

# **A Chronology of Notable Weather Events**

**by**

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243 A. D.

An inundation of the sea in Lincolnshire laid under water many thousands of acres (Camden).

353

Flood in Cheshire in which 3000 people died along with thousands of cattle (Hayden).

402

Euxine Sea frozen over for 20 days (Hayden)

500

The Vandals from Poland held Western Africa, the Diocese of Africa, Visigoth (Western Goth) from Scandia held Spain, Ostrogoth (Eastern Goth) from Scandia held Italy, Germanic-Franks from Scandia held Gaul, Burgundians held Rhone river, and Celts, Germanic-Anglo-Saxon held the diocese of England. The massive migration of the Mongols, the Huns, Goth, Slav-Bulgars, and Avars westward is because of adverse weather conditions driving them from their lands . The Germanic-Danes inhabited the Danish Islands, Schonen, and later Jutland.

St. Brendan (521-527) in his voyage to the northwest suggests the Celts of Ireland discovered America about this time.

The Polynesian reached Hawaii and established agricultural settlements. These people had traveled 2500 miles from Island to Island. It is inconceivable that these peoples didn't reach America in the past 500 years. The Polynesians colonized Hawaii, Easter Island, and Madagascar by 500 A.D.

507

Men from Tsingnan, China report being blown across the Great Sea East to a people who speak a strange language.

508

In England, the rivers were frozen for more than two months (including Thames?). Possible severe winter. Rivers frozen for two months. Years also quoted as 507 or 509.

514

St. Brendan (484-577) of Ireland explored the area discovering the Hebrides, Orkney, Faeroe Islands and Iceland, starting about this time. In 554 he said for America.

520

Major storm surge in Cardigan Bay (B).

523

St. Brendan (484-577) of Ireland recounts how another monk told him of a land far to the west of Ireland, a land of plenty. St Brendan took this account seriously as he and 17 other monks spent 7 years to discover this land. If this be true then only two explanations exist, someone had traveled to America before this time or someone from America traveled to Europe. See 554.

525

City (Edessa), known as Antioch of the Fair Streams, in Mesopotamia is flooded.

530

The Humber River in England overflows and most cattle are drowned.

"the earliest recorded flood that probably affected the River Trent valley was that of about 530 A.D., when the River Humber is known to have overflowed on to adjacent low-lying ground"

536

The Tweed River in Northumberland, England overflows and kills most of the cattle.

A "dry fog" is reported (Trager) indicating a large volcanic eruption.

Volcanic eruption (Rabaul / Papua-NG?) at around 4degS is estimated to have put around 300Mt of aerosols into the stratosphere (c.f. Tambora in 1815 of 200Mt which led to the 'year without a summer' q.v.). It is thought that the effects were experienced over the (then) known world, with a 'severe plague' in the years 541-544 possibly connected; up to 25% of the populations of Africa, Europe and Asia affected. (R.Met.S/'Weather' Feb. 2004): A 'famine'/shortage of bread noted over Ireland in 538. [some publications have the effects lasting until at least 555.] (B)

540

Legon refers to a comet recorded in Gaul and this records the beginning of the dark ages in Europe. Tree ring analysis suggests some catastrophic event effected the weather this year.

In France and Italy, rain caused great floods.

542

Plague struck Constantinople and after four months more than half the population had died, some

three hundred thousand people.

544/545

Intensely cold winter (London / South) & possibly over a wider area (according to Easton, in CHMW/Lamb).

547

There appears to be a mass migration of the Angles or Engles from north of the Eyder River to Britain starting about this time.

549

This is consider the final year of the Roman Christian sponsored Gladiator Games that had been conducted for the past three hundred years. The stopping of these violent barbaric killing games are stopped because of economic decline rather than any moral or religious change of heart.

In Greece, flooding from the sea submerges land.

A storm in London throws down many houses and kills 250 people. Possible severe gale/storm in London; many houses damaged and several people killed.

553

Violent rain in Scotland for five months.

553/554

Severe winter in England: Some confusion between 545 & 554, but Easton (in Lamb/1.) notes both winters as being notably cold / severe. Winter 'so severe' with frost and snow that 'the birds and wild animals became so tame as to allow themselves to be taken by hand'. (A Meteorological Chronology, quoted in "The Long Summer"/Fagan ref: 20)

554

St. Brendan (484-577) of Ireland and 17 other monks set sail for the west from Ireland. The Navigatio Saint Brendani Abatis (Voyage of Saint Brendan) published in the 9th century, resulted in an island being recorded in the Atlantic Ocean called St. Brendan's Island. The Brendan voyage lasted 7 years, and they discovered a beautiful land that they called "The Promised Land of the Saints". Some suggest the land was America, most likely Virginia. The Ogham writings discovered in West Virginia suggests monks were in Virginia about this time verifying the Brendan account. Some say the Brendan saga loses credibility because it claims Brendan and company were "raised up on the back of sea monsters", This is not so absurd as it sounds if you have ever been in a small boat in a 45 foot swell, "they passed by crystals that rose

to the sky", an iceberg looks strangely like crystals, and we were "pelted with flaming, foul smelling rocks by the inhabitants of a large Island of their route", volcanic eruptions fits this description very well. The expedition traveled inland (Virginia) using a guide so the must have encountered the aboriginal Peoples.

556

A storm on the coast of Kent, Sussex, and Hampshire, England.

558

The Danube is frozen over.

565/566

A cold winter in England. (Easton, in CHMW/Lamb)  
570

In Italy, great floods are caused by rain.

575

In England, Essex, Suffolk, and Norfolk are flooded from the sea.

579

In France and Italy, floods are accompanied by great rain.

586

North Sea: Floods and great storm in England (B).

590

In Italy, great floods are followed by the plague.

In England, famine followed a great flood. Or in 589, Durham: storm flood - sea swept away villages, many drowned (B).

592

In England from January to September, a drought with locusts leads to famine.

592/593

A cold winter in England. (Easton, in CHMW/Lamb)

600

The Pict (paint people), and Celt routinely visited Iceland, Greenland and even Jan Mayen Island, Norway. The Picts are firmly established on Orkney, Shetland (Scotland) and Faeroes Islands (Norway). By 800 the Pict of Ireland would dominate Scotland and Northern England. The Kings of Svear extended their dominance from Uppsala to all of Sweden.

604

Severe frost in England. Also noted as a 'severe winter' in Scotland, with 4 months frost. (B)

605

In England, heat and drought lead to famine.

630

Thames flood in London.

634

Munster, Ireland is submerged and great damage is caused.

Ulster, Ireland: Snow - killed many. (B)

649

Chester and Lancashire, England, are flooded from the sea.

669

In Kent, England, the Medway overflows causing great damage.

670

A deadly frost in England and scores die.

680

In England, after 3 years of drought, a famine occurs.

681

"When Wilfred arrived in Sussex in 680 or 681, the king, Aethelwath, and his people were....entirely pagan.....Wilfred must be credited with a major role in converting the still largely pagan population of Sussex. He was able to capitalize on a severe drought, the end of which apparently coincided with his arrival in the kingdom. "

According to legend, the drought (only certain for southern England) which ended in 681, and which was claimed to have lasted for three years, was broken on the day that Bishop Wilfrid converted the South Saxons to Christianity. (Actually, converting the King of the time, who would have then imposed the religion on his court and subsequently the people). Known as 'St. Wilfrid's drought'. (B)

684

The Isle of Sikokf, Japan, has 500000 acres submerged and thousands die.

Ireland: Cold - lakes, rivers and sea froze. [ If this sort of weather was noted across Ireland, I would think that Britain would also have been affected: suggests anticyclonic / blocked, with an easterly type resulting. ] (B)

685

Ireland suffers great floods from the sea.

Colored rain in England (usually an indicator of a major volcanic eruption in the weeks before the event .. Vesuvius & Etna were very active in 685: this would presumably imply south-easterly mid-tropospheric winds, indicating persistent upper-high pressure to the NE of the British Isles. (Various years given, from 684 to 689) (B)

690

Veneto and Liguria, Italy are flooded by incessant rain.

693

Ireland: Flooding due to heavy / prolonged rainfall - Leinster rivers flood for 3 days and nights. (B)

695

The Thames is frozen for six weeks and booths are built on it.  
Severe winter. Thames frozen for six weeks - booths were built on the thick ice. (B)

701

A storm in London destroys 100 homes.



720

Wales - very hot summer (and assumed to be dry). (B) [or perhaps 721]

730

A flood at Edinburgh with great damage.

737

Great drought .. London/South. (B)

738

"Great flood in Glasgow region" 400 families drowned.  
Scotland: flood (assumed to be due to heavy / intense rainfall) - 400 families drowned in Glasgow. (B)

741

Great drought .. London/South. (B)

746

Constantinople is visited by plague that then spread to Italy and Greece killing some two hundred thousand people.

748

Ireland - Great snow destroyed herds. This would have been a major disaster. (B)

758

Glasgow, Scotland, is flooded and 400 families perish (Hayden).

760

In England, a frost from October 1 to February 26.

A cold winter in England. (Easton, in CHMW/Lamb) [ Some accounts have this as 761 .. usual dating problems ]. (B)

763/764

A frost at Constantinople, when the two seas were frozen a hundred miles from shore (Oct 763 to

Feb 764) (Hayden)

The winter in England is noted as being 'severe' .. and was followed by a " long and terrible drought " .. in the spring/summer of 764: suggests abnormally persistent blocking / high pressure situation (at least, 'abnormal' in length of persistence in the same 'phase'). Some sources note 'great snow', with an 'intense' frost. In 'London Weather' entry, .... "one of the severest winters known in history". (Probably affected large areas of continental Europe, again suggesting a 'Scandinavian High' situation.) (B)

770

The Viking displaced the Westman (Celt-Pict) people from the coastal settlements of Ireland and Scotland. Most of Ireland is in Viking hands and some Irish fled to Iceland.

772

In Ireland, drought leads to famine.

770 to 800

In England, a period of higher frequency of cold winters (note: not necessarily every winter). This leads to the suggestion of blocking of the main Atlantic, westerly flow by often slow-moving, intense anticyclones, or an increased frequency of east or northeast flow with higher pressure to the north of these islands. This would tie in to a certain extent with the idea that Scandinavian exploration / raids were assisted by lack of 'westerly-storminess'. (B)

798

Ireland: snow - men and animals died. (B)

800

St. Brendan an Irish monk sailing the North Atlantic wrote about the floating crystal castles (icebergs).

In England, December 24th (original logged as 'Eve of Christmas?'): gale: Great SW or W wind. Cities destroyed (!) (B)

800-1000s: Aletsch and Grindelwald glaciers (Switzerland) were much smaller than today (Aber).

804

March 17th: Ireland - Tornado(?): thunder, wind & lightning. '1010 men killed'. [ I wouldn't

normally detail all 'tornado' events, but the death-toll warrants mention, and I do wonder given that over a thousand died, whether this was in fact a 'storm' event due to a major depression rather than a small-scale tornado event.] (B)

813

The Severn River in England overflows and 7000 cattle drown.

817

December 25th (presumably logged as 'Christmas Day'): Ireland - snow: many rivers & lakes frozen to February 22nd. [ Although only tied to Ireland, given the severity & length of the event, Britain must also have been affected. ] (B)

819

Great floods throughout France followed by rain.

821/822

A severe winter in England. (Easton, in CHMW/Lamb) (B)

825

Iceland is described by the Irish monk Dicuil.

827

In England a frost lasted nine weeks.  
Possible severe winter. Thames frozen for nine weeks. (B)

829

The Nile River in Africa has frozen over this year.

836

"The Tweed overflowed its banks, and laid waste to the country for 30 miles round." (Hayden).

840

In Germany the Rhine floods from rains.

844/845

In England, a cold winter. (Easton, in CHMW/Lamb) (B)

845

This year Paris is sacked by the Vikings.

855/856

A cold winter in England. (Easton, in CHMW/Lamb); Great ice & frost until Jan. 7th - rivers & lakes froze. (B)

856

Ireland: gale: very great wind; woods felled. (B)

859

Carriages are used on the Adriatic Sea which is frozen over.

859/860

A severe winter in England. (B)

860

The Mediterranean Sea was frozen over and passable in carts.

The first of many Viking ships arrived Iceland where they wintered. Included in this group are Floki Vilgerdarsson, Ingolf and his foster brother Hjorkief including ten Westman slaves. One version of history credits Naddod the Viking as the first visitor, another Gardar Svavar. It is believed by some that the Vikings drove many of Iceland's Westman on to Greenland.

861

The Medway river floods.

863

Another Mongol migration, the Magyars, reached German this year. Harold Fair Hair (863-933) Germanic-Norwegian Viking King sought domination overseas. In the Hebrides Ketil Flatnose became King and his daughter Aud went on to Iceland.

864

The Humber floods.

873/874

A cold winter in England. (according to Easton, in CHMW/Lamb); Scotland: specifically a cold winter - great frost from November to April; thaw brought floods. (B)

880

The Westman are permanently settled in Greenland. Some of the first sites are on the southeastern shores. These lands are referred to as Hvitramannaland (White man's land), Ireland Mikkla (Greater Ireland) or the Icelanders called it Alababia. One wonders if Iceland had non-white inhabitants at one time?

880/881

A cold winter in England. (Easton, in CHMW/Lamb) (B)

880-1140: Radiocarbon dates on trees that grew in Canada far north of modern timberline (Aber).

885

The Dee river floods.

892

11th November: Ireland - gale, many trees and houses fell. (B)

900

Iceland had a population of 20000 many of them mixed blood as a result of Viking slave trade in Scot, Irish and English stock. It is noteworthy that Icelandic, Viking and English are all Germanic peoples. Few Icelanders died of natural causes, most by murder, ambush, burning and human sacrifices. Murder of Vikings usually resulted in compensation or banishment that normally is to the west. Banishment is usually for a limited time being one to four years. Weather conditions in the north are excellent. These conditions continue to encourage expansion to the west.

908

Most of the rivers in England are frozen for two months.  
Possible severe winter. Most English rivers frozen for two months. (B)

910 to 930

In England, extended droughts with regularity: also thought that the summer half-years were warm or very warm more often than not - some notably hot summers. (B)

912/913

A severe winter in England. (Easton, in CHMW/Lamb) (B)

917

Ireland: severe winter - Great snow. Lakes frozen. [ As elsewhere, implies a blocked pattern, with occasional 'Atlantic' incursions. Must have affected Britain as well I would have thought.] (B)

918

Continual rain for five months in Scotland.

923

The Thames is frozen for 13 weeks.  
Possible severe winter. Thames frozen for 13 weeks. Year may be 928 or 929. (B)

927/928

A cold winter in England. (Easton, in CHMW/Lamb) (B)

930

Iceland population has expanded to 40000 people as more British Isle and Viking peoples flood to the island. Icelanders tend to be small in stature and many are dark-haired that is more Pict than Nordic or Celt in appearance. The Viking are still active in Gaul, England and Ireland.

935

A large area of Southampton, England, is submerged in a flood.

939/940

A cold winter in England. (Easton, in CHMW/Lamb) (B)

944

A storm in London destroys 1500 homes.  
Possible severe gale/storm in London; many houses destroyed. 1500 houses "fell" (destroyed?): affected the whole of England. (B)

946 to 948

England: drought - 'no rain for 3 years' (unlikely to have been "no" rain - more likely a marked shortage of rainfall / winter snowfall). (B)

951

Southampton, England is nearly destroyed by a lightning storm.

952

The Euphrates floods and submerges half of Bagdad.

955

Wales: Hot summer. [ Must surely have affected other parts of Britain - indeed, the heat may have been 'exceptional', if the summer was notably hot as far west as Wales.] (B)

959

The Euphrates floods and submerges half of Bagdad.

968

Nile fails to rise and 600000 die (Nash).

Also famine throughout Europe with German and Scotland suffering the most, perhaps because of drought.

969

In England, windstorms blow away the grain crops and famine follows.

973

The Thames overflows and floods.

974/975

Probably a severe winter across Britain .. usual doubts about dates etc. Severe winter over whole of Europe until March 11<sup>th</sup>. (B)

981

Erik the Red (Erik Thorvaldsson), a habitual Viking criminal, his father had previously been banished from Norway, sailed from Iceland under a three year banishment order for Gunnbjorn land (Greenland). Earlier Gunnbjorn Ulf Kragesson was storm-driven to Greenland and

Snaebjorn Hog had discovered a grave of previous voyages to Greenland. Between 932 and 981 the Viking made many voyages to Greenland.

Erik started out with 25 ships, arrived with 14 ships and 450 settlers establishing two colonies, one at Eriksford the other at Eriksey. Erik was probably in search of Aris, his kinsmen and with intent to raid the Westman settlements. Some of the Westman are semi-religious, starving hermits who mortify their flesh. The Viking called these people Papas. Erik discovered Celtic habitation but no people. They apparently fled, either back to Ireland or further west that is the more probable option. The Celts declining use of European materials suggest most fled west to Canada. The following year Erik explores the west coast of Greenland north to cape Burnil then crosses Davis strait and explores Cumberland peninsula of Baffin Island. They collected walrus ivory for trade.

983

Erik wintered on the island of Hulm near Cape Burnil where much driftwood can be found. He explores up the Greenland coast to Greenstrups Glacier. In 984 Erik returns to Eriksey and winters, then in the following spring he returns to Iceland.

It is the seventh warmest year of 2209 years in Taymir Siberia, based on tree ring observations.

985

Erik returned to Eriksfiord and named the land Greenland. Twelve chieftains are established, widely spaced up different fjords. In the autumn one final ship arrived, Herjolf and he established a prime trading port not far north of cape Farewell. In late summer Bjarni Herjolfsson sailed for Greenland to meet up with his father Herjolf. A storm drove him off course to Newfoundland. The land is heavily forested with no ice-covered mountains, therefore it was definitely not Greenland. Bjarni reckoned he was 800 nautical miles south west of Greenland. Bjarni sailed north and recorded no signs of human habitation. Bjarni cleared cape St. Francis and encountered Labrador. The next land sighting was Kaumajet peninsula of northern Labrador. They then sailed due east for Greenland.

987

Starting December 22, a frost in England lasts 120 days (late March).

It is the coldest year of 2209 years in Taymir Siberia, based on tree ring observations.

988

Early in the year, the Thames is frozen over for 5 weeks.

989



In England, rains in winter prevented plowing and famine followed.

990 to 1000

In England, extended droughts with regularity: also thought that the summer half-years were warm or very warm more often than not - some notably hot summers. (B)

992

Ireland: Storm flood - tempest (high wind?) submerged island fort in one hour Wicklow. [ The way this is written up suggests that this was a 'storm surge' event, rather than necessarily due to heavy rain - though the latter may have played a part.] (B)

995

Summer cold throughout Europe; severe frost & ice (quite remarkable if true in July as given on this site!) (B)

Lief Ericksson, son of Erik the Red, is determined to visit Bjarni land to obtain lumber and continue searching for the Westman colony. He bought Gjarni's ship and set sail with 35 men, visiting Helluland meaning flat-stone land (now Baffin island), Markland meaning woodland (Labrador) and Vineland meaning wine berry (probably Trinity bay Newfoundland) where he spent the winter. Contact between the Viking, Dorsek or Beothuk of Newfoundland is not recorded in this visit. Others contend Epaves Bay (L'Anse Au Meadows) which is actually Meduse Bay was the first wintering site however this does not appear to be a main Viking settlement. When Lief returned from Vineland the following year he discovered a ship wrecked crew of 15 Germanic-Norwegian traders led by Thorer and he returned them to Greenland.

998

The Thames is frozen for 5 weeks.

Possible severe winter. Thames frozen for five weeks. (B)

1000s: decline in Tiwanaku culture in Bolivian-Peruvian altiplano linked to prolonged drought conditions (Peterson and Haug 2005).

1000s: Tyndall Glacier (Mt. Kenya, Africa) begins to advance (Mahaney 1990).

1004

In England, a famine such as no man could remember. It continues in 1005.

1010

The Nile River in Africa has frozen over this year for the second known time.

1012

The Danube and other rivers in Germany and England flood.

1014

Great floods along the coast of England and many seaport towns are ruined (probably a tsunami, but possibly a windstorm). Penzance:" 1014—Mount's Bay inundated by a "mickle seafood" when many towns and people were drowned. "

It is the sixth warmest year of 2209 years in Taymir Siberia, based on tree ring observations.

1016

In Ireland excessive rains cause great flooding and most cattle die.

1020

In England, there are great floods followed by plague.

Possible severe winter (London/South). (B)

1020-1200: Minimal sea-ice cover around Iceland (Aber).

1022

In Hindustan drought leads to famine. Whole countries were entirely depopulated.

1025

In England, famine from rain and plague.

1032/1033

A cold winter in England. (Easton, in CHMW/Lamb) (B)

1035

In England, a frost on Midsummer's Day so vehement that the corn and fruit are destroyed.

1040

As a result of an earthquake, fifty thousand die in the Persian city of Tabriz (Iran).

In Germany, there are great floods throughout the country.

1042

Extreme bad weather led to famine for this and several years following in England.

1043/1044

A cold winter in England. (Easton, in CHMW/Lamb) (B)

1046

The Severn valley is flooded and most cattle die.

The severest winter in memory in England (Anglo-Saxon Chronicles). Probably the 1046-47 winter.

1047

In Ireland, the previous winter was so harsh with snow and frost that famine followed.

1047-1048

In Scotland, famine stilled the country for 2 years.

1050

In England, barrenness of the land lead to famine.

1052-1060

In Hindustan, 7 years of drought at Ghor burned the earth and brought mass famine.

1055

A storm in London destroys 400 homes.

1059

England suffers cold followed by famine and plague.

1061

Thames frozen for seven weeks. (B)

1063

The Thames is frozen for 14 weeks.

1064

A memorable storm at Edinburgh.

1064-1072

In Egypt, the Nile failed to flood and brought great famine and cannibalism.

1066

In England, after a long/dry summer, W/WNW winds prevailed in the Channel all through September. It was, according to TEC/Lamb, only the breaking of this anticyclonic NW'ly (ANW) spell that gave Duke William his chance to cross the Channel on the 7th October 1066 (New Style calendar). (B)

1067/1068

In England, a severe winter lead to famine.

1073/1074

A severe winter in England. (Easton, in CHMW/Lamb) (B)

1076

The Tigris overflows and Bagdad is flooded.

Starting in November, a frost in England lasts 6 months. The Thames may have frozen over.

1076/1077

The frost in England ends in April.  
Severe winter in Britain. (B)

1078

In England, "This year was the dry summer; wildfire came in many shires and burnt down many towns, and also burnt down many strongholds."

1080-1180: Favorable interval of mild winters and dry summers in western Europe: England, France, Germany (Aber).

1085/1086

Severe winter (London/South). (B)

1086

Rain floods England and plague follows.

A 'wet' year (s): much famine/want over these 2 years. 1086 was also noted as 'a very thundery year', with much flooding & many people killed by lightning. (London/South?) (B)

1088

The Tigris floods and Bagdad suffers much damage.

1090

Constantinople has continuous flooding for months.

1091

On September 29, the sun was darkened for 3 days in Europe; many meteors.

On October 5, a storm in several parts of England, especially Winchelscomb, in Gloucestershire, where a church steeple is blown down.

On October 17, a storm in London destroys 500 homes.

Violent 'whirlwind' (probably a tornado/T8 according to Torro .. date in some sources 23rd, and best not to stick rigidly to date given the antiquity of the report.) More than 600 houses destroyed, much damage to churches (chronicled well of course), and damage also to the not-long built Tower of London. (Some references also talk about a 'gale' which implies a more widespread event - difficult to be precise I would have thought as to what exactly the phenomenon was; 600 houses is a lot of property for a tornado, though not impossible of course.) (B)

"Owing to a perpetual downpour of 1091, the Thames rose with alarming rapidity, and the old wooden 'London Bridge' was swept away, the lands on each side being considerably flooded"

1092

A very wet year overall in England (B). "Terrible flood followed by a great frost and then a second flood 'as the like was remembered by none'"

1092/1093

In England, "River Thames and all the English rivers so heavily locked in with ice that when the

thaw came bridges and mills were carried away".

Severe frost in this winter. English rivers frozen so hard that horsemen and wagons could travel on them. When the thaw came, drifting ice destroyed bridges. (Followed a very wet year) (B)

1094

Ireland has floods throughout the country.

1096

It is the sixth coldest year of 2209 years in Taymir Siberia, based on tree ring observations.

1098

A wet year in England. (B)

1099

Rain and sea floods on the festival of St. Martin in England and Holland. 100000 deaths result.

In England rains and floods bring on famine, tempests, and bad air.

On November 11, a tidal flood affected the River Thames estuary & adjacent areas of north Kent; it is not known whether London was affected, but according to legend, this inundation was responsible for the formation of the Goodwin Sands. The flooding also affected the Dutch coastal areas, so 'tidal' is problematic: I would suspect a wind-driven storm-surge which coincided with a high tide (?spring/exceptional?), and possible excessive autumnal land-water. "Thousands" of deaths reported in areas affected. (I would have thought that if London had been seriously affected, some chronicle of it would have survived?: The 11th century saw a high number of disastrous floods along the English east coast.) (B)

Anglo-Saxon Chronicle records a flood of '...such a height, and did so much damage, as no man remembered before...'. Thousands drowned as far south as Kent."

1100

A great flood and Ostend in Flanders is submerged. (Or maybe 1099?)

1101

"The [lower] Trent is one of only two bore rivers in England (the other is the River Severn). This means that the Trent is tidal and, like the sea, has a tide twice a day, one in the morning and one in the evening. Historical documents claim that in 1101 and 1581 the River Trent completely dried up! "

1102

In England, drought (possible). Also noted as accompanied by 'excessive heat'. (B)

1103

The first recorded use of fireworks is noted in China.

On August 10, severe gales caused severe damage to crops in England.

1104

Hekla in Iceland erupts, destroying farms 45 miles around (stratospheric?).

1105

Great floods followed by plague in England.

1106

In England, barren lands brought famine and plague.

Old Malamocca, a considerable town near Venice, engulfed by the sea.

On February 12, the sun is darkened in Europe and Brazil.

1108

Flanders is flooded from the sea. Ostend totally immersed and remains immersed to the present.

1110/1111

Long & hard winter (London/South). (B)

1114

In England, on October 10, the following is stated: "Remarkable drought in the Thames Valley on October 10th, 1114: .....Simeon of Durham...records: ' In this year, the river which bears the name of Medway, for a distance of some miles, receded so far from its bed, on the sixth day before the ides of October, that in the very middle of it not even the smallest vessel could make the slightest way.'"

Considered to be one of the driest years on record: on the 10th October, the Thames at London was so low that men and boys were able to wade across the river. (Combination of notably low tide & the aforementioned drought). (Some sources have the date as the 15th) [Note that the river

had a completely different character to that of modern times.] (B)

Starting in the latter part of this year and continuing in 1115, England has the most severe winter to date. Several wooden bridges are destroyed by the frost.

Very severe winter: the frost lasted for about 9 to 11 weeks and nearly all the bridges in England were damaged by ice. (B)

1116

A year of 'excessive' rains in England (B; "The Weather" (Kimble & Bush))

1117

Constant rain and floods all year in England leads to famine.

Arno Valley, Italy. The Ponte Vecchio was swept away by floods.

1121-1122

In England, a long and cruel frost lead to famine.

1123-1124

In France and Germany, terrible weather brought famine and plague.

In England, famine leads to bodies lying unburied everywhere.

1124/1125

Exceptionally severe winter in France & Netherlands may also have affected Britain (probably at least the south & southeast if the Low Countries were affected). (B)

1125

In England, great scarcity of food is brought on by incessant summer rains, and famine follows. "The Summer was very wet and on the 10th August there were great floods in which men were drowned, bridges shattered and corn destroyed"

1126

A drought that lasted 1-2 centuries as measured from tree rings in the Sierra Nevada was centered on this time. It coincided with a Medieval warm period when Vikings navigated the waters surrounding Greenland. A 2nd drought centered at 1340.



1133

In France rain causes great floods.

In Italy, the Po frozen across from Cremonia to the sea.

In France, the Rhone crossed upon the ice. Wine is frozen in cellars.

1134

In Flanders, there are great floods from the sea.

1135-1137

In England, drought then famine.

Relatively dry, with one exceptionally dry year in 1136; a particularly fine (hot & dry) summer in 1136. (It is not clear if all three years were dry, or just one (or two) of them.) (B)

1137

From November 10 to January 19, continuous frost in England with the Thames and Medway frozen over; most fish in small rivers and ponds perish from the cold; hundreds of cattle are killed in a snowstorm.

1140

In Wellesbourne, Warwickshire, England, a tornado causes extensive damage.

It is the ninth coldest year of 2209 years in Taymir Siberia, based on tree ring observations.

1141

In May in England, (year may have been 1140): (possibly May 19th, new-style): Welsburn (now Wellesbourne), Warwickshire .. " a very violent whirlwind (i.e. a tornado) sprang up, a hideous darkness extended from the earth to the sky & the house of a priest was violently shaken, and all of his outbuildings were thrown down and broken to pieces ". Some 40 houses severely damaged, and large hailstones, (noted as the size of pigeons' eggs) fell, one of which killed a woman (& possibly one other). This is the first record of a tornado that has been deduced by Torro, and they assess it at T5 (in a scale that extends from T0 to T10). (B)

1142/1143

Very cold weather with snow in December in England (which year?: Easton, in CHMW notes that it was the winter of 1142/43 that was cold in Europe.) (B)

1149/1150

Severe winter in England: the first authentic report of the Thames being frozen solid - the frost lasted from December to March and the frozen river was crossed on foot and on horseback. Very intense cold began 10th December 1149 (calendar?) and continued until February 19th (calendar?). The Thames was frozen over at London Bridge and supported loaded wagons. (B)

1150

It is the third warmest year of 2209 years in Taymir Siberia, based on tree ring observations.

1151

It is the third coldest year of 2209 years in Taymir Siberia, based on tree ring observations.

1152

In Germany the Rhine overflows from excessive rains.

1154

Hekla in Iceland erupts.

1157

In Italy, the Tiber overflows and the country is flooded.

In England, the floods of autumn destroy grain and fruit and pestilence followed.

In Italy that winter, great snow and frost brought famine.

1158

Because of an earthquake (?), the Thames at London was waterless and it was crossed dry-shod. Some sources give the year as 1157. (B)

1161

In Sicily, floods of the rivers and from the sea. 12000 die.

1162

In Holland, floods from the sea and most cattle are drowned.

1167

In England, "A record of great snow at Winchester ... (Annals of Winchester)"

1170

Friesland and Utrecht, Holland are flooded. In Utrecht, people fished within the walls of the town. Thousands die.

1172

In Germany, the Rhine overflows and causes great damage.

In Ireland, floods devastated the country.

1173

The Zuider-zee in Holland is flooded.

1175

Genghis (Genghis) Khan (Lord) (1167-1227), the Mongol Emperor, succeeded his father Yesugei as chieftain at age thirteen. Other records suggest his father Yesugei died 1180 and Genghis became Khan (Lord) in 1206. Tartar tribesmen poisoned Yesugei because he once robbed them. Genghis would later kill all but the youngest males and enslave the women and children. The Tartar tribe ceases to be. The Mongol armies created a Great Empire that stretched from the Yellow Sea to the Mediterranean Sea. He is reported by European sources to have said, "I will carry slaughter and cause devastation to my enemy, so my name will live"

1175/1176

Severe winter in England; frost and snow from 25th December to 2nd February in Normandy (& perhaps in England). (B)

Feb.- "...that winter was one of the coldest in living memory. Christmas found Henry and the Young King at Windsor. The land was covered with snow and ice, and a thaw did not set in until Candlemas in February 1176"

1177

It is the eighth warmest year of 2209 years in Taymir Siberia, based on tree ring observations.

1178/1179

A cold winter in England. (Easton, in CHMW/Lamb) ... does make you wonder if there is confusion here with the 1175/76 event? (B)

1186

John Toledo claims this date is the end of the world.

1188

In England, floods from the sea destroy most of the cattle.

1193-1196

Incessant rains in England (Nash).

1193

In England, regarded as 'unseasonable' (whatever that means), with thunder & lightning often noted through the year. A 'wet' year. (This presumably means that the general opinion was that the climate at this time 'should' have been drier?) (B)

1194

A violent storm almost desolated a great part of Norway and Denmark.

Great dearth in England and France with high prices for wheat.

1199-1202

Nile fails to rise leading to famine. 100000 die (Nash).

1199

From December 10 to mid-March, a great frost in England; people were forced to make fires in the streets to keep warm; many are frozen to death.

1200s: Glaciers began to advance in Iceland (Aber).

1200

The annual flooding of the Nile did not occur and as a result Egypt is visited by famine. Cannibalism soon became the main food source, an offense punishable by death. In 1201, the annual floods again did not occur and as a result Egypt is depopulated. An earthquake struck in May 1202 adding to the devastation visited upon the Egyptian people.

In Ireland cold weather leads to famine.

1201

In England, two consecutive 'wet' years (but see end this entry). In 1201 specifically, the summer is thought to have experienced severe thunderstorms, notable hail in the London area - mid/late June (some sources have June 25th). In contrast to the foregoing, some sources have 1201 experiencing a notable "heat & drought" episode, but with no location details: harvest over on June 24th in 1201 (?where); continued through July & August. (B)

1203

Crop failures in the British Isles, Germany and Poland from long rains lead to famines (Trager).

In July-August, ice is reported at the coast of Iceland.

1205

The Mongols began their invasion of China and completed their conquest by 1279.

In England, a frost from January 14 to March 22. Regnal year 6/7 John: "1205: "The River Thames was frozen over from 1st January to 20th March. No ground could be tilled and frozen ale and wine were sold in Reading by weight....."

This winter was one of the severe winters of history and most rivers including the Thames were frozen completely; the frost prevented ploughing and all agricultural work was suspended from 14th January to 22nd March, the winter seed was destroyed and there was widespread famine. (B)

In England hailstones the size of hens eggs destroy houses and corn.

1206

Six hours of complete darkness in Europe on February 28.

1207

In England, a frost of 15 weeks duration.

1208

In France the greatest floods ever destroy bridges and houses; the worst ever seen.

Solar obscuration in Brazil.

1209

In England, a rainy summer and severe winter lead to famine.

Old London Bridge built - because of its construction it allowed build-up of water up-river, particularly when debris clogged the gaps. Even without such problems, high water levels could lead to a significant difference between up-river & down-river sides: 'several feet' are mentioned. Conversely, tidal rise / fall was dampened by the bridge - decreasing the chance of tidal flooding above the bridge. However, the bridge increased the chance of fluvial flooding upstream. Bermondsey (London) is noted as having experienced flooding in this year. (B)

1209/1210

A severe winter in England. (Europe - Easton, in CHMW/Lamb). Severe frost in January and early February (London/South). (B)

1210

Sep.: "This is the earliest recorded inundation at Perth and must have been one of the most destructive." Night time. Cant's notes to Muses Phreadic: "'So violent was the torrent that the whole town was undermined, the houses leveled, and many persons of both sexes lost their lives. The Royal Palace did not escape. The King's youngest son, John, with his nurse, were carried down the river and drowned, with about fourteen of the King's domesticks.'" (p.24.) There may probably be some embellishment of picturesque exaggeration in this account, but all the historians agree that the inundation was a very terrible one."

1211

In Perth, Scotland the Tay and Anan rivers flood and the King narrowly escapes in a boat. Most of his court drowned.

1212

Sicily is wiped out by floods.

In summer, in England, a dry summer; a great fire in London. (B)

1214

The Thames in London is so low one day that women and children could easily wade across it and the sands were laid bare several miles from shore.

1215-1350: Glaciers began to advance in several parts of Europe (Aber).

1215

In England, Hugh de Beauvais with 40000 foreigners perished in a storm coming to the assistance of King John.

Oberriederin (irrigation canal) overrun by advance of Aletsch glacier; radiocarbon dates on buried larch; canal head still covered by modern Aletsch glacier (Aber).

1216

In Italy and France, the Po and Rhone are frozen to great depth.

London: "It is recorded that in 1216 people have rowed through the Great Hall of Westminster whose floor lay covered in fish as the floods receded"

1216/1217

A cold winter in western Europe / implied parts of Britain. (Easton, in CHMW/Lamb) (B)

1218

Danube remained frozen to a great depth.

A great inundation formed, near the mouth of Weser, the Gulf of Jadhe (India, probably a cyclone).

1218/1219

A cold winter in western Europe / implied parts of Britain. (Easton, in CHMW/Lamb) (B)

1219

In Norway, the St. Lawrence Lake burst, all the cattle are lost, and 36000 people die.

In Holland, severe flooding. Terrible storms form the Island of Wieringen (formerly part of the mainland of North Holland).

In England, "A really wet year, from end to end, with tumultuous floods" .

A violent northeasterly gale did much damage in London; the exact year/date is uncertain. (B)

Genghis Khan invades Afghanistan. His destruction of irrigation systems turned fertile soil into permanent deserts.

1220

In Poland, constant rain floods the country.

Considerable flooding in Freisland.

1222

In February, in England, lightning and thunder is so dreadful, it throws down several churches.

Great dearth in England. "The earlier Survey of 1222 [British Museum Cotton Tiberias, B II, 118d] mentions thirteen arable acres which could not be ploughed and which were in meadow and pasture because of too much rain."

1223

In England, "A really wet year, from end to end, with tumultuous floods"

1224

In England, a dry winter with poor harvest brought on famine.

1224/1225

A severe winter. (Easton, in CHMW/Lamb .. Ref. 1 .. 1224/25)

Severe winter (London/South .. Ref. 8 .. 1225/26).

Difficult to know if these are the same events, with the year mis-attributed, or two events. (B)

1227

Thick sea ice on the Baltic allowed a German army to march from the mainland of Estonia to the islands of Muhu and Saaremaa and to capture those islands (Tannberg et al. 2000).

1228

Friesland, Holland suffers a flood from the sea that devastated the country and killed 100000 people.

1230

In Italy, the Tiber floods.

In France the entire country is submerged.

1231

Famine in Japan (Trager).

The Mediterranean was frozen over and people passed over it in carts.



1232

In Austria, the Danube floods causing great damage.

1233

In England, it thundered for 15 straight days, with rain and floods, that destroyed the fruits of the earth.

November (both years, 1232 and 1233) - thundery (in a month that is not normally noted for thunderstorms inland). In 1232, London experienced 15 days of thunderstorms. (B)

In England, a wet summer - heavy rains led to severe and widespread flooding over most of England. Severe thunderstorms on the 10th February [ accompanied by a 'gale' ] & thunder occurred on several days in November (see above). This sort of weather would have had major effects upon a mostly rural population, with possible famine, disease. (B)

Long and severe frost from Christmas to 2nd February in 1234 (London/South). (B)

1234

The Mediterranean was frozen over and the merchants passed with their merchandise in carts.

1235

In England, famine and plague cause 20000 deaths in London alone. People consumed horse flesh, bark of trees, grass, etc. [weather caused?]

The Thames rose so high at Westminster England that lawyers were brought out of the hall in boats.

1236

In England, "Incessant and torrential rain swept into the area, causing much flooding and hardship to local people. Monsoon-like rains poured from leaden skies through January, February and the first part of March. Livestock was lost and disease spread rapidly amongst animals. During the rest of March dry weather set in and between April and August Hertfordshire and Worcestershire basked in hot sunshine. A prolonged drought began, and even after the wet winter water soon became scarce and rivers fell to low levels, especially the Thames and the Avon."

Very heavy rain January to March: two floods in London in 1236. The first, which flooded Westminster Palace early in the year, was due to heavy prolonged rain.

The second was produced by a high (storm-surge) tide in November, drowned many people and a great number of cattle in the Woolwich area. An inundation in Norfolk by the sea destroyed

flocks of sheep & herds of cattle, tore up trees and demolished houses. In one village alone about 100 people died.

However, the summer of this year was noted as dry/hot in London/South. (B)

1237

Heavy rains in February; the Thames flooded great stretches of the country (presumably roughly downstream of Oxford?). (B)

1238

Hot and dry in England (B)

1239

In England, "From Easter for four months there was almost continuous rain.... Marches were extended"

1240

In Lambeth, England, the Thames floods from heavy rain.

Dry from January to March. (London/South). (B)

An eruption considerably changes the western coast of Schleswig; many fertile territories are swallowed up and the arm of the sea which separated the Island of Nordstrand from the continent is greatly enlarged.

1241

Stars seen during the day in Europe.

Eastern Europe considered this year a year of misery. To escape the Mongol army, 40000 refugees from the steppe of the Mongolian Russia Empire straggled into Hungary. A division of the Mongol army under Baibars Khan (Lord) destroyed a combined army of Polish, French and Germans at Liegnitz in Silesia. The Mongol army annihilates the Hungarian Army of 40000 men including the Templars, Hospitallers and Teutonic Knights. The Europeans are devastated as the European knights are no match for the superior Mongol army. About 30000 well-armed knights are destroyed almost to a man. Those who survived believed they had been defeated by witchcraft. Near the town of Muhi, Hungary 60000 are killed this spring.

The Mongol (Tartars) advanced on Vienna, Austria and Europe for all intent has no remaining army to resist the Mongol Empire. Krakow, Poland fell to the Mongol on Palm Sunday. The Great Mongol Empire is the largest land empire history has known. Only the death of Emperor

Ogadai (Ugedey) in December this year saved Europe from total conquest. General Batu and other Mongolian leaders wanted to take part in the elections on the next great khan (Lord). This election process would take four years. The Mongol objective however is to advance West to the furthest known territory and this short-term objective is attained. Bulgaria and Moldavia became a permanent part of the Mongolian Empire for the next century. Remnants of the Hungarian army reported that the Tartars are using gunpowder in the war. This led the Church to the conclusion that the Tartars are using fire-breathing dragons against the Christians. They are considered the horde from hell itself. Tartars from Tartarus, that part of Hades where the wicked were punished. They had the heads of dogs, and they devoured the bodies of their victims.

March - October, a prolonged drought. Dry/hot from 25th March to 28th October.  
(London/South) (B)

1242

The Mongol withdrew from Poland and Hungary settling in southern Mongolian Russia Empire. The Russian is in total submission and forced to pay tribute. The Russian Princes literally had to kiss the feet of the Mongol Commanders during the collection of tribute. The Mongol in the Russian Ukrainian (Little Russia) area settles in by building forts and planting crops.

Heavy rain and thunderstorms on 19th November and on many days thereafter; the Thames flooded at Westminster & Lambeth. (B) "Stow wrote too of a flood six years later, in 1242, when 'the Thames overflowing the banks about Lamberhithe drowned houses and fields by the space of six miles, so that in the Great Hall at Westminster men took their horses, because the water ran overall'."

1245

John of Plano Carpini was a Franciscan monk who set out on the instructions of Pope Innocent IV to gather intelligence. He was met by Mongol horseman and was brought to witness the enthronement of Guyuk Khan. He experienced a sudden hailstorm followed by a flash flood that killed 160 people.

1246

In Holland, severe flooding.

1246-1305

A severe drought is the Southwest United States which is most intense for 1276-1299.

1247

In England in spring "Such foul weather set in during the spring that it turned into a second winter ... Late snowstorms caught out the shepherds of Hertfordshire, with snows 15 ft deep.

Sudden thaws brought flooding and cold wintry winds created skating rink conditions where flood water lay"

1248

The sixth Holy War (1248-1254) is to the Holy Land.

In Holland, severe flooding.

1249

In Holland, severe flooding.

In England, "After the abundant harvests of the earlier 1240s, the year 1249 was disastrous. Matthew Paris, the chronicler of St Albans Abbey, recorded flooding in the neighborhood of Abington where mills and bridges were carried away, trees uprooted and corn leveled ..."

Warmest year between 1000-2000; Buisman says the era 1226-1250 is the warmest period in Dutch history; In the following winter, winter weather isn't seen in Egmond (Northwest-Holland, coast) till mid-February The wind is the cause of astonishment. In the same year of the feast of the Evangelist Lucas (18 October 1248) till St. Valentine (14 February) there as no snow and no ice or no more than one or two nights at the most. The wind blew so relentlessly from the west, that it rarely blew more than a day rom the east and, how extraordinary to say, only till two or three o'clock at night (Annales Egmondenses, Egmond). It seems like the wind changed its direction starting at 15 February The 17th of February is mentioned in England. In Cologne the winter of 1249 is a very mild one, like in Egmond. Frost lasts only for a day or two when it occurs. The winter is wet. In England the winter is springlike, nevertheless the weather takes a drastic turn at the middle of February in such a way that the real spring looks quite different, according to our spokesman (Matthew Paris of St. Albans): The temperature in winter was very different compared to the spring in such a way that no snow, no ice covered the earth for more than two days in a row. The trees were developing their branches in February and the birds were playing and singing as if it was the middle of April. Three severe floods The most spectacular events in this, till February, extremely mild winter were three floods that occurred each 40 days after the other in the North Sea area. Among them were England and the coastal regions of Flanders, Zeeland, Holland, North Holland and even some parts of Germany. On February 4, the last flood occurs. Late winter weather: After the third flood, winter finally starts of. A tournament in Northampton, where many were looking forward to, is canceled because of heavy snowfall for two days. On February 19, the snow covers the ground a foot thick. During spring, salt layers causes a lot of trouble in Groningen and other places because of increased salinity of the earth. There is no grass, no hay. Heavy rains fall near Abington (Oxford). The water yet again causes great hardship. Nevertheless, the summer seems quite dry in England.

1250

Major North Sea/English Channel storm/flood. Winchelsea on the Sussex coast suffered badly

with 300 houses and a number of churches destroyed in a storm on the 1st October, 1250. More generally on this date, a major North Sea gale and sea flood caused great damage to adjacent parts of England, Holland & Flanders.(see also November 1570) (B)

It is believed that guns are being manufactured about this time in both China and in North Africa.

A supernova 650 light-years away should have been visible to observers on Earth according to scientists who analyzed evidence in 1998.

1251

In Shannon, Ireland, there is a great flood through the area.

1252

In England, lack of rain for months killed crops and caused a huge loss of livestock. In summer Hertfordshire and Worcestershire: "From April to July a severe drought swept the land and caused many of the crops to fail. Water became so scarce that people were reported to be moving out of this area to find water, and transporting it back by horse and cart"

Both (1252 and 1253) dry years in England - considered by some (e.g. Brooks), as the driest pair of consecutive years known in the record. The summer (& possibly the spring in London/South) of 1252 was outstandingly dry/hot, with the ensuing drought ruining crops & many people died from the excessive heat. Spring/Summer 1253 was also noted as dry/hot London/South. (B)

1253

In England, Hertfordshire and Worcestershire: "The extreme drought conditions continued through the spring and summer with streams and ponds drying out and rivers running at their lowest levels ever ... The autumn suddenly turned wet, with flooding as torrential rain and thunderstorms arrived over the area..."

1254

Severe frost January to March (London/South). (B)

In England, "There was a long and great drought this year"

1255

In England, summer Hertfordshire and Worcestershire: "A great drought again struck the land, with little rain and very strong, thirsty winds which again ruined crops, dried out streams and reduced rivers to very low levels. The air was filled with dry dust from late morning to evening during mid summer ..."

1256-1258

In England, three wet years .... extensive flooding, which led to harvest failures & high grain prices: shortage & starvation / distress for poor people. (B)

1256

Severe thunderstorms with heavy rain on June 19th, 1256: "Matthew Paris gives us the following account:- ...an extraordinary storm of wind and ...driving rain, with hail and thunder and vivid lightning, filled the souls of men with fear and immense damage was sustained...The mill wheels were seen to be wrenched off their axles, and transported by the force of the waters to great distances, destroying neighboring houses. And what the waters did to the water mills, the wind did not spare to do to the windmills. The piles of bridges, stacks of hay, huts of fishermen, with their nets and poles, and even babies in cradles were suddenly carried away, so that it looked as if the floods of Deucalion were come again. And not to mention other cases, Bedford which is watered by a river called Ouse, as it did a few years before, suffered damage beyond estimation. Indeed, in one place, a block of six adjacent houses was transported by the rapid torrents, the inhabitants hardly being able to crawl out of them. And other places on the banks of this river were exposed to similar perils." [Bedford Ouse]

1257

In Holland, severe flooding.

1257 July 15 p22: "In this year there was much heavy rain and on 15 July such a flood that houses, walls and trees were washed away, and hay swept down by the force of the water broke many bridges." [The result was a corn shortage in 1258] [ha 033]

1258

Crop failures and famine in Italy/Germany.

June 24th, River Severn storm flood - many drowned. Not clear if this is heavy rain-water (i.e. a pluvial event), or a wind-driven storm-surge event. (B)

1258 June 4 " a terrible storm of wind accompanied by torrents of rain fell on and raised all the waters of the Severn from Shrewsbury to Bristol to a degree that has not been seen in our times." There was an "inundation" which overwhelmed all the meadows and cornfields near the river Severn utterly destroying the crops. Some men and "innumerable boys" were drowned in the violent water as too were "great quantities of animals of every sort".

1258 autumn "Based on a sudden temperature drop for several months in England, the eruption's initiation date can be inferred to have been probably January 1258. The frequent cold and rain that year led to severe crop damage and famine throughout much of Europe ... Although in England a brief hot summer did ripen the crops, these were undone by heavy autumn rains, beginning in August" [3 refs given][ha England]

In England, notably cold/very wet overall: combination of cold/backward spring & heavy autumn rains gave rise to a very poor harvest. (B)

1260

In Germany, the Rhine floods causing great damage.

In England, frequent & heavy thunderstorms during the summer produced hailstones with a diameter of about 5 cm (2 inches). However, as often noted with such phenomena, there was a 'drought' in the summer London/South. (B)

1261

Frost/snow during February (London/South). (B)

1264

In England from May to October, Eleanor of Provence (Queen-Consort to Henry III) was frustrated by 'bad weather' (dates not known, but has to be late summer / early autumn 1264) in her attempt to bring troops to the aid of her husband's cause. The Queen's fleet was trapped by frequent spells of high wind at Sluis, Flanders (modern-day Netherlands, near the Belgian border) before it could cross to the Kent coast. According to Lamb, the 13th century experienced the highest number (by some margin) of "severe sea floods" along North Sea & English Channel coasts. Although the climate across NW Europe was still generally benign (indeed, the peak of warmth of the Medieval Age may have occurred in this century), from the middle of the 13th century, an increase in 'unsettled' weather events has been detected by some researchers; the first signs of the descent into the 'Little Ice Age'. It is indeed possible that the increased storminess was concentrated in the second half of the 13th century, so it was unfortunate that Eleanor attempted the passage of the Dover Strait at this time. (Lamb) (B)

1266

In Scotland, the Tay and Forth rivers flood causing great damage.

1269

In England, "... There was so much rain, and such floods of water.... The water continued to increase for more than 40 days"

1269/1270

A bitter frost persisted for about 10 weeks during this severe winter; the Thames froze solid (thick enough for 'men & beasts' to cross over) and was closed to shipping, so that merchandise had to be transported overland between the Channel ports and London. Accounts of this winter included reference to glazed frost; the thaw, when it arrived, was accompanied by heavy rain and

flooding. A flood on the Thames noted in February - presumably a combination of heavy rain/inland snow-melt etc. (B)

1270

In England, "The downpour and the ensuing inundations were never so bad since the days of the flood of Noah"

1271

A flood in Canterbury, England, led to famine. Also famine in Ireland.

"Walter de Hemingburgh thus describes these events: 'In the year of our Lord 1271, on the fourteenth of the calends of October, there was at Canterbury such a flood of rain, with thunder, lightning and tempest, such that two very old men had never heard or seen anything like it for prolonged thunder, for it was as if one horrible clap sounded for the whole of the aforesaid day and night, and such a flood of water followed that trees and hedges were overthrown, whereby to proceed was not possible to men or horses, and many were imperilled by the force of the waters flowing in the streets and in the houses of the citizens. A very great famine followed throughout the whole kingdom'. Although this account gives September 18th as the date, an earlier writer records it on the 11th of the month. " [Great Stour]

In England a gale; no date given. The bell tower of the church of St. Mary-le-Bow was blown down and killed several people. Also this year, from Norwich ecclesiastical records a 'great flood' in this year, also lightning damaged the cathedral steeple. (B)

1273

1273 March 30 p54: "March was very windy, and rainy beyond all memory. On the last day but one in March ... rain poured almost without stopping night and day and a flood rose which seemed to be nearly as great as that of 1258 [sic, but surely 1257?]. In some places in England it even appeared to exceed in violence that inundation, for the flood rose five feet above the bridge at Cambridge, and at Norwich the strength of the flood was such that neither the ravages of the men of the Isle nor the havoc wrought there recently by the king's officials could equal this catastrophe." [ha 033, 034]

1274

The Kublai Khan attempted to conquer Japan from South Korea but the attempt failed when a storm forced his fleet to retreat.

1276

Severe drought in England starts and lasts to 1278.



Extended drought in western United States which continues to 1305 (Peterson and Haug 2005).

1277

1277 October 10 p64: "There was a terrific downpour of rain on 10 October, which lasted continuously for two days and one night. Such a flood followed this cloud-burst that in some places men and cows, sheep and other domestic animals in the fields were overcome at night by the storm and drowned. Houses, walls, trees and some buildings which stood in the way of the flood were completely overthrown. The storm was at its most violent mainly in the region of Bury St Edmunds and in Essex and in Cambridgeshire. Other parts of England were either spared the catastrophe of this storm or suffered little." [ha 033, 037]

A terrible storm flooded the country surrounding the Zuider Zee, (Holland), submerging the towns and enabling enemy troops to capture the flooded cities by boat. The Dollert Sea is formed and thousands died.

1278

Two hundred and seventy eight Jews are hanged in London for clipping coins, the Christians guilty of the same offense are fined.

In Italy, the Tiber floods causing great damage.

1279

In May, in England, England (location and exact date not known) ... severe thunderstorm, trees uprooted, buildings destroyed or flattened, lakes dried up (?). Possible T4 tornado event (could have been higher given those effects!) (B)

The Mongol Empire (Yuan dynasty 1279-1368) completed its conquest of China. It eliminated the Sung Dynasty in central and south China creating the Empire of the Great Khan (Lord). The Batu (Kipchak) Empire, IL Khan (Lord) Empire of Hulagu, a grandson of Genghis, and the Empire of Jagatai, the second son of Genghis, paying tribute. This extraordinary achievement of a few small tribes implies an organizational genius in the Genghis Khan (Lord) ruling family.

1280

At Winchelsea, 300 houses are destroyed by the sea.

Considerable damage etc., across East Anglia due to floods and storms. (Norwich cathedral records). (B)

On October 9, heavy snow fell in London. (B)

Radiocarbon date on wood (*Pinus cembro*) of forest buried by advance of Grindelwald glacier;

forest does not again grow on site today (Aber).

1281

Kublai Khan (Lord), a grandson of Genghis the first Mongol Emperor is determined to invade Japan having failed in 1274 and sent nine hundred warships with some forty thousand warriors to invade. The invasion is launched from Korea and Hangzhou, China. An epidemic killed three thousand warriors slowing their progress when in June three thousand five hundred ships arrived with more than one hundred thousand men. August 14 a deadly typhoon ravaged Japan for two days destroying Kublai Khan's armada. Only two hundred ships returned to China and it is estimated that one hundred thousand men died or are later killed by the Japanese.

In December in England, "Christmas with great snows; Thames frozen. The pressure of the ice destroyed 5 arches of London Bridge". "A hard frost ended in a great flood and at Biddenham Bridge the ice broke under a woman and floated her down to Bedford bridge but nobody could help her and she was seen no more" [Bedford Ouse]

During this notable winter, the frost (noted as a 'Great Frost' in contemporary records for January 1282) & snow persisted from Christmas to March; the Thames was frozen so hard that people could walk across the river (between Lambeth & Westminster certainly) and the force of the ice damaged five of the arches of London Bridge - some references say the arches 'collapsed'. (B)

1282

In England, (month not known, but after the snow above, and some reports of a 'destructive thaw' in this year, it would suggest sometime in early / mid-spring); Severe floods in 1282 when a great gale brought much destruction & loss of life to Lincolnshire & East Anglia. (B)

Violent tempests break the isthmus which united Holland with Freisland and form the Zuider Zee covering 12000 square miles.

1283

By the end of 1283 only 170000 Prussians remained in Prussia as a result of the Mongol and Teutonic invasions.

1284

In England, "... The heavy and persistent rains of the whole summer and most of the ... autumn completely belied at harvest time the hopes the farmers had when the corn was green."

1286

In May in England, 9th May, 1286 (corrected to new-style calendar) .. Thunderstorm with large hail ('as big as stones?'). Crops leveled, houses damaged, branches of trees broken etc. squally winds (and a possible tornado, but not certain - though the mention of the large hail tends to

support mechanics available for such.) (B)

In Holland, the whole country on both sides of Zuider Zee is submerged.

The Baltic is frozen over.

1287

1287 January 1 p87: "On Sunday night on the feast of the Circumcision a violent gale and stormy sea destroyed buildings at Yarmouth, Dunwich, Ipswich and many other places in England and in coastal districts elsewhere. Especially affected was that part of England known as the Marshland [i.e. the Fens round Wisbech and in Norfolk]; nearly all that region became a lake and innumerable people were cut off by the water and drowned ..." [ha 033. 035]

In Salandria, 15 islands are submerged by the sea. 15000 die.

In Winchelsea, England, a great flood of the sea sweeps away 300 houses.

A 'terrible' inundation in the East Anglia (particularly Norfolk) coastal areas in December 1287 [probably due to a storm surge]. Houses destroyed, and in the village of Hickling the water was so deep that it overflowed the high altar of the priory by a foot or more. Some 500 people perished in this most fatal of all British floods.(B)

On December 14, in Holland, severe flooding engulfs the fertile country of Reiderland including 50 towns; 50000 die.

China. A flood killed around 50,000.

1288

Tidal flooding on the Thames in January. Summer: dry/hot London/South. (B)

Nicholas IV (1288-1292) a Roman Franciscan is elected pope. The election took eleven months and six cardinals died from heat exhaustion and most others fell sick causing suspension of the conclave so divided are the cardinals.

1288/1289

Severe winter (London/South). (B)

1291

In Syria, streams flooded throughout the country.

In India, lack of rain caused terrible famine around Delhi.

1292

In England, "From Christmas Eve till St Silvester's Day [31 December], not counting these days themselves, neither sun nor moon nor stars were visible. There was no snow, hail, frost, rain or wind..."

Loaded carriages crossed the Rhine on ice.

The Categat, a sea between Norway and Denmark, was also frozen entirely across (in 1294 according to Tablet); The Baltic froze over.

1294

On May 25, heavy snow fell in London. (B)

In England, "... during August and the following September there was a continuous drenching of rain, so that very little or none of the new crop could be harvested before Michaelmas [September 29]."

The Thames flooded Rotherhithe, Bermondsey, Tothill & Westminster on 18th October. (B)

The sea between Denmark and Norway was frozen over and near Oslo in Norway.

The Categat entirely frozen (Hayden)

1295

A terrible harvest in England led to famine; famine in Ireland too.

1296

The sea between Norway and the promontory of Scagernit is frozen over. Also from Sweden to Gothland, the sea is frozen.

1300s: Decline of vineyards in Germany; vineyards completely disappeared in England (Aber).

1300

The population of London is about 40000 people while Paris contains 80000 people. Venice at this time contained 100000 people.

Three fourths of Heligoland are swept away; Ciparum in Istria is destroyed.

1302

The Rhone was frozen across.

A cold winter in western Europe / implied for parts of Britain for 1302-1303. (Easton, in CHMW/Lamb) (B)

1303

A great part of Rugen engulfed and many villages on the coast of Pomerania.

1304

Damascus, Syria is flooded.

1305

Drought in England caused the hay crop to fail and many farm animals died. In summer "A drought affected the whole of Hertfordshire and Worcestershire, accompanied by such burning heat that cattle died from lack of water ..."

The Rhone and all small rivers in France were frozen across.

1306

Starting in 1305, a severe winter (London/South). A severe winter over much of western Europe. (Easton, in CHMW/Lamb) (B)

The Baltic was covered with ice for 14 weeks, between the Swedish and Danish islands.

The Caspian Sea was 37 feet higher than normal.

1309

1309 There had been a great frost in the early part of the year and after a sudden thaw Salisbury Cathedral was flooded. The King who was there at the time with the congregation was forced to leave lest they be drowned.

1309 January 19 "According to Hollinshed:- 'A sudden thaw after a great frost caused the waters so fast to rise that Salisbury Cathedral was flooded and the King was enforced to leave the Church as the executor did his Mass, lest they all should have been drowned, and this rage endured for the space of two days...' In the Continuation of Nicholas Trivet, or Treviti (Annales Sex Regum Angliae A.D. 1136-1307 and after, Trivet dying in 1328) the following details appear 'On the 17th and 18th of January the water rose so high as it had not been known to do for many years before; even so as to come to the feet of the Kings, which stand at the west door of the choir of Salisbury Cathedral...' The stone niches in the Choir Screen are still there... If this level is determined it would appear that this might well be the second oldest flood-mark in England."

1309/1310

London Bridge arches damaged by ice during a severe winter. Thames frozen. A possible frost fair on the Thames in London; which implies a persistent length of sub-zero temperatures at some time this winter (inferred by the statement in some chronicles that 'sport' was held on the river). Usual stories about people walking across the Thames. (B)

1311

The Mongol began the extermination of Chinese peasantry and 35 million people are killed between 1311-1340. Some suggest this is not true. Others say: Kubla Khan who ruled China until his death in 1294 was reported by Chinese writers of having killed 18.48 million Chinese to maintain his throne. Some place the overall murder of Chinese over the centuries range from 34 million to 90 million. The Yuan Dynasty (1279-1368) was considered particularly brutal toward the Chinese. It is suggested more Chinese are killed maintaining the Dynasty than in the actual conquest. These likely inflated figures (35 million) likely include the deaths by flooding of the Yellow River because the Mongols failed to maintain the irrigation systems.

1312

1312-1320 A wet period in England and Germany leading to crop failures caused by wet springs and autumns.

1315

Great dearth in England. "This is called the first year of the great famine. It was another wet year with exceptional rain during July and August.....It is said that the crops in England were almost a total failure "

Several famines occurred during these years,1314-1316, (weather assumed to have been responsible, with all three years noted by various historians as 'very wet' ... it's a moot point though as to whether all three were really wet, or just the effects of one or two carrying over). Brazell says that the famine of 1316 was probably the last really severe one in England. [ The wet year credited to 1315 may be the origin of the St. Swithin legend. ]

The 'Black Death' (Bubonic plague) that ravaged the country 1348 onwards may have some linkage to these precursor conditions - though it is a long time afterwards. Certainly though, in the mid-1300's, mortality was high due to famine, disease etc.

It is suggested that it was an increase in climatic variability, rather than the absolute temperature & rainfall regimes that caused the problems. There is some suggestion of an increase in extreme events (including wind-storms), however defined. (B)

The Great Famine in Europe starts (1315-1331); caused by extremely wet growing seasons; as much as 10 percent of the population in Europe may have died.

Crop failure and starvation in northern Estonia (Tannberg et al. 2000).

1315/1316

A cold winter in western Europe / implied for parts of Britain. (Easton, in CHMW/Lamb) (B)

1316

Great dearth in England.

In England and Europe, "Landbeach: open fields and the water-table. The situation of the Lands of Agnes de Bray in 1316 implies a flood reaching a line between these two contours [at 16 ft. and 17 ft. above mean sea level]" ... "We appear to have a series of three peaks in the rise of the water-table ... the third and highest peak (the highest for which we have evidence in this area during historical times) would have produced a situation like that shown in the extent of 1316 [Fig 8]. This seems to have been a disastrous year for flooding generally in Western Europe"

1321

Hot, dry summer (London/South). (B)

1323

The Baltic was passable on foot and horseback for six weeks.

1324

Drought in summer (London/South). (B)

1325

In England at Cambridgeshire: "The Ministers' Accounts from Denney for 1325/6 show that all the oats were lost from drought, and the hay scarcely grew at all in some meadows. The next year not only had problems from drought and heat again: westerly gales stripped the thatch from large areas of the roofs of the church and farm buildings..."

Severe droughts: rivers & springs dried up & in both years the Thames was so low that sea water penetrated much further up river than usual - for 1326, noted as 'salty' for nearly the whole year (presumably in London). (B)

1328

The Rhone was frozen across; horse and foot travelers went from Denmark to Lubeck and Danzig on the ice.

1330

In England, violent rain delays the harvest until Michaelmas (September 29).

1331

In England, drought lasting 15 weeks - until about 17th June. (B)

1332

In summer, in China, floods kill 7 million people in one of the greatest weather disasters ever.

1333

In November, in Florence, Italy, the Arno flooded causing great damage. 300 people died.

1334

Tidal flood on the Thames on the 22nd November. (presumably due to wind-driven surge?) (B)

All the great rivers of Italy and Provence were frozen across.

1335

In England, heavy rain spoils the corn.

1337

An inundation carries off 14 villages in Isle of Cadsand in Zealand.

1338

In England, rain from October to December.

In England, a hard frost started in December and lasted for 12 weeks. (London/South). (B)

1339

On March 22, Tyne, England is flooded with great damage. 120 people die.

1340-50: Western (northern) settlement in Greenland abandoned and derelict (Aber).

1340

In England, "unusually severe weather, having an exceptionally cold winter (duriciam yemis) and an unusually hot and dry summer (siccitatem et calidatatem)" [relates it seems to harvest year ending Michaelmas 1340]....."severe snow on the Downs"[Sussex] [Frost damage severe enough



to reduce the 1340 wheat harvest]

1342

On Jan 19, a gale destroyed the tower of the Church of Friars Minor in London, and occurred at night. It was associated with a violent thunderstorm - so almost certainly a tornado event - though of course it may have been associated with a more widely-based cyclonic development. (B)

In England, "long dry spells in summer, particularly 1344".

1343

In England, "long dry spells in summer, particularly 1344".

1344

Waves inundated Constantinople.

In England, "long dry spells in summer, particularly 1344".

1344 August Herefordshire and Worcestershire: "1343-1345: Widespread and frequent droughts accompanied by summer heatwaves and strong thirsty winds. Corn was unusually scarce, streams dried out and rivers were at very low levels with cracks up to 5 inches wide in their beds by August 1344." [ha 055]

Norwich/East Anglia: at some time in this year, this from Norwich cathedral records . . ." A very high wind, by which the passage-boat coming from Yarmouth was sunk near Cautley, and 38 people perished." (B)

Great famine in China; even the Mogul emperor could not get food.

1345

Eighth coldest year of 2209 years in Taymir Siberia, based on tree ring observations.

1346

In England, "droughty spells in summer". But at the River Trent: "One of the earliest recorded floods was in 1346 when 'from mid-summer to Christmas, the rains fell almost without intermission".

1347

An Italian Christian trading post called Caffa on the northern shores of the Dead Sea are the first to experience the Black Death in Europe. Their post is under siege when the attacking army

contracted the Black Death. This army catapulted their dead into Caffa so they also would suffer the Death. The survivors of Caffa fled in ships back to Italy carrying the Black Death with them.. Italian ships swarming with infested rats imported the Black Plague into Sicily.

In England, "droughty spells in summer"

1348

The Black Death (bubonic plague) arrived in France and a third of the population of Europe would die. From 1347-51 some 75 million people would die in Europe and Asia. The population of England is reduced by one third during 1348-1349 period when the Black Death visited that country. Christians blamed the Jews for causing the plague. In Basel, on the Rhine River, Jews are burned alive in wooden buildings. In Speyer (Germany) they are put into wine casks and rolled into the river. Thousands of Jews are sacrificed to rid the country of the plague. Other suggested that the Pope Clement VI (1342-1352) and the whores of his New Babylon Church have caused the plague. By 1351 an estimated twenty five million people had died in Europe, about one third of the world's population. The people of Europe were terrified because if one died without the last rights of the Roman Church their soul is lost to hell or purgatory. The number of deaths precluded the possibility of last rights. To avoid a complete breakdown of Religious authority Pope Clement VI (1342-1352) proclaimed that all those who died of the Black Death are forgiven of their sins. Despite this precaution there is a rapid rise of a religious order called the flagellants. The flagellants attempted to avoid the Black Plague by harshly scourging themselves so that God would forgive their sins. The Flagellant blamed the Jews for the Black Death and burned down the Jewish communities killing the people.

In England, from Midsummer to Christmas every day and night has rain. "through a violent rain, from Midsummer to Christmas, a constant swell of the river was occasioned; during that period there was not one day or night dry together."

Great dearth in England.

In July, a typhoon struck the Phillippines.

1349

The Baltic was frozen over and passable from Stralsund to Denmark.

1350

The Black Death mysteriously disappeared but did return in smaller cases over the next few decades. London England had a population of 50000 people and now has a population of only 25000 people. Some estimate that 40 million people died in a three-year period. Montpellier, France 90% of the population died from the Black death caused by a Bacterium called Yersinia Pestis carried back to Europe by the returning crusaders.

Beginning of disastrous wind-blown sand drifting along northwestern coast of Denmark. Episodes of wind erosion and sand-dune migration occurred several times during the following centuries (Clemmensen and Andersen 1998).

1352

December 3: A thunderstorm hit Rome and St. Peter's basilica had suffered a direct hit, and the bells had melted. In the market, everyone started celebrating Pope Clement VI (1342-1352) is dead. The people said he is dead and buried deep in hell. Innocent VI alias Etienne Aubert (1352-1362) is elected pope by 25 cardinals at Avignon. Pope Innocent VI personally ordered some of the Spiritual Franciscans to prison and the stake under the Inquisition law. The Sainly Bridget of Sweden (d-1373) publicly denounced the pope as a persecutor of Christ's sheep.

1353

Drought from March to July in England caused some famine.

Great dearth in England.

1353/1354

Long, cold, hard winter lasting from early December to mid-March (London/South). (B)

1354

It is again dry in England. " Both Nottinghamshire and Derbyshire suffered a great drought, no rain had fallen from the end of March to the end of July. . "

"This year, the country was affected with a great drought, in which Nottinghamshire, from its peculiar geographical position, suffered extremely; no rain having fallen from the latter end of March until the close of July. A few years previously there occurred a severe frost, which commenced before harvest was well completed, even in the southern part of the kingdom, and continued with scarcely any intermission, until the following April." [Trent]

1358

In England and France, called the dear summer when famine occurred.

1358 September 7 "...on the eve of the Nativity of the Virgin, 1358 the river Tyne, swollen by excessive rains, overflowed its banks causing immense damage and considerable loss of life. The town of Nungate was leveled to the ground and many houses in Haddington were swept away. The flooding retreated when approaching the Abbey....." [River Tyne (Lothian)]

Ten fathoms (60 feet!) of snow in Bologna in Italy.

1359

At Chartres, France, hailstones and lightning devastated the army of Edward III. 6000 horses were also killed.

1361

In England, "Droughts through the whole of 1361 saw crops fail in Hertfordshire and Worcestershire: and famine in the area ..."

1362

Oraefajokull, Iceland eruption.

In January, in England, " St. Mary's Wind ": A severe gale (at least as powerful as that of October 1987) from between south and west commenced on the 15th (23rd new-style) January 1362 and lasted for about a week - affecting large areas of southern Britain. A large number of buildings were blown down or damaged, including St. Pancras Church, the church of Austin Friars in London, Norwich cathedral and the (original) Abbey Gateway in St. Albans. Damage also to shipping. The "exceptionally 'severe gale' caused great destruction - buildings, towers, trees, wind-mills etc., all 'thrown down' according to contemporary chronicles. Noted by English, Scottish & Irish sources.

The "Great Drowning" ('Grote Mandrenke') causing widespread / severe damage across SE Britain - also along the East Coast, and as 60 Danish 'parishes' are noted as having been 'swallowed up' by the sea, with several thousands dead there, it suggests a rapidly-deepening low moving swiftly across southern Britain and the southern North Sea with a high storm surge event. (Might have been a sequence of events I would have thought, with perhaps the main-event on the 15th). This storm is regarded as the severest on record for the area, with the exception of that in November 1703 & possibly October 1987. (B)

Floods in Schleswig, Denmark.

1362/1363

Cold or severe winters; frost from December to March in the second winter (London/South), which is regarded as the worst of the two when taking the whole of western Europe (Easton in CHMW). (B)

1363/1364

Cold or severe winter; frost from December to March in the second winter (London/South), which is regarded as the worst of the two when taking the whole of western Europe (Easton in CHMW). (B)

1364

The Rhone was frozen at Arles to a considerable depth and loaded carts crossed on the ice; very severe Dutch winter.

A bad harvest in France.

1365

In England, violent rain.

1370

A wet summer in England (Ladurie).

1373

In England at Norwich: " 1373 A deep snow in February that laid upon the ground seven weeks, and on thawing occasioned a great flood. " [Waveney]

1375

Exceptionally warm year (in London/South). (B)

1380-1460: Minimal sea-ice cover around Iceland (Aber).

1380

The Channel between England and France was half frozen over and most rivers locked up; after a month of frost a large snowstorm occurred followed by a sudden thaw causing many bridges to be carried away and many villages to be flooded including the suburbs of London.

1382

In different parts of England, many houses were thrown down, cattle destroyed, and trees uprooted by a storm.

"The King was unable to spend the Christmas at Windsor as he was prevented by the extent of the floods. Much rain on Dec 18th to 20th.... increased the great flood in many places"

1385

Great dearth in England.

1388

"The River Thames was recorded without water beyond Abingdon and it remained so for about

an hour"

1389

The tenth warmest year of 2209 years in Taymir Siberia, based on tree ring observations.

In England, a hurricane threw down many houses, destroyed cattle, and rooted up trees; pestilence preceded and famine followed the storm.

1390

1390-1420 Severe droughts in East Africa

1393

A cool spring and summer in Germany.

The second coldest year of 2209 years in Taymir Siberia, based on tree ring observations.

1393/1394

A cold winter in western Europe / implied parts of Britain. (Easton, in CHMW/Lamb) (B)

1397/1398

A cold winter in western Europe / implied parts of Britain. (Easton, in CHMW/Lamb) (B)

1400

At Texel in the Netherlands, a flood which raised commerce at Amsterdam (Hayden).

1401

"In 1401 AD, the rent for the mills at Abbotsbury and Portesham were limited because in summer that cannot grind for want of water. There are still operational [water] mills at Mangerton, Litton Cheney and Upwey "

1402

The Baltic was quite frozen over from Pomerania to Denmark.

1407

A frost that lasted 15 weeks in England; 1407-08 is a winter of historic severity.

The severe winter affected most of Europe, and is regarded by climatologists as one of the most severe on record. The frost lasted for 15 weeks and people were able to walk across the frozen Thames. According to Ian Currie (a noted authority on historical weather events), "one of the most snowy & was of outstanding duration". [ In Europe, ice in the Baltic had allowed traffic between the Scandinavian nations, and wolves had passed over the ice from Norway to Denmark.] (B)

In England when all the small birds perished (Hayden).

1408

The Danube was frozen across through all its course.

Carriages crossed the Seine on the ice.

A very severe Dutch winter.

The Baltic from Gothland to Geland was frozen and from Restock to Gezoer. Wolves cross from Norway to Denmark.

Admiral Pei Pei Hsein originally in the expeditionary fleet of Sam-Po Kong landed Jolo and was confined to Maubuh Beach due to the monsoons.

1412

"An excessive flood in the River Thames [no other details available]"

Admiral Zheng He aka Ma He (Cheng Ho) (1371-1435) embarked on an unknown voyage (1412-1413) this would likely be to the East.

1412-1413

In India, great drought caused famine in the Ganges delta region.

1413

Snowstorm on 9th April, Henry V's coronation day. (B)

On November 25, in England, a storm destroyed the whole side of a street called the Old Exchange.

1420

Wolf packs are roaming the streets of Paris, France.

The sea between Constantinople and Iskodar is frozen over and was passable on ice.

“... In North-western Europe the summers of 1420, 1422 and 1424 were extremely dry and hot, which could have a relation to exceptional warm conditions in the Arctic Sea, especially during the summer of 1422...” and “... There were a series of extreme severe winters in the seven years 1432 – 1438 eventually leading to the ‘Small Ice Age’...” (Buisman)

1421

On April 17, the dikes near the city of Dort (Holland) burst without warning and swept away seventy two villages claiming more than one hundred thousand (100000) lives. This caused the city of Dordrecht to be permanently separated from the mainland. Of the 72 flooded villages, 20 never resurfaced.

1421 September 27 " many houses were destroyed and the inhabitants [of Haddington] forced to take refuge in the parish church, making their way there in a 'great boat'. On this occasion ..... many of the church's treasures, including a fine library, were swept away." [River Tyne (Lothian)]

Admiral Zheng He aka Ma He (Cheng Ho) (1371-1435) on his 6th voyage (1421-1422) sailed up the west coast of Africa. He is believed to have discovered Europe (Portugal, France & Holland). He described the Hollanders as mostly tall people, some with red hair and beard, long noses, deep eye sockets and long feet. Some suggest he continued on to America. At this time the Chinese fleet was split up into a number of smaller groups to sail to the countries beyond the horizon, all the way to the end of the earth. The fleet contained 62 flag ships that were 475 feet long by 193 feet wide and could hold a crew of 1100 and some claim some of the ships were 600 feet in length. Excluding the flag ships another 250 ships or more were involved in the fleet.

Chinese records claim they circumnavigated the world in March 1421 to October 1423. Xeheng He (Zheng) and a 100 man crew accomplished the feat. The Chinese Ocean fleet is believed to be composed of 317 vessels and 28000 men. Many ships are engaged in other exploration and maintaining trading routes.

1422

1422-23 is a winter of historic severity in Europe.

The Baltic is frozen over.

The ice bore riding from Lubec to Prussia and the Baltic was covered with ice from Mecklenburgh to Denmark.

1423

The Baltic is frozen over.



1425

Vanuatu eruption.

1426

The Baltic is frozen over.

The ice bore riding upon it from Lubeck to Prussia (Hayden).

1428

In England, "All the London chronicles refer to a wet year"

1430

Admiral Zheng He aka Ma He (Cheng Ho) (1371-1433) is ordered by Emperor Zhu Zhanji (1425-1435) to conduct the 7th expedition and he again went to the west, some called this a dignified tour of the world just to collect tribute. His flag ship was 400 feet long, whereas European ships were no more than 100 feet long. He commanded a fleet of 317 ocean going ships that included hundreds of sailors per ship including women and children. They carried homing pigeons in case of shipwreck. Marco Polo reported the Chinese had four masted ocean going craft with 60 cabins and 300 men crews. It is noteworthy the ships carried gardens and all provisions required so as not to depend on barbarian suppliers. It is not know where the balance of the Chinese fleet voyaged this year. The first written account of Admiral Zheng He aka Ma He (Cheng Ho) (1371-1433) titled 'Adventure to the Western Ocean' was written in 1597.

1431

The Chinese on orders of Zgu Di's circumnavigated the whole world over the past 10 years. Admiral Zheng He aka Ma He (Cheng Ho) (1371-1435) claimed his 300 fleet of ships and 28000 man navy visited 1000 countries including North & South America, both the east and west coasts. Admiral Zheng He aka Ma He (Cheng Ho) (1371-1433) personally visited 37 countries in 7 trips from 1405 to 1433. It is not know where his 317 ships and 37000 men over the period 1405 to 1431 explored nor how many were lost in shipwrecks.

1430s

Majority of winters, [ perhaps 7 or 8 ] contained several weeks of widespread severe weather in England. According to Lamb, an experience not repeated / matched until the 1690's, in the depth of the Little Ice Age (and certainly not in modern times). (B)

1431-32 is a severe winter in Europe.

1433-1434

One of the severest winters of the millennium in western Europe.

Late this year, snow fell in Holland during 40 days in succession.

From November 24 to February 10 1434, the Thames frozen down to Gravesend.

The frost commenced at Paris on the last day of December 1433 and lasted for three months, less nine days; it recommenced at the end of March and lasted until the 17th of April.

A very severe winter: the Thames froze solid (from December to February) and was closed to shipping from Gravesend to below London Bridge, and wine had to be transported overland (or over the ice-covered Thames) from Gravesend to London. (B)

In Germany, large fowl of the air sought shelter in towns.

1435

Ying Yai Shenlan: 'The Overall Survey of the Ocean Shores', by Ma Huan covering the period 1416 to 1431 is published this year.

1437-1438

1437-38 is the last severe winter in Europe in a sequence of five.

1437-39, the famine in England is second only in severity to that of 1315-17.

1438

Wolf packs are reported roaming the streets of Paris, France.

Great dearth in England. Bread made from fern roots and ivy berries.

1442/1443

A cold winter western Europe / implied parts of Britain. (Easton, in CHMW/Lamb) (B)

1446

In England and Holland, there are floods similar to the ones in 1421. Thousands die.

Notable storms/coastal flooding this year in the North Sea region (Lamb): In April, 1446 in particular, a North Sea storm occurred coupled with a significant tidal surge. "Thousands" died in coastal areas of the North Sea. (B)

1447

Poor crops in Ireland lead to famine.

1448

Thames flooded Poplar, Stepney and other places during March.(B)

1450

The Little Ice Age (1450-1850) lowered world wide temperatures by 1 to 2 degrees but north America and Europe were hit hardest. Some suggest low sunspot activity caused this global cooling.

1452

Major volcanic eruption according to ice core records.

1453

Cold growing season in Germany.

1457/1458

A cold winter in western Europe / implied parts of Britain. (Easton, in CHMW/Lamb) (B)

1459

The Baltic is frozen over.

The ice bore riding from Lubec to Prussia and the Baltic was covered with ice from Mecklenburgh to Denmark.

1460-1560: End of Medieval glaciation was followed by a century of relatively mild climate (Aber).

1460

In England, the wet summer was claimed to be one of the worst for 100 years. (B)

The Danube remained frozen for two months.

The Rhone was also frozen.

1463

In Flanders the soldiers wine rations were cut with hatchets.

Warm long season in Germany.

1464/1465

A cold winter over western Europe / implied parts of Britain. (Easton, in CHMW/Lamb) (B)

1468

The winter so severe in Flanders that the wine distributed was cut by hatchets (Hayden).

1472

Quoting Warkworth's Chronicle of the first 13 years of the reign of Edward IV (i.e. 1461-1474), edition of 1839, published by the Camden Society, pp. 23 & 24. "In the same yere (XIII of King Edward the 4th 1473 [new style, 1472 old style]) Womere waters ranne hugely, with the suche abundance of watere, that nevyr manne saw it renne so moche afore this tyme. ... And this Wemere [sic] is vij myle [4.3Km] from Sent Albons [St Albans, River Ver], at a place called Markayate [Markyate] ; and this Wemere ranne at every felde afore specified, and nevere so hugely as it dyd this yere, and ranne styll to the xiiij day of June next yere folowyng. Also ther has ronne suche other waters, that betokeneth lykewyse [refers to ancient superstition that bournes flows presage "derthe or pestylence or grete batayle"] ; one at Lavesham in Kent [modern Lewisham in S.E. London], and another byside Canterbury called Naylbourne and anothe at Croydone in Suthsex [Croydon, Sussex], and another vij myle [4.3Km] a this side the castelle of Dodley [Dudley, W. Midlands?] in the place called Hungeravale ; that whenne it betokeneth batayle it rennyng foule and trouble watere ; and whenne betokeneth derthe or pestylence, it rennyth as clere as any watere, but this yere it ranne ryght trouble and foule watere."

1473-1475

In England, droughts with very hot summers occurred in these three successive years - assumed to be applicable to South/Central England only. (In the period 1473-1479, there were 5 fine summers in this seven year period: 1473, 1474, 1475, 1477 & 1479). (B)

1477

Bardarbunga eruption.

1479

In England at St. Neots, Huntingdonshire, hailstones measuring 18 inches around fell.

1480/1481

A cold winter in western Europe / implied parts of Britain. (Easton, in CHMW/Lamb) (B)

1482

Cold growing season in Germany.

1483

In England, the Severn river flooded for 10 days. The settled waters were later called "The Great Waters". "A year noted for its continual monsoon-like rains. The river Wye in Hertfordshire and the Severn in Worcestershire rose rapidly, with several people drowning in their beds as the water swept in. The waters did not abate for ten days and the occurrence became commonly known as 'The Great Water'."

1484

In England, "drying up all springs and rivers" [River Thames etc.].

From September to late February, a continuous frost in England causing hay and coal prices to soar.

1486

1486 "It is known that the River Trent was frozen near Nottingham in the winter of 1485/86, and with the thaw the Newark Bridge was swept away."

1491

The Dismal Year in Ireland, where famine struck.

Olives freeze in southern France and the winter is severe (Ladurie).

1492

Christopher Columbus was on the road out of Spain on his way to Paris when a messenger overtook him with news that the Spanish King Ferdinand had changed his mind and would finance a westward voyage to India.

1493

On February 12, a hurricane in the North Atlantic.

The harbor of Genoa was frozen the 25th and 26th of December.

1494

A severe winter in southern France. Olives freeze.

On May 19-21, a hurricane in Cuba.

On June 16, a hurricane struck St. Domingo.

On July 16, Columbus encountered a hurricane off Cape Santa Cruz. The earliest hurricane report comes from Christopher Columbus, who encountered a tropical storm on one of his voyages to the New World. He later declared that "nothing but the service of God and the extension of the monarchy" would induce him to expose himself to such danger.

In August, a hurricane struck St. Domingo.

1495

Olives freeze in southern France. Severe winter (Ladurie).

In October, a hurricane in St. Domingo.

1496

In March (?), a hurricane in the Atlantic (according to Poey, source of most of these early hurricane records).

1498

Near Cape Verde Islands, Columbus reports great heat than rain for 7 days.

A hurricane in Cuba.

1500

The parish of Bourgneuf in Brittany and several others in that neighborhood destroyed.

In August, a hurricane in the Caribbean.

1501

The Oliveriana Map of 1504-1510 suggests Newfoundland might have been visited in 1501 or 1502.

In England, "Early this year serious floods at Oxford."

1502

On July 1-2, a hurricane at St. Domingo.

On July 11-12, at Hispaniola, a hurricane sank 20 ships carrying gold for Columbus. [NHC rank 58/259 with more than 500 dead]

1503

A dry summer in England. (B)

1504

A hurricane off the coast of Columbia. [NHC rank 117/259 with 175 dead]

On October 19, a hurricane in the Atlantic.

1505

A mild winter in France with roses in January.

1506

Severe frost in England. Thames frozen throughout January; horse and cart could cross the frozen river. (B)

1507

The port of Marseilles was entirely frozen. on the 12th day three feet of snow fell in the same city.

1508

On August 3 at Santa Domingo, a gale destroyed all the thatched huts and 20 sailing vessels.

1509

In February-March, a hurricane in the Gulf of Mexico.

On July 10 at Hispaniola, a hurricane destroyed Santo Domingo killing hundreds.

1510

In Italy, hailstorms destroyed all the fish, birds, and beasts of the country.

1510/1511

A cold winter in western Europe / implied parts of Britain. (Easton, in CHMW/Lamb) (B)

1512

Nicholas Copernicus (1473-1513) a Polish astronomer and mathematician proposed the sun is the center of the solar system and not the earth. He also proposed the orbits of the planets are irregular.

Very quiet year with no meteorological reports, not even in England.

1513

"Hot Wednesday'. Several killed by heat " (July in England).

1513/1514

A severe winter in western Europe, including many parts of Britain. (Easton, in CHMW/Lamb). Severe frost in January 1514. (B)

1515

On January 1 in Denmark, a violent storm rooted up whole forests and blew down the steeple of the great church in Copenhagen.

“All Germany like a sea and Cracovia submerged.” Thousands died.

In July at Puerto Rico, a hurricane claimed a large number of Indians as victims.

1516

Hot and dry (London/South). More generally, there was a drought with very little rain falling for 9 months . (B)

1517

In England, A 'great frost' started on the 12th January. (B)

In England, a very hot summer. (B)

1518

Very quiet year with no meteorological reports, not even in England.

1519

In England, at Norwich: " 1519 A great flood on St. Leonard's day, thence called St. Leonard's flood. " [Waveney] Cringleford, three miles south-west of Norwich: "A stone bridge was built to



replace the wooden one which had been swept away in a flood in 1519. "

1520

Chocolate was brought from Mexico to Spain for the first time.

Hurricane in the Dominican Republic (AGI Justica 14, N 3).

1521

A flood in Holland.

In England, at Sudbury: "For centuries Ballingdon Bridge was a vital link on the [A131] main route between London and Bury St Edmunds and Norwich.....by the beginning of the 13th century the crossing boasted a stone bridge, believed to consist of eight 13 m spans. By 1521 this had been swept away in a flood and replaced by a second bridge, probably of brick and stone. Later that century another great flood partly demolished the crossing.... "

1522

September 8, Juan Sebastian del Cano (died 1526), of Spain is the first to circumnavigate the world returning to Spain this year.

Very quiet year with no meteorological reports, not even in England.

1523

Olives freeze in southern France (Ladurie).

1524

The peasants of Germany, about 250000 from the Black Forest on July 19, 1524 revolted demanding the right to select their preacher, the abolition of tithes and slavery, the right to hunt and fish where they pleased, etc. May 15, 1525 the revolt is put down when one hundred thousand peasants' martyrs are killed in a blood bath.

Naples Italy is flooded.

Near the end of October, a hurricane struck Cuba. [NHC rank 169/259 with 73 dead]

1525

Hurricane in Honduras at Triunfo de La Cruz (AGI Justica 1005, N 1, R 2).

1526

From January-March, England has a three month flood that destroyed cornfields, pastures, and livestock.

On October 4-5, Espanola suffered the worst hurricane in years and rivers flooded. Hundreds were killed.

1527

In England, probably the 'wettest' pair of consecutive years (1527-1528) since weather chronicles began. 1527 is regarded by some climatologists as being significantly wetter than 1258.(B)

Hurricane in Dominican Republic at Santo Domingo (AGI Indiferente 421, L 12, IM 69/AGI Indiferente 421, L 12, IM 139-140).

On October 4, a hurricane in Trinidad, Puerto Rico, and Cuba killed 700. [NHC rank 180/259 with 70 dead]

On October 23, Narvaez and his 5 boats of Spanish explorers encountered a hurricane near the mouth of the MS.

In November, in TX, there is record of a hurricane destroying a merchant fleet on Galveston Island. Up to 200 lives were taken by the storm. This is the first record known of a hurricane along the Texas coastline and also one of the most unusual...it struck during the month of November; only one other hurricane has ever struck during November (1839). [NHC rank 100/259 with 200 dead]

1528

"During this year, Nottinghamshire, along with all other parts of the country, suffered severely in the price of provisions, from an extensive failure in the harvest, in consequence of an extraordinary quantity of rain during the period of seedtime. Almost incessant deluges of rain prevented the farmers from cultivating their grounds ..." [Trent]

On October 2, a hurricane struck Apalachee Bay, Florida and struck the fleet of Narvaez.

1529

Maize from America, grown in Turkey, was introduced to England as 'turkey corn'.

On June 13, Basle Switzerland is flooded.

On July 28-29, a hurricane in Puerto Rico at San Juan (AGI Patronato 175, R 18, N 3).

On October 2, the Thames is in flood. (B)

From November 3 to March 7, a continuous frost in England with many people frozen to death.

1530

At San Juan, PR, and Cuba, a hurricane caused rivers to overflow; crops and herds were swept away.

On July 26, a hurricane struck Puerto Rico.

On August 23, a hurricane struck Puerto Rico.

On August 31, another hurricane struck Puerto Rico killing 100.

On November 1, the dikes fail and the sea engulfs the town of Kortgene in the Island of North Beveland; 400000 die in Holland.

1531

January 26 a great earthquake shook Portuguese capital Lisbon, demolishing some fifteen hundred houses and killing thirty thousand people.

Very quiet year with no meteorological reports, not even in England.

1532

The eastern portion of South Beveland is carried away with several villages and the towns of Borselen and Remerswalde.

1533

July 26 - August 31: A trio of hurricanes at Puerto Rico demolished the Spanish settlement and killed 2000 black slaves.

1534

Jacques Cartier reported sightings of huge numbers of whales on his first trip to Canada.

There is extensive flooding throughout Poland.

1534/1535

In England, frost lasting from November to February; Thames frozen below Gravesend (which presumably means it was also frozen up-river from this point; the river below Gravesend is at the head of the Thames estuary - so perhaps only ice along the shore-line, rather than being completely frozen all the way across?) (B)

1536

In England, starting in December, a severe frost. Thames frozen in London: King Henry VIII, with his queen (Jane Seymour .. who was to die late in the year (1537) after giving birth to the future Edward VI) rode on the ice-bound river from London to Greenwich. (B)

1537

In England, a wet summer. (B)

In August, a hurricane struck Puerto Rico.

On September 9, a hurricane struck Cuba.

October 7: A 40 foot wave sank 20000 small craft and killed 300000 people in Bengal, India.

1538 to 1541

1. These four years apparently experienced drought, with 1540 & 1541 particularly dry - in both these latter years, the Thames was so low that sea water extended above London Bridge, even at ebb tide in 1541. Three successive fine / warm summers from 1538-1540: the weather in 1540 was so fine that picking of cherries commenced before the end of May and grapes were ripe in July.

2. General warmth over Europe summer of 1540. (The next warm summer of equal worth is possibly that of 2003!) (also noted in usw via Holland .. " 1540 is described in contemporary chronicles as the 'Big Sun Year'; the lower part of the Rhine from Cologne into the Netherlands is 'dry' - it didn't rain over Italy, with Rome dry for something like 9 months. Forest/city fires, with many people dying of heat stroke, heart failure etc.") (B)

1539

In England, "In the year 1539 there is a record that the River Lea was nearly dried up, and the people living in the neighborhood were subject to pestilence as a consequence." [ha 038] See 1541.

1540

According to Buisman's recent findings, the year 1540 was an even more severe summer than 2003. All over Europe, the heatwave lasted, off and on, for seven months, with parched fields and dried up rivers, such as the Rhine. People in Paris, France could walk on the river bed of the Seine without getting their feet wet.

"England : Hot summer : Great heat & drought, agues kills many "

Widespread forest fires, cattle dying. The Rhine in Cologne was so low that somebody was able

to cross it on horseback. The wine had an unusual high alcohol content, so much that people lay drunk in the streets. (Weinsberg)

1540-1598 North American mega-drought. Tree rings indicate a severe drought in the United States and northern Mexico; the most extensive and severe drought between 1200 and 2000.

1541

In England in Hertfordshire and Worcestershire: "1538-1541: Extremely dry years ... rivers and streams drying out in parts. A remarkable series of droughts, with a burning sun during the summer"

"1541 At Nottingham remarkable drought; almost all the small rivers dried up, and the river Trent diminished to a straggling brook.....Much cattle died for want of water, especially in Nottinghamshire, and many thousands of persons died from grievous diarrhoea and dysentery."

1542

The bubonic plague 1542 to 1560's started in Egypt. killing 40% of the population of Constantinople before spreading into Europe. In London 1/4 to 1/3 of the population died. It recurred in London at least six more times in the 1560's, killing thousands each time.

In England, a wet summer.

1543

In the south of France, the Rhone freezes over (Ladurie).

For 1543/1544, a cold winter in western Europe / implied parts of Britain. (Easton, in CHMW/Lamb) (B)

1544

In France they were obliged to cut the wine with sharp edged instruments.

Wine in Flanders frozen into solid lumps (Hayden).

1545

In England, at the English Bridge, Shrewsbury: " In 1545 the major part of the Stone Gate fell by reason of a great flood and was rebuilt a few years later."

A hurricane in Cuba at Havana (AGI Panama' 235, L 8, IM 270-271).

For 1545/1546, a cold winter in western Europe / implied parts of Britain. (Easton, in

CHMW/Lamb) (B)

1546

French King Francis I (1515-1547) ordered the massacre of the Waldenses, a Protestant sect connected with the Calvinists. The Waldenses lived chiefly in Provence and twenty-two towns were attacked and thousands of Christians slaughtered by the Catholics.

A hurricane in Dominican Republic (AGI Santo Domingo 868, L 2, F 313 V-314 V).

On the day of San Bartolome, a hurricane in Puerto Rico at San Juan (AGI Santo Domingo 164, N 31).

1547

On April 23. In Brazil and Europe, the sun is the color of blood on with many stars seen during the day (unidentified volcanic eruption?).

The summer 1547: "spring and summers failed drying in Franconias to drying and/or very and hot, which by a negative oak ring signature is confirmed. Other sources report of it, that one rides and goes dry through the Elbe and Weser/ some weeks.' (Fausten & barley mountain 1619) also in the area all ponds and rivers drained Luebeck."

Intense frost at the end of the year (London/South). (B)

1548

Sledges drawn by oxen travelled on the sea from Rostock to Denmark (Hayden).

A hurricane in St. Domingo.

1549

Very quiet year with no meteorological reports, not even in England.

1550

Very quiet year with no meteorological reports, not even in England.

1551

Mariapod, Austria, is flooded in January and February.

Tidal flooding in the Thames, as far up-river as Millwall, in December. (This would imply some form of storm-surge event.) (B)

1552

On January 5<sup>th</sup> and again on the 8<sup>th</sup>, great windstorms all over western Europe, with thunder, hail, North Sea storm surges & sea/coastal floods. (B)

In England, drought (London/South). (B)

On August 28-29, a hurricane struck Dominican Republic at Santo Domingo (AGI Justica 1029, N 7, R 1).

On September 2-4, a hurricane struck Dominican Republic at Santo Domingo (AGI Patronato 181, R 25).

1553

On January 19, the Rhine between Germany and Holland flooded causing great damage.

Around 1553, off the west coast of Florida, a hurricane struck [NHC rank 46/259 with more than 700 dead]

A fleet of 20 ships of the New Spain Flota, loaded with silver and gold along the Texas coast, were struck by a hurricane. The three heaviest vessels sunk early in the storm. Most of the others were either scattered widely across the western Gulf of Mexico, grounded, or capsized just offshore Padre Island. Only 300 of the original 2000 crew made it ashore on the four remaining ships. [NHC rank 47/259 with 700 dead]

1554

Very quiet year with no meteorological reports, not even in England.

1555

In England, "Another very wet year with consequent flooding and poor harvests."

A wet year: Westminster flooded after great storm of wind and rain in October (or possibly September - some doubt about attribution and calendar usage here). (B) "Owing to excessive rain the Thames greatly overflowed into the King's Palace, Westminster, and Westminster Hall."

1556

Sir Francis Drake who apparently picked them up in Columbia introduces the American potato to Europe. The Incas loved their potato and called the blue tubers the food of love and Pope Paul IV denounced it as the root of man's licentious and depraved moral behavior. As a result tens of thousands would die a famine. Many people thought that because of the Vatican stand that they are poisonous and they are banned in Burgundy in 1619 because they caused leprosy.

January 23: A powerful earthquake rolled through Shensi, Honan and Shansi (Shanxi) provinces of China killing an estimated 830000 people (most deadly quake in human history).

In England, the drought of this year was reputed to be responsible for a 6-fold increase in the quarterly price of wheat. Springs failed - implies a 'significant' event, particularly if the entry for 1555 above is correct! (B)

1557

In the south of France, the Rhone freezes over (Ladurie).

In Russia, a severe famine is worsened by rains and great cold. The Volga is hardest hit. Thousands, perhaps, millions, die from the ensuing famine.

A hurricane in Cuba.

1558

Russian Tsar Ivan IV (1500-1584) ordered Prince Ivan Kurbsky to invade Estonia, burning and slaying. The young people between ten and twenty are dragged off to the Tartar slave-markets. Every German is put to death some 10000 before the gates of Dorpat. The Russians occupied twenty towns before retiring for winter. The Teutonic Order retaliated taking advantage of the winter weather to capture several garrisons.

A severe winter in southern France.

On July 7 in England, a tornado struck around Nottingham. All houses within a mile of the city were destroyed.

" "On the 7th of July, this year," says Baker in his Chronicles "within a mile of Nottingham was a marvellous tempest of thunder, which, as it came through two towns, (no doubt Wilford and Lenton) beat down all the houses and churches; the bells were cast to the outside of the church-yards, and some webs of lead four hundred feet into the field, writhen like leather. The river of Trent, running between the two towns, the water, with the mud in the bottom, was carried a quarter of a mile, and cast against trees, with the violence whereof the trees were torn up by the roots, and cast twelve score yards off. Also, a child was taken forth of a man's hand and carried two spear's length high, and then let fall two hundred feet off, of which fall it died. Five or six men thereabouts were slain by the storm; during which, hailstones fell measuring fifteen inches in circumference." " [Trent]

In July in Northamptonshire, hailstones 15 inches around fell.

Very hot summer (London/South) (B)

1559



Russian Tsar Ivan IV (1500-1584) sent 130000 men into Estonia and attacked the Teutonic Order and this time not even babies are spared. The people are stripped naked without regard of the freezing weather, tying and binding them by three or four at their horse's tails, dragging them blooding the ways and streets. The streets are full of carcasses of aged men, women and children.

On September 19, a hurricane wrecks a Spanish expedition. A Spanish fleet of 74 ships sent to recapture Florida sailed into a hurricane. Most of the fleet was sunk, but one ship survived and founded a colony near Pensacola, FL. [NHC rank 59/259 with more than 500 dead and dated August 20]

1560

1560-1600 North American mega-drought.

1560-1625 Severe droughts in East Africa.

The portable camera obscura allows precise tracing of an image.

1561

In June in England, St. Paul's steeple struck by lightning - causing fire-damage (see also 1444); this was long before the days of lightning conductors which were first suggested by Benjamin Franklin in 1752). (B)

1562

Very quiet year with no meteorological reports, not even in England.

1563

On January 19, in England, at Leicester, Leicestershire. A tornado of possibly T6 force (estimated wind speeds ~170mph) caused considerable damage. (B)

A hurricane in the Caribbean near Cape Canaveral, FL. [NHC rank 83/259 with 284 dead]

1564

1564 January p4: "The chronicler, Hollinshed, wrote 'on the third daie of January, at night, it began to thaw, and on the fift there was no ise [sic] to be seen between London Bridge and Lambeth, which sudden thaw caused great floods and high waters, that bare down bridges and houses, and drowned manie people, in England; especiaillie in Yorkshire, Owes Bridge was borne awaie with others'". [ha 027, R. Ouse; ha 039]

In February, Bruegel paints Hunters in the Snow during one of the most severe winters since the

1430s.

Tidal flood in the Thames on 20th September. This would imply some form of storm-surge event, quite a severe storm no doubt for this early in autumn? (B)

A hurricane is observed off VA.

Severe, prolonged frost (set in 7th December 1564). The court (of Elizabeth I) later (21st) indulged in sports on the ice at Westminster (perhaps one of the first occasions a great frost had been treated in this way: but see also 1309/10 which contradicts this). Football & other games were played on the ice.

(In the depths of the Little Ice Age, this would not have been too unusual; the reason the event is noted is because the Queen & Court were involved: it would have been an impressive sight!)

Thaw set in circa 3rd (old-style)/13th (new-style) January 1565 - accompanied by a notable Thames flood: A notably 'unhealthy' fog followed this thaw.

The winter of 1564/1565 was notably severe as regards depth of cold - amongst the top 10% of bitterly cold winters in the millenium. (Easton, in CHMW/Lamb). (B)

1565

In England, p213: "... in 1565 the Thames was 'frozen over as hard as dry land'" [ha 039, upper Thames]. From the 21st of December until the 3rd of January there was a very hard frost in the area. At Bristol and 'Hungrode' it was so hard frozen that people passed over the [river] channel upon ice unto St George's side safely. "Severe winter. Severn & Wye frozen over" The first recorded Frost Fair on the Thames was held in 1564 and Londoners danced and practiced archery on the ice.

The Rhone was frozen entirely across at Arles; severe winter in southern France.

A very severe Dutch winter.

Louvain, France is flooded from the sea accompanied by strong winds.

Storm destroys French fleet. The French lose their bid to control the Atlantic coast of North America when a storm smashes their fleet, allowing the Spanish to capture Fort Carolina, near present-day Jacksonville, FL

Great dearth in England.

Thames flood, probably tidal (& therefore storm-surge related), on 24th December. (B)

The pencil is invented.

1566

Drought all summer & 'harvest-tide' (London/South). (B)

On June 14, (Old Style): Four vessels of Angel Villafa e's fleet were passing offshore Hatteras. On the 14th, two small vessels perished, while Villafa e's caravel nearly foundered. The remaining two vessels eventually made their way to Havana (Lewis & Loomie).

On September 3-6, a hurricane struck Florida (37.5 N). (AGI Patronato 257, N 1, G 3, R 4, IM 23).

In October, a typhoon struck the Phillippines (logbook of S. Jeronimo). The logbook of the ship San Jeronimo shows that in the month of October of 1566 she experienced several storms between Guam and the Phillippines, on account of which she was forced to change her course several times.

1567

In England, a severe winter (London/South). (B)

In England, a dry summer. (B)

In England, the washout of a bridge on the river Tay in England.

1568

Excessively hot with drought (period not given, but presumably includes late spring & much of summer; London/South). (B)

On August 15, a typhoon struck the Phillippines (report from the fleet of Felipe Salcedo).

If we take into consideration the topographical situation of the place and the season of the year it is very probable that the maritime disaster related below refers to a typhoon. "The nao Capitana commanded by Felipe de Salcedo left Cebu for Nueva España on the first of June, under very favorable weather, with one hundred and thirty persons, and with a great quantity of cinnamon. With much hardship she followed her course to the Ladrone Islands. On arriving at the island of Guam and entering the port, which is very unprotected, and after the landing of the General, Felipe de Salcedo and of the majority of the passengers of the ship on the feast of the Asuncion de Nuestra Señora on August 15, a heavy storm broke out that carried away the ship and dashed her against the coast, where she was smashed to pieces, with a total loss of all her cargo."

On December 11, loaded carts crossed the Rhone on the ice; it did not break up until the 21st.

1569

Continued from 1568, a cold winter in western Europe / implied parts of Britain. (Easton, in CHMW/Lamb) (B)

In September, a hurricane struck the Bahamas at the Bahamas Channel (AGI Patronato 254, N 3, G 3, R 4).

1570

On October 5, a tidal flood affected the Thames estuary as far up-river as Erith: extending from the Humber to the Straits of Dover. The high tide was associated with severe gales and the flood was aggravated by heavy rainfall.

On November 11 (new-style; known as the 'All-Saints' Day storm, so must have been 1st November old-style): The greatest North Sea storm / flood (after that of 11th October 1250 q.v.): coastal changes; cities drowned on the continent.

[ 1570 is noted as being a year with Notable storms/coastal flooding around the North Sea region; Great cities flooded, and many peopled killed. ] (B)

From the end of November 1570 until the end of February 1571, the winter was so severe that all the small rivers, even those in Languedoc and Provence, were frozen so hard as to allow loaded carts to cross them. [A severe winter in western Europe / implied for parts of Britain. (Easton, in CHMW/Lamb) (B)]

On November 1, a violent storm destroys half the village of Schevingen northwest of the Hague; the church, once in the middle of the village, now stands on the shore; about 400000 died.

Russian Tsar Ivan IV (1500-1584) called the Terrible, January 9, 1570 seized the city of Novgorod believing they opposed him killing sixty thousand people.

Medieval gold mines of Hohe Tauern blocked by glacier ice; Icelandic glaciers much larger than today (Aber).

1571

In England, in the Norfolk Rivers Group, "Heavy snow & frost c. 25 Dec 1570-12 Feb 1571"

In England, in the Cumberland Rivers Group, p186: "...1571, when Derwent water froze..." [ha 075]

In England, in February, in the Norfolk Rivers Group, Thaw caused floods in mid Feb, especially 15-19 February. Waters overthrew stone walls & removed the stoles in all the churches on "the other side of the water except St (Augustine?) & the water at this flood was a handful higher than St Leonards's flood" (This latter occurred 16 Nov 1519)

On October 18-21, a hurricane struck Cuba and Jamaica. (AGI Contratacio'n 4803, DOC S/N).

In England in October, gales and a sea flood in Lincolnshire & in the Fens: many ships wrecked, houses destroyed, cattle perished. (B)

1572

In the south of France, the olives freezes(Ladurie).

In England, "Snow fell c. mid February & melted c. mid March Weather very cold from mid November"

Hard frost from early November to about mid-January (London/South). Also a cold winter much of western Europe. (Easton, in CHMW/Lamb) (B)

"November 1 : England : Cold winter Deep snows & freezing rains to Jan. 6 "

1573

February 4 to 8: England :Snow :People & cattle lost.

In the south of France, the Rhone freezes over (Ladurie).

In England, "Long, cold, hard dry winter & spring"

1574

On October 1-2, the siege of Leiden, Holland by the Spanish is broken when the dikes broke flooding the land killing twenty thousand Spaniards.

The sun was darkened for 18 days in Europe.

Some contend that nearly 150000 Spanish had migrated to the New World by this date. The pick of the population sailed away leaving the dregs behind and is considered along with the Moor expulsion a significant factor in the decline and fall of the Spanish Empire. Continuous wars also depleted the population.

1575

"24 Feb: flooding of meadows prior to this day which was cold with a hard frost " (England)

"Maitland informs us that in 1575, and again in 1582, there was such a scarcity of water, that the magistrates strictly prohibited all the brewers from drawing out of any of the town's wells, 'but to fetch what they had occasion for from the South Loch' or Meadows."

On September 21, a hurricane in Puerto Rico killed 400.

1576

Severe drought in Mexico leads to the death of about 2 million people out of an initial

population of 3 million.

A hurricane struck the Dominican Republic at Montecristi (AGI Patronato 257, N 1, G 4, R 4).

1577

In March in England, a tornado T6 (possibly T7 though this now less of a possibility) on the 27th (new-style calendar corrected from the Julian) at Patrick Brompton, North Yorkshire from historical records. Destroyed cottages, trees, barns, hayricks and most of a church. (B)

"A weather vane in Bungay Market in Suffolk depicts a black dog and a flash of lightning, it commemorates an event on Sunday the 4th of August 1577. Between nine and ten in the morning while the parishioners of Bungay were at church, a fearful and violent storm broke out, which caused the sky to darken and the church to quake. Suddenly, in the midst of the storm, a black dog appeared within church. Lit by flashes of fire, it ran about the body of the church causing great fear and panic. It passed between two people kneeling at prayer, killing them instantly, and caused another man to shrivel up, severely burned, although he is said to have survived. About seven miles away in Blythburgh, at around the same time, another black dog (or the same phenomena) appeared in the parish church preceded by the same thunderstorm. This black dog struck three people dead and left scorch marks on the North church door, which can still be seen today. "

In August- September, a hurricane struck Cuba and Jamaica (AGI Contratacio'n 5101).

Between September 26 and October 8, a hurricane was observed between 27 and 38 N. (AGI Contratacio'n 717, N 9).

1578

In England on September 29, at English Bridge, Shrewsbury: "At Michaelmas, 1578, the river was so dry that the Horse Fair was held 'in the middle of the Severn, which was never seen before'."

A hurricane struck the Dominican Republic at Ocoa. (AGI Mexico 72, R 4, N 51).

In October, a hurricane struck Cuba and Jamaica (AGI Patronato 255, N 2, G 1, R 5).

Winter Of the Ducklington winter of early 1635 it was said that it was: "the worst snowfall [season] in the memory of man. " [ha 039, Windrush]

1579

On February 10, the Thames flooded by melting snow, deposited fish in Westminster Hall. (B)

On February 14 in England, a 4-day snowfall 14th to 18th with N. wind, deep drifts: many people

& cattle lost. (B)

In May in England, snow 1 foot (30cm) deep in London [ location not specified, but 'London' was a relatively small area - compared to today ] after 5-hour fall on the 4th (not clear if this is 'old-style' dating). (B)

A hurricane struck Jamaica (AGI Indiferente 2676, DOC S/N).

On September 13, a hurricane was observed 33.30 leagues from Bermuda (AGI Indiferente 739, N 217, DOC 3).

On September 26, a hurricane struck the Bermudas (AGI Indiferente 1095, R 25, N 299/AGI Indiferente 1095, R 25, N 304/AGI Indiferente 1095, R 31, N 370).

1580

Bougainville eruption.

In England, "Floods are described in the printed news in 1580, 1607 and 1613, but the disastrous floods in many parts of England in 1607 seem to have excited the greatest interest. "

1581

Severe winter with severe snow in the south of France (Ladurie).

1582

On January 14, in England, on the river Tay, "Perth bridge partially destroyed by floods".

1583

Responding to excessive population growth in England, landowners turned to sheep farming which resulted in fencing off the lands that had always belonged to the whole village.

Drought, very hot / dry summer (London/South). (B)

On August 19, a hurricane struck Dominican Republic at Santo Domingo (AGI Santo Domingo 80, N 79 BIS).

1584

Pope Gregory XIII (1572-1585) changed the calendar this year by 13 days. The Orthodox religions refused to accept this change as a matter of faith. The Greek and Russian Orthodox Churches continue to celebrate Christmas on January 7.

The Backerganj typhoon in the Bay of Bengal killed 300000 in present day Bangladesh.

Severe winter in south of France and olives freeze (Ladurie).

1585

In England, "Very wet summer with many floods" [River Sowe]. "A wet summer & autumn. Heavy rain on 8 November followed by floods in Salisbury" [Hampshire Avon]

1585/1586

"Much rain & many sudden floods during 1585-6 winter. Cold but few frosts & little snow. Very wet spring. Violent thunderstorm from west 28 Aug. Very wet autumn" [Hampshire Avon]

1586

The Archbishop of Treves had 118 women burned and two men for incantations that prolonged winter, this added to the growing martyrs of the inquisition, Bishop of Geneva burned 500, Bishop of Bamberg 600, Bishop of Wurzburg created 900 martyrs.

On June 23-26, Sir Francis Drake arrived near Roanoke Island, only to be greeted by a storm. It was described as "extraordinary" and lasted three days. His fleet was in great danger during the tempest. The Primrose broke its 250-pound anchor. Hail the size of hen eggs pelted the colony. Waterspouts also threatened the mariners. The settlers evacuated back to England soon after the storm.

1586/1587

A cold winter over western Europe / implied for parts of Britain. (Easton, in CHMW/Lamb) (B)

1587

“The Great Flood at Welford. It may not be uninteresting at the present time while the disastrous effect of the late floods [July 1875] is felt all over the country, and this neighbourhood in particular, to print an extract from the Welford Parish Register of an immense flood that took place nearly three hundred years ago, and which visited Welford [a few miles downstream of Stratford-Upon-Avon] with the greatest severity. We are indebted to R.F. Tomes Esq., for an exact copy of the entry, which we give verbatim, also observing the original forms of spelling and punctuation:- ...“ The account was also given by Savage (1929) and can be found under a CBHE entry for 18 July 1588, and is not repeated here. The article goes on to say “A notice of this remarkable flood appears also in the records of the town of Tewkesbury, but it is stated to have occurred on the 19th of July 1587.” “Probably the date given here [19 July 1587] is the correct one. The entry in the Welford Register was made some years after the occurrence of the flood, and the date is less likely, therefore, to be exact.”



On August 31, Admiral Drake encountered a hurricane at Roanoke Island. Strong northeast gales caused him and his crew to "cut his cables" and set out to sea. It took six days to regroup after this treacherous storm.

1588

"2-4 Jan: Severn water rose at Shrewsbury due to the great rain in Wales & flooded western suburbs of Shrewsbury. The waters rose again on 8 Jan but not as high as before. This time there was no apparent reason such as rain or thawing snow in Wales. From 11 May-end Nov "foul" weather, i.e. great wet & floods"

On January 24, dense fog in Paris.

Stratford: "The worst flood recorded occurred on the 18th July, 1588, just before the Spanish Armada, when a sudden rise in the river, 'higher than ever yt was knowne by a yeard and a halfe and something more', carried away all the hay in the Avon valley, breaking both ends of Straford's bridge and leaving a trail of devastation all along the river course, from Warwick where houses were broken down to Welford and Bidford, with consequent loss of life and goods. According to a contemporary account the water rose a yard every hour from eight till four o'clock in the day, and it depicts in graphic detail the plight of the three men who, going over Clopton Bridge, 'when they cam to the midle of the Bridge they could not goe forwardes and then returned presently but they could not go backe for the watter was soe risen'." [Warwickshire Avon]

On September 20, a hurricane struck Havana, Cuba (AGI Santo Domingo 127, N 66). A hurricane in Cuba killed 600.

A hurricane struck Roanoke Island, SC. [NHC rank 134/259 with less than 116 dead]

Spain attacks England and the Spanish Armada is defeated. The defeat of the Spanish Armada more by bad weather than by English guns marked the arrival of England as a great European sea power.

On November 4-6, a hurricane struck Colombia at Cartagena de Indias (AGI Patronato 196,R 21/AGI Santa Fe 62, N 46)

Grindelwald glacier broke through its end moraine (Aber).

1589

A hurricane destroys 50 ships in FL Channel and nearby.

On June 29, a typhoon struck the Phillippines. A furious typhoon raged over Manila Bay destroying many vessels belonging to Spaniards and Chinese. The native said that no storm like this had ever before occurred. The sea and the river swelled to such height that the Fort was flooded.

On August 7, a hurricane struck the Leeway Islands (Lesser Antilles). (AGI Contratacio'n 5108).

A hurricane struck Florida between Cape Canaveral and Santa Elena (AGI Contratacio'n 730 A, N 5).

On September 12, a hurricane was observed in the Bahamas Channel.

1590

Severe winter in south of France and Rhone freezes (Ladurie).

A dry year (London/South). (B)

In England, in October, "River at Bradford, Devon, frozen over early October". [A cold winter in western Europe / implied for parts of Britain. (Easton, in CHMW/Lamb) (B)]

In early November, a hurricane in the Gulf of Mexico caused one of the worst maritime disasters in the history of this region. Over 1000 people lost their lives at sea while aboard ship. [NHC rank 33/259 with more than 1000 dead]

1591

The severe winter in south of France continues early in this year.

In July, 29 of 77 English ships under Howard and Grenville were lost to hurricanes between Havana and Flores.

On August 10 in the Atlantic Ocean, a gale struck the Grand Fleet on its annual treasure run from Havana to Spain. [NHC rank 57/259 with 501 dead]

On August 26, Roanoke Island was again struck by a severe storm. The winds blew out of the northeast, directly into the harbor. Waves crashed on a sandbar and currents in the area became quite dangerous; 300 died from this hurricane.

In England, " A severe drought destroyed practically all the crops and vegetation in the areas around Nottingham. The rivers Trent and Erewash, plus other rivers were almost without water."

On September 21, a hurricane struck Puerto Rico (AGI Santo Domingo 169, FOL 390).

On September 24, a hurricane struck Cuba (AGI Contratacio'n 5109).

In September, a hurricane struck Florida at Las Tortugas (AGI Santo Domingo 127, N 62).

1592

In England, in the spring an uncommon drought in Nottinghamshire, it being succeeded this summer by strong W. winds and little rain. The Trent and other rivers were almost without water.

In summer, the Thames is so shallow that a man might ride over it on a horse near London Bridge.

A drought so great that horsemen could ride across the Thames at/near London Bridge & the River Trent was also said to be almost dry. These accounts would imply a dramatic lack of rainfall (and winter / early-spring snowfall), not only during this year, but for the previous year as well - hence the possible confusion over dates. Taken with the dry weather noted for earlier years (above), and the cold winter - it looks as if this period was often visited by anticyclonically-driven drought episodes. (B)

On December 16-17, the Niger overflowed flooding Timbuktu. The population fled.

1593

In England, "... Continuous snowfall and frost between 23rd December 1592 and 31 March 1593 produced drifts of snow threatening to at times to bury the City [Oxford]... The rapid thaw came on the 8th April 1593"

In England, "Great drought. Many cattle perished for want of water." And "Long drought this year in Barnstaple region" [River Taw]

1594-98: Glaciers of Italian Alps advanced markedly (Aber).

1594

In England, "May, June & July v. wet & cold. Many great floods this summer." [Hampshire Avon]

Wet and unseasonable summer - extensive flooding of fields etc., with loss / spoiling of crops across England: probably the year referred to in Wm. Shakespeare's " A Midsummer Night's Dream ". (B)

A hurricane struck the Dominican Republic at Santo Domingo (AGI Santo Domingo 24, N 46).

On the day of San Lucas, a hurricane struck Havana, Cuba (AGI Santo Domingo 127, N 202).

The sea was frozen at Marseilles and at Venice. Also Rhine and Scheldt frozen (Hayden).

A severe winter in western Europe / implied for parts of Britain. (Easton, in CHMW/Lamb) (B)

1595

The Rhone freezes.

The Glacier at Gietroz, Switzerland advanced because of the Little Ice Age and dammed the Dranse River and caused flooding in Bagne causing 70 deaths. This is evidence to confirm global cooling 1550 to 1850.

Severe winter in south of France and Rhone freezes (Ladurie). Also olives freeze and the sea freezes.

Crops fail in England. "Our years are turned upside down, our summers are no summers, our harvests are no harvests" John King.

On August 29-30, a hurricane struck Havana, Cuba (AGI Santo Domingo 99, R 20, N 190).

1596

Cold growing season in Scandinavia.

Starting July 11, a period of frequent severe gales in Scotland set in and lasted until 16th August: many ships lost on the east coast. (B)

In September, a typhoon struck the Philippines. The people of the city of Manila were very much grieved at the loss of the galleon San Felipe which, diverted from its course by a series of tempests, fell into the hands of the enemies on the coast of Japan. So valuable was the cargo shipped on the boat that, as Governor Tello wrote to the King of Spain, its value would have been appraised in Mexico at more than one million three hundred thousand pesos. On July 12, 1596, the galleon San Felipe, 700 tons, left Cavite under the command of General D. Matias de Sandecho, taking on board 300 persons, among them even seven Fathers; four Agustinians, two Franciscans and one Dominican, who was the Chaplain of the boat. It anchored at Ticao and received the documents from Governor D. Francisco Tello. On the 18th of September, while in the latitude of Japan, a furious hurricane burst over the ship and drowned six men. The waves carried away the binnacle, steering gear and galley: tearing to pieces the helm main and sails. It was necessary to lighten the vessel, because the water entered by the hatchways. A second tempest struck them on the 25th, lasting 36 hours, and damaging the lower deck. It was aboard this galleon San Felipe at the time she was making the open sea through the Strait of San Bernardino, that the passengers observed the famous comet of 1596, the first of which there is any record of having been observed in the Philippines. Among the passengers of the lost galleon, there was a glorious martyr Fray Felipe de Jesus o de las Casas, Chaplain, who for a lack of a bishop in the Philippines was sent by his superiors to his native country to be ordained, but was put to death on the hillock of Nagasaki together with other companions of the same Institute for the profession of his faith.

On October 3, a typhoon struck the Philippines (letter of Gov. Tello on the loss of the galleon S.

Felipe).

At Val d'Aosta, glaciers advance and there are spring floods (Ladurie).

1597

Very quiet year with no meteorological reports, not even in England.

Iceland's Mount Hekla volcano erupts as it did in 1154 and will in 1836.

1598

In England, great drought and very hot (London/South). (B)

On October 4, a typhoon struck the Phillipines (letter of Fr. Diego Abuarde O. P. on a private expedition to China). "We left Manila Bay on the 17th of September; we were about one hundred and fifty soldiers and sailors. The sixth day of the trip had not elapsed before our ships were dispersed by a furious hurricane. The Galeota came out the best, because, although destroyed, at least she landed on friendly shores."

1599

On September 22, a hurricane struck St. Augustine, Florida (AGI Santo Domingo 229, fol130r-130v/AGI Santo Domingo 229, fol 136r/AGI Santo Domingo 229, fol 151r)

On October 27, a typhoon struck the Phillipines (report of the historian Fr. Chorino S. J.). "Up to the 21st of October, writes the historian Fr. Chirino, the weather was good, but on this day the Fathers encountered a storm which, although not very strong, drove the vessels to a bank covered with corals and rocks, so dangerous that the ships were almost broken to pieces. On the 23rd of the same month, there came another storm stronger than the former. On account of the force of the wind, the vessels were dispersed."

1600

Huaynaputin Peru eruption.

On April 24, a deep snowfall in England. (B)

On September 12, a hurricane struck offshore Mexico. [NHC rank 178/259 with more than 60 dead]

On September 26-27, off shore of Mexico, a hurricane caused 60 people to perish at sea. [NHC rank 138/259 with 103 dead]

Plague and famine in Russia killed an estimated 500000 people.

The glacier of Chamonix, France, advanced, because of the Little Ice Age (1550-1850), causing massive floods, destroying 3 villages and severely damaged a fourth. One of these villages had stood since 1200.

Severe winter in south of France and olives freeze (Ladurie).

1601

On May 1, a typhoon struck the Philippines. The ship Santo Tomas set sail from port of Acapulco on February 16, 1601 and sighted the Philippines 72 days later, on April 29. Having missed the San Bernardino Strait, the Santo Tomas was carried by the currents towards Catanduanes. While lying of anchor in a bay, a hurricane so violent came on, that it tore the ship away from its moorings.

In England, "Long dry summer. Drought from begin April - c. 3 September"

In Veracruz, Mexico, a hurricane struck [NHC rank 37/259 with 1000 dead]

Half a million Russians died of famine between 1601 and 1604 when a shortage of rye sent the price of bread skyrocketing.

In May, the galleon Santo Turks reported a typhoon near the Philippines.

According to them (Verosub et., 2008. Nature article), the year 1601 featured several climate discrepancies:

Tree-ring records show that it was the coldest year in six centuries in the Northern Hemisphere - possibly due to the cooling caused by the sulphur particles spewed from the volcano.

The effect was felt on the other side of the globe, where a severe winter caused famine in Russia. Snow blanketed Sweden, leading to record flooding and a poor harvest.

Wine harvests were late in France. In Japan, Lake Suwa froze far earlier than usual. Galleons traveling from Mexico to the Philippines made the trip significantly faster than normal, perhaps because of altered wind patterns.

“What we find is that 1601 was among the coldest or wettest or worst years, in many cases,” said Verosub.

1602

Floods in Timbuktu, like 1592.

Drought in autumn and winter (London/South). (B)

The Soane River in France has an extreme flood that is not equaled until 1840.

On August 21-23, a typhoon struck the Phillipines (report of the galleon). "When in the position of the 25th parallel, we met with a storm which obliged us to lighten the ship of everything on top of deck, and of 300 boxes and bales from below deck. This storm lasted from the 21st of August to the 23rd, on which day we were in the position of the parallel 28.5°. Our sails were destroyed, we cut down the main mast and we found about 20 palms of water above the step of the mast."

1603

Carts crossed the Rhone on ice; severe winter in south of France.

On July 11, a typhoon struck the Phillipines (letter of the Governor on the galleon). When two ships, loaded with produce, were near Mariveles, they encountered such a violent hurricane that they were forced to cast anchor there.

October 20: A Chinese uprising in the Philippines failed after 23000 people are killed.

1604

On January 3, in England, "great flood" From: Summary of Dr Napier's diary 1598-1635, Great Linford, Buckshire.

On October 14-17, in England, "Heavy snowfall for 4 days 14-17 October" [Bristol Avon]. Also "Bristol: great snow 14-17 October"

1605

On September 29, a hurricane struck Sabana Port, Cuba (AGI Santo Domingo 224, R 6, N 52, DOC 1/AGI Santo Domingo 224, R 6, N 52, DOC 4).

A hurricane offshore from Nicaragua took 1300 lives. [NHC rank 29/259 with 1300 dead]

1606

On January 20, floods in England created the Severn Estuary. Holland also flooded. Thousands died.

In England, 2000 died around the Severn Estuary on Tuesday, 20 January 1606. (Torro); As well as the cost in human life, much damage/loss of housing etc., and also cattle, sheep & horses perished. There would have been a great deal of salt-contamination of arable fields too. [ There is some debate whether this event was a 'standard' wind-driven storm-surge, or a Tsunami-like occurrence. Contemporary accounts mention 'high tides' & 'strong west winds', so I

would plump for the more likely storm-surge cause.] (B)

On August 20, a typhoon struck the Phillipines (report of an unknown ship towards Japan). Such was the fury of the wind and the violence of the waves that the tiller was broken and the ship was left in such a great distress that it was necessary to lighten it of everything it had on deck. The storm grew worse on St. Bartholomew's day and the night came on very cloudy and dark with hurricane winds and terrific thunder. About 10 o'clock at night the wind increased in such a way that the ship was heeled over until the sails touched the water, and the side of the boat was submerged for a space of three creeds.

1607

In England, for example, of the winters 1607: "this year began with a thermal anomaly: The winter was extremely warm and very much drying - one record winter. Contemporaries did not speak very drastically of "a winter" with few frost and snow days, even smaller brooks remained ice-free. Already in February the sowing was performed, in the same time violets are to have flowered "

Burnham-on-Sea, Somerset:" 1607 a disastrous flood occurred at Burnham. A tidal wave broke over the sea wall and 30 villages were deluged with water. Without warning, the countryside for 20 miles was flooded to a depth of ten or twelve feet. At Huntspill 28 people drowned after the village was overwhelmed. Other villages badly affected were Berrow, Mark, Lympsham, Brean, plus South and East Brent. The flood captured the attention of the nation and was the subject of a London pamphlet entitled 'God's warning to His people of England.' (Jan 20?)

A dry and hot summer in England. (B)

In 1607-08, a very severe winter in England like 1683-84; also very cold in eastern North America.

The 'Great Winter': apparently, trees died due to the severity (and length) of the frost; ships were stranded by ice several miles out into the North Sea - this latter a major concern as much commerce was done in these days via coastal shipping. In December, a "deep" frost until mid-month, then a thaw until just before Christmas, then (from ~21st December) intense freeze for much of the time until at least mid-January. Ice formed on the Thames in London, sufficient to bear all sorts of sports, perambulations and even cooking! The frost lasted overall for some two months. (much of the foregoing from Ian Currie). The severe weather lasted in parts of England until about 20th February, though with variations in depth of cold. For example, in records from Kendal (Westmorland / Cumbria) 'hard frost' is noted from November 3rd, 1607 to March 6th, 1608. (\*\* lots of winters will be found in the literature known as "The Great Winter": treat this title with some caution, however, in a series developed by C.Easton, in CHMW/Lamb, this ranks near the top of most severe winters taking western Europe as a whole.) (B)

"A very severe frost from c. 30 Nov 1607 - 28 Feb 1608. The Severn & Wye frozen hard but the river at the Back & Key (Bristol & Gloucester region) & so downward to Hungrvad was not



frozen, as it is reported to have been in 1564".

Fires and diversions on the Thames (Hayden).

1608

In England, "A very severe frost from c. 30 November 1607 - 28 February 1608. The Severn & Wye frozen hard but the river at the Back & Key (Bristol & Gloucester region) & so downward to Hungrvad was not frozen, as it is reported to have been in 1564" Also "River of Barnstaple frozen over in January" [River Taw].

In England a frost fair on the Thames (previous one in 1564).

Severe winter in south of France (Ladurie).

Extreme frost in Jamestown VA.

70% of Baffin Island is under permanent snow and ice, compared to 2-3% now; glaciers in northwestern North America are far advanced compared to the present.

Red shower in Aix France and many miles around.

In June, Samuel Champlain reports ice on the shores of Lake Superior.

On September 3, a hurricane struck Veracruz, Mexico (AGI Me'xico 351, DOC S/N).

In October-November, several typhoons struck the Phillippines (Edifying Letters of the Jesuits Missionaries). From the Edifying Letters of the Jesuit Missionaries, we know that in October and November of 1608, there were several formidable hurricanes in the Philippine Archipelago.

1609

A hurricane struck the southeastern Bahamas. [NHC rank 234/259 with 32 dead]

On August 4, The Tempest occurred in VA. Sir Thomas Gates, future governor of VA, was on his way to England from Jamestown. On Saint James Day, while between Cuba and the Bahamas, a "most terrible and vehement storm" raged for 44 hours. One of the small vessels in the fleet sank to the bottom of the Florida Straits. Four of the remaining vessels reached VA soon after the storm...followed a few days later by three other ships. Bermuda settled after one of the ship seeks refuge from this storm.

Number of typhoons striking Guangdong Province, China this year: 2. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

Great frost commenced in October & lasted four months. Thames frozen and heavy carriages

driven over it. (Possible confusion with 1607/08). (B)

1610

Sunspots are discovered, probably in Holland.

In England, a hot and dry summer. (B)

In England on September 29, " On Michaelmas Day, blizzards raged throughout Derbyshire. Snowstorms were unparalleled in recent history. That year was also noted for exceptional rainfall , so ferocious in one instance that three prisoners were drowned in Derby Jail. " [R. Derwent].

On November 1, a typhoon struck the Phillippines (Annual Litterae of the Province of Phillippines by Fr. Gregorio Lopez). "excited a terrible tempest of furious wind, a hurricane or baguio, as it is called in these islands, so strong that it destroyed more than 200 houses and caused injury to the rest."

1611

On January 12, in England, on the Severn River: "Floods began 12 January and lasted for a long time. On 30 January "increased to so great a flood as seldom been seen". Continued through February. The east bridge over the Avon swept away and other bridges destroyed. Much rain fell in July and August. Hay spoiled by floods "one renewing and following another" from 19 - 24 Aug"

In February, in England, in the Norfolk Rivers Group, "Great rains in early part of year to end February. Great drought from end February to the end of May. Great rains fell at begin of June and ended drought." Also in London, Church of England liturgy for a special event:" A forme of Praier to be used in London, and elsewhere in this time of Drought. "

In July and August, in England, "Heavy rain & floods in July and August" [River Sowe]

So overall, in England, wet in January and February, very dry from March through June, and then floods in July and August.

1612

In England, drought from January to May (London/South). The extended period of dry weather was apparently widespread over England at least, with that affecting the Lake District noted as not breaking until early August. (B)

In England, "From May-August, 4 months, the "driest time that any man living ever knew"" Also "Lack of rain March-August".

A hurricane in Bermuda.

1613

The Wonders of this Windie Winter ... Imprint London, Printed by G. Eld, for I. Wright, 1613.

In England, severe flooding this year (see 1580).

In 1613-14, a very severe winter in Switzerland.

1614

In England, "At York it began to snow and freeze on January 16th, and the frost continued unbroken, with occasional snow, until March 7th, by which time the depth of snow was greater than in any other year within living memory. When the thaw came there was a great flood, but without rain, and the drought continued until August 20th, causing a great scarcity of hay and corn. This drought was experienced also over a wide area of Europe." [River Ouse]. Also at York a drought from spring to August, causing a great scarcity of hay and corn.

From January 5 to March 12, in Wotton Gilbert, England, it snowed every day (66 consecutive days); an immense number of lives and cattle were lost.

Five month long drought in Crete kills harvest.

1615

January in England, known as "The Cold Yeare", deep snow claimed much of the livestock.

In England, "Great snow which lay for 7 wks during 1614-15 winter" and "A great drought in Summer "

On August 30, the ship San Miguel sunk in a storm off the Mexican coastline. No belongings aboard ship or passengers were able to be saved.

On September 12, Puerto Rico suffered the worst hurricane in 40 years and 500 died.

In September, the same hurricane struck Bermuda.

1616

The Holy Office on March 3, 1616 placed the works of Copernicus on the Index of Condemned books.

Floods in Timbuktu, like 1592.

In England, a hot and dry summer. (B)

On September 20, a hurricane in Cuba left 70 dead.

1617

Floods in Spain including Catalonia kill 35000 to 50000.

Floods in Timbuktu, like 1592.

On October 10-15, a typhoon struck the Phillipines. A very severe typhoon crossed Visayas. Six ships were wrecked near Marinduque with the loss of over a thousand persons. It was considered as the greatest calamity during the administration of Jeronimo de Silva.

Number of typhoons striking Guangdong Province, China this year: 2. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1618

During the period of the Thirty Year War (1618-1648) about 60 million people died in Europe from smallpox.

Floods in Timbuktu, like 1592.

In 1618-19 winter, snows in Pearl River delta; elders say it has never been like this before.

1619

The French banned the pommes de terre (potato) in Burgundy, France and burned the crop to protect citizens from leprosy and its base addiction and craving.

In July, floods in Thuringia (Germany) caused by rain.

Floods in Timbuktu, like 1592.

In November, 2 hurricanes strike Bermuda.

1620

A hurricane struck Bermuda.

On August 2, a typhoon struck the Phillipines (report of the galleon S. Nicolas).

A violent typhoon raged over Samar. The ship San Nicolas, that was returning from Acapulco to Manila, was wrecked near Borongan. The flagship of the expedition foundered near Palapag.

In December, the Thames frozen over.

In December, in Scotland, the Thirteen Drifty Days of continuous snowfall occurred; the cold was intense as never before remembered and the wind keen and biting; only 40 of 20000 sheep in Eskdale-muir district survived.

1620-21

In England a frost fair on the Thames (previous ones in 1564 and 1608).

1621

The Venetian fleet was hemmed in by the ice in the channel of Venice.

Calm winter at Plymouth MA.

At beginning of year, the Thames frozen over.

On May 24, a typhoon struck the Phillippines (report of the frigate Buen Jesus). A strong typhoon between San Bernardino Strait and Manila. The six hundred passengers of the frigate Buen Jesus were in danger of shipwreck.

On September 13, a hurricane struck Bermuda.

1622

The Papacy adopts January 1, as the beginning of the New Year rather than March 25.

On Sep 5, a hurricane struck the straights of Florida and killed more than 1090 people. [NHC rank 32/259 with more than 1090 dead]

On September 9, a hurricane was observed at 31 N, 150 leagues from Bermuda (AGI Contratacio'n 5101/AGI Contratacio'n 4806, DOC 34).

The rivers of Europe and the Zuider Zee frozen. Ice covers the Hellespont (Hayden).

1623

The Danube in Austria and Hungary floods.

In England, "Very cold & frosty winter & spring with heavy snows. Cold lasted to May." and "The summer was very dry so grass and hay was scarce. The natural water supply failed in many places and many cattle did not survive."

On September 19, a hurricane at St. Christopher and Cuba in the Caribbean. [NHC rank 92/259 with 250 dead]

1624

The Thames was navigable to Oxford indicating high water.

1625

This is the year of the English plague where one quarter of England's population died.

The sea detaches part of the peninsula of Dars in Swedish Pomerania and forms of it the Island of Zingst.

On August 11-12, a hurricane is observed in the Bahamas Channel (AGI Santo Domingo 101, R 3, N 33).

1626

In England, a dry and hot summer. (B)

On September 15, a hurricane struck Puerto Rico. [NHC rank 217/259 with 38 dead]

1627

Apulia (Naples) has a great flood.

In September, a cloudburst causes the Danube in Austria to flood.

Typhoon struck Guangdong Province, China (Liu).

1628

The year without a summer in Switzerland; at Engstlignalp, it snows 23 times with snow cover until the end of August.

A hurricane struck at Santa Maria de Cizal (Merida), Mexico (AGI Mexico 242 A, N 65).

Typhoon struck Guangdong Province, China (Liu).

1629

On January 7, a typhoon struck the Phillippines. Strong typhoon that did considerable damage in the Island of Marinduque.

Starting June 20 and its effects lasting years, a great flood from the mountains hit Mexico City. Thousands died.

In August, a typhoon struck the Philippines (Governor report on the galleon). The Governor of the Philippines reports to the home office that the ships dispatched on August 1st from Manila to Acapulco had encountered a severe typhoon in the Pacific and having been lashed by eleven more hurricanes the vessels were forced to put back and to return to the Philippines after seven months of useless efforts to cross the Pacific and reach Acapulco.

Typhoon struck Guangdong Province, China (Liu).

1630

Very mild winter in MA.

In January, a typhoon struck the Philippines. Toward the beginning of January a strong typhoon, lasting 24 hours, was felt over southern Samar.

A long drought followed by sudden rains and floods in Deccan India causing 30000 to die in Surat alone. During 1630/1631 there was a great famine in India. Cannibalism was so rampant that human flesh was sold on the open market. 100000 die.

The Clyde river in Scotland floods.

Typhoon struck Guangdong Province, China (Liu).

1631

Droughts continue across much of Asia and cause widespread famine.

On October 21, a hurricane moved through the Gulf of Mexico, taking over 300 lives at sea. [NHC rank 80/259 with 300 dead]

Typhoon struck Guangdong Province, China (Liu).

1632

Typhoon struck Guangdong Province, China (Liu).

1633

In Cork, Ireland, a flood wiped out public buildings and bridges.

In Guangdong Province, China, "In the sixth lunar month of the sixth year of the Emperor Chongzhen (1633 A.D.), a typhoon struck. Torrential rain fell for 10 days. Houses collapsed. Naval battleships were drifting in the sea; eight or nine out of 10 were destroyed, drowning numerous soldiers. Since the first year (1627) of Chongzhen there was no year without typhoon strikes. The damage was especially serious this year. It was widely believed the culprit was a

mischievous dragon.” (Liu)

1634

In England, summer/autumn Ducklington: "This was one of the driest and warmest years for summer and autumn weather in memory."

On October 5, a hurricane strikes western Cuba. [NHC ran 214/259 with 40 dead]

On October 21, a storm submerges the whole Island of Nordstrand destroying 1358 houses, 50000 cattle, and 6000 people.

In Guangdong, China, snow frost and ice 4 to 5 inches on ponds with people never experiencing anything like it before.

In England a frost fair on the Thames (previous ones in 1564, 1608, and 1620).

1635

The Thames is frozen over and the frost fair is on.

On August 20, a hurricane in the Windward Islands left 70 dead.

On August 24-25, a major hurricane affected the VA coast as it moved to the east of the colony. Despite its impact in New England, no references to damage in VA has been found. On August 25, this hurricane caused great destruction and uprooted thousands of trees in New England. This storm passed between Boston and Plymouth, MA, and was a fast mover. The eye passed between Boston and Plymouth, Mass., and caused a twenty-foot tide in Boston. Gov. William Bradford reported, "It blew down many hundred, thousands of trees," and many houses. [NHC rank 224/259 with 35 dead]

1636

In England, severe drought, rainless for months (reputedly)

On October 14, a hurricane in Cuba left 200 dead.

For three months, a great frost in England which caused great flooding upon a sudden thaw.

1637

On the Island of Timor, a great volcanic eruption occurs in which the volcano disappears and a lake takes its place.

On September 1, E. Friesland, Holland is flooded several times.



1638

The galleys in the port of Marseilles were blockaded by the ice.

From November 14th 1637 to April 2nd 1638, a hard winter in MA with 3 feet of snow.

On May 3, snow fell in Boston.

On September 20, a typhoon struck the Phillipines (loss of the galleon N. S. de la Concepcion, referred in the *Sucesos en Filipinas*). The flagship Ntra. Sra. De la Concepcion was caught by a typhoon in the Pacific on her way from Manila to Acapulco, and wrecked with a total loss of cargo and death of almost all passengers near the island of Rota, Mariana Islands. The *Sucesos en Filipinas* describes the arrival of a few survivors at Manila ten months later, and gives details of the horrors of the disaster.

On October 5, the journal of John Winthrop recorded that a mighty tempest struck eastern New England. This second severe hurricane in three years blew down many trees in mile long tracks.

On October 21, a tornado accompanied by ball lightning struck the church at Widecombe-in-the-Moor, on Dartmoor, in southwest England; between 5 and 50 people were killed.

On November 10, a typhoon struck the Phillipines (*Sucesos de Filipinas*. Probably written by Juan Lopez S. J.). A document entitled *Sucesos de Filipinas*, probably written by Juan López, S.J., gives in the form of a diary the main events in the Phillipines during the period 1638-1639. The sucesos give an account of a furious storm that raged over Manila Bay and out in the China Sea on November, 1638, with great danger to navigation. " At midnight on November 10, so fierce a gale of wind came from the south that it broke five of the moorings of the flagship San Luis, which was about to sail to Ternate, having been already laden with artillery aboard. The wind carried away its shrouds, and grounded it in the sands near Parañeque, but in a way that it could be floated off after five days. The wind also drove the second galley ashore, but without doing any damage."

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1639

A cold summer in France.

On June 27, a typhoon struck the Phillipines. A destructive hurricane raged furiously over Manila Bay. It did great damaged to the city. The typhoon blew down one hundred and seventy houses in Parañeque.

On August 5, a typhoon struck the Phillipines (report of the galleon). A very strong typhoon raged over the China Sea and the western coast of Luzon. Out of five ships that had left Manila

for Acapulco, two of them foundered near Cavite with the loss of 600 Chinese. Two ships coming from Acapulco to Manila were wrecked in the coast of Vigan, with the loss of 150 persons. The material losses amounted to more than half a million pesos.

Number of typhoons striking Guangdong Province, China this year: 1. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1640-50: General glacier advances throughout Alps. Fossil trees (*P. cembra*) from high moraines in Mont Blanc vicinity radiocarbon dated to 1630-80 interval (Aber).

1640

April 4 in Belgium, Holland, and France, disturbed waters flooded a large area.

Floods in Timbuktu, like 1592.

A hurricane in Cuba left 200 dead.

1641

Soap is being manufactured in England and prior to this time bathing was rare in Europe.

From January 28 to March 3, MA Bay is frozen over; it is the harshest winter in more than 40 years.

On October 2, a hurricane in Cuba killed 24.

On November 22, an observer at Boston MA recorded a "great tempest of wind and rain from the southeast all night, as fierce as a hurricane, and thereupon followed the highest tide which we have seen since our arrival here".

1642

A hurricane in St. Kitts wrecked 23 vessels and destroyed all houses and the cotton and tobacco crops.

Also a different hurricane at Martinique, St. Christopher, and Guadeloupe that killed 600.

The Rebels who are battling the Ming Dynasty rulers deliberately broke river dikes at the city of Kaifeng in China's Honan province, flooding the city, hundreds of thousands died as a result. Chinese floods killed 300000 people.

The English Civil War begins (1642-1649).

1643

Great floods in Thuringia, Austria.

In July, a bad hurricane in New England.

On August 20-21, a hurricane struck Antigua and Barbuda (AGI Contratació'n 5101).

1644

In England, late January snowfall, lasted 8 days.

In October, a hurricane in western Cuba and the straits of Florida killed less than 1500 people. [NHC rank 27/259 with less than 1500 dead]

A very mild winter (1644-45) in MA with no snow.

Chamonix glaciers advanced across Chamonix valley and threatened to transform valley into lake. Swiss glaciers expanded to their maximum Little Ice Age positions: 1644-53 (Aber).

1645

The Manchu siege of Yangzhou, China in May resulted in the death of 800000 residents of the city.

1646

The volcano Machian in the Molucca Islands erupts; a mountain was rent from top to bottom, sending out great columns of fire and dense vapors.

On May 31, a notable outbreak of tornadoes in eastern England. Specifically Thetford / Newmarket, (Cambridgeshire, Suffolk, Norfolk); Brandon Parva (Norfolk) and Swaffham Prior (Cambridgeshire). At least three different tornadoes involved. It was a notably hot day ("violent hot day"), with severe thunderstorms, heavy rain and large hail. The hail is noted as being of "extraordinary size", and "some hollow within like rings". (B)

A series of great floods in Holland kill 110000.

Cold summer in France with poor wine (Ladurie).

On October 17, a hurricane struck at Los Organos (Pinar del Rý'ó), Cuba (AGI Contratació'n 5101).

One of the mildest winters ever in MA (1646-47) with no snow.

1647

Continued mild winter in MA.

Enso warm event.

1648

In England, very wet, but probably not as wet as 1258 and 1527. The summer in particular was described as worse than several of the past winters (i.e. 'cold & wet'). (B)

1649

Starting in 1648, the Thames frozen over.

Very warm in Southwest United States based on tree rings (1649-1651).

A "great storm and tide" destroyed a large quantity of tobacco stored in various rolling houses in VA (Chapman).

On October 5, a typhoon struck the Phillipines (shipwreck of the galleon N S de la Encamacion). The nao Nuestra Señora de la Encarnacion was overtaken by a typhoon in the San Bernardino Strait and totally broken up in the shores of Bulan, with the loss of over two hundred persons. Ten Champans were wrecked during the same typhoon.

The British Parliament invoked a law that made it a crime, punishable by burning at the stake, to forecast the weather.

1650

Cyrano de Bergerac (1620-1655) is believed to be the first to suggest the use of rockets to travel from the earth to the moon.

Excessive rains and floods in Russia cause the grain crops to fail leading to a famine that kills thousands. It probably continues into 1651.

In the Lesser Antilles, a hurricane wrecked the town of Basseterre and 28 ships are lost along with thousands of people.

Number of typhoons striking Guangdong Province, China this year: 2. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1651

A hurricane in Martinique in the Caribbean.

On August 23, hailstones 7 inches in circumference fell on Dorchester England.

On August 31, the Elbe floods and does much damage.

In 1651-52, the port of Riga on the Baltic is closed by ice.

1652

In Guangdong, China, cyclones reported off the coast.

Several hurricanes or storms strike Bermuda.

A hurricane at Martinique, Guadeloupe, and St. Christopher.

Number of typhoons striking Guangdong Province, China this year: 4. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

In 1652-53, the port of Riga on the Baltic is closed by ice.

1653

On July 13, a hurricane at St. Vincent.

On October 1, a hurricane at St. Vincent.

Number of typhoons striking Guangdong Province, China this year: 5. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1654

Severe drought in Midi, France, starts and lasts several years.

In China (thru 1676), frequent frosts mean no oranges or mandarins are grown for these years.

On May 29, a typhoon struck the Philippines report of the galleon). A strong typhoon between San Bernardino Strait and Manila. It wrecked the Galleon on which the missionary Juan Montiel, S.J., was coming from Mexico to the Philippines. The storm lasted 15 days and caused unbelievable sufferings to the survivors.

1655

From December 8 to 18, the Seine was frozen across; Thames frozen over. [A cold winter in western Europe / implied for parts of Britain. (Easton, in CHMW/Lamb) (B)]

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1656

Plague kills 400000 in Naples.

From December 29, 1655 to January 28, the Seine was frozen over without interruption.

In early February, the Seine once more was frozen over until March.

A hurricane in Guadeloupe destroyed most of the houses, all the domestic animals, and every vessel with most of their crews, killing hundreds.

On July 20, in and to the south and southwest of Norfolk, England, a violent thunderstorm and hailstorm broke most (3000) of the south facing windows and killed much wildlife in the surrounding countryside; hailstones 5 inches in circumference fell, but many hailstorms were flat like plate glass.

A hurricane in the Antilles.

1657

A hurricane in the at Guadeloupe in the Caribbean.

In 1657-58, snow remains on the ground for 102 days in southern England.

Starting December 11 in England, the beginning of one of the longest periods of snow lying in England, lasting (reputedly) until 21st March 1658. A notably severe winter over western Europe and much of Britain (Easton in CHMW/Lamb). (B)

1658

From December 1657 to February 8, an uninterrupted frost at Paris. Continued frosts until the February 18.

June in England, a cold month - likened at the time to a 'winter' month. (B)

On September 3, in England, A 'wild and stormy night', with chimneys and roofs blown down and many trees uprooted. This was the night that Oliver Cromwell (the 'Lord Protector' of England during the 'Inter-regnum') died. (B)

Members of the army of Charles X of Sweden died crossing the ice from Holstein to Denmark.

Venetians lose many ships between Italy and Crete.

The island of Orisant annihilated.

A hurricane in the Antilles in the Caribbean.

On October 18, a typhoon struck the Philippines.

1659

Starvation, pestilence and war plague France. The peasants are paying a large portion of their crop for local seigneur feudal dues, church tithes and the king's taxes. The average life expectancy is about twenty-five years. Twenty five percent of children did not live past one year of age.

In February a severe ice storm in New England.

In May, punishing gales and sandstorms in Scotland ruins property and causes rises in sand dunes and general crop destroying weather.

On July 15, a typhoon struck the Philippines (Jesuit report). Francisco Ferrer, sailed for Manila on a sampan and, having passed the coast of Lobo, was lashed by a furious storm. All the passengers and crew died.

In October, a typhoon struck the Philippines. A severe typhoon raged over Visayas. The boat on which the Jesuit missionary Jose Quesada was traveling to Manila was caught by the typhoon and sunk near Burias. With the exception of three persons, all passengers were drowned.

On November 25, a typhoon struck the Philippines (History of the Philippines by Rev. Father Pedro Murillo). "On the 25th of November, 1659, Rev. Juan del Castillo, a native of Manila, was drowned in the Tablazo of Marinduque, during a furious tempest. His entrance in the Society of Jesus was of great edification to all, because of the high qualifications that he possessed and the positions of trust he had held, namely 'Encomendero', 'Regidor', 'Capitan' and 'Procurator' of the City of Manila. Having been sent to Visayas, the small vessel was wrecked and he lost his life while he was the confessions of the fellow passengers and encouraging them all up to the last moment. Only three natives escaped with their lives to tell the doleful tale."

1660

A hole in reality (a vacuum) is discovered. The English embraced the vacuum as a place where God and angles could live. Rome considered this thinking as heresy and insisted a vacuum doesn't exist and Christians must believe dogma this as a matter of faith.

Long Island, New Guinea, volcanic eruption.

A hurricane in the at the Antilles in the Caribbean.

On November 11, the Thames floods.

1661

In England, the Derwent was so dried up that in many places there was no water, and people might go over dry shod.

The Punjab region of India suffers drought and thousands die.

1661/1662

According to Evelyn .. "there having falln so greate raine without any frost or seasonable cold ..."; suggests mild, cyclonic, wet, and windy regime much of the winter until at least the middle of January. (B)

1662

On February 28, a violent storm in London. A major severe gale/storm affected certainly the southern 'half' of Britain, with damage reported from widely scattered locations: according to Pepys, it was 'dangerous to go out of doors', with several people killed, houses damaged / destroyed in London. Also reported are major falls of trees, e.g. "above 1000 oakes and as many beeches are blown down in the Forrest of Deane"; also, there is a report of 57 Elms being felled on an estate at Nettleton (Wiltshire) [thanks to Barbara Walker for this]: no doubt much damage was done to stands of trees around the southern UK. (B)

On June 15, a fast was held at Salem MA with prayers for rain, and the Lord gave a speedy answer.

In England, "The same thing [i.e. the Lea nearly drying up in 1539] again happened in 1662."

In 1662-63, snows lies on the ground for 60-70 days at Aldenham, Hertfordshire, England.

1662-1667

In England, 3 of 5 winters in this period were described as cold, with severe frosts. Skating was launched on the Thames, for the pleasure of King Charles 2nd.

1663

From December 5, 1662 to March 8 1663, a frost lasted at Paris.

On December 17, a flood (driven by gales) submerged Whitehall, and was produced by a high tide that was said not to have been exceeded for more than 200 years. This storm-surge would have also damaged properties / structures elsewhere along the Thames Estuary, and perhaps coasts adjacent to the southern North Sea, though I have no references for this assumption. (B)  
Thames frozen over.



1664

In September, a hurricane struck Havana, Cuba (AGI Santo Domingo 104, R 6, N 55).

On October 16, a hurricane near Bermuda.

On October 22-25, a violent hurricane struck Guadeloupe, Antigua, and St. Kitts. The potato crop is destroyed.

From November 10 to mid-March 1665, a terrible frost in England with snow lying on the ground with much wildfowl frozen and many people perishing by being frozen on the Thames attempting to cross it in boats.

Severe frost from 28th December to 7th February. 6th February in 1665 reputed to be one of the coldest days ever in England. (B)

1665

On February 15-20, the Yangtze River basin in China freezes.

In England, a cold / dry winter and a dry spring. Thought to be a factor in the outbreak of the 'Great Plague' later that year due with ideal conditions for breeding rats. (B)

In October, a hurricane in the Caribbean.

In England, in November, a deep depression was recorded, possibly the lowest recorded in London, of 931 millibars! Still stands today?

The bubonic plague visited London.

In England, every month from November 1665 to September 1666 was dry. By August, 1666, the River Thames at Oxford was reduced to a 'trickle'. This drought was a large contributory factor in the 'Great Fire of London' (q.v.), bearing in mind that many houses in London had a high proportion of timber in them - and presumably old timbers too. [ A rainy spell started just after the Fire ... 9th by the old calendar, and there was prolonged/heavy rain for 10 days early in October 1666. ] The dryness extended to Scotland, at least from May to mid-July.

Perhaps confirming an 'anticyclonic' bias to the broad scale type, The River Thames was frozen over in London by mid-December 1665. (B)

On November 7, deep depression probably brought the lowest barometric pressure ever measured in London (about 931 mbar .. probably still a record as at 2002). (B)

On November 30, a climax to a month of wind and rain, the roads very bad. English ships trapped by ice in port at Hamburg (Pepys).

On December 2, a severe frost in London 2nd to 7th. (B)

On December 21, a severe frost set in again, the Thames blocked by ice in London by 30th. The plague much reduced, but flared up again in the mild weather after 6th to 10th January 1666. A mild January followed. (B)

1666

A terrible bubonic plague that struck London last year ended this year killing sixty eight thousand people and this year most of London is destroyed by fire including eighty seven churches, thirteen thousand homes (about 80% of the city) and a new law required they be rebuilt of brick and stone. The Great Fire of London lasted 4 days in September. The fire however helped contain the plague.

In January a severe frost in MA: the Charles River is frozen.

Thames frozen over.

In the summer, a severe drought in England reduced the flow of the Thames River so much that it seriously threatened to ruin boatman; the dryness may have contributed to the Great Fire in London that September.

On 27th June: Heat wave began: mostly dry in London since the 12th.

On 5th July, 1666, Pepys writes: "extremely hot ... oranges ripening in the open at Hackney".

July 6th: Beginning of period with occasional showers/heavy rains though often warm.

July 26th: Hail ' as big as walnuts ' in London and 27th on Suffolk coast.

The climatological summer (June, July & August) of 1666 was amongst the top 10 or so of warm summers in the CET series (began 1659). (B)

In August and September, the drought over these two months is noteworthy because it preceded the Great Fire of London; apparently the east wind, which prevailed during that period, had dried the wooden houses of London until they were like tinder. When the fire started early in September (12th/New Style), the east wind drove the flames before it and helped the fire to spread rapidly; smoke from this reached Oxford in the days thereafter. The prevailing weather was noted as 'hot and dry', and strong east Winds during the fire caused great problems with fire-fighting. On the 2nd/old-style (the first day of the fire), a 'strong' east wind is noted - Evelyn notes this as a "Fierce" eastern wind in a very dry season. It is not clear though whether the wind was caused by the fire, or was there anyway. However, Evelyn does note that there had been a..."long set of fair and warm weather". On September 4th (14th new-style), Evelyn still notes: "The eastern wind still more impetuously driving the flames forward." Later on the 5th, the wind is noted as 'abating' -- again not certain whether this was due to the fire burning itself out. In any case, this was effectively the end of the Great Fire.

On 15th September: Foul weather in the southern North Sea began the breakdown of the long dry warm summer weather (see previous).

On 19th September: The first considerable rainfall quenched London fire: rainy autumn followed. (B)

On August 4-5, a hurricane struck Guadeloupe, Martinique, and St. Christopher destroying a fleet of 17 vessels and killing most of the 2000 troops on board. [NHC rank 24/259 with less than

2000 dead]

A hurricane struck San Juan, Puerto Rico (AGI Santo Domingo 543, fol 52r-53v/AGI Santo Domingo 543, fol 54r-56r/AGI Santo Domingo 543, fol 57r-60v/AGI).

1666-1667

In England, Thames covered in ice.

A cold winter over western Europe / implied parts of Britain; cold weather, hard frost in London on 31st December; Thames covered with ice on the 1st January. Using the CET series [ 'central' England ], the overall figure for the three 'classical' winter months of December, January & February showed an anomaly of -1.5degC on the all-series mean. December was around a degree (C) below average, but January was bitterly cold, with an approximate anomaly of at least -3degC; February was about average, but this was followed by a very cold March. March of 1667 was very cold: nominal CET (to nearest 0.5degC and perhaps inaccurate?) was 2degC, representing an anomaly on the 'all-series' mean of at least -3degC. Perhaps in the 'top-5' coldest March's of the series. (B)

1667

On August 19, a hurricane struck Barbados and St. Nevis.

On September 1, a hurricane struck St. Christoval in the Antilles.

On September 6, the "dreadful hurricane of 1667" is considered to be one of the most severe hurricanes to ever strike VA. On the first, this same storm was reported in the Lesser Antilles. The hurricane devastated St. Christopher as no other storm had done before. The "great storm" went on to strike the northern Outer Banks of NC and southeastern VA.

Number of typhoons striking Guangdong Province, China this year: 2. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1668

A hurricane struck Bermuda.

1669

In England, a cold year in regards to the milder ones proceeding it. Thames froze over, again.

Famine in Bengal with 3 million fatalities.

On August 17, a hurricane struck an island near Nevis and Cuba. On August 18, perhaps the same hurricane struck the northern Outer Banks of NC, and most likely affected VA. [NHC rank

112/259 with 182 dead on the island]

On August 24, a French ship is lost due to a hurricane off Bermuda.

Colder in London on 26th December than for past 5 or 6 years; freezing quickly for some days. Much colder than 1665 and 1666. (B)

1670-80s: No signs of significant waning. Maximum historical advances achieved by glaciers in eastern Alps; Vernagt glacier again caused flooding. Noticeable decline of human population by this time in areas close to glaciers, whereas population elsewhere in Europe had risen (Aber).

1670

The maximum glacier advances in the Alps occurred between 1670 to 1680 driving people from historic farming sites. This is evidence to support the Little Ice Age (1550-1850) is global in nature.

The Yangtze River basin in China freezes.

On August 18, a hurricane in Barbados.

On October 7, a hurricane in Jamaica and Barbados.

1671

Enso warm event.

In August, perhaps the first tornado recorded in American history occurred near Rehobeth, which is 7 miles east of Providence, RI.

On September 22-25, a hurricane struck at Ensenada Mexicana, Mexico (AGI Me'xico 2489, DOC S/N).

In September, in Norfolk, England, [near Lynn?]: "Marshland by a storm Monday Sept: 1671 was all-most quite drowned etc.; many cattle lost, ye banks broken downe & in many places being too low overflowne ..."

A cold winter over western Europe / implied for parts of Britain. The anomaly on the 'all-series' CET figure was approx. -1.5degC. (B)

1672

The Black Plague hit Naples Italy killing some four hundred thousand people.

In September, a hurricane traveled from Caracas, Venezuela to San Juan de Ulua, Mexico (AGI

Mexico 2489, DOC S/N).

In December, a major ice storm in England. The Bodensee freezes.

Floods in Timbuktu, like 1592.

1673

On September 11, a flood in Hartshead, Yorkshire, England.

A 'mixed' but extended winter: Bitterly cold in December, with a CET anomaly around -3degC, followed by a mild January (+2degC), then a cold or very cold February (-2degC). (B)

1674

On March 8-22, a blizzard along the border of Scotland and England. 13-day snowfall / blizzard - "The thirteen drift days" in the Scottish Borders began about 5th to 8th March (new style). Most of the sheep perished. From Norwich cathedral records (listed as 1673 some records, but I think this is the ecclesiastical year), a great snow (East Anglia / Norwich) from February 24th, which lay on the ground until Easter (end March) when it suddenly thawed. (Norwich/Cathedral records) In the CET series, the coldest March, (since 1659), with value 1degC (poor accuracy for the record so early on, but obviously very extreme). This represents an anomaly (on the 'whole-series' mean) of something like -4degC. (B)

On August 1, in Utrecht, The Netherlands, a tornado. This was one the Netherlands' most famous tornadoes and affected part of the city center. The nave of the cathedral (the Dom, the tower of which was the tallest building in the Netherlands until relatively recently) was destroyed, splitting the cathedral into two parts. There are some doubts as to whether the nave was destroyed by the tornado or straight line winds because details of the construction of the nave (which, in order to save costs, was constructed out of weaker materials than the rest of the cathedral) suggest that strong gusts would have been sufficient to damage and destroy the nave (Geurts 1985). However, contemporary press reports do indicate that a tornado did affect central Utrecht on the date in question (Geurts 1985) causing substantial damage. For example, the towers of five churches were damaged or destroyed and all but two windmills lining the town wall were also destroyed (Buisman 2000).

On August 10 a hurricane struck Barbados leveling 300 houses, sinking 8 ships, and killing 200. [NHC rank 101/259 with 200 dead]

A very cold summer in England. (B)

On December 21, a severe gale uprooted entire forests in Scotland.

1675

A very cold summer in England. (B)

A hurricane hits New England.

On September 10, a hurricane struck Barbados destroying all crops and killing scores. [NHC rank 97/259 with more than 200 dead]

On September 15-22, a hurricane traveled from Havana, Cuba to Campeche, Mexico (AGI Mexico 2489, DOC S/N).

Number of typhoons striking Guangdong Province, China this year: 1. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1676

In England, June exceptionally hot. There was 'exceptional' heat 19th June to 1st July 1676.

From December 16 to February 15, 1677, a severe frost in England with the Thames frozen over in divers places except for a narrow channel over which people passed using planks; a frost fair occurs (earlier ones in 1564, 1608, 1620, and 1634); the sudden thaw on February 15 caused many sheep, goats, and cattle to perish and broke down many bridges along with other great damage.

1677

In England, Thames is frozen, again! Becoming a regular occurrence.

From December 2, 1676 to January 13, 1677, a continued and intense frost in France.

The Seine was frozen across for 35 consecutive days.

In Hyderabad, India, excessive rains brought famine and virtually every village was wiped out.

1678

On Lake Ontario, a storm wrecked a bark for the first lake disaster in this area.

On September 2-13, a hurricane struck San Juan de Ulua, Mexico (AGI Me'xico 2489, DOC S/N).

On September 14-19, another hurricane struck San Juan de Ulua, Mexico (AGI Me'xico 2489, DOC S/N).

1679

On January 12, in England, an unaccountable darkness occurred at noon making it too dark to read.

On August 26 on Lake Huron, a gale sank the Griffin.

1680

On August 3 at Martinique, a hurricane shattered the island sinking 22 ships with great loss of life. Thousands died.

On August 14-15 at St. Domingo, a hurricane swept the area sinking 25 French ships with total loss of life. Thousands died.

1681

A very severe winter (80-81) in MA and PA.

In England on May 25 at Deptford, p428: "There had scarce fallen any rain since Christmas."  
Also on June 12 p428: "It still continued so great a drought as had ever been known in England, and it was said to be universal." Also "Drought from end March - mid July"

The island of Antigua was left desolate by a hurricane.

1682

A severe sea storm, like 1634, drowns thousands in Europe.

On June 20, a major tornado ripped through southwestern CT, passing through Stratford, Milford, and New Haven, and then into Long Island Sound.

On December 2, near Hamburg, Germany and over the Baltic Sea, a bolide created a mushroom shaped cloud that was many miles tall (observed and sketched by Eimmart)

1683

On August 23, a hurricane which made landfall in VA caused a tremendous flood in the Connecticut Valley; this was an inland storm, and probably dropped heavy rain on ME as it caused major flooding in CT.

On October 22, a hurricane struck Curazao, Venezuela (AGI Santa Fe 259, FOLS 207-213).

Starting in December, the Thames freezes two miles out to sea; a frost for 13 weeks; for 1683-84, a cold winter England; the ground is frozen to a depth of four feet in southwest England; there is extensive sea ice in the English Channel and off the Netherlands; severest winter on record since thermometers were invented.

A meter of ice is on the Thames River in London as a result of the Little Ice Age (1500-1800). It is frozen for 13 weeks.

In England, "Frost September-December: all rivers & fresh waters frozen" [Lune, Lancaster]

One of the four or five coldest winters over the British Isles (& large parts of Europe), and the coldest in the CET record. (LW/Manley -'Weather', but note that the CET record to the nearest 0.5degC at this time). The 15th December 1683 saw the onset of a great FROST in England & central Europe: Thames frozen down to London Bridge by 2nd January 1684, with booths on the ICE by 27th January and for more than a fortnight thereafter - coaches were observed on the ice and the royal court (King Charles II) visited the fair held on the frozen Thames. Many birds perished. This great frost was claimed to be the longest on record; the Thames in London was completely frozen for about two months and the ice was reported to be 11 inches (circa 28 cm) thick. Sea ice was reported along the coasts of SE England and many harbours could not be used due to ice: severe problems for shipping accessing such ports on either side of the North Sea. Near Manchester, the ground was frozen to a depth of 27 inches and in Somerset to more than 4 feet. The winter was 'incredibly severe' according to John Evelyn and a Frost Fair was held on the ice. "No vessels could stir out or come in while a thick FOG occurred towards the end of January which made it difficult to see across the streets". (This latter due to warm advection no doubt, as a THAW set in over snow/ice covered surfaces).

HH Lamb has constructed a tentative mean seasonal pressure pattern with high pressure in the Faeroes area, an arctic northerly from Spitzbergen to the Baltic, thence an anticyclonic east or northeasterly over NW Europe / British Isles. See also 1739/40; 1813/14 and 1962/63.

(Technically, this winter was the coldest in the CET series, but series here is noted to the nearest 0.5degC only). >> Using the CET series, both January (-3.0) & February (-1.0) has sub-zero mean temperatures, only one of four instances of successive 'sub-zero' months in that series (see also 1740, 1878/79 & 1963). This was the winter that was described so vividly by R.D.

Blackmore in his novel: "Lorna Doone". First half of February: based on reconstructed records: CET averaged (minus) 6.6 degC: the coldest 15 day period of the entire 336 year record (up to 1995, and almost certainly beyond that). On 18th Feb. 1684, rain / thaw after 8 weeks with Thames frozen: ships could reach Port of London by 20th/22nd. (B)

1684

The Thames thaws probably around February 20. 1684 January [p75] "The frost this year was terrible. It began in the beginning of December, 1683; there was then a constant frost for seven weeks, producing ice eighteen inches thick. Many parks of deer were destroyed, and flocks of sheep, the forest trees, and even the oaks were split by the frost; most of the hollies were killed, and nearly all the birds perished. The Kennet was froze over, and when the thaw came the greater part of the town [Newbury] was flooded; the town bridge was considerably damaged, and had to be temporarily secured by shores and props, while the neighboring Marsh Bridge was bodily carried away, and landed in a neighboring meadow. The flood of waters made a breach in the river bank at the bridge and in other places, so that great fears were entertained that the whole town would be inundated, but this was happily averted by the prompt measures taken."



Also on the above: "A cold winter brought the longest frost on record... Ice on the rivers was 11 inches thick ... tents were erected for selling wares, especially on the Wye near Hereford and Hay-on-Wye. A severe drought followed in the summer, with very high temperatures."

Also on the above: " ....ships could not pass out of the Quay in Bristol due to heaps of ice and mud congealed together. According to the Somerset County Herald it was the worst of the century's six prolonged frosts in Somerset. In Nicholls and Taylor's 'Bristol Past and Present' they reported that the frost began in early November 1683 and lasted until February the 5th 1684".

In England a frost fair on the Thames (previous ones in 1564, 1608, 1634, and 1677).

A very severe Dutch winter;

In 1684-85, a very severe winter in Switzerland with snow on the ground for an exceptionally long time.

Number of typhoons striking Guangdong Province, China this year: 3. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1685

In England, "Great drought in summer"

1686

A severe sea storm, like 1634, drowns thousands in Europe.

In May, in Lisle Netherlands hailstones up to 2 pounds in weight fall.

A hurricane struck Bermuda.

On July 3, a typhoon struck the Phillippines (report of the English pirate William Dampier). William Dampier wrote: the 4th day of July we got into a deep Bay, four leagues from the islands of Sarangani and Balut. But the night before, in a violent tornado, our bark being unable to beat any longer. Besides, we were forced to shelter ourselves from the violence of the weather, which was so boisterous with rains, and tornadoes, and strong westerly wind.

Number of typhoons striking Guangdong Province, China this year: 1. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1687

Isaac Newton postulated that the earth was not round but flatter at the poles. Science has proven that the difference is actually a significant 42 kilometers. Since the last ice age the poles have been expanding as the heavy ice slowly melts and the earth springs back.

In September, mountain torrents inundated Navarre, Spain and killed 2000.

On September 27, a typhoon struck the Phillippines (report of the English pirate Dampier on board the Cygnet of London). "We were surprised on September 25th, with a most violent tempest which forced us out to the sea and we were every moment in danger of being swallowed up by the waves till the 29th, when the fury of the winds being allayed, we made the best of our way back to the island. The last storm so disheartened our men that all resolved to lay aside their design of cruising before Manila".

1688

On March 1, a hurricane is reported east of Jamaica.

In England, long and severe frosts for the 1688-1689 winter. Thames froze over. Long and severe frosts. (noted as lasting from 20th December to 6th February); frost fair held on the Thames. (B)

1689

On Nevis, a hurricane swept away one half of the inhabitants.

1690s: Moderate withdrawal of many glaciers in Alps took place; Chamonix glaciers retreated about 500 m. Norwegian glaciers experienced opposite trend, however, with marked advances (Aber).

1690

Late in this year, the Yangtze River freezes.

1691

Continuing from the previous year, the Yangtze remains frozen.

The wolves driven by hunger entered Vienna and attacked man and cattle (Hayden).

The Viking displaced the Westman (Celt-Pict) people from the coastal settlements of Ireland and Scotland. Most of Ireland is in Viking hands and some Irish fled to Iceland. In Fife, many areas were 'knee-deep' in snow from January until the beginning of April; there was 'great distress' by reason of sickness.

A hurricane in Antigua and the Antilles and off the Florida east coast. [NHC rank 62/259 with 496 dead]

In England, "The winter of 1690/91 saw a longer frost than that of 1683/84 but not so severe." [Idle]

1692

On March 4 at New Haven, CT, a violent storm of wind and rain with another such storm a week later.

In England, on July 25 "...noted in the Bath Natural History and Antiquarian Field Club, "" this whole summer was exceedingly wet and rainy the like had not been known since 1648, with a great deluge of rain at reaping time""

On June 7, a hurricane in Jamaica. [NHC rank 142/259 with more than 100 dead]

On October 24, a hurricane in Puerto Rico and Cuba left 235 dead.

1693

In late March, a single sunspot group crosses the sun for 4 days, the only observed sunspot between 1684 and 1700. The 1690s are very cold.

Famine in France probably from drought.

On October 29, a "most violent storm in VA" stopped the course of old channels and created new ones from VA northward to Long Island. The great storm was violent as it passed through Acomack, which was located on the Delmarva peninsula between Chesapeake Bay and the Atlantic, sixty miles northeast of Norfolk. This storm may have created Fire Island Cut, to the east of NYC.

Hekla (Iceland) experienced enormous eruption, in which 22,000 km<sup>2</sup> of land was covered by tephra fall; 55 farms were ruined or badly damaged in neighboring districts (Bárdarson 1991).

1694

1694 was a cold year (London/South): the CET value for 1694 was ~ 7.7degC [ crude data at this date ], which is some 1.5C below the long-period average & would place it in the 'top 5 or 6' coldest years in that series; a notably cold summer using the CET record. (B)

On August 13, a hurricane at Ft. James, Barbados.

On July 3, a typhoon struck the Phillippines (History of the Phillippines by Rev. Father Pedro Murillo). The Galleon San José ran aground on the island of Luban in a furious typhoon. It was shattered to pieces, resulting in the total loss of its cargo and the death of more than 400 persons.

On September 27 at Barbados, a hurricane swept the island and 26 British merchantmen sank in the Carlisle Bay. 3000 people died. [NHC rank 34/259 with more than 1000 dead]

Early November (old-style): Notable storm. Villages in NE Scotland (near the Moray coast)

buried in sand due to a prolonged northerly or northwesterly gale. (B)

Long and severe frosts in England during the winter of 1694/95. A severe winter. December 1694 - frost / snow started in London on 25th. At Oxford, frost began around 28th (new style calendar). (B)

1695

January 1695 - Fairly general 'severe' conditions. Thames frozen on 23rd and by the 30th, frost / continual snow had last for 5 weeks in London.

February 1695 - Deep snow after heavy falls 8th/9th. More snow end of month London area.

March 1695 - further 'significant' snowfall. April 1695 - severe frost / heavy snow continuing well into the latter part of the month. (B)

In England, "By January 13th the Thames was frozen over, and the winter, which was characterized by severe cold and snow, did not end until April 14th...."

Iceland is surrounded by ice. It is one of the worst winters in English history.

The Bodensee freezes.

A cold summer in England. This summer was one of the first of a sequence of disastrous harvests in Scotland, where famine ensued.

Iceland glaciers are advancing dramatically during the period of 1695 to 1709.

At Abrekke, Norway, glacier expansion destroys pastures.

On October 2 at Martinique, a hurricane swept the island with a dozen French ships sunk and 600 people drown off the western side of the island. [NHC rank 52/259 with more than 600 dead]

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

An interval of snow / frost in the London area after mild, dark misty weather and before a long wet spell which lasted until February 1696. Intense frost (London/South?) on 26th January (1696), temperature 9 degrees (?F) below zero in London. (in degC this would be: -23degC.) (B)

In England, the year 1695 was reckoned to be one of the coldest years ever known. The severe (exceptionally long/snowy) winter ended around 21st April. During April & May, the greatest extension of Arctic sea ice ever known (!) spreading around the entire coast of Iceland. The CET value (crude assessment for this period of the series)=7.3degC, 2nd coldest in that series. (B)

1695-97:

Great Famine of Estonia. Climate was unfavorable for crops in 1694; summer of 1695 was cold and rainy, followed by an early autumn frost that destroyed the summer crops. Cold conditions continued during 1696, and rain fell throughout the summer. Peasants, orphans and the elderly began to die en masse of starvation. Melting of snow in spring 1697 revealed many corpses. Meanwhile, rich landlords and merchants exported grain to Finland and Sweden, where crops also had failed. 70,000 to 75,000 people died during the famine in Estonia, which did not end until 1698 (Tannberg et al. 2000).

1695-1709:

Outlet glaciers of Drangajökull and Vatnajökull (Iceland) advanced dramatically, approaching or destroying farms. One farm at Fjallsjökull dated from AD 900 (Bárdarson 1991).

1696

In the Bay of Cromer, Norfolk, England, 200 sailing ships are lost in a violent storm; most of the crews perish.

In 1696/97, a severe winter in England. On 11th December: East wind brought in spell of snowy weather lasting until February 1697. West wind 27th to 29th December brought more snow, but did not break the long frost near London.

1697

On 8th January: NE gale renewed the frost ( after brief intermission with rain and drizzle in the London area 6th to 8th ).

In February, it was a severe month in a severe winter in a decade of severe winters. CET=+ 0.5degC (at this point, the series is the nearest half-a-degree C only). [c.f. with the 1961-90 mean of 3.8degC.] Not a 'record-breaker', but certainly colder than we have become used. (B)

On April 29, a major hailstorm in Wales through Yorkshire according to Halley; some stones weigh over a half of pound.

On May 4, hailstones 14 inches in circumference fell in Hertfordshire, destroying trees and corn.

A hurricane struck the United States east coast.

A hurricane struck St. Thomas.

In the autumn in England, a very cold season. Frosts sharp/severe in November, with rivers in Netherlands were blocked unseasonably early (even for those cold times). Fall of snow in the London area on the 24th November. Remaining cold/sleet/snow to the end of the month. (B)

In November, a typhoon struck the Philippines. With the aim of discovering the Palau Islands, a schooner was built and equipped in Manila through the contributions of several persons. On it

embarked Jaime Javier, a Dutch Jesuit, well versed in nautical lines. About November, the schooner reached Balangiguan and Javier landed, as if urged by Providence. For on that night a terrible storm arose which broke the cable of the vessel, took it away from its port, and lashed it with such strength that it miserably sank with all hands on board. Brother Jaime Javier had instructions to go to Guiuan, to meet Fr. Francisco Prado, in order to start from there together for the discovery of Palau Islands. This father had already prepared for this purpose a big vessel named Sacayan by the native of Visayas.

1698

In England, this winter continued with severity well into May [1698]. There was deep snow all over England on the 3rd May (after snowfall up to 6 inches/15cm in Yorkshire on the 1st - and a keen frost) and the spring of 1698 was the most backward for 47 years; further snowfall 13th May in London and Yorkshire, with corn/fruit crops damaged. More snow 19th in Shropshire - described as 'deep'.

It is a most terrible winter (97-98) for continuance of frost and snow, and extremity of cold, that ever was known in MA.

Glaciers expand in Iceland destroying towns.

On December 12, a hurricane struck Pensacola, Florida (AGI Me'xico 618, DOC 10).

1699

A violent storm struck Charleston SC.

On the Sunderbans coast of present day Bangladesh, a cyclone killed 50000 people.

On December 10, a severe ice storm hit Boston MA causing much damage to orchards.

1700

China takes Formosa.

A hurricane in Barbados.

On September 14, a hurricane struck Charleston, SC. [NHC rank 152/259 with 98 dead]

1701

On April 5, a hurricane in the Antilles.

1702

In England at a S W Wiltshire farm:" Yet another hot dry summer. March was a dry month, and very little rain fell from April 23rd to May 29th...."

A hurricane in Barbados.

1703

On October 18, a hurricane caused great damage along the Mid- Atlantic coast. In MD and VA, many vessels left their moorings. Ten tobacco houses were overturned. Damage occurred northward to Philadelphia. Across the Northeast, northeast winds caused a very cold rain to fall. The timing of this storm was quite unusual, as it followed a very early season snowstorm by eight days.

On November 26-27, the "Great Storm" struck England wrecking over 100000 homes and crippling the Royal Navy. Thousands died. 30000 sailors were lost at sea. The poorly built Eddystone Lighthouse is destroyed. "Sea salt is often contained in rain, and after the 'great storm' of November 27th, 1703, salt was found on the trees fourteen or fifteen miles from the coast. A letter from John Fuller, of Sussex, dated December 6th, 1703, published in the Philosophical Transactions for 1704, says, 'We live ten miles off the sea in a direct line ... but that the sea-water was blown thus far, ... all the twigs of the trees the day after were white, and tasted very salt.'"

December 30: An earthquake kills 200000 in Tokyo, Japan. Others suggest the death toll was closer to 37000 people.

1704

In July in England at a South West Wiltshire farm:"...A drought occurred in June and July, and the grass was burnt up. Autumn also was very dry "

On July 30, a typhoon struck the Phillippines (History of the Phillippines by Rev. Father Pedro Murillo). Terrible storm on the eve of Saint Ignatious. It was a typhoon on account of the force of the wind and the waves.

1705

In late January, a severe winter in PA and MA with 3 feet of snow in Philadelphia.

On February 7, a hurricane in the Antilles.

On April 23, a hard freeze in Boston;

On August 15, a hurricane struck Havana sinking 4 Spanish warships and killing nearly 100.

50% of Limerick Ireland is flooded.

1706

The second severe winter in a row in MA and NY.

In Brazil there is an obscuration of the sun.

On May 12, a dark day in New England.

In August in England, "...Following a dry spring very little rain fell at all over the whole country [England] for the three months before harvest. "

On November 6, a severe storm raged offshore of VA before it swept up the coast. A fleet met the storm soon after departing the VA shore. Fourteen ships foundered on the north coast of Cape Charles; those ships that returned sustained extensive damage to masts and sails.

1707

Mount Fuji, Japan exploded, following a 8.4 earthquake, sending ash to Tokyo 70 miles away. Fuji has erupted about 10 times since 781. This 12388 foot mountain became a point of pilgrimage.

In England, "Another hot dry summer, though with showery weather in harvest. An early dry period occurred from March 12th to May 22nd, with hot days and cold nights..... "

A hurricane in the Caribbean islands (St. Nevis and Antigua).

In September, a typhoon struck the Phillipines (History of the Phillipines by Rev. Father Pedro Murillo). On this typhoon, Murillo gives the following information: "On September, 1707, the Capitana was lashed by storms so furious that it was considered a singular favor for any vessel not to sink in the gulf. The hull of the vessel was almost shattered to pieces owing to the force of the waves."

On December 17 and continued to 1721, a flood at Dagenham in Essex, England.

1708

In England, the coldest Spring, Summer, and Autumn for 47 years, other than 1698!

On August 23, a typhoon struck the Phillipines (report from a Portuguese ship). A typhoon raged over the China Sea about the middle of August 1708. We are told that the ship N.S. Das Neves coming from Goa entered the port of Macao on the 23rd of August shattered by a typhoon.

In the southwest Caribbean Sea, a hurricane struck [NHC rank 55/259 with 578 dead]

In 1708-09, a frost throughout most parts of Europe though scarcely felt in Scotland and Ireland;



people walked across the Baltic; many trees killed in France by the frost; all orange trees lost in Provence; vineyards abandoned in northern France.

From December to March 1709, frost in England with heavy snows.

In England, severe winter, the frost lasted for over 3 months! Temperatures plummeted to -18c. Thames froze in London, once again! Severe winter by CET values (1.2c).

1709

January 5: Sudden extreme cold kill's 1000's of Europeans and famine follows because of the bitter cold winter.

In England the frost lasts from December 1708 to March 1709.

The Gulf of Venice and the Mediterranean at Genoa, at Marseilles, at Cette, etc. was frozen.

The Adriatic Sea was frozen and olive trees were killed in the south of Europe.

Coldest winter in memory with heavy snow in Scotland.

The Thames froze over completely, with the usual 'booths & tents' being set up on the frozen surface.

In most of Russia, a severe winter and spring floods, plague and epidemic caused the death of large numbers of people.

"This year was perhaps the most terrible that France had ever known. On 12 January, the cold came down. In four days the Seine, all the rivers and the sea on the Atlantic coast were frozen solid. The frost lasted for two months; then there was a complete thaw; as soon as the snow which had hitherto afforded some protection to the land, melted away, the frost came again, as hard as ever. The winter wheat of course was killed as were the fruit, olive and walnut trees; and nearly all the vines; the rabbits froze in their burrows; the beasts of the field died like flies." (Mitford, Nancy, 1969. "The Sun King: Louis XIV at Versailles", Sphere Books London 256 p.)

Probably the coldest winter across Europe (as a whole) in a series starting 1500; combining proxy & instrumental data. [University of Berne / RMetS / 'Weather' 2004] (B)

To the curse of devastation was added an unkind prank of nature, when at the end of 1708 a winter, cruel beyond the precedent of a century, set in to blight the region. As early as the beginning of October the cold was intense, and by November 1st, it was said, firewood would not burn in the open air! In January of 1709 wine and spirits froze into solid blocks of ice; birds on the wing fell dead; and, it is said, saliva congealed in its fall from the mouth to the ground.

Most of Western Europe was frozen tight. The Seine and all the other rivers were ice-bound and

on the 8th of January, the Rhone, one of the most rapid rivers of Europe, was covered with ice. But what had never been seen before, the sea froze sufficiently all along the coasts to bear carts, even heavily laden.

Narcissus Luttrell, a famous English diarist of that day, wrote of the great violence of the frost in England and in foreign parts, where several men were frozen to death in many countries. The Arctic weather lasted well into the fourth month. Perhaps the period of heaviest frost was from the 6th to the 25th of January. Then snow fell until February 6th.

The fruit trees were killed and the vines were destroyed. The calamity of this unusually bitter weather fell heavily on the husbandman and vine-dressers, who in consequence made up more than half of the emigrants Of 1709. “

Last four paragraphs from <http://www.horseshoe.cc/pennadutch/history/european/knittle.htm>

In May, a typhoon struck the Phillippines (Jesuit report?). The Governor of the Philippines, Zabalburú, prepared a good and well-equipped vessel for the discovery of the Palau Islands. In the sea of Marinduque, they were caught by a severe typhoon.

In June, four typhoons were near the Phillippines. The expedition send from Manila to discover and explore Palau Islands met four typhoons in the Pacific between Samar and the Palau group.

In July, a typhoon was near the Phillippines. The expedition sent out by the Governor of the Philippines to discover the Palau Islands encountered a severe typhoon in the Pacific.

1710

Norway's glaciers are advancing at 328 feet (100 meters) per year from 1710 to 1735 as a result of the Little Ice Age (1550-1850).

1711

The Black Plague struck the Holy Roman Empire killing five hundred thousand people.

A cold spring/summer in Europe.

In August, in the north Atlantic a hurricane struck an English Armada and 8 transports with 1342 soldiers are lost.

On October 18, a typhoon struck the Phillippines (History of the Phillippines by Rev. Father Pedro Murillo). This typhoon must have occurred on October 18, because according to Murillo, Father Andres Serrano went to his reward on October 18, 1711.

1712

Thomas Newcomen (1663–1729), using patents developed by Thomas Savery (1650?–1715), invented the first working steam engine and by 1778 more than seventy Newcomen engines were pumping away in the mines of Cornwall alone.

On August 28, a hurricane in Jamaica. [NHC rank 68/259 with more than 400 dead and dated September 8]

On September 8, a severe hurricane struck Bermuda.

In October, a hurricane in Cuba.

1713

A hurricane struck St. Thomas.

2 hurricanes strike Bermuda.

In August, a hurricane in New England.

On September 4-5, a hurricane struck Martinique. [NHC rank 150/259 with 100 dead]

On September 16-17, a great storm attended by immense inundation affected the Carolinas and VA. The effects were most significant in Currituck county, NC near the VA-NC border, where the storm surge breached the Outer Banks and opened several inlets into the Currituck Sound; 70 were killed. It is the third hurricane of note in this area and it blew buildings down. 70 died. [NHC rank 173/259 with 70 dead]

1714

In England, the second driest calendar year at "Kew" over 1697-1970 with 12.27 ins. rain.

On August 13-14, a hurricane in Guadeloupe.

On August 29, a hurricane in Jamaica.

A hurricane in Cuba.

1715

On July 30, a hurricane struck the south Bahamas and straights of Florida, killing more than 1000 people. [NHC rank 35/259 with more than 1000 dead]

On August 26, a hurricane struck Tampico, Mexico (AGI Mexico 856, DOC S/N).

1716

In England, Thames frozen for 2 months, frost fair took place. Ice on Thames in London lifted around 15 feet by a flood tide but remained intact! The ice must have been astonishingly strong. In early 1716, the Thames was frozen at London; a great number of shops and stalls were established on the river. A frost fair is held on the Thames (previous ones in 1564, 1608, 1620, 1634, 1677, and 1684).

In September, "A year of drought. A cold dry spring was followed by an equally dry summer, though without great heat.....On September 14th the bed of the Thames lay dry above and below London Bridge. This was caused by a combination of drought, strong westerly winds and high tides.... "

On September 14, the Thames was dry above and below the London Bridge.

On October 21, an extraordinary darkness at noon in New England.

1717

A cold winter in England.

From February 27 to March 7, a great snowstorm leaves 36 inches in Boston and 60 inches northward.

In July, a typhoon struck the Phillipines (Jesuit report). It was the fiercest typhoon ever experienced in these islands and hardly a house remained undestroyed however strong it was.

On December 25, Zealand, Holland flooded with 1300 killed. A flood in Holstein Germany with incredible damage in Hamburg.

1718

On March 6-7, a hurricane in St. Vincent.

In France, it one of the hottest and driest summers (Ladurie).

In September, a hurricane at St. Nevis.

1719

The land is torn away at Catwyck, which, though once far from the sea, is now upon the shore.

In Europe, the second hot and dry summer in a row.

A great snowstorm struck a caravan on a journey to Drontheim Sweden killing 7000.

1720

A severe winter (1719-20) on Atlantic seaboard and said to have been coldest ever in VA.

A hurricane in Barbados and offshore Barbados. [NHC rank 60/259 with more than 500 dead]

On August 22, a typhoon was near the Philippines (report in a Jesuit letter). The part of the Cantova's letter which refers to the typhoon says: "On the 18th of August of last year, we entered the Pacific Ocean through San Bernardino and on the 22nd of the same month, we were caught by a storm so furious that we were forced to lighten the ship and cut the masts. Afterwards we met two other typhoons which forced us to change our course and navigate up to the parallel of 23 degrees."

Engabreen (Norway) buried a farm; other glaciers threatened farms in Norway.

China takes Tibet.

1721

In Russia, cold weather led to crop failures and famine.

A volcanic haze is reported.

1722

On May 18, the Ripon Flood in Yorkshire.

In August, the Carolinas are damaged by a hurricane.

On August 28, 90 ships near Jamaica wrecked by a hurricane and 400 are killed; Port Royal is destroyed. [NHC rank 84/259 with more than 280 dead]

On August 31, a hurricane in the Antilles.

On September 8-9, a hurricane hits Jamaica and the Cayman Islands. [NHC rank 69/259 with 400 dead].

On September 22-24, the first well documented hurricane hit LA. It initially moved through the Lesser Antilles on September 11, later making landfall west of the Mouth of the MS on the 23rd, then passing through Central LA. This same storm most likely recurved northeast into SC, as they reported 3 days of flooding rains around the 27th. Hurricane force winds lasted 15 hours beginning on the night of the 22nd. Storm surges were reported to be 3 ft. at Bayou St. John and 8 ft. in the MS River.

A cold winter in England.

1723

Madrid Spain is flooded and many prominent people drown.

On September 11, a destructive hurricane struck New Orleans, LA. 24 died.

A hurricane in Martinique.

In 1723-24, England has a very mild winter.

1724

On August 23, the Great Gust of 1724 occurred in VA. Almost all tobacco and much of the corn crops were destroyed by a violent tropical storm, which struck Chesapeake Bay. "Violent floods of rain" and "prodigious gust of wind" were seen upon the James river. Some homes were wrecked and several vessels were driven ashore (Ludlum). One ship was wrecked while on the James river. It may have been followed by a second tropical cyclone on the 28th, as rains continued in VA for days.

On September 12, a hurricane struck Hispaniola. [NHC rank 131/259 with 121 dead]

1725

Savaii, Samoa volcanic eruption.

Famine in France.

A very cold summer in England, being the coldest on record where thermometer records exist; July in London is described more like winter than summer.

A very cold and dry in Southwest United States through 1727 based on tree rings.

A hurricane struck Trinidad and Tobago.

Number of typhoons striking Guangdong Province, China this year: 1. Also one of the 20 warmest years (actually the warmest of all the years) between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1725-1726

In England, severe winter.

1726

Persons crossed in sleighs from Copenhagen to Sweden.

A violent storm changes the salt marsh at Araya, in the province of Cumana, into a gulf several

leagues wide.

In March, floods in southern England raised the level of the Thames and inundated Salisbury Cathedral.

A warm/dry summer in France.

2 hurricanes strike Bermuda followed by many storms.

On July 23, a typhoon was near the Philippines (report of the galleon). The Galleon Santo Cristo de Burgos was on her way to Acapulco when it was overtaken by a furious typhoon and driven by the winds and waves on the rocks Ticao Island.

On October 22, a hurricane in Martinique.

1727

On September 9, a hurricane nearly destroys St. Domingo.

A dry year in England (see 1741), perhaps the driest of the century.

Number of typhoons striking Guangdong Province, China this year: 1. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1728

On August 19, a hurricane struck Antigua.

In August, a hurricane struck Bermuda.

On September 14, a great storm (hurricane?) struck Charleston SC.

Number of typhoons striking Guangdong Province, China this year: 3. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1728-1729

In England, a severe winter, frost and snow remained for at least a month. Very cool spring.

1729

On January 1, an extremely dense fog in London causing many to lose their way and fall in canals, etc..

A hurricane struck San German, Puerto Rico (AGI Santo Domingo 546, DOC S/N).

1730

Earthquake kills 130000 in Hokkaido, Japan.

Lanzarote, Canary Island, volcanic eruption.

A drought started in England and lasted until June 1734.

Concepcion Chile flooded entirely.

A hurricane in Cuba.

From 1730 to 1760, orange trees thrive in SC where it is now too cold for them.

1731

An earthquake kills 100000 in Beijing, China.

Drought in England. A dry year in England (see 1741). Very dry, after a 'great frost' at the start of the year. Very cold first period of the year, with much snow and ice. London recorded -18c. A warm summer. This year resembles 2003 quite closely, very dry with a minimum of -18 recorded in London (-18c recorded in Aviemore January this year? (2003)) followed by a warm summer (ours has been hot 100F reached and breached) But the similarities are evident, especially on the side of drought.

A hurricane in Barbados.

In England, snow is remarkably deep.

1732

A severe winter (1732-1733) on Atlantic seaboard with DE Bay frozen until March 15.

The worst famine ever in Japan.

In Russia, cold weather led to crop failures and famine.

On August 9, a dark day in New England.

The drought continues in England for its third straight year.

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

Vatnajökull crushed ruins of Icelandic farm that had been abandoned during earlier advance



(Aber).

1733

On June 30 at St. Kitts, a storm sinks 20 ships.

Drought in England continues for its fourth straight year.

On July 15-16, Cuba, along with the south Bahamas, FL, and the Florida Straits, is struck by a hurricane. [NHC rank 187/259 with 56 dead]

In England, for 1733/34, one of the warmest winters (by CET) in the series which began in 1659. Up to 1997, rank=9 Value=6.10; Dec=7.6, Jan=4.3, Feb=6.4 (Others: 1686, 1796, 1834, 1869, 1935, 1975, 1989 and 1990.) (B)

1734

Famine hit Japan resulting in 3 million starving to death.

Drought in England continues for its fifth straight year, but finally ends in June.

On September 1, a hurricane at Jamaica.

On December 11-12, a typhoon struck the Phillipines (a manuscript which narrates the principal events that took place in Balayan, Batangas). A hurricane which blew down almost all the houses of the town, prevented the peoples from attending the midnight mass, and destroyed the crops of palay and other cereals.

Turkish-Persian War (1734-1735).

1735

On January 8, the westerly or west-south-westerly gale on this date was the most violent since the destructive storm of November 1703. The damage in London was considerable; several houses were destroyed, practically every street was covered with tiles, and 36 trees were uprooted in St. James' Park. (B)

In February, at Dagenham and on the coast of Essex, a flood carried away sea walls and drown several thousand sheep and black cattle.

In Iceland, Nigardsbreen glacier destroyed pasture land and threatened a farm, which was completely destroyed by ice in 1743 (Aber).

1736

In England, snow is remarkably deep.

On December 24, the Thames floods.

1737

On September 9, a hurricane struck St. Louis, St. Domingo, St. Kitts, and Montserrat.

On October 7, a cyclone created a monstrous wave of 40 feet and destroyed 20000 ships at the mouth of the Hooghly river. 300000 people died.

1738

Famine in France.

A hurricane struck Guadeloupe and St. Thomas.

On Sep 5, a typhoon struck the Phillipines. From the morning of the 5th to the morning of the 6th, Macao experienced a dreadful typhoon which did enormous damage and caused tremendous waves of the sea. No similar typhoon was remembered to have struck the colony since its foundation. The loss of ships and Chinese sampans were appalling.

1739

The North American potato is introduced to Scotland greatly improving the productivity of agriculture to accommodate the rapidly growing population.

Cold spring/summers in Europe (1739-1741).

On September 9, a hurricane struck the Antilles.

In Ireland, an early frost destroyed the potato crop and famine followed.

In France and Germany, a cold spring and summer leads to a poor vintage (Ladurie).

In England, October, Easterly wind set in heralding frosts. The beginning of another 'Big One!'.

A frost of 9 weeks starts on December 24 in England.

Starting December 14, a severe frost in England for 9 weeks or 103 days (i.e., until March 27, 1740). This winter was extremely severe and may have been worse than that of 1715/16.

1740

The frost in England ends after 103 days on April 5. During the winter of 1739-40 the frost began

on Christmas Day 1739 and continued until February 17th 1740 and was known as the Great Frost. Again, when the ice thickened, the Frost Fair on the Thames (after 1564, 1684, 1608, 1632, 1677, 1684, and 1716) with roasted ox was held on the river.

Also the Seine was frozen.

There is a heavy snow in Scotland.

There is famine in Russia and France.

Also Lake Constance in central Europe froze over (see also 1829 and 1963).

It is a cold summer in England with temperatures remaining below normal until 1741; 1740 is the coldest calendar year in England since 1659.

A cold growing season in Scandinavia.

On July 11-13, a hurricane struck San Toma's Island and San Juan, Puerto Rico (AGI Santa Fe 572).

On August 29, an intense hurricane in Antigua, Martinique, and St. Domingo.

A hurricane struck Puerto Rico.

On September 23, a hurricane struck the Mouth of the MS River. It destroyed a large portion of the crops and left many colonists without shelter. The storm, along with others during the 1740's, removed all traces of the original habitation of La Balize. An island named San Carlos surfaced, and became the new site of the Balize.

In England, coldest October on record, with ice already formed in parts. 1740 was very cold as a whole, the spring was also cold.

On November 1, a hurricane struck the coast of England.

On December 7, two weeks of mild and rainy weather culminated in the worst flood in fifty years in the Lower CT River Valley. The Merrimack River swelled to its highest level, and in ME the raging waters swept away mills, carried off bridges, and ruined highways.

1741

The severest winter (1740-1741) on the Atlantic seaboard since 1697-98; rivers frozen until mid-April in CT with 3 feet of snow.

In England, a dry year. "There is no doubt that 1921 was the driest year since 1788 but beyond that it is only possible to say that the year 1921 was about as dry as any year since 1727, over

England generally, but that the four years 1731, 1741, 1743 and 1788 were probably about equally dry."

On September 8, a tornado struck in Huntingdonshire England causing considerable damage and one death.

Drangajökull glacier destroyed another farm in Iceland (Aber).

1742

A severe frost in England for many weeks. Ice in the Thames, very cold once again.

Also the Seine was frozen.

A hurricane struck St. Thomas.

On September 23, a typhoon struck the Mariana Islands (report of Lord Anson's Centurion). Late in August, 1742, the Centurion arrived at Tinian, Mariana Islands. Many of the marines being sick with scurvy were removed to the shore. The narrative of the storm that occurred while many patients were still ashore is as follows: "By the middle of September many of the sick had tolerably recovered and were sent on board the ship; the Commodore who was himself ill of the scurvy, had a tent erected for him on shore, where he stayed several days. Under these abnormal conditions, the wind on the 22nd, blew from the eastward with such a fury that we soon despaired of riding out the storm; all the communication with the shore was now effectually cut off, for there was no possibility that a boat could live, so that we were necessitated to ride it out, till our cables parted."

In November, a typhoon struck the Philippines (manuscript dated 1743 and written in Manila). In a manuscript dated 1743 and written in Manila, we read the following account: "On All Saints' Day of the last year, 1742, we experienced such a storm, as never before had been seen in Manila. It caused the greatest destruction to the churches and houses of the Society of Jesus. In our church, some arches were damaged. The big window of the choir with its frame was forced in; the rain rushed in and the church was so full of water, that mass could not be said on some of the altars the next day. The corridors of many houses were destroyed, and in a word, there is scarcely a roof in Manila that is not damaged."

1743

A dry year in England (see 1741).

On October 22, a hurricane struck the northeastern United States.

Benjamin Franklin had planned to study a lunar eclipse one evening in 1743, but the remnants of a hurricane ruined his evening. His curiosity aroused, Franklin gathered additional details and learned that the storm had moved up the Atlantic seaboard and against the surface winds. Thus

science took the first step toward a basic understanding of hurricanes.

1744

The Seine was frozen.

In August, the Carolinas are damaged by a hurricane.

On October 31-November 1, 104 ships and 182 men are lost in a hurricane in Jamaica. [NHC rank 111/259 with 182 dead]

In November, a hurricane struck Cuba.

1745

In May a hailstorm in Yorkshire England with stones 5 inches in circumference.

A hurricane struck the Caribbean islands.

Number of typhoons striking Guangdong Province, China this year: 2. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1746

In January, a hurricane-like storm is observed at 40 N in the Atlantic.

On October 2, a cyclone in Madras India destroys French fleet.

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1747

On September 15, a hurricane in VA came twenty three years after the "Great Gust". A ship load of indentured servants, whose goal was to cross the Atlantic and pay for it with years of servitude, was lost in the Rappahannock River. She was struck just south of Urbanna by a "sudden violent hurricane" and immediately capsized. More than fifty drowned during the storm (Shomette).

On September 21, a hurricane struck St. Christopher.

On October 24, another hurricane struck St. Christopher.

On October 24, twin hurricanes in the Leeward Islands wrecked 50 ships and killed hundreds.

On December 1 at Cologne, Germany, 100 persons and carriages were carried away by a flood.

A very severe frost in Russia.

Number of typhoons striking Guangdong Province, China this year: 1. Also one of the 20 coldest years (actually the coldest of all the years) between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1748-50: Norwegian glaciers achieved their historical maximum Little Ice Age positions (Aber).

1748

A severe frost in the Carolinas hurts orange production there.

A winter of deep snow with up to 4-5 feet in MA with 2-3 feet as late as April 15th in Cambridge.

In summer, fires throughout the western United States caused by drought.

Great dearth in England.

In England, severe frost in November in London and the South.

On December 4, a typhoon struck the Philippines (History of the Philippines by Rev. Father Pedro Murillo). In a horrible typhoon, a wave carried away P. Ignacio Generoso Serra with four other Fathers who probably were eaten by the sea monsters, because only one corpse was found of the many passengers who perished.

During 1748 to 1750 the Norwegian glaciers achieved their historic maximum for the Little Ice Age (1550-1850).

1749

A severe drought in New England (May-June). On June 25, a general fast was called on account of drought in MA. It was the year of the famous dry spring in which fields and villages burned.

On June 29, the famous hot Sunday (>100 F in Philadelphia).

On September 18, a hurricane struck Belize and at least 20 English merchantmen were totally lost on coast and off cays and reefs.

On October 19, a tremendous hurricane tracked offshore VA, northeast to Cape Cod. At 1:00 a.m. at Norfolk, winds became violent from the northeast. The fury of the storm peaked between 10:00 a.m. and 2:00 p.m.. In Williamsburg, one family drowned as flood waters carried their house away. At Hampton, water rose to four feet deep in the streets; many trees were uprooted or

snapped in two. Torrents of rain flooded northern VA and MD. The Bay rose to fifteen feet above normal...destroying waterfront buildings. The storm alters Virginia shoreline. A hurricane destroys Fort George, site of present Fort Monroe, Va., and creates Willoughby Spit in Norfolk. According to one record, "A sand spit of 800 acres was washed up."

In England, Severe frost in November, again in the South and London.

1750

On August 10, the Don River floods its banks and does great damage.

In August, a hurricane was observed in the Bahamas Channel (AGI Contratacio'n 2527, N 5).

On September 2, Gloucester, England damaged by a violent rain.

On December 24, The weather is so warm here [Scotland] that birds have new nests with eggs and young ones in the hills near us; we never knew such fine weather as we have had of late. (Phil Trans.).

1751

In February at Ceuta in Barbary, 200 houses are blown down by a windstorm.

On March 7, a violent storm at Nantz (France) sinks 66 vessels killing 800 sailors.

On March 7, a hurricane struck Jamaica.

On March 12, New England is swept by a violent storm.

On August 10, a hurricane hit Jamaica causing extensive damage.

On September 2, another hurricane struck Jamaica.

On September 15, a hurricane struck St. Domingo.

In October, a hurricane struck Jamaica and St. Domingo.

On December 8, a violent storm in Cadiz Spain sinks 100 ships.

Number of typhoons striking Guangdong Province, China this year: 1. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1752

On September 15, a great hurricane produced a tide along the SC coast which nearly inundated

downtown Charleston. However, just before the tide reached the city, a shift in the wind caused the water level to drop five feet in ten minutes. Over 500 homes are destroyed. [NHC rank 139/259 with 103 dead]

On September 19, in Wales, rain destroyed 10000 sheep.

On September 26, a hurricane in Cuba killed 100.

On October 1, the second severe hurricane in two weeks hit the Carolinas. The Onslow County Courthouse was destroyed along with all its records, and Beacon Island disappeared.

In December, a typhoon struck the Phillipines (certifate of death from the parochial books of Siriaya). On the 12th of December, 1752, Christian burial was given in the church of our Father, S. Francisco, to Luis de Villanueva, young man who died suddenly, his house having toppled over him on account of the typhoon and thus preventing him from receiving the last sacraments.

1753

Lisbon, Portugal is destroyed by earthquake and tidal wave. Some suggest it was 1755. The ministers in Boston proclaimed it was punishment for the sacrilege of using lightning rods invented in 1753 to avert the wrath of God.

It is a mild winter (1753-1754) on mid-Atlantic coast.

On May 19, a typhoon struck near the Phillipines (report of the galleon N S de Guadeloupe or Mexicana). When the galleon was navigating from Siam to Manila, to undertake later on the voyage to Acapulco, the ship was caught, on the 19th of may, by a strong typhoon in latitude 13° 40', and a distance of 30° from Lubang. The high winds lasted for three days and backed from N through W to S.

On June 24, a typhoon struck the Phillipines. A very strong typhoon in Siquijor, Cebu and Southern Negros.

On September 15, Charleston SC is destroyed by a hurricane.

1754

A mild winter on mid-Atlantic coast.

In September at St. Domingo, a hurricane destroyed 1700 hogs, drove 12 ships ashore, and ruined the sugar and indigo plantations.

On October 24, a great storm with heavy waves struck New England.

On December 3-4, a typhoon struck the Phillipines (Edifying Letters of the Jesuits). "On the 3rd



and 4th a formidable typhoon occurred and since then the eruption of the volcano (Taal) ceased.”  
“On the 2nd, a very furious typhoon burst forth with considerable quantity of mud and ashes. It was so destructive that not even a tree or grass was left alive. On the 3rd, the storm blew with greater fury and the amount of mud was such that there was no corner left in the house where one might seek shelter and refuge.”

A severe frost in England.

A flood in Holland.

1755

A mild winter on mid-Atlantic coast (third in a row).

On June 10, a flood in Newmarket, England.

The Golden Horn freezes over completely in one of the coldest winters on record.

1756

War again broke out between England and France (Seven Years War 1756-1763).

A mild winter on mid-Atlantic coast (fourth in a row).

On June 25, a typhoon struck the Phillipines.

On August 23, Barbados is struck by a hurricane.

On September 12, Martinique is nearly destroyed by a hurricane.

St. Simon's Island, GA is flooded during a storm.

1757

In France, it is a warm spring and summer (Ladurie).

In July-August, very hot in England.

A hurricane struck the east coast of the United States from FL to Boston.

On August 29, Barbados is struck by a hurricane.

On October 29, a hurricane at Malta; 200 are killed or injured.

On November 12, the river Liffey overflowed, causing extensive damage to Dublin, Ireland.

On December 29, a typhoon struck near the Phillipines. “The typhoon burst forth and the galley was wrecked in an attempt to round the cape...Captain Fernando Torres and 35 men perished likewise: 15 men were saved floating on the debris of the shipwreck. After the storm abated, part of the artillery and other ammunition were saved.”

For 1757-58, a very mild winter in England, with no freezing temperatures in London all winter.

1758

A tropical hurricane struck Florida and 40 people drowned at St. Mark's.

On July 17, Williamsburg SC is damaged by a storm (hurricane?).

On August 23, a hurricane struck Barbados and the Carolinas. Also perhaps St. Kitts. [NHC rank 102/259 with 200 dead]

A hurricane strikes St. Marks, FL. [NHC rank 215/259 with 40 dead]

The Church ban on the works of Nicholas Copernicus (1473-1513) is lifted this year officially recognizing that the 2700 year belief that the Earth is the center of the universe is in error.

1759

In September, an extreme gale sank Tortugas and other islands in the Gulf of Mexico and great snow followed.

1760

On September 7-8, a hurricane struck Veracruz, Mexico (AGI Mexico 2982, DOC S/N).

On October 25, a hurricane struck Barbuda. [NHC rank 199/259 with 50 dead]

On December 3, a hurricane destroys three British ships at Pondicherry, India. Also a whole squadron of ships lost due to a hurricane in the East Indies.

Ten million East Indians perish as a result of the Great Bengal famine.

A frost in Germany.

1761

On May 2, a tornado on a 150 mile track sinks 5 ships in Charleston, SC; it was 300 fathoms wide and ploughed the Ashley River to its bottom.

On June 1, a hurricane struck Charleston SC.

In September, a hurricane of great strength raked the VA and NC coasts.

On October 20, a large part of British fleet at Madras is destroyed.

On October 21, a hurricane struck southeastern New England. It was the most violent in thirty years. Thousands of trees blocked roads in MA and RI. Charlestown, MA, is heavily damaged by the storm.

1762

Great sheep farms are introduced to the Highlands of Scotland.

In Burhanpoor, Dacca, India one fourth of the city is flooded as the Taptee overflows.

On February 9, the Thames floods.

On February 24, a blizzard lasted 18 days in England killing about 50; several whales are driven ashore on the coasts of Essex and Kent by the violent hurricane.

Late spring and summer in New England.

In April, a flood in Spain with extensive damage at Bilboa; Lisbon Portugal flooded.

In May, severe flooding in France.

From April 20 to August 10, a severe drought with little rain in New England.

On September 30, a typhoon struck the Philippines (report of Admiral Cornish on board of the South Sea Castle). While the British were sieging the city of Manila, a strong typhoon broke over Manila Bay. "The rains fell very heavy. The gale drove the South Sea Castle ashore near Polvorista."

On October 19, a dark day in Detroit.

On December 9, a hurricane struck the West Indies followed by an earthquake at Carthagen.

In England, snow fell early on (late October) in London and the South. Continued into the next year.

The Seine was frozen.

1763

A frost of 94 days in England.

On January 29 in England, a frost fair on the Thames (earlier ones 1564, 1608, 1620, 1634, 1677, 1684, 1716, and 1740). "A most intense frost set in with a north-easterly wind, and continued with very little intermission to the 29th of January, when it broke up by a gentle thaw. Besides the general appearance of nature, some experiments, tried during the course of it, proved, that it was some days no less severe than that of 1740 . . . by the 2nd of January the river Thames was completely frozen over at Richmond; as was the Severn in several places, carriages passed over the ice, and booths were erected and fairs held; the ice being in some parts six feet thick."

On March 9, the Ohio River at Pittsburg PA crests at 41.1 feet.

The second wettest summer on record in England with 181% of the modern mean. The Nore river in Ireland floods covering 250000 acres and killing 250.

1764

In January, Dublin and Cork, Ireland, are flooded. There are other floods in Ireland.

Konigsburg, Prussia, is nearly destroyed by lightning.

A hurricane in the Caribbean islands, including Martinique and Carthage.

On October 27, a "very remarkable storm of snow with high winds" produced 22 inches at Rutland in central MA.

1765

A severe winter (1764-1765) in northeast United States with Hudson and DE rivers frozen.

On March 11 in England, "There fell such a quantity of snow in all parts of England, that many persons, who happened to be overtaken by it in wild and open places, unfortunately perished. Many places were overflowed by the sudden thaw, that succeeded, particularly Maidstone, the inhabitants of which were driven into their upper rooms." [River Medway]

A cold spring/summer in Europe.

On July 31, a hurricane struck Martinique, St. Eustache, and Guadeloupe.

In September, a hurricane struck Martinique, Guadeloupe, and St. Christopher.

On November 13-14, a hurricane struck St. Domingo.

1766

The Seine was frozen.

On February 3, Gibraltar nearly destroyed by a storm.

A severe frost in SC, GA, and northern FL ends citrus farming in these areas (see 1730).

At Mayon, Phillipines, a typhoon and floods caused immense mudslides with great damage to property. Thousands died.

On July 14, hailstones an inch and half in diameter fall in Greenwich, England.

On July 17, a hurricane was observed in the Bahamas Channel (AGI Mexico 2973, DOC S/N).

On August 13-14, a hurricane wrecked St. Pierre, Martinique sinking 35 ships and killing 90. On August 16, the same hurricane struck Jamaica. [NHC rank 64/259 with 440 dead]

On September 4, a hurricane struck TX coast near Galveston, yet also plays a role in early LA history. The ship *Constante* was lost in the storm about 45 miles east of Calcasieu Pass.

On September 11, a hurricane struck the VA coast.

On September 13-15, a hurricane struck St. Christoval and Montserrat.

On September 21, a hurricane struck St. Eustache and Toriue.

On October 6, a hurricane hit St. Domingo, St. Eustache, and Guadeloupe.

On October 22, Pensacola FL was struck by a hurricane.

On October 23, a typhoon struck the Phillipines (French translation made by the astronomer Le Gentil of a letter of the governor of the province of Albay to the Fiscal in Manila). By a letter of the Governor of the province of Albay to the fiscal of Manila, we learn of a very strong typhoon which raged in the towns of Albay and Camarines at the end of October, 1766. "In the year 1766, on the 23rd of October at dawn, a strong west wind began to blow. At 8 o'clock it grew stronger and continued to blow with the same force until 4 o'clock. It drizzled at intervals. In the upper part of the atmosphere, the wind was coming from the East while in the lower a steady west wind was blowing with constant force until 7 o'clock when it doubled its velocity and veered to WNW. With this direction, it acquired such strength that it seemed it was going to destroy everything. I thought that the town was going to be completely carried away. With this strength it lasted until 3 in the morning when it changed suddenly and violently to the S, destroying all the houses of the town which had been badly shaken before. The rain then decreased a little. At 2 a.m. the Mayon volcano started to vomit out more water than it was possible to calculate. I never saw such a thing before, and only with the data which I am giving, some idea may be formed of what happened. Between Libog and Albay various rivers 20 yards wide were formed, rushing into the sea, considerably swollen and with great violence. This rivers cannot be waded now when during

high tide; before there were only three rivers and some brooks which could easily be waded at any hour. From Bacacay to Malinao, the width of the rivers is over 80 yards; from Camalig advancing through the interior of Jayares of the province of Naga the land has changed so much that the roads cannot be recognized. The town of Malinao has been completely destroyed; almost all the houses ruined; the weeds and fields entirely covered with piles of sand. One-third of the town of Cagsava has also been destroyed. The other two thirds are forming an island or rather a mountain surrounded by wide and step gorges through which currents of water and sand had passed. This inundation has cost even more ruin in Camalig, Guinobatan, Ligao and Polangui. It reached the town of Albay across the devastated farms, carrying away with it 50 houses which were at the foot of the volcano. In the southwest the coconut trees, palms and others had been covered with sand up to the top of the trees. The houses that had withstood the storm, remained half covered with sand and the persons that stayed in those houses escaped death. Those that went out to run away from the imminent danger perished without exception in the sand. In Albay, 18 corpses of both sexes were found; over 30 in Malinao; many were saved somehow or other. A boy of two years was found buried in the sand, and only his head could be seen with his right arm covering his eyes. Nothing is known about his mother. This torrent or inundation had covered a space of almost two leagues. Such an amount of destruction could not possibly be owing only to the amount of water that had fallen that day, for the rains had not been excessive. By all appearances this terrible amount of water came out from the crater of the volcano. Now the volcano is in the same state as before the occurrence. The sand makes it inaccessible and prevents a close examination.”

On October 29, a hurricane struck Havana, Cuba (AGI Mexico 2982, DOC S/N).

On December 8, a typhoon struck the Phillippines (Le Gentil report). “On the night of the 8th to the 9th of December, 1776, a terrible storm destroyed in Manila many houses of the natives, an English boat that was anchored in Manila Bay was badly damaged and a boat of the ship Buen Consejo was sunk. The winds backed from north northeast to southwest through the north.”

1767

Wales suffers its worst flooding in many centuries.

In January, in England, irruptions of the sea cause much flooding throughout the country.

In January, at Lochinabar, Scotland, the Annan river poured into the village wiping out houses, cattle, and corn.

In England, snow came late (May)

In Wales the worst flooding in centuries occurred.

In May, in Hertfordshire, hailstones up to 14 inches in circumference fall.

In August in Martinique, a hurricane killed 1600 people. [NHC rank 25/259 with 1600 dead]

On October 23, a typhoon struck the Philippines (Le Gentil report while in Manila). The districts of Manila were inundated as a result of an enormous quantity of rain and simultaneous high tides. In the town of San Mateo alone more than 500 persons perished as a result of the hurricane and the heavy floods of the San Mateo river.

At Banggeranj, Bangladesh, a cyclone killed 30000 people.

Starting in December, a cold winter in Plymouth, England, being the coldest since 1739.

The Seine was frozen.

1768

In England, January saw severe frost and deep snow.

The sixth wettest summer on record in England with 164% of the modern mean.

On August 12, Grenada was struck by a hurricane.

On September 8-10, a typhoon struck near the Philippines (see below).

On September 29, a typhoon struck near the Philippines. Once in the Pacific, the boat that was bringing the exiled Jesuits to Acapulco, was buffeted by two very severe typhoons: one on September 8th to 10th and another on September 29th. The wind was reported to have been very strong and the waves were said to have been mountainous. Every wave shook the ship so tremendously that its innermost parts rattled and smashed up into splinters and scattered in fragments. The ship was unable to overcome the difficulties of the journey and was forced to put back to Cavite. The sufferings on board ship were unbelievable. One of the exiled members died.

In October, a cyclone at Coromandel, India, destroyed the Chatham Indiaman.

On October 2, a typhoon struck near the Philippines. A very severe typhoon raged over the Pacific. The ship bringing the exile Jesuits from Manila to Acapulco, was overtaken and buffeted by the storm.

On October 15, a hurricane struck Havana, Cuba. [NHC rank 36/259 with more than 1000 dead]

On October 25, a second hurricane in Havana Cuba destroyed 4000 dwellings including 98 public buildings and killed 1000.

1769

At St. Nazaire, Brescia, lightning set off powder in a church and 1/6th of the city was destroyed. 3000 people died.

Drought and famine in Bengal kill 6 million; estimates are as high as 10 million. The droughts and famine continue until 1778.

In May, a typhoon struck China. A strong typhoon along the China coast, especially at Macao. It lasted for 28 consecutive hours.

In August, in Venice, Italy, lightning struck a theater with 600 people in it, killing several, melting a lady's watch, melting jewels, etc.

On August 30, a hurricane struck FL.

On September 7-8, considered one of the worst storms of the Eighteenth century, this hurricane passed over Williamsburg VA. Winds increased at 1:00 a.m., blowing a violent gale between 10 and 11 a.m.. Winds increased out of the northwest and continued "until dinnertime". Many old homes and trees were leveled. Heavy rain ruined tobacco crops and flooded roads. Tobacco in storage was also damaged at the warehouse.

On October 29, another hurricane struck FL.

Famine in France kills 5% of the population.

1770

In England, Late snowfall (May) in South.

Currents and tempests hollow out a channel between the high and low parts of Helgioland, creating 2 islands from one (1770-1785).

On June 6, a hurricane struck Charleston SC.

On October 20, an exceedingly great storm struck eastern New England causing extensive coastal damage from MA to ME, and the highest tide in 47 years.

In November, severe flooding at Coventry England killed 70; additional flooding at Cambridgeshire, Gloucestershire, etc..

Dry in Chile.

1771

On January 11 in England, "The river Thames was entirely frozen over at Fulham."

On May 26-27, a famous VA flood occurred as heavy rains in the mountains brought all rivers in the state to record high levels. All the rivers in VA east of the Allegheny Mountains flooded. The James River had the most serious flooding.



Floods in the north of England carry away the Newcastle bridge, etc.; called the Ripon Flood.

In August, a hurricane struck St. Eustache.

On November 30-December 1, a hurricane struck Veracruz, Mexico (AGI Mexico 2973, DOC S/N).

Dry in Chile.

1772

Papandayang volcanic eruption in Java.

On January 27, a snow fall in MD and VA, known as the Washington and Jefferson Snowstorm. George Washington reported three feet of snow at Mount Vernon, and Thomas Jefferson recorded about three feet at Monticello.

A series of heavy snowstorms in New England in March-April.

On April 18, in Girgenti Italy, hailstones weighing up to 20 ounces fell.

In May, a typhoon struck China. The vessel Rynsburg of a Dutch company sank south of the island of Meru in the typhoon which hits the coasts of China. Only 8 persons were saved after struggle of 24 hours against the waves.

On June 20, hailstones as large as nutmegs fell in Leeds Yorkshire England.

On July 16, hailstones as large as oranges fell in St. Jugo, causing great damage.

On July 20, a hurricane in Cuba left 149 dead.

On August 4, a hurricane struck St. Domingo.

On August 17 and August 31, a hurricane destroyed Johnstown, St. Antigua; also most of the Caribbean islands.

On August 31-September 4, a hurricane originating near Jamaica on the 28th of August moved north and northwest into the Central Gulf Coast just west of Mobile. Its effects were far reaching. In Pensacola, it destroyed most of the wharves. The most devastation occurred in the vicinity of Mobile and the Pasca Oocola River. All shipping at the Mouth of the Mississippi was driven into the marshes. this included the ship El Principe de Orange from which only 6 survived; on September 1, a tropical storm forced fourteen vessels ashore at Ocracoke Bar in NC with 50 persons perishing. It is likely this storm caused significant winds in southeastern VA. This hurricane drove 15 ships ashore at Edenton, NC. [NHC rank 200/259 with 50 dead]

On September 1-4, a hurricane struck St. Domingo and other Caribbean islands killing 900.

On November 22, a hurricane struck St. Christopher and St. Eustache.

From December to April, heavy snow in Scotland with snow continuously on the ground.

Dry in Chile.

Captain James Cook (1728-1779) is sent to Antarctica to confirm its existence as recorded on ancient maps. It is assumed this knowledge is as a result of the Chinese expeditions of 1405-1433. Cook failed on this mission but could assume that if it existed it would be a frozen land.

1773

The warmest year in 1700's in Scandinavia.

The first report of flooding at the site of Cincinnati OH. Indians mark the depth at 76 feet.

A flood in Calcutta India (perhaps another cyclone).

On February 21, the memorable cold Sabbath in New England (Many persons froze extremities while going to church).

On February 21-22, the heaviest snowfall ever at Charleston SC.

In February, a heavy snow off St. Augustine FL.

In July, a hurricane struck St. Thomas and Cuba.

In August, a hurricane struck Trinidad and Tobago.

On August 14, there is a very violent storm in MA, perhaps a hurricane.

On August 26, the Virginia Gazette reported a hurricane in VA.

On September 13-14, a hurricane struck at Riohacha-Cartagena de Indias, Columbia (AGI Santa Fe 576).

On November 10, at Venice Italy, and at Naples, a flood carries away an entire village and kills 200.

Dry in Chile.

1774

On March 9, a flood at Battersea and Chelsea in England.

A famine in France.

On August 3, in Alencon France, hailstones 18 inches in circumference fell.

On September 6, a hurricane struck Guadeloupe.

On October 2, a hurricane struck Jamaica.

On November 25, there was a violent storm on the eastern coast of England.

Dry in Chile.

1775

James Watt improved the steam engine invented by Thomas Newcomen (1663–1729).

This year marked the last known death of an accused witch in Europe. It is estimated that 100000 witches were executed in Germany from the thirteen century and 30000 were executed in France just during the reign of Henry III in the late sixteen century. .

The Meuse at Rotterdam Holland overflowed.

On July 3, a hurricane struck St. Croix and Martinique.

On August 25, a hurricane struck Martinique.

On August 27, the hurricane struck St. Domingo.

On August 28-29, a hurricane struck Havana, Cuba (AGI Santo Domingo 1211, N 972).

Between August 29-September 2, 1775 (The Independence Hurricane): This savage hurricane raged from NC to Newfoundland. Heavy rains began to fall across the colony on the 29th of August and slowly increased with time. The coast was ravaged from Currituck to Chincoteague. Wharves and storehouses on the waterfront of Norfolk were devastated. Bridges were carried away by the raging waters. At Williamsburg, mill dams broke and corn stalks were blown flat. Winds blew furiously until 10:00 p.m.. The hurricane wiped out Bar NC with great destruction to the corn crop. 150 people died. [NHC rank 120/259 with more than 163 dead]

On September 5, St. Kitts is greatly damaged by a hurricane.

On September 9-12, a hurricane ripped apart Irish and English fishing boats and houses collapse in Newfoundland. More than 4000 fishermen died. [NHC rank 7/259 with 4000 dead]

On September 14, a hurricane struck Cuba and St. Domingo.

On October 16, a hurricane struck St. Christopher.

On October 29, an awful storm in the north of England destroyed many vessels and 4 Dublin packets.

On November 14, a violent hurricane off the coast of Holland.

November 1: A tsunami with (6 M) 20 foot waves struck Portugal, Spain and Morocco.

Dry in Chile.

Worst episode of sand-dune drifting in northwestern Denmark. Many farms, villages, and churches were destroyed during the late 1700s (Aber).

1776

On January 7 in England: "Began, attended with an high easterly wind, one of the greatest falls of snow that has happened in England in the memory of man; and it was followed by so intense a frost, that, the barometer at times, sunk two or three degrees lower than it did in the great frost which began during the last days of 1739, and continued about three months of 1740 and, by the 16th, the Thames was entirely frozen over at Mortlake."

In early 1776, a cold, stormy winter in southern United States.

A flood in Kent England.

On April 26, a flood at Languedoc France that destroyed the village of Bar-le-Duc.

On June 11, in Antwerp and in Holland, hailstones as large as hens eggs weighing up to 12 ounces fell, killing several horses and fruits of the earth.

On July 10, a strong gale played a role in a battle between the Royal Governor of VA, Dunmore, and General Lewis of the rebel forces. The royal fleet had been injured prior to the storm by General Lewis' forces and was sailing from Gwynn's Island toward St. George's Island, in the Potomac. The British crew was without water and enduring smallpox when the gale struck.

On September 4-6, the West Indies (Antigua, Martinique, Guadeloupe, and St. Kitts) were damaged greatly by a hurricane. The storm kills more than 6000 on Martinique. [NHC rank 6/259 with more 6000 dead]

Ca. September-October, a hurricane struck New Orleans and produced some damage.

On December 25-26, 22 inches of snow fall at Monticello VA.

On December 26, George Washington crossed the ice clogged DE River. He marched on Trenton in the midst of snow and sleet thus surprising and capturing many of the British garrison.

Starting late in this year, a severe frost in England.

Late in this year, the Seine was frozen.

Dry in Chile.

1777

In January, "The River Thames was frozen over at Kingston, and many persons crossed over on the ice. The frost, however, has not this year been very intense." [River Thames]

On August 10, a storm of tropical origin affected the NC and VA coasts.

On September 23, St. Petersburg Russia is extensively damaged by a storm and flood.

On October 28-November 4, a hurricane struck Santiago, Cuba (AGI Cuba 1230, Fols 283r-284).

1778

On June 28, the Battle of Monmouth in central NJ was fought in sweltering heat. The temperature was 96 degrees in the shade, and there were more casualties from the heat than from bullets.

On August 12, a RI hurricane prevented an impending British-French sea battle, and caused extensive damage over southeast New England.

On October 7-10, there was a great storm surge that destroyed the establishments of the Belize, Bayou St. John, and Tigouyou in the LA with this late season hurricane. All structures were wiped out of existence.

On October 28, a hurricane struck Cuba.

On November 1, a hurricane struck Cape Cod, MA. [NHC rank 198/259 with 50 to 70 dead]

On December 26, Hessian storm with 18 inches of snow in southern New England with more than 50 frozen to death.

Dry in Chile.

1779

On August 18, a hurricane made landfall at New Orleans. At that time, Spain had declared war on Great Britain. Almost all of Bernardo de Galvez' ships (Governor of New Orleans) that were to be used to secretly seize the British post at Baton Rouge were grounded or destroyed, thus ruining his plans for invasion until the 27th. The only ship that escaped disaster was El Volante. Some of the ships were found in the middle of woods after the storm.

On August 28, a hurricane struck Martinique destroying the same area damaged 3 years before; over 70 ships were lost and thousand died.

On September 27, a typhoon struck the Phillippines (Sesion de Definitorio de la Corporacion Recoletana). The church of Imus, Cavite, was blown down in the storm of September 27, 1779. In the Sesion de Definitorio of the 2nd of January, 1780, the Corporation Recoletana resolved to construct a new church of stone and roof it with tiles.

On October 7-10, a hurricane affected New Orleans.

Before December 3 in the Atlantic, a hurricane struck shipping. [NHC rank 133/259 with 120 dead]

Starting, December 25-28, 1778, a cold winter in New England.

A frost lasts 84 days in England.

In 1779-80, the ice was driven out of the mouth of the Mississippi into the Gulf of Mexico, a circumstance never known before or since.

Dry in Chile. The end of ten years of drought there.

1780

Sheep were introduced to Ireland from Scotland.

On January 23, the coldest day of the coldest month of record in the northeastern United States A British Army thermometer in NYC registered a reading of 16 degrees below zero. During that infamous hard winter the NYC harbor was frozen solid for five weeks, and the port was cut off from sea supply.

IN AL, severe winter weather in 1780 forced wild deer out of the woods to seek shelter by settlers' cabins.

On May 18, the famous dark Friday in New Engalnd.

In July, a typhoon struck the Phillippines (Piddington map and letter of Mr. Webb, captain of an English ship).The maps of Piddington shown a typhoon which moved along the coast of China passing south of Canton and Macao. "All the ships which were at sea that night were lost. Surely,

more than 100000 persons died in the storm. At first the wind was from ENE. At 8, the wind violently shifted to the SE. At midnight, it veered fast to the S with the same violence, and having notice that we had come into shallower water.”

On August 24-25, a hurricane worse than the August 1779 storm swept over the province of LA striking New Orleans; destroying crops, tearing down buildings and sinking every vessel and boat afloat on the Mississippi River and on area lakes.

On October 2-5, a hurricane struck Jamaica and Cuba. 1115 died. [NHC rank 31/259 with 1115 dead]

On October 9, a hurricane leveled Orange Town, St. Eustatius.

On October 10, the hurricane destroyed every house in Barbados.

On October 10, one of the severest hurricanes ever struck Bermuda; 50 ships are driven ashore; houses are blown down; few trees are left standing.

On October 16, the hurricane struck Cuba.

On October 13-18, 2 great hurricanes in Leeward Islands which destroy Savannah-la-Mar, Jamaica; this is the deadliest single hurricane ever and it kills at least 20000 people on Martinique; deaths: 4000 in Barbados, 6000 in St. Lucia, 9000 in Martinique, and more than 9000 on other islands; total = 28000+. This remains the deadliest hurricane in recorded history. The hurricane in Savanna-del-Mar caused the sea to overflow mile inland killing thousands. [NHC rank 1 of 259] [NHC rank for second hurricane 21/259 with 2000 dead in the eastern Gulf of Mexico on October 17-21]

On October 31, Barbados is struck by another hurricane.

In October-November, three typhoons struck near the Philippines (Biography of Fr. Juan Huy de los Santos, a Chinese Dominican). In the biography of Fr. Juan Huy de los Santos, a Chinese Dominican who was educated in San Juan de Letran of Manila, we read that he sailed for China at about the beginning of October, 1780, but on account of three typhoons, was forced to seek shelter and remain in Pangasinan for a considerable time. Macao was not reached until January 1, 1781.

1781

The severest winter (-1781) in American history; harbors frozen as far south as NC.

On March 15, a typhoon hits the east Indies.

On August 1, a gale (hurricane) in Jamaica sank 2 loaded vessels and drove 97 ashore killing thousands. [NHC rank 19/259 with more than 2000 dead]

On August 2, a hurricane struck New Orleans.

On August 10-11, a gale (hurricane) prevailed for forty hours at Wilmington, NC moving slowly northward just inside the coastline. This storm probably affected VA as well.

On September 5, a hurricane struck St. Domingo.

On October 16, a storm of "unknown character" struck VA. The Earl of Cornwallis, at Yorktown, was trapped by the French Fleet and the Patriot Army, under the command of George Washington. The Earl decided to flee to the north to Gloucester Point under the cover of darkness. A "furious storm" doomed the plan to failure, as seas ran high and every boat was "swamped". He sent forward his flag of truce and surrendered, thus ending the battle (Chapman).

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1782

In March, in the north of England, a flood destroys Hexham bridge, Ridley hall, etc..

On April 12, a hurricane was encountered in the North Atlantic.

On April 22, a cyclone in Surat in the East Indies killed 7000 people.

On June 17, hailstones in France weighed up to 8 ounces.

On July 23, a hurricane was encountered in the North Atlantic at 43 N, 0.4 W.

On July 26, a violent hailstorm in Madrid Spain did considerable damage, breaking many windows; stones weighed up to one pound.

On July 31-August 1, a hurricane struck Kingston Jamaica. A hurricane devastated the Barbados region with 3000 victims at sea alone.

On August 14, a typhoon struck the Phillipines. A strong typhoon raged over Manila bay and did considerable damage in Cavite.

On September 16-17, a hurricane was encountered in the North Atlantic. [NHC rank 11/259 with more than 3000 dead]

1783

In early May, a New Island about 70 miles from Iceland formed due to an emerging volcano; ashes and dross from this volcano covered an area of 150 miles across; this eruption is probably the cause of the dry fogs observed this year.



On May 8, a dry fog first observed at Copenhagen (one month before eruption of Skaptar Yokul [not Hekla!] in Iceland).

In early June, Skaptar Yokul eruption in Iceland, killing 20% of Iceland's population.

For the summer, Schove [1954] noted that in the Finnish tree-ring record was recorded by extremely narrow rings, caused by extremely high temperatures and drought rather than by cool wet conditions. Current research [Briffa & Schweingruber 1992] indicates that ; the summer of 1783 was warmer than the 1951- 1970 mean.

In July, England experiences its warmest July in the 320 record of central England.

In August, a stratospheric volcanic eruption in Japan.

Lack of rain in India causes famine from Zahore to Karumnasa.

On August 10, a typhoon struck Palau (report of the packet Antelope of the East India Company). The packet Antelope, of the East India Company, was wrecked in a typhoon on August 10 in one of coral reefs of Palau.

On October 8, the first of three major storms to affect the East coast that month made landfall near Charleston SC on the 7th. At Richmond VA, violent winds blew in from the northeast for 24 hours. Norfolk saw a 25 foot rise in the tide, which caused damage there and at Portsmouth totaling around 9000. The reference to 25 foot tides was probably more of a reference to wave heights. This cyclone moved offshore NJ and continued past Providence, RI.

Number of typhoons striking Guangdong Province, China this year: 3. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

In 1783-84, snow remains on the ground for 80 days at Buckland, Hertfordshire, England; the frost in England lasts 89 days.

1784

A violent storm, according to M. Hoff, forms the lake of Aboukir, in Lower Egypt.

Hailstones weighing up to 23 ounces fall in the Pyrenees.

On February 10-17, it is very cold in CT with NY harbor frozen.

On February 13, ice floes blocked the MS River at New Orleans, then passed into the Gulf of Mexico. The only other time this occurred was during the "Great Arctic Outbreak" of 1899.

On March 8, a hurricane struck Havana Cuba.

On March 15, the Susquehanna River at Harrisburg PA floods 25.0 feet.

On May 8, a deadly hailstorm in SC hit the town of Winnsborough. The hailstones, measuring as much as nine inches in circumference, killed several persons, and a great number of sheep, lambs and birds.

In summer, a lack of rain in India causes famine from Zahore to Karumnasa in India.

On June 24, a hurricane struck Matanzas Cuba.

On July 10, a hurricane struck Jamaica.

On July 18, hailstorms at Iran in the Pyrenees weighed up to 23 ounces and were as large as hens eggs.

On July 30, a hurricane struck Jamaica and St. Domingo. The hurricane destroyed many buildings and wrecked or damaged all the vessels.

In December, a hailstorm in Italy.

A frost of 115 days in England; in 1784-85 (details below).

A very severe winter in Switzerland.

1785

A frost of 115 days in England. Two successive severe winters. The Thames froze completely in both, almost continuous frost lasted from early to late winter. Snow remained for as long as 4 months. Attributed to an Icelandic volcanic eruption, although details regarding this are slim. Heavy snow also fell early on in both years, with snow falling as early as October. 1784 was a cold year generally. Sleet was recorded near the coast of the Moray Firth in August! Heavy snow fell in the South in October. The year was ranked in the top 10 coldest years recorded in the CET series. 1785 was very dry and cold, with again early snow in October. 1786 had a very dry summer, and was persistently cold from September to November.

In March, in France and Europe, the coldest March of record extending an already cold winter.

In summer, in France, drought strikes making it necessary to destroy many cattle.

In summer(?), floods in different parts of Germany destroyed thousands of houses.

On July 1, a hailstorm in Paris with stones as large as cherries.

On July 6, a hurricane in the east Indies.

On July 23, a hurricane struck St. Croix.

On August 5, hailstorms laid waste to 131 villages and farms in France.

On August 25, a hurricane struck Guadeloupe. On August 27, this hurricane struck Jamaica. On August 31, this hurricane struck Barbados, and St. Domingo. It also struck St. Croix and Puerto Rico. [NHC rank 123/259 with more than 142 dead]

In September-October, floods occur in different parts of England.

On September 22-24, the "most tremendous gale of wind known in this country" passed over the Lower Chesapeake Bay and went along a track very similar to the Chesapeake-Potomac Hurricane of 1933. At Norfolk, lower stories of dwellings were flooded. Warehouses were totally carried away by the storm surge, causing large amounts of salt, sugar, corn, and lumber to disappear. A large number of cattle drowned, and people hung onto trees for dear life during the tempest. At Portsmouth, the entire town was submerged. [NHC rank 113/259 with 181 dead]

On September 27, a hurricane struck St. Domingo.

On October 16, in Quebec, a dark day with yellowish clouds from the northeast and black rain (forest fire?).

On October 24, a four day rain swelled the Merrimack River in NH and MA to the greatest height of record causing extensive damage to bridges and mills.

1786

On July 17, in Highbickington Devonshire England, a storm removed 13 elm trees upwards of 200 yards from their original spot and they remained upright in a flourishing state; a rock at the same place was divided upwards of eight feet asunder and all the poultry and corn, for several miles, were destroyed by the thunder and lightning.

On July 17, at Ferrara Italy, hailstones as large as hens eggs fell.

On August 11, a hailstorm struck Barbados, St. Eustaches, and Barbados.

On August 16, a hailstorm in North Shields England had stones the size of hens eggs.

On August 29, a hurricane struck the United States.

On September 2, a hurricane struck Barbados claiming victims in the ruins of their houses from the August 11<sup>th</sup> hurricane.

On September 10, a hurricane struck Guadeloupe.

In September, a hurricane struck Bermuda causing great damage.

On October 5, a hurricane struck Barbados and Grenada.

On October 5, the famous "Pumpkin Flood" occurred on the DE and Susquehanna Rivers. Harrisburg PA reported a river stage of 22 feet. The heavy rains culminated a wet season.

On October 5, the north branch of Susquehanna River at Wilkes-Barre PA floods 29 feet.

On October 9, at Brighthelmstone England, a flood washes down the Blockhouse.

On October 20, a hurricane struck Jamaica.

On December 5-6, heaviest snowstorm since 1717 in New England. New Haven had 37 inches of snow.

On December 9, a second great snowstorm in just five days brought another 15 inches of snow to Morristown NJ, on top of the eight inches which fell on the 7th and 8th, and the 18 inches which fell on the 4th and 5th. The total snowfall for the week was thus 41 inches. New Haven CT received 17 inches of new snow in the storm. Up to four feet of snow covered the ground in eastern MA following the storms. (9th-10th).

1787

Near Madras India, a cyclone kills 10000 people and 100000 cattle with a storm surge traveling 20 miles inland.

In April, a hurricane struck Bermuda and the United States.

In July, a hurricane struck Guadeloupe.

On July 30, a hurricane struck the United States.

On August 3, a hurricane struck St. Domingo.

On August 4, hailstones the size of hens eggs fell in Normandy France.

On August 15, tornadoes were reported in CT, RI, MA, and NH. Wethersfield CT was hard hit by the tornado outbreak.

On August 23, a hurricane struck St. Domingo.

On August 29 another hurricane struck St. Domingo.

In September, a great flood from the mountains wiped out the populace of Navarre Spain; 2000

died.

On September 2, a hurricane sank 30 plus English merchantmen on the coast and off-lying areas off Belize; 15 were lost in the port of Belize. [NHC rank 149/259 with 100 dead]

On September 19, a hurricane struck SC killing 23.

On September 23-27, a hurricane struck Belize, British Honduras, sinking 11 ships and killing 100. [NHC rank 143/259 with more than 100 dead]

On October 4, a cyclone in India left 10000 dead.

On November 12, a terrible flood in Liffey Ireland which did considerable damage in Dublin and its environs.

On December 1, a typhoon struck the east Indies.

1788

In Punjab India, the a flood killed 15000 people and 100000 cattle.

In January, a severe ice storm in New England.

In January, a hurricane struck Honduras.

On February 5, it is very cold in New England and the middle states with a maximum of 3 F at New Haven.

In March-April, a hurricane struck St. Croix.

On July 13, a heavy hailstorm in two parallel lines of 500 and 600 miles length in France; hail as large as quart bottles was reported; all the trees from Vallance to Lisle were torn up by their roots.

On July 23, a weather diary kept by George Washington recorded that the center of a hurricane passed directly over his Mount Vernon home. The hurricane crossed eastern NC and VA before moving into the Central Appalachians. Norfolk VA reported houses destroyed, trees uprooted, and crops leveled to the ground.

On August 14, a hurricane struck Martinique. On August 16, the same hurricane struck Puerto Rico and St. Domingo. On August 19, a small but powerful hurricane inflicted great havoc upon forests along a narrow track from NJ to ME. A similar storm track today would cause extreme disaster in the now populated area; the strong storm uprooted trees, unroofed barns, destroyed orchards, and killed many cattle. This storm was known as the "Western New England Hurricane". [NHC rank 51/259 with 600 to 700 dead]

On August 29, a hurricane struck St. Domingo.

Crops failed in France that summer due to drought and a hailstorm.

A dry year in England (see 1741). One of the driest ever in England.

In September, a hurricane swept Caravel, Martinique killing hundreds and sinking 50 ships.

On September 19-20, a hurricane struck the United States.

On October 4, in Kirkwold Scotland, the dam-dykes broke which nearly destroyed the town.

In 1788-89, a severe winter in France; the Seine was frozen; but warm/no winter according to Ladorie.

In November to January 1789, a frost in England when the Thames freezes. It is cold in Holland and the rest of Europe. The Thames was frozen for seven weeks. As well as the usual attractions of previous Frost Fairs(after 1564, 1608, 1620, 1632, 1677, 1684, 1716 and 1740), this one included a Wild Beast Show.

1789

Much rain in the north of England.

In England a frost fair on the Thames. January 14 p[5] London: "A severe frost commenced in London, on the 25th of November last ... It continued exactly seven weeks, with the wind principally between N. and E. though it shifted to all points and was S. the whole of December 31, accompanied with a great fall of snow ... On the 5th instant ... the thermometer 21 [degrees F.], at eight in the morning, and did not rise higher than 26, so that this was the coldest day ... Yesterday a sudden change took place ... for, after much snow in the morning, it began to rain at noon, and the drops froze when they rached the ground: this continued for some time, and, in the evening there was a general thaw; the barometer 29.13, the thermometer 36, and the wind southerly. ... [Thames frost fair description] ... it was not till after the dusk of the evening that the busy crowd were persuaded of the approach of the thaw. This, however, with the cracking of some ice about eight, made the whole scene a most perfect confusion..." See also Ian Currie (1997) *Frosts, Freezes and Fairs: chronicles of the frozen Thames and harsh winters in Britain since 1000 A.D.*, 90pp Published by Frosted Earth, 77 Rickman Hill, Coulsdon, Surrey CR5 3DT

A very severe Dutch winter.

On January 18, the two-month-old settlement of Columbia OH on the Little Miami River is under water.

On June 29, Liverpool England is damaged by a storm.

In July, there are floods in the north of England and in Scotland.

On August 18, a hurricane struck New Orleans, LA (AGI Cuba 1232, N 202/Cuba, 1232, N 204).

In December, a cyclone in Coringa India causes 3 great waves and kills 300000. At Punjab, India, floods in Bejar and other Northwest provinces drown 100000 cattle and killed 15000 people.

In November-December, the Thames frozen over and cold in Europe, particularly Holland.

Smallpox was introduced to Australia and caused devastation among the aborigines.

1790

In January, the Thames frozen over and cold in Europe, particularly Holland.

On July 31, a hurricane struck Jamaica.

In August, a hurricane struck St. Nevis.

On August 10, a hurricane struck Trinidad and Tobago.

In the French Alps, glaciers reach their maximum extent (Ladurie).

In India, an almost total lack of rain caused the Skull Famine; cannibalism was rampant in Bombay, Orissa, and Madras.

Dry in Chile.

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1791

New eruptions destroy the dikes and carry off other parts of the already reduced Island of Nordstrand.

On June 21-22, in Havana, Cuba, rain (from a hurricane) produced a great flood killing 11700 cattle and 3000 people. [NHC rank 14/259 with 3000 dead]

In midsummer, frost and snow with hail in different parts of England.

Famine in France.

On June 21, in Cuba, rain caused floods drown 12000 cattle and killed 3000 people.

In late summer (?), a hurricane struck the Lower Coast. Padre Island TX and mainland nearby were submerged. A herd of 50000 cattle belonging to a Spanish cattle baron drowned in the storm surge (Ellis 21).

In September, in Calabria, near Naples Italy, a violent hailstorm with stones up to one pound destroyed the vineyards.

On September 27, a hurricane struck Cuba.

On October 25, a hailstorm in Sussex, England.

On October 25, a hurricane struck Puerto Rico (AGI Indiferente 1559, N 46).

In November, a flood of great extent at Placentia, Italy.

On November 20, a flood of the river Don near Doncaster, England and the rivers Derwent and Trent.

In December, frost and snow in Italy and Spain.

Dry in Chile.

Number of typhoons striking Guangdong Province, China this year: 3. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1792

Plague kills 800000 people in Egypt.

On April 4, in Waterford, Ireland, a violent storm carried away the tower of the exchange.

On April 13, a flood at Broomsgrove, Worcestershire, England from a waterspout.

On July 1, a tremendous storm (a tornado or hurricane) hit Philadelphia and NYC. Many young people were drowned while out boating on that Sunday.

On July 15, a typhoon in the east Indies.

In August, a flood at Lancashire England.

On August 2, a hurricane struck Antigua.

On August 6, a hurricane struck Bermuda.

On September 10, a hurricane struck Antigua.



On October 29, a hurricane struck Cuba killing 100.

In December, a typhoon struck Guam. A strong typhoon raged over Guam and destroyed the church and parish house.

Dry in Chile.

1793

In Buenos Aires, lightning struck 37 times killing 19.

In March, a storm at Whitehaven England causes the tide to rise 6 feet above normal causing great damage.

April 1: The volcano Unsen in Japan erupted killing about 53000 people.

On April 25, in Jamaica, a violent storm of hailstones that measured 3.5 inches in circumference.

On June 2, hailstones as big as pigeons eggs fell in Savannah Del Mar Jamaica.

On August 3, a hailstorm in Thornton England caused great damage.

On August 13-16, a hurricane struck St. Christoval, St. Eustache, and St. Thomas. [NHC rank 242/259 with 28 dead]

In August, a strong tropical storm hit New Orleans and destroyed unharvested crops and devastated rural sections of the province. (Also AGI Santo Domingo 2612, N 16).

In August, a typhoon struck near the Phillippines (report of the Recolect Fathers). In the latitude of Panay, the passengers were caught suddenly by a destructive typhoon, which sank the ship and sent to the bottom of the sea, the three priests and all the members of the crew.

On August 27-28, a hurricane struck Cuba.

On October 23, a hurricane struck Bermuda causing great damage.

Dry in Chile.

1794

On July 16, hailstorms throughout England caused much damage.

On August 9-10, a hurricane struck Havana, Cuba (DOCIMPRESO).

On August 10-11, a hurricane struck New Orleans and Baton Rouge, LA (AGI Santo Domingo

2563, N 431/Santo Domingo 2606, N 122/AGI Santo Domingo 2612, N 6/AGI Santo Domingo 2612, N 8).

On August 31-September 1, a hurricane that moved through Cuba on the 27th and 28th of August struck New Orleans on the 31st and produced crop damage. The storm surge moved inland from Balize (Pilottown) westward to the Plaquemines as deep as 10 feet in places, totally engulfing Fort St. Phillip and drowning their chief engineer. Large hail was also noted in the storm; a very unusual event in a hurricane. Nine hours of high winds tormented what is now Avoyelles Parish on September 1st as the storm continued marching northward. Many lives, cattle, and horses perished in the storm. [NHC rank 144/259 with more than 100 dead, mostly in Cuba]

On October 6, a storm throughout England caused several hundred vessels to be destroyed or damaged; in November, a most violent storm of rain in Norfolk inundated many towns, particularly Norwich England.

Dry in Chile.

During a sixteen day period (July 12-28) 1285 victims died on the guillotine in France directed by the Committee that is led by Robespierre. He himself is executed July 29.

1795

The Zuider Zee is frozen over and the rivers of Holland passed by the French.

On January 24-25, a violent snowstorm in the south of Scotland killed 17 shepherds, much livestock, and many wild animals.

In February, almost throughout England, floods from melting snow destroy or damage nearly all the bridges. It ended an exceptionally severe winter. The cold beginning on Christmas Eve, and lasting until late March, with a few temporary breaks. January was particularly cold, with a CET of 0.8c. It was the coldest January in the instrumental era, beginning 1659. The Severn and The Thames froze, and 'Frost Fairs' started up again (previous fairs in 1564, 1608, 1620, 1634, 1677, 1684, 1716, 1740, 1763, and 1788). An extremely bitter temperature of -21c was recorded in London, on January 25th. In early February, there was a rapid, but only temporary thaw. Flooding ensued. The severe cold returned slightly later (mid February) and continued well into March. There were many recorded snow events. The winter was anticyclonic (High Pressure dominated) and Easterlies were dominant throughout. Up in Scotland, it was the seventh coldest at Edinburgh, in the series 1764/65 1962/63. (coldest 1779/80). The winter was memorable for all.

On July 20, a hurricane struck New Orleans, LA (AGI Santo Domingo 2564, N 543).

On August 2, a hurricane which passed through NC passed to the south of Norfolk. A ship foundered off Cape Charles. Heavy rains in northwestern VA flooded Winchester and Martinsburg. Roads were impassable beyond Baltimore, disrupting mail service. A large amount

of corn and hay were in ruin. Mills and mill dams were swept away. Great damage was noted across Culpeper and Orange counties. It then recurved across MD and passed south of New York City to Halifax. Several vessels were lost off Norfolk. The brig Esther was lost, with most of her cargo from Jamaica, twenty-five miles south of Ocracoke Bar.

On August 10, a hurricane struck Jamaica.

On August 18, a hurricane struck Antigua.

In autumn, a poor wheat harvest in England.

On October 10, a typhoon struck near the Philippines (letter of the Governor-General to the Duke of Alcedia). In a letter dated at Manila on January 6, 1796, and addressed to the Duke of Alcedia, Madrid, the Governor-General of the Philippines, Aguilar, gives an account of a typhoon which occurred on Tuesday, October 10, 1795, and which forced two English ships, navigating from Madras and Bombay to Canton, to make the Philippines and seek shelter and assistance in Manila.

In November, Barbados is flooded (hurricane?).

Dry in Chile.

1796

On June 7, a St. Petersburg, upwards of 90 vessels and a large magazine of naval stores were destroyed by a storm.

On August 26-27, a hurricane struck New Orleans, LA (AGI Santo Domingo 2613, N 40).

On October 3, a hurricane struck the Bahamas causing extensive damage.

On October 24, a hurricane struck Cuba.

On November 2, a hurricane struck Cuba.

On December 25, the most severe frost in the memory of men in England. -21c was recorded in London, as was -19c.

1797

Tungurahua volcanic eruption (probably had a stratospheric cloud).

On April 22, a typhoon struck near the Philippines. The frigate Santa María, which was ahead and was bound for New Spain got into the thick of the storm and sunk under the furious waves. The rest of the fleet was un-masted and cleared of everything on deck. The next morning all the

ships appeared completely stripped, with broken masts.

On May 6, a hailstorm in London and environs caused great damage.

On June 5, a hailstorm in Lewes England caused much damage.

In June, a typhoon struck Formosa and Macao. A severe typhoon passed south of Formosa and close to Macao. The Swift sank with all hands on board.

On September 5-6, a sloop was lost at Currituck Inlet on the 5th during a storm. The sloop Betsy was returning from Cape Hatteras during the 6th. In sight of the Cape Henry lighthouse, she "was obliged to bare away in a gale of wind" (Chapman).

In October, a typhoon struck the Phillippines (report of the shipwreck of the galleon S. Andres, made by the historians Jose Montero y Vidal and Zuniga). Very pressing was the situation in which the General found himself when his ship was caught by a storm. There can be no doubt that there was a typhoon.

Dry in Chile.

1798

A major hailstorm in Germany.

On September 25, a storm causes great damage in Halifax, Nova Scotia.

On November 17-21, a four day storm was in progress in the northeastern United States The storm dropped a foot of snow on NYC and New Haven, and as much as three feet in ME and NH. The snow-storm ushered in a long and severe winter, in some places the ground remained covered with snow until the following May; tunnels had to be cut through the snow to rescue survivors in their homes.

Dry in Chile.

1799

A plague hits North Africa killing 300000 people.

On April 6 "... So deep was the snow in the neighborhood of Congleton (England), that the Liverpool coach was entirely buried in it ..." [R. Dane]. Severe frost lasted from late December to early January in London and the South. Heavy snowfalls were recorded, especially in North Eastern Scotland, where transport was dislocated for quite some time.

On September 23, a hurricane was off shore Jamaica. It perhaps struck Cuba as well. [NHC rank 247/259 with 27 dead]

Dry in Chile. The end of ten years of drought there.

Number of typhoons striking Guangdong Province, China this year: 1. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1800

Napoleon conquers Spain. Napoleon I (1804-1814) defeated Austria on four occasions, 1799, 1801, 1805 and 1809.

Around 1800 the extent of snow and ice attained a maximum as great as any time since the last major Ice Age..

Total darkness at noon in Amsterdam (uncertain of year).

On January 10, Savannah GA received a foot and a half of snow, and ten inches blanketed Charleston SC. It was the heaviest snowfall of record for the immediate Coastal Plain of the southeastern United States

In August, a hurricane struck New Orleans.

On August 19, a hailstorm in Heyford England had stones the size of hens eggs; it did great damage.

In summer (?), China has great floods. Thousands die.

On September 9-10, a hurricane struck Bermuda.

In October, a hurricane in St. Domingo causes flooding and 1400 die.

On November 2, a hurricane struck Cuba.

On November 4-5, a hurricane struck Bermuda.

On November 8, a storm in London and throughout England did great damage.

1801

On February 8-9, a two day hailstorm in Turkey.

On July 21-22, a hurricane struck Nassau in the Bahamas.

On August 15-16, a hurricane struck Mobile, Alabama (AGI Santo Domingo 2618, N 20/AGI Santo Domingo 2618, N 21/AGI Santo Domingo 2618, N 24).

In October, a typhoon struck the Philippines (report in the parochial archives of Bacolod, Occidental Negros). "The painting which was kept in the church of Bacolod, and had been ordered by D. Antonio de Remo, was damaged by moisture and completely destroyed by the typhoon of October of last year."

In November, the seacoasts of Holland and Germany are wrecked by flooding caused by a storm.

1802

On February 21-23, a great snowstorm raged along the New England coast producing 48 inches of snow north of Boston. Three large ships from Salem were wrecked along Cape Cod.

On April 14, Lorca, Murcia, Spain flooded from a bursting reservoir killing 1000.

In the summer, hot and dry in France with Seine becoming dried up revealing Roman ruins.

On September 15, a typhoon struck the Philippines (shipwreck of the Nautilus of Calcutta). It would seem that the misfortune of the Nautilus of Calcutta should be attributed to a typhoon that dashed her on the shoals of White Rocks.

On September 16, a hurricane struck Cumana.

On December 2-3, the Irish Liffey overflows and causes great damage in Dublin and vicinity.

1803

The French Academy of Sciences insisted that meteorites could not exist because no specimens had been produced.

The sea sweeps away the last remains of the priory of Crail, in Fifeshire.

Drought compounded by locusts in western India contributes to famine killing thousands.

On May 8, a freak spring storm produced heavy snow from southern IN to New England. The storm made sledging possible in MA, but also ruined shade trees in Philadelphia.

On July 10, a hurricane struck the Bahamas.

On August 29, the schooner Jupiter sprung a leak off the VA Capes in heavy seas during a storm off the VA Capes, before heading into the Chesapeake. As the ship was sinking, the captain jumped overboard, but was pulled into the whirlpool created by his sinking ship and drowned (Chapman). [NHC rank 132/259 with 121 dead between Jamaica and England]

In September, two typhoons struck near the Philippines (Piddington map). The winds were very furious, the seas mountainous, the squalls terrible and the rains incessant.

On December 29-30, a windstorm struck France uprooting many trees; all the roof tiles of Notre Dame Cathedral were blown off.

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1804

Drought in India contributes to famine.

On January 1, a tornado in Falmouth England stripped the roof of every house in its way and caused other damage.

On April 4, a large tornado crossed six GA counties killing at least eleven persons near Augusta. It was the most destructive in the state until 1875.

On August 29, a hurricane struck Jamaica.

On September 3-9, a hurricane struck Martinique, the Caribbean islands and the United States.

On September 8-12, (the Antigua-Charleston Storm): This system was first spotted near the Northern Leeward Islands on the 3rd and moved west-northwest, to very near the Florida coast. It then moved inland near Charleston with disastrous consequences, before moving northeast along the coast of the Atlantic Seaboard; 500 to 575 are killed. [NHC rank 61/259 with more than 500 dead]

On September 22, a hurricane struck Jamaica (20 N).

On October 1, a typhoon struck near Japan (based on Russian corvettes Nadicjada and Neva; a low pressure of 680 mm Hg was recorded or about 906 mb). The typhoon, experienced by the Russian corvettes Nadicjada and Neva, near Japan, was classed as strong and horrible by the Admiral Krusenstern. The fury of the winds was undescrivable. The barometers fell 70 mm. in 4 hours. The barometric minimum was close to 680 mm. The calm lasted a few minutes. The winds shifted from ESE to NE.

On October 4, a hurricane struck Savanna GA.

On October 10, a famous snow hurricane occurred. The unusual coastal storm caused northerly gales from ME to NJ. Heavy snow fell across New England, with three feet reported at the crest of the Green Mountains. A foot of snow was reported in the Berkshires of southern New England, at Goshen CT.

1805

On February 20, the Potomac River was opened after being closed by ice for a period of two

months.

On June 5, a violent tornado swept through MO to Jonesboro IL killing many.

On July 27, a hurricane struck Jamaica.

On July 29, a hurricane was observed north of Barbados at 26 N, 60 W.

English Admiral Horatio destroyed the French-Spanish fleet at Trafalgar and a British army landed in Portugal headed by Wellington.

Emperor Napoleon I (1804-1814) beats Austria, Russia, England and Sweden at Austerlitz.

1806

In February, an Egyptian goose is shot in England (warm weather?).

On August 21-24, (the Great Coastal Hurricane of 1806): The appearance of the weather from the 20th indicated a nearby storm. Heavy squalls broke upon the bar off Norfolk. A hurricane which went inland in South Carolina took 36 hours to go through NC. The system accelerated into the offshore waters of VA. 30 died. [NHC rank 210/259 with 42 dead]

On August 30, a hurricane struck the Bahamas and Eleuthera.

On September 9-11, a hurricane in Dominica (St. Domingo), Guadeloupe caused the Roseau River to overflow killing 131. [NHC rank 63/259 with 457 dead]

On September 20-24, another hurricane struck St. Domingo. [NHC rank 118/259 with more than 165 dead]

Crop failures and famine in Estonia (Tannberg et al. 2000).

On September 27, a typhoon was observed in the east Indies.

On September 28-29, the first signs of a hurricane were seen in Georgia, when several days of heavy rain fell at Augusta, Georgia on the 25th (National Intelligencer). Gales began from the northeast during the night of the 28th at Norfolk. Winds became southeast in the morning before shifting to the west, as the center moved inland of the coastline. Tides rose "uncommonly high". The schooner Charming Mary fell victim four leagues north of Chincoteague, with many of her masts seen above the waterline after her sinking (Chapman).

On October 5, a hurricane struck the Bahamas.

On October 27, another hurricane struck the Bahamas.



1807

On February 7, it was the famous "Cold Friday" in the Midwest and South. The temperature did not rise above zero in OH and KY.

In AL, frigid conditions in February 1807 froze tree sap, causing the bark to explode as the sap expanded.

In April, the north branch of Susquehanna River at Wilkes-Barre PA floods 30 feet.

On June 26, lightning struck a powder magazine in Luxembourg killing 230 as it destroyed the lower part of the town.

On July 25-28, a hurricane struck St. Christoval, Montserrat.

On September 5, a hurricane struck Cuba.

Crop failures and famine in Estonia (Tannberg et al. 2000).

1808

Flooding throughout England; the Thames floods.

The vineyards of Tokay in Hungary are destroyed by hail.

On July 15, a hailstorm in Somersetsshire had stones 6 to 7 inches in circumference.

On September 12, a hurricane again damaged the seawall surrounding Smith Point lighthouse. The ship Mary was destroyed during the gale, while anchored at Baltimore.

A hurricane struck Puerto Rico (AGI Santo Domingo 2325, N 122).

Crop failures and famine in Estonia (Tannberg et al. 2000).

1809

In February-March, in England, a sudden thaw lead to many accidents.

April 10: Austria declared war on France and her forces entered Bavaria.

On May 28, 3 tornados struck Cincinnati OH killing many.

On July 6, a violent tornado in Colchester England.

On July 8, a waterspout in Aix, district of Mt. Blanc, France, was very destructive.

On July 27, a hurricane struck St. Domingo and Guadeloupe.

On August 1-3, another hurricane struck St. Domingo and Guadeloupe and perhaps the same one near Tortola, Montserrat. [NHC rank 177/259 with 62 dead]

On September 2, a hurricane struck Guadeloupe and Puerto Rico.

In September, a typhoon struck Formosa (logbook of the Scalesby Castle, Piddington map). The maps of Piddington show a typhoon that crossed the central part of Formosa.

In South Africa, severe drought in eastern frontier.

On October 13, a hurricane struck Martinique.

On October 18, a hurricane struck Trinidad.

1810

Millions die from famine in China (estimate about 15 million).

In late January, in Ochotsk in Siberia, a dreadful gale for 2 days from the southeast caused the waters of the Ochotsk to rise 12 feet flowing over the tops of the houses and a transport was driven into the middle of the town.

On January 19, the famous "cold day" in New England. Gale force winds wrecked homes, and accompanied a sudden overnight drop in temperature of 50 degrees. Tragedy struck Sanbornton NH where three children froze to death.

On March 6-8, a violent tempest in Cadiz Spain caused great damage to the shipping.

On July 1, a violent storm in London and throughout England.

On August 12, a hurricane struck Trinidad and Barbados.

On August 28, a hurricane struck Barbados.

In September, a typhoon struck the Phillippines (on board the ship Winchelsea, Piddington map). The maps of Piddington show a typhoon which passed through the northwestern sector of Luzon and the Balingtang Channel.

On September 22, a tornado in Fernal Heath Worcestershire England uproots 200 trees.

On September 23-26, a hurricane struck Havana Cuba wrecking 70 vessels.

On October 25-26, a hurricane struck Cuba killing 150.

On November 10, at Boston MA, the sea-banks are broken by high tides; the country all around is flooded.

Last recorded calendar year with no sunspots.

1811

The French are driven out of Portugal.

Millions die from famine in China (estimate about 15 million)

In England, a late start for severe winters in the 1800s, but January of 1811 saw the Thames freeze, once again!

In April, the Danube (at Pesth near Presberg) overflows seeping 24 villages away and killing nearly all their inhabitants.

On April 5, a typhoon struck the Phillippines.

In May, at Madras India, a cyclone drove ships at anchor into the town and 70 vessels sank with their crews.

On May 12, a tornado in Bonsell England accompanied by a tremendous hailstorm.

On May 25, a tornado in Plasyollen Shropshire England uproots many trees and carries them a great distance.

On May 27, a cloudburst at Salon England causes a flood killing many persons and much livestock.

On May 28, the Severn rose 20 feet in 24 hours at Worcester England.

On September 10 in Charleston SC, a tornado destroyed large parts of the city and was one of the worst recorded twisters in history. 500 people died.

In October, the Elbe River overflows at Wengen in the duchy of Wurgem, sweeping the village away.

On October 11, a hurricane struck Pensacola Bay, FL (AGI Cuba 447, N 76).

In late summer-early autumn, a hurricane struck New Orleans, LA.

On December 23, a cold storm hit Long Island sound with a foot of snow, gale force winds, and temperatures near zero. During the storm many ships were wrecked, and in some cases entire crews perished.

1812

On January 10, an extremely dense fog in London.

In England, March this time. 1ft of snow fell in Scotland, around the city of Edinburgh (I think Edinburgh and London had the most weather records of anywhere in the UK due to their frequency in data being recorded) followed by drifting in a gale force North Easterly!

On April 30, St. Vincent in the Caribbean erupts with ashes projected to a great height and carried downwind 200 miles.

A cold spring/summer in France.

On May 4, a storm produced snow from Philadelphia to ME. A foot of snow fell near Keene NH, and in MA, nine inches fell at Waltham, located near Boston.

On June 1, apple trees at New Haven CT did not blossom until the first of June, the latest such occurrence during the period beginning in 1794. Snow whitened the ground in Cleveland OH and Rochester NY.

June 12: France invades Russia. The invasion of Russia cost France 332000 soldiers, most died of starvation and were frozen to death.

On August 12 in Arabia, 2000 people returning from Mecca perish in a windstorm.

On August 14, a hurricane struck Jamaica.

On August 19, a hurricane struck LA wrecking 53 vessels and many small vessels. Extensive damage on land as well with 45 dead. [NHC rank 207/259 with 45 dead]

On August 27-28, a hurricane struck Charleston and spread gale force winds as far north as MD. An all-day easterly gale was seen in the Upper Chesapeake Bay on the 28th. A north-northeast wind began on the 27th. By 10 p.m., it shifted to southeast, accompanied by squalls. As winds became southwest, strong winds buffeted the region until 1 a.m. the 28th. By 11 a.m., winds were dying and the sun was shining once more. The United States schooner Carolina went ashore near James Island.

In September, a typhoon struck the Phillipines (on board the ship Werford and Piddington map). The maps of Piddington show a typhoon which crossed the Mountain Province and the Province of La Union.

On October 12-14, a hurricane struck Trinidad, Jamaica, and Cuba, wrecking 500 houses and many vessels.

On October 21, the Thames overflowed at the Palace-yard and filled Westminster Hall.

On November 24, southwesterly winds of hurricane force sank ships and unroofed buildings at Philadelphia and NYC.

A pestilence in Constantinople kills 300000.

1813

In June-July, in Silesia and Poland, floods wipe out the French army under MacDonald. Much of the populace died too, with about 10000 perishing.

On July 22, a hurricane struck Barbados.

On July 22-23, the same hurricane struck St. Domingo, Martinique, and St. Christoval.

On July 26, the same hurricane destroys one third of the houses in Bermuda and all but two of the vessels in the harbor.

On July 31-August 1, Jamaica was struck by a hurricane.

In August, the river Drave near Orsatch overflowed destroying 6 villages and burying 240 persons of one congregation beneath the ruins of their church.

In August, a hailstorm in the Pyrenees.

On August 5, a hurricane struck Bermuda causing immense damage.

On August 5-9, a hurricane was observed in the North Atlantic at 41 N.

On August 10, two hurricanes struck Martinique killing 3000 and starting a rebellion among the slaves. [NHC rank 12/259 with more than 3000 dead]

On August 19, a hurricane affected Gulf coast. Considered very destructive.

On August 25, a hurricane struck St. Domingo.

On August 27-28, a hurricane struck SC causing mass drownings and destroying 1/3 of the rice crop; off the Bahamas, a hurricane sinks the frigate Laurestina, but her crew is saved.

On September 14, at Widdin, Germany, the Danube flooded and a corps of 2000 Turkish troops were wiped out.

On November 13, a hurricane struck Nouvelle-Ecosse.

On December 23-27, extremely dense fog in London.

In England, for 1813-1814 winter, One of the 4/5 coldest winters in the CET series. Colder winters included: 1962-63 (see part 1739-40 (see part 3) and the coldest, 1683-84 (see part 2) 'Lorna Doone'. A memorable winter overall. January to March was very cold. January had a CET of -2.9 (third coldest since records began?) The next comparable year in terms of cold weather being 1962-63. The tidal stretch of the Thames froze for the last time, the old London Bridge was removed, and other factors helped increase the rivers flow, preventing ice forming again. If it was the same now as it was back then, we would still see it being frozen. A frost fair was held on the Thames, possibly the last 'great' one. The frost began in late December, approaching the new year. Thick fog came with the frost, as was common in London at the time. Probably one of the snowiest winters in the last 300 years, although 1947 was likely to have been snowier. Heavy snow fell for 2-3 days in early January, before a temporary thaw of 1 day. Then the frost just returned, possibly more severe than before due to the snow cover, and persisted until early February. A thaw followed later, and ice floating down the river damaged ships. Fog was also a hazard and took a long time to clear, lasting from late December to early January, an unusual occurrence. Visibility was down to 20 yards at times! Traffic hardly moved, and travelling became very dangerous. The fog cleared following a Northerly gale in early January, when heavy snow fell. A severe and very snowy winter.

1814

A stratospheric volcanic eruption in the Phillipines.

The Thames freezes over and the last frost fair is held. The Tyne was frozen to 20 inches thick. In the winter of 1813-14 there was the last great Frost Fair (previous ones on 1564, 1608, 1620, 1634, 1677, 1684, 1716, 1740, 1763, 1788, and 1795; additional frost fairs in 695, 1310, 1689, and 1709; additional years when the Thames froze over are 827, 923, 988, 998, 1061, 1063, 1093, 1137, 1150, 1205, 1270, 1281, 1407, 1434, 1506, 1535, 1536, 1649, 1655, 1663, 1665, 1666, 1667, 1669, 1677, 1785, and 1811) held on the River Thames. The watermen, who usually earned a living by ferrying people across the river, replaced their lost earnings by charging people for entering the fair. To facilitate this, they broke the ice near the banks so people needed the watermen to help them cross. Booths were erected on various parts of the Thames; several contained printing presses, the owners of which sold various brief accounts of the Frost Fair; the Antiquarian Society of Newcastle noted that the rapid river Tyne was frozen to a depth of 20 inches. Gavin Schmidt claims the Thames froze in 923, 1063, 1076, 1410 (record freezing), 1536, 1608, 1683-4, 1715-6, 1739-40, Dec 1788, 1794-1795 and 1814.

In January, a great fall of snow everywhere in England.

In January, a gale at Falmouth England wrecks the transport Queen killing 389 out 473.

On February 12, the Narbudda river in Bengal India swept away 15 villages with their inhabitants, houses, and cattle.

On June 4, a hailstorm in Cincinnati OH.

On July 3 in New England, darkness due to clouds carrying dust and wood ashes.

On July 23, Dominica suffers considerable damage from a hurricane.

On August 7, a severe frost in Quebec.

On August 24-25, (the Burning of Washington hurricane): A very hot day accompanied the retreating of Federal troops from the Capitol. As Dolly Madison and an armed escort stopped in Tennallytown (Tenlytown) during their retreat, a strong wind accompanied by dark clouds rolled over Washington county. Winds near hurricane force and a prolonged downpour added to the drama of the day. The rains were helpful, as they helped firefighters quench the fires set by the British (Helm). The weather signs mentioned point to this either being a severe thunderstorm, or a tropical cyclone; Cornell says it was a tornado.

In October, a hurricane struck Bermuda.

On December 16-17, a tremendous storm through England and Ireland causing much damage and destroying many ships.

1815

Napoleon is defeated at Waterloo in Belgium by Wellington and the Prussian army.

April 5: Mount Tambora on Subawa Island, Indonesia, in the Java Sea erupted. One-third of the 13000 foot mountain was blasted into the air. About 100000 people were killed. The whole planet was shrouded in its debris. In Borneo it was pitch black for 3 days due to volcanic dust from Tambora 300 miles away.

On August 7, a severe frost in Quebec.

On August 9, a hurricane was observed in the North Atlantic at 40 N, 62 W.

On August 30, a hurricane struck Puerto Rico (AHN ULTRAMAR 1067, Expediciones 56).

On August 31-September 1, a hurricane in the West Indies kills scores with the Leeward Islands hardest hit.

In September (?), a hurricane struck Bermuda.

On September 15, a hurricane struck Puerto Rico (AHN ULTRAMAR 1067, Expediciones 56).

On September 18-23, a hurricane struck St. Barthelemy.

On September 20, the hurricane struck Turks Island.

On September 23, one of the greatest hurricanes to strike New England made landfall at Long Island and crossed MA and NH. It was the worst tempest in nearly 200 years, equal to the hurricane which struck in 1938, and one of a series of severe summer and autumn storms to affect shipping lanes that year; it was called "The Great September Gale of 1815"; sea spray went 25 miles inland. It first made landfall on Long Island, N.Y., and then again in Connecticut. The storm flooded Providence, R.I., and caused extensive damage throughout the region.

On September 29, a hurricane struck Barbados.

On October 18, a hurricane struck Jamaica and the whole island was deluged, many vessels were destroyed, many houses washed away and many people died including hundreds of negroes. [NHC rank 145/259 with more than 100 dead]

On October 24-26, a powerful hurricane struck St. Bartholomew in the Caribbean Sea. By the 24th, it progressed west and northwest to a position east of Chesapeake Bay. The schooner Friendship was knocked on her beam ends by unfriendly winds and seas. For 48 hours, the storm passed offshore, delaying ship arrivals into Norfolk with its strong northwest wind (Chapman).

Number of typhoons striking Guangdong Province, China this year: 1. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1816-25: New glacier offensive throughout Europe; all Alpine glaciers showed advances reaching positions slightly short of 17th century Alpine maximum limits (Aber).

1816

This is the year of no summer caused by the eruption of Mount Tambora, Java. Starvation swept Europe and 50000 people died in Ireland from typhus.

This summer was cold and wet, crops failed and famine forced many to emigrate to Canada. Scotland was land clearing as sheep were more profitable than people. Some Scots who had occupied the same land for forty generations were driven away. This was caused by the eruption of Mt Tambora, Indonesia last year that sent a blanket of debris that covered the sky around the world.

In 1816, Savannah, Georgia, celebrated the 4th of July with a high temperature of 46F. Because it was so cold across the eastern United States, crops were ruined as the growing season was shortened. Snow even fell in June, the heaviest in New England between June 6th and 11th, creating snow drifts 18 to 20 inches in parts of Vermont.

This cooler than normal weather also contributed to crop failure in Canada and Western Europe. There was also sunspots on the sun visible to the naked eyes. This combined with the unusual amount of volcanic dust in the stratosphere might have lead to global cooling.

It has been theorized that a series of volcanic eruptions in earlier in the decade ejected billions of



cubic yards of fine volcanic dust high into the atmosphere. On St. Vincent Island in the Caribbean, Soufriere erupted in 1812. In the Philippines, the Mayon Volcano erupted in 1814, and Mount Tambora, located in Indonesia, erupted in 1815.

On January 12, in Strabane, Ireland, the snow on the nearby mountains melted causing destructive flooding; it was the worst flooding there in 20 years.

In February, the greatest floods ever remembered in Northumberland and Durham, England.

On March 21, the river Vistula, Germany, overflows putting many villages under water; 55 villages in Werder, 49 in Siegendoff; 17 in Ebling; 119 villages total. Thousands died.

In the summer, hot in the Ukraine.

In June-July, at Thiel, Arnheim, Zutphen, and numerous other places in Europe, the harvest was nearly destroyed by floods from continued rain.

On June 6, the temperature reached 92 degrees at Salem MA during an early heat wave, but then plunged 49 degrees in 24 hours to commence the famous "year without a summer".

On June 7, a famous June snow occurred in the northeastern United States Danville VT reported drifts of snow and sleet twenty inches deep. The Highlands were white all day, and flurries were observed as far south as Boston MA.

On June 24, the cold weather of early June finally gave way to several days of 90 degree heat in MA, including a reading of 99 degrees at Salem.

On July 2, a dreadful storm in Worschetz in the county of Timeswar in Germany damaged 2600 buildings.

On July 4, Savannah GA has a high temperature of only 46 degrees F.

On July 8, frost was reported in low places throughout New England.

In AL, cold temperatures produced a frost during every month in 1816 and in April of that year a passenger on a ship sailing from Mobile to New Orleans reported seeing ocean spray form ice on the ship's rigging.

On August 22, the growing season for corn was cut short as damaging frosts were reported from NC to interior New England.

On August 31, a tremendous gale on the English coast sank many vessels and caused great damage to the shipping; in August, tremendous storms of wind and hail desolated various parts of Cumberland and Westmoreland, England.

Ireland had an exceptionally wet summer, with rain falling 142 out of 153 days, which led to a wholesale destruction of wheat, oat and potato crops. An estimated 60,000 people died of famine or famine related diseases in this, Ireland's first major potato failure. A wave of emigration followed.

Conditions in Europe were bad. The altered weather had adverse effects on French crops, greatly reducing the food supply. Wholesale failure or late harvesting of grapes due to frosts resulted in a practically nonexistent grape harvest. Food riots broke out in Britain, Switzerland and France triggering the looting of grain warehouses. Widespread famine in Switzerland caused the government to declare a national emergency and release instructions for distinguishing edible plants from poisonous ones. That year, the British government abolished income tax because of severe food shortages.

On September 2, snow fell in Cambridge and Huntingdon causing much damage to the gardens. Known as the year without summer, snow fell very late on, and the summer never recovered. The winter proceeding it was severe. A volcanic eruption (Tambora: East Indies) disrupted wind patterns and temperatures greatly, affecting the track of depressions, which tracked further South than usual, and making the UK very cold and wet for the summer and beyond. Scotland was drier though, an obvious sign that the depressions changed track. In September the Thames had frozen! Snow drifts remained on hills until late July, 1817!

On September 15, Dominica has damage from a hurricane.

On September 18, a tropical storm affected VA before moving northeast into New York. Heavy rains caused the James river in Richmond to rise only an inch or two lower than the High Fresh of 1814. Flood waters invaded the first floors of area homes. One bridge was submerged, cutting off travel (Chapman).

On September 27, a black frost over most of New England kills unripened corn in the north resulting in a year of famine.

On October 16, a hurricane struck St. Domingo and Martinique.

1817

The first great cholera pandemic of this century, 1817-1823, originated in India, spreading to Japan, China, Russia and the Middle East. A cold winter stopped its spread into Europe.

On January 17, a luminous snowstorm occurred in VT and NH. Saint Elmo's fire appeared as static discharges on roof peaks, fence posts, and the hats and fingers of people. Thunderstorms prevailed over central New England.

On February 27, a tremendous gale of wind did considerable mischief in Birmingham, Liverpool, Manchester, and other northern towns of England.

On August 8-9, a tropical storm with heavy rain moved through VA. At Norfolk, floods to the north delayed the passage of mail. The gale moved slowly northeast, reaching NY on the 12th. (Chapman).

On September 15, a hurricane struck St. Domingo.

On September 26-27, a hurricane causes severe damage at St. Lucie, Dominica, and Barbados, killing 200 and sinking 7 ships; St. Vincent was also struck. [NHC rank 91/259 with more than 252 dead]

On October 25, a hurricane struck Barbados, and Martinique.

1818

A most destructive storm raged at Hindustan (cyclone most likely).

On March 4, a tremendous hurricane throughout England that did considerable damage to shipping.

In Norfolk, England: "Severe drought for 9 weeks: 10 May - 12 July" "Drought followed by rain on 12 July"

On August 28, a hurricane struck Bermuda.

On September 10-12, a hurricane struck the Cayman Islands and Campeche.

On September 12-14, among the earliest accounts of a direct hurricane strike on the TX coast was this storm which passed by the Cayman Islands, before moving westward into the Bay of Campeche, then northwest to hit Galveston on September 12th. It was described as a storm of extraordinary violence. War ships from Vera Cruz who encountered this storm were put out of commission for months.

On September 19, a hurricane struck St. Domingo.

On September 21, the same hurricane struck Barbados.

On September 22-25, Antigua was struck by the hurricane.

On September 27-30, Barbados was struck by another hurricane.

On October 7, Port Royal, Jamaica, was struck by a hurricane.

On October 21, a hurricane struck St. Lucie.

On November 17-20, a hurricane struck Jamaica.

Number of typhoons striking Guangdong Province, China this year: 4. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1819

A late harvest of crops in India leads to famine.

In June, 5000 acres in the Fen countries of England are deluged.

On July 26, twin cloudbursts of fifteen inches struck almost simultaneously at Catskill NY and Westfield MA. Flash flooding resulted in enormous erosion.

On July 27-28, a small but intense hurricane passed over Bay Saint Louis MS. The hurricane was considered the worst in fifty years. Few houses were left standing either at Bay Saint Louis or at Pass Christian, and much of the MS coast was desolate following the storm. A United States cutter was lost along with its 39 crew members. The storm struck the same area that was hit 150 years later by Hurricane Camille. [NHC rank 209/259 with 43 dead]

On August 25, a hurricane struck St. Domingo.

In September, a typhoon struck the Phillipines (Piddington map). The maps of Piddington show a typhoon which passed through the Babuyan Islands.

On September 20-22, a hurricane struck the Leeward Islands and on the island of St. Thomas alone 104 vessels were lost; Barbados and Puerto Rico were also struck.

On October 13-15, a hurricane struck Barbados and St. Lucie.

A hurricane also struck Cuba this year.

On October 28, a typhoon struck near the Phillipines (Piddington map). According to Piddington, a typhoon moving NW by W from the Pacific overtook the ship Warren Hastings of the East India Company, towards the end of October 1819, in latitude 20° N and longitude 119° E.

On November 6-10, dark days in New England and Canada.

On November 12, a smoky day in GA.

Number of typhoons striking Guangdong Province, China this year: 5. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

In 1818-20, very cold winters in England.

1820

In the first two weeks of January, a cold wave extended to the province of Andalucia (Espana) and Napoli (Italia). The Rhine, Thames, Rhone, Garonne, Saone and the Danish coastal waters froze over; in Haarlem (Holland) -16 C, in Mons (Belgium) -16 C, in Maastricht (Holland) -19 C, and in Berlin -24 C. As usual, the thaw caused problems with severe flooding near Keekerdom (Nijmegen, East Holland) large parts of the Dutch river area are like a sea with on the 22nd of January. Dikes broke down. Cattle are lost. In Belgium cities like Brussel, Antwerp, Leuven and Liege are totally or partly under water.

On March 8, a hurricane struck Alquizar, Cuba.

On July 7, a storm in France laid desolate 10 communes in Montargis and everything destroyed for a space of 20 leagues.

In September, a severe gale from the southeast in New England and the middle states along the coast (hurricane?).

In September, a typhoon struck the Phillippines (Piddington map). The maps of Piddington show a typhoon crossing the islands of Busuanga and Culion.

1821

On January 25, the Hudson River was frozen solid during the midst of the coldest winter in forty-one years. Thousands of persons crossed the ice from NYC to NJ, and refreshment taverns were set up in the middle of the river to warm pedestrians.

In England, late May saw snow in London, probably the latest snowfall there until 2nd June 1975.

On September 1, a hurricane struck Guadeloupe and Turks Island. On September 3, the same hurricane made landfall at Long Island, near Kennedy Airport, then moved through western CT. The hurricane produced a record tide at NYC; it caused tremendous damage in NC and VA. [NHC rank 98/259 with more than 200 dead]

On September 9, a hurricane struck Antigua and St. Barthelemy.

On September 13, the hurricane struck Cuba killing 60.

On September 15, a gale demolished the military quarters on Petite Coquille Island LA and the entire garrison of hundreds was lost. [NHC rank 225/259 with 35 dead]

On September 23, a hurricane struck New Haven CT.

In October, a typhoon struck the Phillippines (Piddington map). According to Piddington, a typhoon crossed the Bataan Islands.

On October 17, a second typhoon struck the Philippines (report of the corvette Fidelidad).

In November, a great storm along the coast of England from Durham to Cornwall destroyed many vessels.

In 1821-22, a very mild winter in England.

1822

Galoengong volcanic eruption in Java; a terrible explosion that kills 4000.

A dry fog in England and France (people could gaze on the sun at noonday).

A tornado only 25 feet wide is observed in Boulogne, France.

On March 11, a hurricane struck Jamaica.

In June, a cyclone killed 50000 near the mouth of the Ganges River in India.

On July 11, a hurricane struck Mobile AL.

On September 4, a tornado off North Inlet SC forced tides to records heights killing 7 and destroying 7 houses and 1 church. 37 died.

On September 27-28, a hurricane struck Charleston, then moved through central NC and western VA, accompanied by a "tropical deluge". Richmond had endured a long drought until this storm visited the region. "Very copious rains" and "equinoctial winds" quickly ended the drought. Flash flooding occurred on the James River, rising feet in depth in a matter of one hour (Washington Gazette). Mail south of Richmond was unable to be delivered for three days, as the storm rendered roads impassable. At Monticello, near Charlottesville, Thomas Jefferson's granddaughter noted that a violent storm broke branches and felled one of their willows. At Lynchburg, winds uprooted trees and toppled chimneys. Along the Staunton River, rains began on the 27th and continued until 9 a.m. the next day. The river rose to "the greatest height ever known" (Chapman); 300 were killed in all. [NHC rank 81/259 with 300 dead]

On December 12, near Dublin Ireland, many houses were blown down and vast numbers unroofed by a violent storm.

On December 18, a hurricane struck Barbados.

In 1822-23, a very cold winter in England. In England, severe winter, ice on the Thames by late December. February 8th (1823) saw a great snowstorm in Northern England. People had to tunnel through the snow.

1823

On March 30, a great Northeast storm with hurricane force winds raged from PA to ME. The storm was most severe over NJ with high tides, uprooted trees, and heavy snow inland.

On June 24, a tornado in Scarborough England.

On December 23, snow fell in Jamaica at Annottobay.

1824

Lack of rain causes drought and famine in India.

On May 22, a hurricane struck Alquizar, Cuba.

On July 14, another hurricane struck Alquizar, Cuba.

On July 26, a typhoon is observed in the east Indies.

On September 7-8, a hurricane struck Guadeloupe.

On September 15, a hurricane lashed St. Simon Island GA, killing 83. [NHC rank 151/259 with 100 dead]

On November 1, a typhoon struck the Phillipines (letter of the Governor of the Phillipines). On account of the earthquake of October 26, 1824, the garrison of Manila had to abandon the barracks and live for several days under provisional tents in the outskirts of the City of Manila. The typhoon that began October 30th, destroyed the temporary camp, damaged the buildings that had been spared by the earthquake and sank six vessels anchored in the bay.

On November 19, ice jams in the river Neva, Russia, causing St. Petersburg and Kronshtadt to be flooded, killing about 10000.

On November 23, a tremendous hurricane throughout England that did considerable damage to shipping.

1825

Droughts in India, Indonesia, and Australia.

On March 3, a hurricane struck Havana Cuba.

On May 18, a tornado (said to have crossed all of the state of OH) smashed into the log cabin settlement of Burlington, northeast of Columbus.

On June 3-4, a severe tropical storm tormented the Atlantic seaboard from Florida to New York City. It was first sighted near St. Domingo on May 28th and moved across Cuba on June 1st.

Gales began at St. Augustine as the cyclone approached United States soil on the 2nd, and at Charleston on the 3<sup>rd</sup>.

On July 25-26, Guadeloupe devastated by hurricane; the barometer dropped 1.86 inches; St. Domingo and Martinique are also struck; on July 26, Puerto Rico is struck by the hurricane killing 374, injuring 1210, and leveling 7000 houses. [NHC rank 28/259 with less than 1300 dead]

During the summer, the worst forest fire in Canadian history with fires in ME and New Brunswick, 40 by 6 mile swath causing up to 500 fatalities; 4 million acres are burned.

On October 1, a hurricane struck Cuba.

A cyclone in Mayon, Phillippines, kills 1500 and causes widespread destruction.

1826

In India, lack of rain in 1825 and 1826 brought famine to Delhi, Madras, and western districts.

In summer, the warmest on record in England. In July, the great drought in England leads to spontaneous fires.

A hurricane struck Cuba this year.

On August 18, a hurricane struck the Antilles.

On August 27, a hurricane struck western Cuba. [NHC rank 232/259 with 33 dead]

In September, a typhoon struck the Phillippines (historical records of Lumban). The historical records of Lumban, Laguna, mention three great calamities of the year, 1826, namely, a strong earthquake, a fire that consumed most of the town, and a severe typhoon. Perhaps this typhoon recorded in the records of Lumban is the same as that mentioned by Piddington as having passed through Basuanga and Culion.

On November 6-9, a hurricane in the North Atlantic struck Teneriffe.

1827

The great drought in Buenos Aires starts; so dry thistles die, streams dry up, and many animals die including more than one million cattle.

More drought and famine in India, but perhaps not as serious as the previous two years.

On July 13, two tornados in the Glatz mountains in Germany caused dreadful destruction at Hautenbach and many other villages with many people perishing.



On July 30, a hurricane struck the Carolinas and northward.

On August 17-28, (the St. Kitts Hurricane): A hurricane originating near the Windward Islands struck Cape Hatteras, before moving northeast offshore VA, MD, and New England. The track of this storm was to the east of Norfolk. Initial reports from Wilmington, N.C. indicated that this was a storm of great intensity as it passed by to their east. One report gave an account of waves over the top of garden fences some 6900 feet from the beach. Other reports indicated storm tides greater than 10 feet above normal levels. The town of Washington, NC, on the western end of Pamlico Sound, reported water levels 12 to 15 feet above ordinary levels.

On September 7, a hurricane was reported in the North Atlantic.

On October 11, a hurricane struck the Bahamas.

On October 26, a typhoon struck the Phillipines (report of the Governor-General). The German ship Asia, which, having left Manila on October 26th, met a furious typhoon around Lubang and was dashed against the coral reefs of the island.

A hurricane also struck Belize this year.

1828

Droughts in India, Indonesia, and Australia.

The great drought continues in Buenos Aires.

On January 12-13, on the coast of England, an awful storm wrecks many vessels and drives 13 ashore at Plymouth alone.

On February 18, on the coast of Spain and Portugal, a storm destroys between 160 and 180 vessels at Gibraltar.

On March 15, a hurricane was observed in the Gulf of Mexico.

In August, a typhoon struck the Phillipines.

On September 17, a typhoon struck Japan killing 10000.

On September 19, Bermuda is on the fringe of a passing hurricane.

1829

The great drought continues in Buenos Aires.

On April 9, the Vistula near Danzig Poland breaks the dikes killing 1200 people and 10000

cattle; 4000 homes are destroyed.

On April 29, a hurricane struck Guatao, Cuba.

On July 24, a hurricane is reported in Boston MA.

On August 3, 4, 27, and 29, the rivers Spey and Findhorn in Scotland overflow causing Morayshire to flood, killing many.

In August, rain falls for 28 days in the usually dry lowlands of northeastern Scotland; 5000 square miles are flooded. On August 9, in Scotland, the Spey and Findhorn rivers flooded by 50 feet to be called the Moray Floods.

In August, two typhoons disturbed the seas adjoining the Phillipine Islands. One passed through Baler and the provinces of La Union, the other crossed the South of Formosa.

On September 10, a hurricane struck Mouth of Rio Grande TX. Inundated the Lower Coast. Port Isabel and Brazos Santiago saw great destruction. Corpus Christi reported high water. A subsequent flood along the Rio Grande washed away the Socorro Mission, originally built south of El Paso in 1691. The building, made of adobe brick, melted and sank into the ground (Ellis 21).

On October 16, a typhoon struck the Phillipines (report of the Regente, ship of the East India Company). The ship Regente of the East India Company was caught in a typhoon between the islands of Cabra and Lubang and driven by the southwesterly winds against the cliffs of the southwestern coast of Lubang, where it became a total wreck

In 1829-30, a very cold winter in England. In England, a cold year. Continuous frost throughout January, 1830. The summer was wet, and quite cold. Over an inch of snow fell in early October, although where isn't certain, most likely to be London. 6 inches fell in London and the South in late November. Northerly and Easterly gales damaged ships, and lost some.

In 1829-30, Lake Constance in central Europe froze over for the first time since 1740 (see 1963)

1830

In England, continued cold from last year. Severe winter. Continuous frost from the 23rd to 31st December, 12th to 19th January, and 31st January to 6th February. Ice on the Thames from late December to late January. Some places completely blocked. 25th December 1830 was cold, with -12c recorded in Greenwich.

Also a very severe Dutch winter.

The great drought of three years in Buenos Aires ends.

In January, a hurricane struck Guines, Cuba.

In February, the Danube overflows inundating 50000 houses in Vienna.

On April 24-25, a hurricane struck Vera Cruz, Mexico.

On August 7, a hurricane struck Jamaica.

On August 16-18, (the Atlantic Coast Hurricane): This hurricane passed northeast of the Caribbean Sea and tracked west north- west to a point very near Daytona Beach, Florida before recurving to the north and northeast. The center made landfall on the morning of the 16th near Cape Fear and moved back out into the Atlantic by nightfall. The area's three-month drought came to a sudden end. Complete damage was done to corn crops as a considerable amount of rain fell; the hurricane also struck St. Domingo, St. Thomas, Turks Island, and Barbados.

On September 16, a typhoon struck the Phillippines. The chronicles of the time mentioned three calamities which befell Manila on this day: the overflowing of the Pasig River which flooded the city, various earthquake shocks, and a typhoon or colla of considerable intensity.

On September 20, Dominica suffers considerable damage from a great hurricane.

On December 5-6, a hurricane struck the coast of the United States at 30 N.

On December 29, a very heavy snowstorm ushered in the "winter of the deep snow". The storm produced 30 inches of snow at Peoria IL and 36 inches at KS City MO. Cold and snow continued until the middle of February (1831) causing great suffering among pioneers.

A cholera pandemic spread worldwide in 1830-1837.

1831

Cholera swept Europe killing 900000 peoples this year and millions would die before the end of the century.

On January 13-15, a gale in FL.

On January 18-19, a blizzard with several inches of snow as far south as GA, 30 inches at Gettysburg PA, and 22 inches at Pittsburg, PA.

On January 31-February 3, snow fell over the north of England and all of Scotland.

On April 27, a hurricane struck the United States.

On June 10, a hurricane struck FL.

On June 23-27, a hurricane struck Trinidad, Tobago, Antigua, and Grenada.

In late July, Babuyan Philippines erupts (stratospheric dust cloud); dry fogs worldwide.

On July 16, a dreadful storm at the Cape of Good Hope causes immense property damage.

On August 4, a tornado at Glanfesck Ireland destroyed farmhouses and other buildings; 17 perished.

On August 10-11, a hurricane struck Barbados, killing 1477 out of 100000 and causing extensive damage; within 3 months, the reconstruction was so complete, there was no sign of damage. On August 13-14, the same hurricane struck Cuba, killing 100. In all this hurricane killed more than 1500 people. [NHC rank 15/259 with 2500 dead]

On August 11-13, the sun appears blue in Bermuda.

On August 13, a blue sun was widely observed in the southern states. The phenomena was believed to have pre-staged Nat Turner's slave uprising. The blue sun had appeared earlier in Europe, so perhaps it came from the Babuyan eruption. People who saw the skies this year and in 1883 after Krakatoa said they were very similar.

On August 18, a hurricane made landfall near mouth of Rio Grande TX. Port Isabel and Brazos Santiago were again ravaged by the storm. This hurricane may be the August 10-11 hurricane reported on above.

On September 6-10, a hurricane struck Belize. [NHC rank 16/259 with 2500 dead]

In September, the maps of Piddington show a typhoon which crossed the China Sea close to Macao.

On October 22, three typhoons struck the Philippines. On the night of the 22nd to the 23rd of October, 1831, Manila was visited by one of the most horrible typhoons ever known in Philippine History. Frigates and brigs which were carried along by the typhoon then raging over the bay, either ran aground or dashed to pieces on the sea walls. The material damage was considerable, amounting to more than a million pesos. Between Cavite and Tondo alone, about 150 persons were found drowned. Official statistics give 33357 as the number of houses destroyed by the typhoon in Tondo, Bulacan, Bataan, Cavite and Laguna. To aid the typhoon sufferers, a national subscription was opened and funds raised regardless of regional demarcations or racial differences. The maps of Piddington show three typhoons in October, 1831. One of these passed Calapan, Mindoro, and headed for the sand-banks of Macclesfield in the Paracels. The third crossed the Bataan Islands.

On December 1, the coldest December of record in the northeastern United States commenced. Temperatures in NYC averaged 22 degrees, with just four days above freezing, and at Burlington VT the temperature never did get above freezing. The Erie Canal was closed the first day of

December, and remained closed the entire month.

1832

An outbreak of cholera in London spread by dirty water killed thirty two thousand people, at this time, one in four babies died within one year of birth.

On January 25, a hurricane struck Ing. Delicias, Cuba and Trinidad.

In early February, the Ohio River overflows flooding parts of Cincinnati, OH; the water rose 64 feet; on February 10, the Ohio River at Pittsburgh PA crests at 38.0 feet.

On June 3-6, a hurricane struck Cuba and the Bahamas. On June 6, the same hurricane struck Bermuda. [NHC rank 191/259 with 52 dead]

On August 7, a hurricane struck Jamaica.

In August, the maps of Piddington show a typhoon which moved along the south of Formosa and passed close to Macao.

In October, the maps of Piddington show a typhoon which crossed the Northern part of the Bataan Islands, Phillipines.

At Coringa, Hindustan, a great and deadly flood, mostly likely from a cyclone.

1833

Droughts in India, Indonesia, and Australia.

In May, a cyclone struck Calcutta, India, killing 50000 and destroying 300 villages.

On June 2, a violent hurricane in London and other parts of England; there is great loss of shipping off the coasts of England and France.

On July 2, an unusually large New England tornado, one half to three quarters of a mile wide, went from Salem Pond to Norton Pond VT, and then into Canada. It "prostrated" nearly everything in its path.

On August 14, a hurricane struck Guadeloupe, Antigua, and Bermuda.

On August 29, Canton China is flooded by rains killing 1000 and sweeping away 10000 houses (typhoon?).

On September 20, a hurricane struck St. Domingo.

In October, the maps of Piddington show a typhoon which moved along the China Sea and the western coast of Formosa.

In October, 18000 houses are carried away in Chienchow China with much other damage throughout China caused by incessant rains.

On October 16-19, a hurricane struck the Gulf of Mexico and Cuba.

On December 18-19, a typhoon struck the Phillipines (Letter of the Governor-General). "From December 18 to 19, 1833, there was a strong hurricane in both of the Camarines and in Albay, which lasted 16 hours, demolishing many houses, destroying trees, swelling the rivers and flooding the corn fields."

In 1833-34, a very mild winter in England.

In 1833-34, numerous shipwrecks occurred on the coasts of England, Scotland, and Ireland, as well as both sides of the Channel and near Germany.

1834

On January 15, whole villages swept away and many thousands of its inhabitants around Canton, China.

On March 15-16, a hurricane struck Santa Clara and Malezas, Cuba.

On April 26, killer frosts were reported in the Deep South. The frost was quite severe around Huntsville AL, and highlighted a backward spring in the South that year.

On May 15, the Northern Atlantic Coast States were in the midst of their greatest May snowstorm of record. The hills around Newbury VT were covered with two to three feet of snow.

In summer (?), dense fogs in Germany due to burning of peat- bogs.

In August, pieces of ice three feet in diameter fell at Padua, Italy.

On September 4-5, a hurricane that struck the NC coast also created problems for VA. A "severe" northwest wind capsized the schooner E. Pluribus Unum, laden with stones. The crew escaped with their lives. The schooners Susan and George Wheaton bumped into each other at Newport News. The Susan's upper work was carried away (Chapman). [NHC rank 222/259 with 37 dead]

In September, a hurricane struck South TX. Establishments along the Mouth of the Rio Grande suffered severely.

On September 20-23, a hurricane struck St. Domingo killing thousands and destroying most houses and crops on the island. [NHC rank 99/259 with more than 200 dead]

On October 18, a hurricane struck the coast of Great Britain causes great damage to shipping.

On October 20-21, a hurricane struck Martinique.

1835

In January, a severe frost in America with -30 F at 42 N and -40 F in ME.

On February 8, severe cold in southern United States with 0 at Charleston, and 8 at Jacksonville; orange trees killed to roots; northernmost orange production is limited to FL from here on.

On March 16, a hurricane struck Isla de la Juventud, Cuba.

On April 28, a hurricane struck the coast of the United States.

On June 19, a tornado tore through the center of New Brunswick NJ killing 5 persons and scattering debris as far as Manhattan Island. The tornado provided the first opportunity for scientists to study firsthand the track of such a storm; it flushed all water from the bed of the Raritan River.

In July, the maps of Piddington show a typhoon which crossed the island of Palawan towards the China Sea.

In August, according to the maps of Piddington, a typhoon, crossed the island of Mindoro in a SE-NW direction. This typhoon was felt by the Lady Hayes which was then south of Macao, and the Levant which was then in the center of the China Sea in the latitude of Bolinao.

On August 12-18, The Antigua Hurricane. This storm was named such after it passed over Antigua on August 12th. It then raked the Greater Antilles; passing over Puerto Rico, Hispaniola, and Cuba before heading back out into the open waters of the Florida Straits. The hurricane hit the Mouth of the Rio Grande on August 18th. In its 28 hour duration, many houses were blown down at Matamoros. The storm surge engulfed the barrier island and lowlands along the river; at least 14 died.

On September 3, a hurricane struck Barbados.

On September 12-18, a hurricane lashed the Florida Keys killing 100.

On September 18, a hurricane struck Matamoros Mexico.

On November 10, a hurricane struck Nouvelle Ecosse.

On December 16, New England experienced one of their coldest days of record. At noon on that bitterly cold Wednesday the mercury stood at four degrees below at Boston, 15 degrees below at Norfolk CT, and 17 degrees below at Hanover NH. The temperature at Boston was 12 degrees

below zero by sunset. Gale force winds accompanied the severe cold, and that night a great NYC fire destroyed much of the financial district.

1836

Hekla in Iceland erupts, causing widespread destruction.

On July 8, a dark day in New England.

On September 28, the first of three early season snows brought four inches of snow to Hamilton NY, and two inches to Ashby, MA.

On October 6, a second early season snowstorm produced eleven inches at Wilkes Barre PA and 26 inches at Auburn NY. All the mountains in the northeastern United States were whitened with snow.

On October 12, a third early season storm produced heavy snow in the northeastern United States. Bridgewater NY received 18 inches, a foot of snow fell at Madison NY, and for the third time all the mountains of the northeastern United States were whitened.

On November 29, a hurricane struck England and the coast of France causing great damage to shipping; the cross on St. Pauls cathedral vibrated fearfully.

On December 20, a famous cold wave occurred in central Illinois. A cold front with 70 MPH winds swept through at Noon dropping the temperature from 40 degrees to near zero in a matter of minutes. Many settlers froze to death. Folklore told of chickens frozen in their tracks and men frozen to saddles. Ice in streams reportedly froze to six inches in a few hours.

On December 24 and several days afterwards, snow fell in England. The snowstorm covered 60000 square miles to a depth of several feet; snow also fell in Germany, Holland, France, and Spain. It also snowed in Paris and northern France. In England, on 25th December 1836, roads impassable, snow depths reached a staggering 5-15 feet in many places, and most astonishingly, drifts of 20-50 feet!

1837

In March, a severe ice storm in New England.

In April, a snowstorm throughout England and France.

In summer, a drought in India leads to famine killing about 800000.

On July 9, a hurricane struck Barbados and St. Lucie.

On July 26, a hurricane struck Barbados, Martinique, and Cuba. [NHC rank 184/259 with 57



dead]

On July 31, a hurricane struck Antigua and St. Thomas.

On August 2-4, a hurricane and quake on St. Thomas killed 500. On August 6, the hurricane struck the Lesser Antilles. On August 12, the hurricane was observed northeast of the Caribbean. [NHC rank 124/259 with more than 141 dead]

On August 18-20, (the Calypso Hurricane): A hurricane which skirted the NC Outer Banks also affected VA. Damage was considered lighter than at Wilmington, where bridges washed out during the storm. This was referred to as the worst storm in Norfolk since 1822. The storm was observed east of the West Indies on the 13th, moved into the central Bahamas on August 16th and began to affect the NC coast on the 18th, where the Norfolk newspapers reported it had continued with unusual severity for forty-eight hours.

On August 31, a hurricane struck St. Mark.

On August 31-September 3, a hurricane struck Apalachicola FL.

On October 9, the "Racer's Storm" leaves 2000-mile path of destruction. Racer's Storm, named for a British sloop of war which encountered the storm in the northwest Caribbean, was one of the most destructive storms of the 19th century. It formed near Jamaica, crossed the Yucatan, struck the Gulf coast of Texas, and moved over Louisiana, Mississippi, Alabama, Georgia, and South Carolina before arriving off the North Carolina coast on October 9. It was the tenth known storm of that destructive season. The hurricane was observed from September 27 to October 10. [NHC rank 137/259 with 105 dead]

On December 27, a flood in Yorkshire England takes many lives.

In 1837-38, a very cold winter in England.

1838

In January, the Thames is completely blocked by ice.

Murphy's Almanac predicts 20 January as coldest day of the year in UK. It is coldest day of the century.

Drought in India (1837-1838) kills 800000.

Budapest is flooded by the Danube River.

On September 7, a hurricane struck near Cape Florida, Fl. [NHC rank 218/259 with 38 dead]

On September 10, a hurricane struck the Bahamas.

A hurricane made landfall along Lower Texas Coast; caused high tides. Settlements at the Mouth of the Rio Grande again suffered losses.

On September 28, a violent storm visited the western and southern coasts of England destroying many houses, vessels, and lives.

On October 9, a tornado in Calcutta India destroys 1245 houses and kills 215 people.

On October 28, a typhoon struck the Phillippines (report of the Governor of Marianas to the Governor of the Phillippines).

On November 1, a hurricane struck Vera Cruz Mexico.

On November 26, another hurricane struck Vera Cruz Mexico.

On November 26-28, a hurricane was observed in the North Atlantic off the coast of Europe.

On December 13, a typhoon struck the Phillippines (Letter of the Governor-General).

On December 18-19, a typhoon struck the Phillippines (at Carmarines or Albay). Both of the Camarines and Albay had experienced a hurricane which lasted 16 hours. It destroyed many houses, uprooted many trees, overflowed the banks of the rivers and damaged plantations.

1839

Droughts in India, Indonesia, and Australia.

On January 6-7, a violent hurricane extended along the north coast of England, over all the northern countries, Scotland, and Ireland causing extensive mischief; 20 are killed in Liverpool and 100 drowned nearby; Dublin suffered dreadfully; called The Big Wind.

On January 26-27, a thaw caused by heavy rains and a snow-ice melt lead to floods in PA and NY; there were heavy snows in western NY and PA.

On June 9, a hurricane struck Antigua.

On August 29-30, a tropical cyclone which struck Charleston on the 28th passed through eastern NC on the 29th and then Norfolk just past midnight that night. The hurricane raged until 3 p.m; on August 30, the hurricane moved from Cape Hatteras NC to offshore New England. An unusual feature of the hurricane was the snow it helped produce, which whitened the Catskill Mountains of NY. Considerable snow was also reported at Salem NY.

In September, extraordinary floods occur throughout England.

In September, two typhoons struck the Philippines (historical records of Lumban). The historical records of Lumban, Laguna, state that in 1839 a furious typhoon lasting for a whole week was felt in that place. The maps of Piddington show two typhoons in the month of September. The first passed south of Macclesfield and west of Macao. The second crossed the central part of Luzon from northern Tabayas to northern La Union. Very likely, this second typhoon recorded by Piddington is the same as that mentioned in the records Lumban.

On September 11-12, a hurricane struck Bermuda causing more damage than in 1780.

On September 14-17, a hurricane struck Charley's Lake (later named Charleston, then Lake Charles, LA). An "appearance of rain" was noted in the T. Rigmaiden Diary on the 14th. Rain began on the 15th with a "hard wind". Rainfall increased in intensity on the 16th. By the 17th, the rain and wind subsided, while cloudiness lingered.

In October, there was a strong hurricane in the Islands of Guam and Rota, which caused great ruin, destroying bridges of stone and mortar, various houses, rice fields, and trees of the forest.

A cyclone struck Coringa, India, killing 300000 and destroying 20000 vessels and most of the city.

In November, very extensive flooding occurred in Hertfordshire, Essex, and Middlesex.

On November 5, a hurricane struck Galveston TX unusually late in the season.

On November 23, a cyclone struck Australia killing 12.

In December, there are extensive floods in Ireland and the west of England.

On December 15, the first of triple storms hit MA Bay. The storm produced whole gales, and more than 20 inches of snow in interior New England. There was great loss of life (est. 41) at Gloucester MA. At Gloucester, MA, the gale wrecks 41 vessels in the harbor.

On December 22, the second of triple December storms hit the northeastern United States The storm produced 25 inches of snow at Gettysburg PA, and gales in New England, but only produced light snow along the coast.

On December 28, the third storm in two weeks hit the northeastern United States It brought two more feet of snow to Hartford CT and Worcester MA. Whole gales swept the coast causing many wrecks.

1840

On May 1, the Belle Alliance Cyclone struck India killing 100.

The Great Natchez Tornado - May 7, 1840. This massive tornado hit Natchez, Mississippi,

killing 317 people and injuring 109. At least 269 people were killed on boats on the Mississippi River.

On May 23, a hurricane struck Madeira.

On June 19-23, another reference to a tropical storm appears in the diary in LA of the next year. An "all day rain" began on the 19th and continued for days. Wind increased by the 21st, as corn was "blown down in the field". The center of the cyclone passed to the west of Charley's Lake (Charleston, Lake Charles), as a "hard south wind" blew through the area. Rain continued until the 23<sup>rd</sup>.

Ca. September-October, a hurricane destroyed villages at Mouth of Rio Grande TX. Flooding was also noted.

On September 16, a hurricane struck Puerto Rico.

On October 31-November 4, the Soane in France rises to its highest level in 238 years (i.e., since 1602) and Lyons, Avignon, and La Gaillotiére are submerged; the Soane river which flows into the Rhone in Germany, overflows flooding 100 square miles and drowns thousands.

On November 17, a violent storm visited London and vicinity causing many shipwrecks along the whole coast.

1841

On January 6, Breatford and surrounding districts in Middlesex England are flooded; Derby England also deluged.

On January 8, the Delaware River at Riegelsville PA floods 28.5 feet; the Lehigh River at Bethlehem PA floods 23.0 feet.

On January 16, the Loire River at Brentford England rises 20 feet and destroys bridges and a railway.

In April, a Typhoon struck the Phillippines. A typhoon in Central Panay on Palm Sunday.

July 18 at Schuykill River in PA: floods capsize boats. 20 die.

In July, two typhoons are shown in the map of Piddington. One of them passed very close to Hainan. The other crossed Luzon from Casiguran to Ilocos Norte and entered the Continent between Macao and Canton.

On July 21-22, a typhoon struck Hong Kong killing hundreds and causing great suffering.

In September, a hurricane struck St. Jo, FL, killing all 4000 inhabitants and destroying all the

buildings.

On October 3-6, an October gale, the worst of record for Nantucket MA, caught the Cap Cod fishing fleet at sea. Forty ships were driven ashore on Cape Cod, and 57 men perished from the town of Truro alone. Heavy snow fell inland, with 18 inches near Middletown CT. [NHC rank 159/259 with 81 dead]

On October 6, a hurricane struck Barbados and St. Lucie.

On October 21-28, a hurricane struck Bermuda according to Poey.

In November, a typhoon struck the Phillippines (Piddington map). According to the maps of Piddington, a typhoon, crossed Palawan towards Conchinchina. That there was storm in 1841, is confirmed by the following passage from Cavada. "The town of Romblon suffered terribly in the storms of 1841, 1842, 1843 and particularly in that of 1867."

On November 28, a hurricane struck Cuba.

1842

On June 11, a late season snowstorm struck New England. Snow fell during the morning and early afternoon, accumulating to a depth of ten to twelve inches at Irasburg VT. Berlin NH was blanketed with eleven inches of snow during the day. Snow whitened the higher peaks of the Appalachians as far south as MD.

On June 16, 500 killed in an Adams County, MS tornado. It is the second big tornado in Natchez, MS, after the 1840 tornado.

On July 12, the worst hurricane to date struck NC killing scores, with great lost to livestock and shipping.

On August 30-September 9, a hurricane was observed in the Atlantic and off the coast of Mexico.

In September, a typhoon struck the Phillippines. It is recorded in the parochial archives of Las Piñas, Rizal, that in 1842, "in the month of September, there occurred a typhoon which destroyed the fish ponds of the church."

On September 4, Cuba was struck by a hurricane.

On September 17-18, a strong tropical storm hit Galveston TX. They were on the west side of the system, as waters invaded the Island from the Bay to the north. About 4 feet of water swept over the island destroying smaller buildings and houses. 40 cattle were crushed under a house that was blown down.

On October 2-10, Bermuda was struck by a hurricane according to Poey.

On October 5, a storm brushed by Galveston TX, flooding the town. The schooner Dream foundered between Galveston and New Orleans. All aboard the ill-fated craft were rescued.

In October, a dreadful storm raged along the whole coast of England destroying a large number of vessels and her crews.

On November 1, a violent and destructive storm visited Madeira.

On November 3, a hurricane was observed at 36.7 N, 63.3 W.

1843

In January, a violent hurricane off Boulogne France destroyed several vessels.

On March 25, a second great snowstorm hit the northeastern United States. The storm produced snow from ME all the way to the Gulf of Mexico. Natchez MS received three inches of snow, and up to 15 inches buried eastern TN. Coastal ME received 204 inches of snow that winter.

On August 5, a spectacular cloudburst near Philadelphia turned the small creeks and streams entering the DE River into raging torrents. As much as sixteen inches of rain fell in just three hours. Flooding destroyed thirty-two county bridges, and caused nineteen deaths. It is believed that several small tornadoes accompanied the torrential rains, one of which upset and sank more than thirty barges on the Schuylkill River.

On August 18, a hurricane struck Bermuda.

On September 13, a hurricane left Port Leon in ruins, killing 14.

On October 13, a hurricane struck FL.

On October 23, an "Indian Summer" was routed by cold and snow that brought sleighing from the Poconos to VT. A foot of snow blanketed Haverhill NH and Newberry VT, and 18 to 24 inches were reported in some of the higher elevations. Snow stayed on the ground until the next spring.

On October 28, a typhoon struck the Phillippines (letter of the Rector of the Royal Seminary of S. Carlos to the Archbishop of Manila). "On account of the strong typhoon which occurred on the night of October 28, several wood apartments and shell windows had been seriously damaged."

1844

Droughts in India, Indonesia, and Australia.

Floods in KS.

On February 22, a hurricane struck Martinique.

In April, a hurricane struck Santiago, Cuba.

In April, a strong storm in the China Sea between the Philippines and Macao.

On May 12, a hurricane was observed at 37.8 N, 0.67 W.

On June 11-15, Charleston (Lake Charles LA) experiences another hurricane. During the 10th and 11th, threatening skies brought the promise of rain. A "very hard rain" materialized on the 12th. A continuation of the deluge on the 13th led to the bending of corn stalks and the washing away of a bridge. Rainfall continued through the 15<sup>th</sup>.

On August 4-6, a hurricane struck Matamoros, Mexico, leveling all but 3 structures; 70 were killed. [NHC rank 171/259 with more than 70 dead]

On October 4-5, a hurricane struck Cuba killing 500. [NHC rank 141/259 with 101 dead]

On October 19, the famous "Lower Great Lakes Storm" occurred. Southwesterly winds were at hurricane force for five hours, driving lake waters into downtown Buffalo NY. The storm drowned 200 persons.

On October 7 or 24, a typhoon struck the Philippines (letter of the Governor of the Philippines). The storm raged with fury and did considerable damage in the provinces of Pampanga, Pangasman and Zambales.

On November 13, a typhoon struck the Philippines. The typhoon which hit the provinces of the South, near Manila, in the middle of November, 1844, should be classified as destructive. From the reports of the Provincial Governor to the Governor-General of the Philippines, the following details are gathered: In Camarines Norte the houses destroyed numbered 250 and the trees were badly damaged by the fury of the winds. In Camarines Sur, the typhoon demolished 5 churches, ruined 13 parochial houses, 10 schoolhouses and 7500 private houses. Two corvettes were lost and a few passenger perished. The winds veered from N to SE through E. The typhoon lasted almost 24 hours. According to the governor of Camarines Sur, this typhoon was stronger than that felt in Manila in 1831. In Albay, the typhoon ruined 2470 houses, 7 granaries, 8 bridges and caused the death of 32 persons. The loss in the plantation of Cacao, abaca, sugar cane and in trees was considerable. The barometer fell in Albay to 720 mm. In the coast of burias, two corvettes were wrecked. Some inter-island ships were lost in the sea of Marinduque: the church of Gasan was blown down and several houses of Mogpog were ruined; more than 500 work animals perished in the floods of Boac; In Batangas, the winds destroyed 765 houses. In the capital of Tayabas alone, the wind blew down 800 houses. Except the typhoon of 1811, the people in Tayabas did not remember any stronger typhoon than this one.

1845

Between September 1845 and 1847 the potato crop because of blight failed in Ireland and the Protestant grain farmers of Ireland shipped their crops to England. In many cities at least one-third of the inhabitants are destitute, one and a half million starved to death, and one million are forced to emigrate.

In China, the Yellow Sea overflowed and whole provinces were submerged with thousands dying.

On April 7-8, a hurricane struck San Juan, Cuba.

On April 27, a hurricane struck Santiago, Cuba.

In August, a hurricane struck Matanzas, Cuba.

On August 19, a tornado near Rouen, France.

Starting September 1, Hekla in Iceland erupts; the eruptions end in October 1846.

On September 25, a tornado traveled 275 miles across Lake Ontario, NY and Lake Champlain.

On October 7, a typhoon struck the Phillipines. A violent hurricane occurred on the coast of Cagayan on October, 7, 1845. All the town, from Pamplona and Bugey on the west to Catarman in the east, were completely destroyed, the roofs of the churches and convents not excepted. Many persons and animals died. In Camalaniugan alone, 12 persons lost their lives and many more were seriously injured. The valleys and mountains were left completely bare, as if they had been devastated by fire. During the hurricane the earth was felt to quake terribly and the lighting was terrific. Nine town were destroyed and their ill-fated inhabitants were left in the greatest misery.

On October 12, a hurricane was observed in the FL Channel.

On October 27, a hurricane struck Bermuda.

On November 3, a typhoon struck the Phillipines (books of the parochial archives of Imus, Cavite). "On November 3rd, 1845, a typhoon caused considerable destruction in the houses. There were no personal casualties, but the water was higher than that of the terrible storm of October 22, 1831, which the natives declared was unequalled in fury by any they have yet seen." This passage was signed by Fr. Martin Zubire, priest and superintendent of the Imus State.

On November 9, another hurricane struck Bermuda according to Poey.

In 1845-46, a very mild winter in England.



1846

Azul Chile volcanic eruption.

On February 14, a hurricane struck Havana, Cuba.

On March 2, a great storm hit VA and the Carolinas. The storm caused half a million dollars damage, and in NC drowned fifty families and a thousand cattle on Notts Island.

On April 3-4, a hurricane hits Balize, near the Mouth of the Mississippi. Considered the most damaging since 1831. The storm cut a new boat channel between Cat Island and its lighthouse. It is possible this was an intense springtime low in the Gulf of Mexico, similar to the March storm of 1993, and not of tropical origin due to its time of occurrence.

In summer, England is very hot and warm in northern Europe and Asia; vast floods in Siberia due to melting permafrost.

On June 7, a hurricane struck Guines, Cuba; Santa Clara, Cuba was also struck by a hurricane this year.

On July 1, a typhoon struck the Phillipines (Jesuit report). Romulando Jimeno embarked in Laphu on June 30, bound for Macao; but the next day, a terrible tempest broke out.

On September 8, a hurricane created Hatteras and Oregon Inlets in VA. The hurricane creates inlets on the North Carolina Outer Banks. Two major inlets on the Outer Banks of North Carolina were cut by a hurricane in September 1846.

On September 11-21, a hurricane struck Barbados, Guadeloupe, and Antigua.

On September 17-18, a hurricane struck Bermuda.

On October 6-18, a great hurricane tracked across Cuba, FL, GA, the Carolinas, VA and PA. The hurricane inflicted major damage along its entire path, which was similar to the path of Hurricane Hazel 108 years later. On October 11, Havana is wrecked by this hurricane and hundreds die. The hurricane caused great damage at Key West FL (92 of 104 vessels are destroyed and 46 people die), and at Philadelphia PA it was the most destructive storm in thirty years; 650 died. Some experts say this hurricane was probably a Category 5 on the Saffir-Simpson scale. [NHC rank 119/259 with more than 164 dead]

On October 22, disastrous flooding the center, west, and southwest of France; the Loire rose 20 feet in one night; extensive damage to bridges and property.

On October 31, 87 pioneers were trapped by early snows in the Sierra NV Mountains that piled five feet deep, with 30 to 40 foot drifts. Just 47 persons survived the "Donner Pass Tragedy".

On November 21, a typhoon struck the Philippines. A strong typhoon raged over the Visayas from Northern Mindanao to Mindoro. The floods in Cagayan, Camiguin and Dapitan were extraordinary. The church of Calapan, Mindoro, was unroofed. The sailboats Enriqueta, Nuestra Sra. Del Pilar and Naval were wrecked.

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

The third great famine in China in this century kills millions (perhaps 15 million).

1847

On February 21, a hurricane was observed in the Atlantic.

On February 21, a hurricane struck Alcranes, Cuba.

On April 21-22, a hurricane struck Havana and Matanzas, Cuba.

On October 10-11, a hurricane struck Trinidad and Tobago. [NHC rank 244/259 with 27 dead]

1848

On June 14, a hurricane struck Havana, Cuba.

On August 11, the french ship La Bayonnaise encountered a severe typhoon on her way from Guam to Loochoos.

On August 22-September 3, a hurricane struck Antigua. A hurricane pushes a 15-foot tide through Tampa, FL Fort Brooke, site of the present-day city of Tampa, was nearly destroyed by two hurricanes that hit the area within a month of each other.

On September 1, the typhoon caused tremendous havoc along the southern coast of China. The sea waves around Catanduanes to the east of Luzon were enormous. "If the typhoon has overtaken us in the open Bashi Channel, the Bayonnaise would have been in great danger," wrote the vice-admiral Julien de la Gabiere.

On September 19, a hurricane struck Barbados and St. Christopher.

On October 15, a hurricane struck Bermuda.

On October 17, a hurricane struck the Lower Coast of TX. Brazos Santiago Island was under two feet of water. Several vessels were lost near Port Isabel. Tides were reported to be high at Corpus Christi.

On December 13-14, a typhoon struck the Philippines (in Manila). A strong typhoon passed

close to, and by the south of, Manila. The winds from the second quadrant were very strong.

On December 16, a hurricane was observed in the Atlantic.

The period of 1846 to 1848 marked a severe food shortage throughout Europe. The harvest of grain and potatoes is very poor. A revolution in France starts a wave of revolutions in Europe. Peasant insurrections and artisan uprisings occurred throughout Europe.

1849

A cholera pandemic spread worldwide in 1849.

On Jan 2, frosts are so intense in Norway that mercury freezes (Hayden).

On March 25, a hurricane struck Havana, Cardenas, and Limones Grandes, Cuba.

On March 27, a hurricane was observed at 48 N, 0.22 W.

On April 1, a hurricane struck Sagua Oriental, Cuba.

In England, in April, a great snowstorm hit Southern England. Coaches buried in drifts. Notably late snowfall.

On April 25, a hurricane struck Seibabo, Cuba.

On May 12, a flood in New Orleans LA destroys 1600 houses.

On August 9, a hurricane struck Santa Clara and San Antonio, Cuba.

On August 26-27, a hurricane struck Cardenas and Havana, Cuba.

In September, Mount Merapia in Java erupts, accompanied by a violent hurricane, but no deaths.

On October 6, a hurricane off the east coast of the United States swept from Long Island to New England. 145 people died. [NHC rank 122/259 with 143 dead]

Famines in China from 1800 to 1850 caused 45 million deaths.

1850

A cold spring/summer in France.

On March 15, a hurricane struck Santa Isabel, Cuba.

On March 30, a hurricane struck Nassau in the Bahamas.

On May 4, a furious typhoon was experienced in Manila Bay and the adjacent seas. The ship Juno experienced the fury of the storm.

On June 9, a hurricane struck Cafetal San Carlos, and Bemba, Cuba.

On July 14-16, a hurricane was observed in the Iles du Sud and Iles de l'Ouest.

On July 18, the first of three hurricanes to affect the upper Eastern Seaboard moved into NC on the 18th. As it moved north, Chesapeake and DE Bays took a beating as high waves and tides flooded the coast. It moved almost due north into central New York state. 20 people lost their lives.

On August 21, a hurricane struck Cuba.

On August 24, a powerful Gulf hurricane struck Apalachicola on the 24th; a great storm surge inundated the northeast Gulf coast. As the system moved north, enormous amounts of rain fell from Georgia northward to VA. Major flooding occurred along numerous rivers. The Dan rose to a level twenty feet above normal. The cyclone continued northeast, causing damage in its wake through New England (Barnes II).

On September 2, the Schuylkill River at Reading PA floods 23.0 feet.

On September 2, a hurricane struck St. Nicholas (in the Caribbean?).

On October 14, a hurricane was observed at 21.6 N, 49.5 W.

On October 18, a hurricane was observed at 24 N, 43.6 W.

1851

The Irish potato famine combined with typhus is estimated to have killed 1.5 million people since 1846.

The China floods 1851-1866 killed up to 50 million people.

On March 30, a hurricane struck Havana, Cuba.

On April 16, the famous "Lighthouse Storm" raged near Boston Harbor. Whole gales and gigantic waves destroyed Minot Light with its two keepers still inside. The storm resulted in great shipping losses and coastal erosion.

On June 10, a hurricane struck Sabanilla, Cuba.

Between June 25 and 28, a category 1 hurricane traveled along the east coast of the US and eventually struck CT.

On July 10, a hurricane struck Barbados, St. Domingo, and St. Christopher.

In summer, fires throughout the western United States caused by drought.

On August 16-28, a hurricane struck St. Thomas, St. Christopher, Cuba, and St. Mark FL (so-called Great Middle Florida Hurricane).

On August 22, a tornado in MA (The Tornado of 1851 in Medford, West Cambridge and Waltham by Rev. Charles Brooks); the tornado appeared on a hot afternoon and made its way through several towns, flattening houses and orchards, moving railway cars, but not killing many people, as most everybody saw it coming.

In October, a hurricane struck Haciendas, Bermuda, according to Alfonso.

On December 9, a typhoon struck the Phillipines. The historical records of Passi in the Island of Panay mention a furious typhoon which was experienced on December 9, and which demolished many houses and destroyed the church.

1852

On January 12, a hurricane struck Vera Cruz Mexico.

Between January 15th and February 24th a total of 1378 railroad cars were drawn by horses across the frozen Susquehanna River to engines waiting at Havre De Grace MD.

On February 4, Holmfurth England is flooded by a bursting reservoir with many lives (90) are lost and factories destroyed.

On March 8, a hurricane struck Marianao, Cuba. On March 10, it struck Havana.

On April 13, a tornado struck a 200 mile area near New Harmony IN, killing 16.

In May, a hurricane struck Sabanilla, Cuba.

In June, the Murrumbidgee River overflowed killing 89 in Gundagai, Australia.

In July, a hurricane struck Havana, Cuba.

In July, a typhoon occurred in July, 1852, in the coast of Indochina. The typhoon caught the vessel by surprise and endangered the life of all passengers who force to land at Hainan.

On August 26, a tropical storm formed north of the Dominican Republic on the 19th, then moved west through the Florida Straits. In the Gulf, movement became northwest and the hurricane made landfall at the Mouth of the Pascagoula River on the night of the 25th. It was hardly noticed on Lake Pontchartrain. Four new channels were cut through Chandeleur Island. The

storm claimed the 55 foot tall Chandeleur Island lighthouse and replaced it with a broad 10 foot deep lagoon (Cipra). The keepers were rescued three days later, on the verge of starvation. The schooners Josephine and Walter M. went ashore on Cat Island. The Great Mobile Hurricane.

On September 5, heavy rains brought widespread flooding to England, causing the Severn Valley to be turned into a continuous sea.

On September 19, a destructive overflow of the Rhine and Rhone Rivers.

On September 22-26, a hurricane struck St. Christopher, St. Eustache, and Puerto Rico.

On October 9, a hurricane struck St. Mark FL. The Middle Florida Hurricane.

1853

The Crimean War (1853-1856) begins.

Extreme drought in TX and southwest.

A hailstorm in India killing 84 people and 3000 cattle.

On January 1, Hamburg is flooded by the Elbe.

In March, a hurricane struck Sabanilla, Melena del Sur, and Havana, Cuba.

In summer, heavy rain causes widespread flooding in England, destroying crops and killing many sheep.

On June 22, a hurricane struck Santa Maria, Enramada, and Moron, Cuba.

On August, 11-14, there is a great heatwave throughout the United States with the thermometer everywhere 100F. In New York City, 400 die (Putnam).

On August 21, a hurricane struck San Andres, Cuba.

On August 30-September 11, a hurricane struck Cape Hatteras NC.

On September 6-8, a hurricane struck Bermuda and the western Atlantic. [NHC rank 212/259 with 40 dead]

On September 26-27, a hurricane struck Bermuda.

On November 2, a flood in Cork Ireland destroyed the St. Patricks bridge and killed 50.

On December 31, a hurricane struck Madruga, Cuba.

1854

Droughts from India to Australia.

In 1854 and 1855, several ships in the South Atlantic reported a crescent shaped iceberg with one horn 40 miles long, the other 60 miles long, and with an embayment 40 miles wide between the tips.

On January 1, there was a great storm on the coast of Crimea.

On January 20, a tornado struck in Know County OH, killing many.

On April 4, a hurricane struck Havana, Cuba.

On April 25, a hurricane struck Potrerillo, Cuba.

On May 1, the CT River reached a level of nearly twenty-nine feet at Hartford (the highest level of record up until that time). The record height was reached in the midst of a great New England flood which followed 66 hours of steady rain.

On May 30, a hurricane struck Bayamo, Cuba.

In June, destructive floods near Lyons France and several villages are destroyed.

On September 7-13, a hurricane struck the mid-Atlantic coast of the United States. [NHC rank 250/259 with 26 dead]. The Great Carolina Hurricane.

On Sep 18-20, a hurricane struck TX. The Matagorda Hurricane.

On October 21, a hurricane struck Bermuda.

On November 14, the British Fleet moored off Sevastopol is devastated by a gale, destroying vital supplies for the troops in the Crimean War.

On December 31, a great storm on the north coast of Europe.

1855

On January 1, the Elbe at Hamburg Germany floods.

On January 14-February 24, a severe frost in London with continued cold weather to June 26.

On January 20, a hurricane struck from Baltimore to Halifax Nova Scotia.

In January, severe cold in the United States with mercury frozen in northern IN.

On February 10, a hurricane struck Bermuda according to Poey.

On May 24, a hurricane struck Trelaway.

On August 25-26, a hurricane struck Martinique and St. Domingo.

On August 27-28, the hurricane struck Cuba killing 200.

On September 15-16, a hurricane swept out of the Gulf across Fort St. Phillip and Lake Borgne, before moving into Mississippi. It was considered the worst since 1819 and was felt as far east as Apalachicola Bay. At Proctorville (Yscloski), bathhouses and the wharf were consumed by the waves that ran inland. Water was as deep as 4 feet on Proctor's Landing. At Lake Borgne, water began to rise during the afternoon of the 15th. A "smart breeze" was blowing by sunset. Winds had increased to a "perfect hurricane" by midnight. A number of homes fell victim.

On September 23, a typhoon struck the Phillippines (report of an educated person who had lived for many years on the Marianas; published around 1870). "During the 20 years and over I have lived in this island of Guajan, I knew of but one typhoon or rather violent hurricane, which was on September 23, 1855, and caused horrible havoc, blowing down all the houses of wood, and some others of stone, many trees, and some of them over a hundred years old. It destroyed all the nurseries and seed beds. According to what I have heard from several old natives, these hurricanes occur every 18 to 22 years. Except for this, I have seen various typhoons or collas in the following months: February, about two; April, 2 or 3; June, 1; September, several; and November, various."

On September 27, a tornado in Calcutta India lasted 10 minutes.

Signs of moderate retreats by Chamonix glaciers (Aber).

1856

A great drought occurs in France.

In January-February, severe cold throughout the United States.

In March, a volcano on the Island of Sangir in the Moluccas erupts, killing 2000.

On April 3, lightning struck a powder vault in the church of St. John on the Island of Rhodes, killing 4000.

In May and June, there were awful floods in the south of France.

On August 10-13, the Isle Derniere (Last Island) disaster occurred off the coast of LA. A storm tide drowned 140 vacationers as a five foot wave swept over Low Island during a hurricane.  
[NHC rank 70/259 with 400 dead]



On Aug 25-Sep3, the Southeastern States Hurricane passed through FL, GA, and the Carolinas.

On September 24, a tornado near Calcutta India.

On December 3, a severe blizzard began to rage across IA and KS. It produced as much as 16 inches of snow in IA.

1857

Over 100000 died in an earthquake and fire in Tokyo, Japan.

On January 18, a great cold storm swept across the Atlantic Seaboard. Snowfall totals of 12 inches were common, whole gales caused shipwrecks and damage property on islands, and temperatures near zero prevailed from VA northward. Great drifts of snow blocked transportation. Richmond VA was cut off from Washington DC for a week.

On February 6-13, a flood in IL along the Illinois River caused great damage breaking up the ice on the river and destroying many bridges.

O March 23 in Europe, gloom spread over the heavens with 8 minutes of extreme darkness.

On April 7, a late season freeze brought snow to every state in the Union. Even as far south as Houston TX the mercury plunged to 21 degrees.

On May 20 a dark day in Iraq, probably a major sandstorm.

On September 11-12, a hurricane struck the Carolinas sinking the ship Central America killing nearly 400 on board. [NHC rank 65/259 with 424 dead]

In November, a great storm on the northeast coast of Scotland killed 42 fisherman.

1858

On May 21, a tornado in the Galesburg, Peoria, and Bloomington area of IL destroyed hundreds of houses and killed 10.

On August 18-19, a typhoon struck the Phillippines (on board the ship Novara). The Austrian frigate Novara, engaged during the years 1857, 1858 and 1859 in scientific researches and the circumnavigation of the Globe, was caught in the spirals of a typhoon that swept over the Pacific Ocean and the China Sea from the 23th to the 20th of August, 1858. Although the storm raged in the latitudes of Formosa or Loochoos, yet in all probability it was severely felt in the Philippines, to judge from the violence of the winds and the force of the waves that buffeted the Novara.

On September 16, a hurricane occurred in ME; Bangor reported they had "one of the heaviest in years" This storm continued until midnight, and uprooted trees and blew down chimneys.

Belfast, ME reported that there was minor damage to shipping. Central and Eastern ME felt the strongest winds as they were in the eastern side of the storm.

On October 2, a hurricane hit San Diego CA, the only such time that has happened. A report from the San Diego Herald – printed in the Daily Alta California, a San Francisco newspaper that carried items from other papers – described the scene. At 11 a.m. on October 2, "a terrific gale sprung up from the (south-southeast) and continued with perfect fury until about 5 P.M., when it somewhat abated, and rain commenced to fall. It blew with such violence, and the air was filled with such dense clouds of dust, that it was impossible to see across the Plaza, and it was with the greatest difficulty that pedestrians could walk the streets."

On October 24, a hurricane struck Bermuda.

On November 8, a typhoon struck the Philippines (a suit instituted in the court of Manila). Five cascos loaded with tobacco products were ready for unloading: one of them was sunk, with all its cargo; the material of the other four was damaged to a considerable degree.

1859

On June 5, frost was reported from IA to New England. The temperature dipped to 25 degrees in NY, and up to two inches of snow blanketed OH. The cold and snow damaged the wheat crop.

On June 17 in CA, the thermometer rose from 77F to 133F with a burning northwest wind that lasted only a few hours in San Francisco. In Santa Barbara the temperature rose to 133F, 102F at San Diego, and 117F at Fort Yuma (Greeley). The hot Santa Ana winds in southern CA roasted fruit on one side at Santa Barbara (Greeley).

In June-July, excessive heat in Europe (Putnam).

On Sep 15-18, a category 1 hurricane passed through AL, GA, SC, NC, and VA.

On October 25-26, off the coast of Wales, the Royal Charter Storm sank the Royal Charter killing 450.

On October 26, NYC had their earliest substantial snow of record as four inches blanketed the city.

1860-80s: Evidence of pronounced glacier withdrawal all over continental Europe; many Alpine glaciers retreated >1 km by beginning of this century. Icelandic glaciers remained in advanced positions, however (Aber).

1860

On April 11 in Brazil, several minutes of darkness with Venus visible.

On May 21, a swarm of tornadoes occurred in the OH Valley. Tornadoes struck the cities of Louisville KY, Cincinnati OH, Chillicothe OH and Marietta OH causing a million dollars damage.

On June 3-4, IA's "Commanche Tornado", with wind speeds estimated in excess of 300 MPH, was unquestionably one of the worst experienced by early settlers, with nearly a million dollars damage. Whole villages are destroyed.

Protracted drought in great plains with black snow in OH and black rain in Syracuse NY.

On July 9, a hot blast of air in the middle of a sweltering summer pushed the mercury up to 115 degrees at Fort Scott KS and Lawrence KS.

In July, in AL it is 103 F in the shade for several days.

In July, hot winds cause the temperature to rise to 120 F for short periods.

On August 11, on the fourth anniversary of the Last Island disaster, another hurricane made landfall in Southeast LA. The Mississippi rose 3 feet during the storm. The old site of Proctorville, now Yscolski, had hardly a house left standing... its lighthouse also leveled. The Bayou St. John lighthouse was destroyed. The Cat Island lighthouse was demolished, along with its keeper's dwelling. The Island was inundated, causing the loss of 300 cows. [NHC rank 204/259 with 47 dead]

On September 14-15, another hurricane struck near the Mouth of the Mississippi, worst at Balize (Pilottown). The gale raged for about 20 hours across extreme Southeast Louisiana, and large hail fell. Every building in Balize was either blown down by the wind or washed away by the storm surge. The third Bayou St. John lighthouse was damaged beyond repair. Lower portions of Plaquemines parish were covered by several feet of water, drowning several people. Tides rose to 6 feet above the high tide mark; 40 people died in the storm.

On October 2-3, a third hurricane within seven weeks produced severe damage to houses, businesses, boats, and crops as far inland as Baton Rouge LA. The storm made landfall in the Atchafalaya Swamp and swept northeast. It only carried with it a 12 to 15 inch storm surge at Port a la Hache, likely due to its rapid movement.

On December 20-January 5, a severe frost in England.

Lack of rain in the Delhi district of India lead to famine this year and in 1861.

1861

Civil War starts in the United States (1861-1865).

In Delhi India, lack of rain causes the great Nujjufghur Hheel to become entirely dry for the first

time in its history.

In January, nearly 40000 acres are flooded in Holland.

On February 21-22, a great storm in England blows down part of the Crystal Palace.

On May 28, a great storm on the British coasts wrecks 143 ships.

On June 14, a tornado struck San Juan, Cuba.

On August 13-17, the Key West Hurricane occurred.

On November 1, a hurricane near Cape Hatteras NC battered a Union fleet of ships attacking Carolina ports, and produced high tides and high winds in NY and New England. 33 died in the Expedition Hurricane.

On November 2-3, the same storm struck Boston MA killing 22. The vessel Mauritania wrecked on a rock. [NHC rank 231/259 with 33 dead]

On November 13-14, a storm off Britain wrecks 50 ships.

In December, floods in CA; LA river valley a great lake; Sacramento and San Joaquin valleys a vast sea; swollen rivers from OR to Mexico.

1862

In January, floods in CA continue. California has its largest recorded floods in history (Trager).

On January 5, the Delaware River at Riegelsville PA floods 28.5 feet. On January 5, the Lehigh River at Bethlehem PA floods 23.3 feet.

On January 22, the OH River crests at 57 feet 21/2 inches; Flood waters backed up to Cumminsville OH, and Spring Grove Avenue was under 4 feet of water.

On February 24, the "February Blow of 62" in Gloucester MA killed 122.

In summer, crops fail in Britain.

In June, a typhoon struck the Phillippines (at Macao; 968 mb).

On July 27, a typhoon that hit Canton and Macao must be termed destructive. The victims were at least 40000 and the loss on property of millions of dollars. All the buildings in the area were demolished. The aspect of Praia Grande after the typhoon was disheartening. The barometer fell to 726.44 mm.

1863

A cholera pandemic spread worldwide in 1863 to 1866.

On January 14 the greatest snowstorm of record for Cincinnati OH commenced, and a day later twenty inches of snow covered the ground. That total has remained far above the modern day record for Cincinnati of eleven inches of snow in one storm.

In May, a typhoon struck the Philippines. The schools of the town of Pilar in Sorsogon were destroyed by a typhoon.

On May 26, a hurricane struck the northeast Gulf of Mexico. [NHC rank 223/259 with 37 dead]

Notable flood at Fraserburgh, England, apparently greater than all intervening floods up to 1895 [River Ugie]

On August 21, a hurricane struck near the NC Outer Banks. [NHC rank 160/259 with 80 dead]

On August 29, a typhoon struck the Philippines. On the morning of this day, there was felt in Manila a furious typhoon with strong westerly winds from the fourth quadrant. The waves broke heavily against the shore and wharves producing an inundation which destroyed the Bagumbayan drive and covered the Sta. Lucia road with boulders. Several trees along the roads were uprooted; important specimens of plants of the botanical garden were lost; the water level rose 1.5 yards in the Quinta market; and several houses were unroofed.

On October 16, a dark day in Canada.

On December 12, a typhoon struck Nueva Caceres, Philippines. The casualties were great, the number of widows and orphans considerable and the destruction caused by the typhoon constituted a national calamity.

On December 13, a second typhoon struck the Philippines. When the typhoon season was about to end, a typhoon was experienced in southeastern Luzon. In Albay, the typhoon first came from the N and ended in the S with strong wind, copious rains and thunder. In the district of Lagonoy, Ambos Camarines, the typhoon was considered strong and furious. After raging horribly for 5 hours, the typhoon destroyed completely the temporary church, the courthouse and the public school of S. Jose and the Chapel of Quinasalan together with over 800 private houses. The Lagonoy River rose suddenly to such a height that it carried away a good number of families, resulting in the drowning of 49 persons.

1864

A hurricane at Indianola TX kills 164.

In January, Mount Merapia in Java erupts, killing 350.

On March 7, a hurricane struck Guaracabulla, Cuba.

March 12 at Sheffield, England: the Bradfield Reservoir burst at the Dale Dike. 250 die.

On May, a hurricane struck Sancti-Spiritus, Cuba.

On June 6, a typhoon struck Hong Kong which was hard hit by a typhoon that destroyed many houses, claimed many victims and damaged property valued at half a million patacas.

On June 7, a hurricane struck Caibarien, Cuba.

On October 5, a Calcutta cyclone has a storm wave of 16 feet and kills more than 45000 (Trager says 70000).

On December 13, a storm at Lisbon Portugal caused much damage.

1865

On March 18, the north branch of Susquehanna River at Wilkes- Barre PA floods 33.1 feet. On March 18, the Susquehanna River at Harrisburg PA floods 24.6 feet.

In June, a tornado moved through Viroqua, WI, killing more than 20 and destroying 80 buildings.

On September 5, Saipan, Mariana Islands, experienced a very severe typhoon. All the public buildings and private houses were said to have been destroyed; the town was flooded to a depth of four feet by the sea; all fruits and many trees were felled. The buildings of Tinian were unroofed, although the typhoon was felt there with less intensity than at Saipan.

On September 6, Guadeloupe is devastated by a hurricane.

On September 13, a hurricane struck extreme Southwestern LA. Considered similar to Audrey in strength, but smaller in areal extent. Niblet's Bluff was completely destroyed. One person died in Johnson Bayou where many homes were leveled. The area around Calcasieu (Big) Lake was inundated by the storm surge. Grand Chenier was also put under water by the storm, where several more people died. Fragments of furniture and homes were found afloat several miles up the Calcasieu. Twenty-five people lost their lives to the hurricane, most at Leesburg (now Cameron).

On September 27, this typhoon, according to Montero y Vidal stranded 17 vessels on the shores of Manila.

On October 22-23, a hurricane affected LA coast.

On October 2-3, a typhoon moved across the China Sea. The barometer at Manila fell to 747.44 mm.

On October 9-10, a typhoon, not very severe, was felt in the islands of Pangan and Agrigan of the Marianas group.

On November 7-12, a typhoon struck the Philippines (at Manila). Samar and Leyte experienced a heavy typhoon. Many houses were destroyed. The crop of Occidental Samar, about to be harvested, was a total loss. The same typhoon hit the province of Pangasinan; most of the houses were unroofed in Urbiztongo, Mangatarem, and Manaoag. The same typhoon was responsible for heavy flood in the Zamboanga district, Mindanao. The barometric minimum at Manila was 742.64 mm. It was considered as one of the worst typhoons both on account of its intensity and extension.

On December 7-8, a typhoon struck the Philippines (Letter of the Governor-General). The Governor of Burias reported to the central Government that a dreadful typhoon had hit the island of Burias.

On December 14-18, another typhoon struck the Philippines (at Manila). For 24 hours the province of Leyte experienced the effect of a heavy typhoon. It was felt in Albay for over 13 hours. Although this storm was less severe than the typhoon of November 8, 1865, yet the damage done by it to houses and crops was considerable. The strong winds and heavy rains that accompanied the storm ruined the seed-beds of tobacco in Cagayan Valley and the rice fields in Nueva Vizcaya.

On December 15-17, yet another typhoon struck the Philippines. A storm raged not far from our shores. The barometer at Manila fell to 747.32 mm on December 16th. The WSW winds blew with hurricane force.

1866

On April 28-May 5, a strong typhoon lashed the provinces of southern Luzon, Masbate, Burias, Panay and Mindoro. In Manila the barometer fell to 745.62 mm. A boat with 12 persons was caught by the storm near Providence of Sorsogon; only three persons holding on the keel of the wrecked ship reached land. In Antique the storm was dreadful, destroying many houses and driving aground four brig-schooners. In Masbate the storm caused the destruction of 95 private houses and the wrecking of 4 schooners. In Burias, the typhoon did great damage to the port and the light-houses.

On June 5-9, a typhoon struck the Philippines. A severe typhoon did considerable damage to the Provinces of Cagayan, La Union, Ilocos and Abra. In Bagued, Abra, the winds shifted all around the compass. Seven pancos were wrecked off Ilocos. Five persons were drowned in Aringay.

On July 12-13, a hurricane stayed well off the coast of LA. On the 11th at 28.5N 87.3W, a three-masted schooner was dismasted in heavy seas. Winds "blew hard" at New Orleans for a few hours on the evening of the 12th. Tides increased until daybreak the 13<sup>th</sup>.

On August 15-18, stormy conditions spread across Southwest Pass LA, as winds increased out of

the northeast. New Orleans became breezy on the 16th, but rain was absent. A steady rain set in by sunset on the 17th. High tides and stormy weather were experienced at Southwest Pass, as winds became southeast. New Orleans also rained during much of that day.

On September 6-9, a heavy storm raged in the China Sea off the coast of Atique. A panco was wrecked in Bugason, Phillippines, with loss of four persons. The heavy rains damaged the roads of the northern part of the province.

On September 26, great floods start in France.

On October 1-2, a great hurricane in the Bahamas destroyed 600 houses and killed 60 to 70 people. Bimini was devastated by a hurricane, possibly this one. [NHC rank 72/259 with more than 387 dead]

On October 4, a the southern edge of a hurricane struck Bermuda.

On October 21-22, a typhoon struck the Phillippines. Winds and heavy rains did great damage to the provinces of Morong, Cavite, Laguna, Batangas, Bulacan, Nueva Ecija and Pampanga. The rivers of Bulacan and Pampanga overflowed their banks. The flood from the lake of Pinac de Gandaba and Pampanga rivers was so great that the towns of Calumpif, Bocaue, Paombong, Hagonoy and Quingua suffered very heavily. In the north, the Cagayan river rose to a height unknown since the year 1846, with the subsequent loss of cattle, seed-beds and curing-shades.

On November 16-17, great floods in the north of England with farms destroyed, mines flooded, mills thrown down, etc; 20 people drown at Leeds.

On December 14-21, a typhoon struck the Phillippines. The heavy winds and rains experienced in Mindoro and Nueva Ecija together with the great flood of the Cagayan River indicate that Luzon was under the influence of a storm during the second fortnight of December.

In India, lack of rain caused an awful famine with 1.5 million dead in the Bengal, Orissa, and Behar districts.

1867

The drought in India continues.

On April 16, a tornado (or hurricane) struck San Juan, Cuba.

On May 3, a typhoon struck the Phillippines. At 19:00 a terrible storm broke out in Leyte, resulting in extensive damage. The houses destroyed were 127. The same storm passed through the islands of Burias on the afternoon of the 4th. The brig-schooner Ntra. Sra. de la Paz went to the bottom, only one passenger being saved. On the southern part of the Barrio of Claveria, the 31-ton schooner Pilar sank.



On May 18, a hurricane struck San Juan, Cuba.

On July 11-14, a typhoon struck the Philippines. The effects of a typhoon were felt in the Provinces of Camarines, Pampanga, Zambales and Ilocos.

On September 7, a typhoon struck the Philippines. A furious typhoon of short duration lasting only for half a day, but of considerable intensity, caused serious damages to buildings and plantations at Santo Domingo de Basco, Bataan Islands.

On September 20-26, a typhoon struck the Philippines (at Manila). Manila experienced a violent storm which caused the inundation of all the city suburbs. On the 25th of September a frightful inundation occurred in Ilocos, owing to the extraordinary flooding of the Abra River. The water reached a height of 25 meters above the ordinary level, killing 1800 persons and causing incalculable damages to property in Ilocos and in Abra.

On October 2-6, a hurricane was discovered east of Brownsville TX on the 2nd. On that day, a regatta was held on Lake Pontchartrain. A "spanking breeze" from the northeast and squalls wreaked havoc on the contest. Rain began during the evening of the 4th in New Orleans.

On October 29, a hurricane struck St. Thomas; this was the worst hurricane to strike the island up to that time; 77 vessels were destroyed and 1300 people were killed. [NHC rank 41/259 with more than 811 dead]

On November 1, a cyclone struck Calcutta, India, but it is not too destructive.

On November 14-16, a typhoon struck the Philippines. A terrific storm was felt in the province of Antique which caused considerable injuries to edifices, woodlands, and rice fields. Most of the streets were impassable. Five persons died. On the coast of the barrio of San Antonio, the brig-schooner Bella Francisca, voyaging from Zamboanga to Manila went to the bottom with a total loss of two-thirds of its cargo and the death of a sailor and a Chinaman. Southern Luzon and Visayas experienced a severe typhoon. The buildings and crops of northern Samar suffered heavily. Many houses were blown away in the Bicol region. Three small ships were lost in the Romblon harbor. The plantations of Mindoro and Tabayas were damaged. In the town of Gumoca, the San Diego Fort was demolished by the impact of the waves.

1868

The drought in India continues.

On January 30 "Towards the end of January heavy rain fell over the whole of Scotland and northern England, but it was in the Highlands that the streams and rivers rose most rapidly and the worst damage was done. On January 30th Loch Ness rose twelve inches in seven hours. Another alarming flood occurred on February 7th, but this was only an echo of the first, resulting from the high level of the river, in conjunction with a spring tide and a westerly gale in the Atlantic" [River Ness]

On July 22, a record 100.6 F in Tunbridge, Kent, England caps a very warm summer in England.

From September 15 to October 20, dark days in western OR and WA.

On September 28, on this day, a strong typhoon was experienced in the island of Saipan of the Marianas group and in all the islands of the north, destroying the chapel and all the houses of Saipan, and completely wrecking the English ship And then anchored in Tanapac.

On October 1-3, a hurricane passed just offshore the Southeastern tip of LA, before hitting Apalachicola the next day. On the first, cloudiness set in as a "fresh breeze", associated with showers, developed at New Orleans. Gales and heavy rains developed on the 3rd as the city became flooded. The sawmill and bathhouses were blown away. At Milneburg, houses were swept away by the flood.

On November 20-24, a typhoon struck the Phillipines. A heavy typhoon was felt in Catbalogan, Buriyas, Albay, Sorsogon, Camarines, Pangasinan, La Union, Ilocos, and Mountain Province. Three ships were lost in the Visayas. The rivers of Ilocos overflowed the fields with heavy loss of property and damage of crops.

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

In 1868-69, England experiences its warmest winter of record.

1869

The drought in India continues.

On January 30, floods in Cork, Dublin, and other places in Ireland.

On July 17-21, a typhoon struck the Phillipines. The provinces which greatly suffered by this storm were Leyte, Buriyas and Mindoro. The towns of Boac, Gasan, Mogpog and Santa Cruz in Marinduque suffered heavily from the fury of the tempest, with the resulting destruction of bridges, roads and plantations.

On October 4, a great storm struck New England. The storm reportedly was predicted 12 months in advance by a British officer named Saxby. Heavy rains and high floods plagued all of New England, with strong winds and high tides over NH and ME. Canton CT was deluged with 12.35 inches of rain. [NHC rank 220/259 with 37 dead]

On October 4, the Schuylkill River at Reading PA floods 21.6 feet.

On October 5, rainstorms deluged several states in the northeast United States. MA was hardest hit with the schooner Rio lost with 17 victims.

On October 20-25, a typhoon struck the Phillipines. The heavy rains caused by this typhoon flooded many towns of Pangasinan and carried away the culverts of several roads. Many towns of Zambales were without communication for several days on account of the destruction of bridges and flooding of rivers. Many seed-beds and curing-sheds of tobacco were lost in Cagayan.

On November 12-20, a typhoon struck the Phillipines. A heavy storm, accompanied by wind and rain, was experienced by the provinces of Northern Luzon, towards the middle of November. The flood of Cagayan Valley was so extensive, so rapid and so persistent that it destroyed 5732 seed-beds, 128 fields and 63 curing-sheds. The animals lost were 148 carabaos, 161 horses, 188 cows and 163 pigs. Small sailing craft were wrecked and persons lost.

On November 16, southwest winds of hurricane force swept the Berkshire and Green Mountains of New England causing extensive forest and structural damage. On November 20, a second great windstorm in three days struck VT and NY blowing railroad trains off their tracks.

On December 27, a post Christmas storm in NY and VT produced record storm totals of 30 inches at Burlington VT, and 39 inches at Montpelier VT. A public emergency was declared in VT.

1870

The drought in India continues and ends after 5 years.

In February, very cold in Europe.

On March 8-9, a typhoon struck the Phillipines. A strong typhoon broke out with fury in Samar, destroying churches, convents, schools and many private houses. Almost every vessel anchored in Guiuan was wrecked. Three members of the crew of the brig-schooner Sacra Familia were lost at sea.

On May 5, a typhoon struck the Phillipines. Samar and Leyte experienced a devastating typhoon, which in Leyte alone destroyed 400 houses, more than 15 bridges and many fruit trees. On the night of the same day a terrible storm was felt on the western coast Negros, causing the death of three persons and seriously injuring three others, and 247 houses were destroyed. The courthouses, school buildings and bridges fared ill from the typhoon. One day later, the storm, was felt in Iloilo with excessive rains and violent wind from the N, later veering to the E and SW. The sky was gloomy and the barometric pressure very low. The schooners San Rafael, San Antonio, San Salvador, San Miguel and San Vicente, all disappeared in the sea. In the brig Januaria, only four persons were saved, the rest of the crew and passengers, 18 in all, being drowned.

On May 11, a typhoon struck the Phillipines. A terrific storm raged over the provinces southeast and northwest of Luzon. The towns of Tiwi, Malinao, Bacay, Libog, Manito, Guinobatan, Polangui, Pilar and Bacon suffered destruction of houses, flooding of rivers and breaking of dams. In the town of San Jose de Lagonoy, 27 houses were brought down by the fury of the wind.

On September 10, a hurricane struck Bermuda.

On September 22-24, a typhoon struck the Philippines. Considerable were the damages caused by the storm in the provinces of Luzon. In the different towns of the province, more than 1500 houses were brought down, seven churches and twelve convents were totally ruined, the rice fields were inundated, more than one hundred storehouses leveled, and the provincial roads damaged. The Amburayan River rose to such a frightful height, that on overflowing, it gradually wore away the land sixty meters southeast of the church of Tagudin, and carried several houses to the sea.

On October 7-8, a hurricane struck Matanzas, Cuba, east of Havana, killing 800. [NHC rank 22/259 with 2000 dead]

On October 20, a hurricane struck Cuba killing 12. It also struck offshore central FL and VA. [NHC rank 190/259 with more than 52 dead]

In October, a typhoon struck the Philippines. At about the end of October, a strong hurricane was felt in the province of Misamis. Many houses and rice fields were destroyed. The river overflowed its banks and many herds of carabaos and cattle were drowned and numerous houses were washed away. A banca was wrecked, and its cargo of 400 cavanese of palay was totally lost.

On November 3, a typhoon struck the Philippines (at Tuguegarao and Albay; 952 mb). The storm caused enormous destruction, especially in the provinces north of Luzon. In Isabela, the hurricane blew with such an overwhelming fury, that the old men of the province said it had no equal. The Casa Real, the convento, the courthouse, the tobacco warehouse, the schools, and the greater number of houses were severely damaged. According to the Alcalde, not even a single banana plant was left standing. In Ilagan, the church was razed to the ground and all houses received damages. Sixty carabaos, 28 horses, more than 2000 chickens, and more than 800 carts of corn disappeared. Even in the provinces of the south, the effect of the storm was felt.

On November 15, a severe typhoon raged over Agaña, Mariana Islands, with strong winds from the first and fourth quadrants. Buildings, trees plantations, roads and bridges were greatly damaged.

On November 20-22, yet another typhoon struck the Philippines. The storm that raged over the province of Capiz on the 10th, 21st and 22nd was considered as the worst of those which the old people could recall. Rivers overflowed their banks; public buildings gave way, bridges collapsed and many houses were carried away. In Sigma the water rose to an unprecedented height; roads and bridges were partly destroyed. The losses in the plantations and abaca fields of the Aclan region were enormous. Unfortunately the casualties were many.

On December 28-29, floods in Rome, Italy.

Number of typhoons striking Guangdong Province, China this year: 7. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

Rome becomes the capital of Italy.

1871

A flood in China killed 3000.

On March 25-29, a typhoon struck the Philippines. A very severe typhoon crossed Visayas and southern Luzon. The water rose to an unprecedented height in Calbiga, Samar. The rice fields and tobacco plantations of San Pascual de Burias were reported wiped out by the typhoon. The towns of Luzon mostly affected by the typhoon were López, Gumaca, Atimonan, Mauban, Lucban, Sariaya, Dolores, Pagbilao, Catanauan and Guinayangan in Tayabas and Batangas, Tall, Ibaan and Lian in Batangas. The point Dolores was wrecked with loss of 11 persons and all cargo.

On April 4, a typhoon struck the Philippines. A strong typhoon crossed southern Visayas. In southern Leyte alone 300 houses were destroyed. The schooner Soledad was wrecked in the bay of Maasin. Many houses and roads were destroyed in Tagbilaran, Loboc, Valencia, Ubay and Taliban. Many public buildings were destroyed in Bacolod. The towns of the Aclan district in the Providence of Capiz were flooded. Several lorchas loaded with sugar were lost between Negros and Panay. In Iloilo the winds blew with hurricane force.

On June 2-3, a tropical hurricane that struck Galveston also made an impact on LA. New Orleans was flooded, giving the appearance of a "submerged city" after the storm.

On June 8-9, another hurricane made landfall near LA, this time just west of Galveston. Strong southeast winds set in at New Orleans. Heavy rain began in earnest around 3 p.m.. At Berwick's Bay, a "terrific gale" occurred on the 9th. Southwest Pass also saw strong southeast winds. Rains fell in torrents. Milneburg went underwater. A tornado touched down at Chatawa, 95 miles from New Orleans. It made a path 100 feet wide and lasted ten to fifteen minutes. A schoolhouse was razed to the ground. Numerous trees were uprooted, including 100 peach and pear trees.

On June 24, a typhoon struck the Philippines (at Naga). A strong typhoon did considerable damage to the Samar and the provinces of southern and central Luzon. Many buildings were destroyed in Legaspi, Naga, Daet, Tayabas, Lucban, Binangonan de Lampon and in Zambales.

On August 21, a hurricane in Antigua, St. Kitts, and other isles caused great damage and made thousands homeless. [NHC rank 245/259 with 27 dead]

In late August, the United States Arctic whaling fleet is trapped by the earliest winter in memory. All but 7 of 39 vessels are frozen fast in the ice. The surviving vessels carry 1200 men back to New Bedford, MA.

On September 29, a typhoon struck the Philippines (at Naga; 948 mb). A severe typhoon affected the weather of the Philippines the later part of September. It destroyed several bridges, roads and houses in Panay. Hundreds of lighthouses were demolished by the wind in Albay and

Camarines.

On October 1-4, heavy rains and winds began in Southeast LA on the first. Large trees were blown down. Walls of two burnt buildings crumbled before the storm. New Orleans saw "unprecedented rainfall" between 6 p.m. on the 2nd and 3rd: six to ten inches. Homes were unroofed and telegraph poles fell.

On October 5, a typhoon struck the Philippines. Although the inundation was not destructive as that of 1867, it, however, carried away 28 houses in Vigan, 50 houses in Cauayan, 4 houses of wood, 10 of timber, and 3 granaries of palay in Santa Catalina. The water reached a height of 3 to 3 meters on the main road of Tagudin. In Ilocos Norte, all the roads were destroyed. 460 houses disappeared; 1343 cattle, 842 horses, 761 carabaos, and numberless hogs and chicken were drowned. Various rice fields, enough to plant 270 cavans of Palay seeds, were left completely useless. In the town of Dingras alone, where the typhoon and rain were very violent, 490 houses and 600 seedbeds of palay were destroyed. 670 cattle, 280 carabaos, 120 horses, 500 pigs, and 150 lambs and goats were drowned. Various fields of palay enough to cultivate 7364 cavans of palay seeds; and tobacco nurseries enough to yield 800 bales of tobacco were carried away by the water. In the whole province of Cagayan, many edifices were destroyed, and the inundation caused three fourths of the crops to be damaged. The combined effect of the tempest, the tides, and the inundations was the loss in Aparri alone of 109 houses, 46 warehouses, 1092 sacks of palay, 200 cavanes of rice, 850 oil jars, 4285 large baskets of salt, 30 carabaos, 8 horses, 92 hogs and 61 cows.

On October 8, prolonged drought and desiccating winds led to the great Chicago fire, the Peshtigo horror, and the MI fire holocaust. Fire destroyed more than seventeen thousand buildings killing more than 200 persons in the city of Chicago, while a fire consumed the town of Peshtigo WI killing more than 1100 persons. In WI, a million acres of land were burned, and in MI, 2.5 million acres were burned killing 200 persons. "Tornadoes of fire" generated by intense heat caused houses to explode in fire, and burned to death scores of persons seeking refuge in open fields.

On November 2-4, a typhoon struck the Philippines. The rivers overflowed their banks in Nueva Ecija.

On December 2-3, a typhoon struck the Philippines. 5 houses fell in Davao and the municipal building was unroofed. In the towns or hamlets of the Islands of Samal, every house fell. Zamboanga, on the 3rd, experienced a terrible tempest of wind and rain, the like of which was not seen for a long time before. There was so much rain that at 12 noon, the borders and ditches which border the town of Zamboanga, became filled and at three o'clock, the land became so vastly inundated that it looked more like a sea. As a result, considerable damage was done to public works and private houses.

1872

A tornado in a little town in Italy kills several.

On March 6, a cold wave hit the East coast sending the mercury plunging to 8 degrees below zero at Boston. It was the most severe March cold wave in modern history.

On April 15, a hurricane struck Zanzibar sinking 150 ships and killing 200.

On May 1, a cyclone near Madras India destroyed many ships.

On July 28, a typhoon struck the Philippines. A strong typhoon accompanied by heavy rains occurred in the northern part of Luzon. On the coast of Zambales, the Spanish vessels were wrecked. In Abra, damages in roads and bridges were great. The rice fields newly transplanted with palay plants and the corn crops about to be harvested were completely destroyed.

On September 1, at Khandeish and Nassick, India, the area around Bombay is flooded and most cattle are destroyed.

On September 7, a typhoon struck the Philippines. This typhoon affected primarily the provinces of Northern Luzon.

On October 12, a typhoon struck the Philippines. The typhoon left heart-breaking memories in the Philippines. The towns, which suffered most were Tanay, Binangonan, Pililla, Cainta, Baras, Jalajala, and Bosoboso. The abaca plantations were completely destroyed, and the roads were made impassable because of the inundations and the great number of big fallen trees which obstructed the way.

In late October, floods along the Po River in Italy cause thousands to become homeless.

On November 5-9, a typhoon struck the Philippines. A typhoon broke out in Burias, which although not as strong as that of October 12, was sufficient to destroy what the former typhoons had spared.

On December 24, extreme cold gripped the Upper Midwest on Christmas Eve. Downtown Chicago reported an all-time record low of 23 degrees below zero, which stood until January 1982, and Minneapolis MN reached 38 below. The afternoon high at Minneapolis was 17 degrees below zero.

1873

A famine in Bengal due to rice crop failure.

On April 13-16, a Dakota blizzard kills thousands of cattle.

On May 22, a tornado from Keokuk IA to Peoria IL caused great damage and killed many.

On June 21-30, a typhoon struck the Philippines. A great part of Luzon and the north of Visayas suffered under a persistent storm of southerly winds, accompanied by rain, which caused

considerable damage in Masbate, Capiz, Romblon, Laguna, Tayabas, Zambales and Ilocos.

In August, a hurricane struck Bermuda.

On August 14-27, Nova Scotia hurricane destroys 1223 vessels and more 600 people dead between Bermuda and NS. [NHC rank 53/259 with more than 600 dead]

On August 30, a typhoon struck the Phillippines. The strong wind which prevailed in Capiz destroyed various roads, churches, and convents.

On September 26-October 9, a hurricane in the southwest Atlantic which strikes Cuba. [NHC rank 254/259 with 26 dead]

On September 27, a hurricane blew over Agaña and Mariana Islands.

On October 6, a hurricane struck Cuba.

On October 18, a typhoon struck the Phillippines (at Masbate; 954 mb). On the island of Panay, however, it caused considerable destruction. Thirty-seven houses in the town of Panay, 35 in Inisan, 90 in Jimeno, 14 in Balete, 14 in Banga, 400 in Calivo, 58 in Macato, 22 in Ibahay, were crushed down. Many churches, convents, schools, roads and bridges suffered a great deal of damages.

On October 25, the second typhoon of the month struck the Phillippines. The storm, which on October 25, lashed the provinces of Tayabas, Batangas, Cavite and Batan, should be classified as destructive. In Mauban, with the exception of the convent and the church, and about four or five houses, almost all the others were blown down. Two hundred fifty houses fell in Lucban and 215 more were left useless. In Tayabas, about 300 houses were destroyed. The falling down of houses and the over flooding of rivers caused the death of more than 30 persons. In the province of Laguna alone, more than 200 persons died. In the province of Batangas, 154 houses fell in Tanuan and 220 in San Pablo.

On October 28, the third and strongest typhoon of the month struck the Phillippines. The tempest spent its greatest fury in Masbate, Ticao and Romblon. In the town of Masbate, every house was blown down, including the church, the convent, the schools, the prison and the newly constructed courthouse. The officials reported to the Superioridad that in Magdalena, Lauang, Baleno, Aroroy, Mabo and Uson, the churches, convents, courthouses, schools and all houses were completely destroyed, and the rice crops as well as other grains totally damaged. The governor of Masbate wrote: "What surprises us most is that the thick forests were completely dried up, as if thru the effects of fire." The old men of the capital affirmed that the typhoon had no equal.

On November 18, a severe storm raged from GA to Nova Scotia causing great losses to fishing fleets along the coast. In ME, the barometric pressure reached 28.49 inches at Portland.



A flood at Mill River MA killed 150.

On March 4-5, a typhoon struck the Philippines. A strong typhoon lashed the Islands of Samar, Leyte and Panay. All the houses of the town of Mercedes were blown down. The typhoon destroyed 201 houses in Balasijija, 20 in naval, 34 in Albuera, 14 in Maligabo and 10 in Merida. In Laoang only 20 houses were left standing. In Capiz the typhoon lasted for 5 hours and its intensity was considered greater than in any other storm ever experienced in the province. Two hundred and nine-three houses were destroyed in Panay, 120 in Luctugan, 150 in Cuantero and 60 in Dao. Very strong buildings as churches and convents were nearly ruined.

On March 20, the Thames overflows.

In April, in the Mississippi River, floods inundate tens of thousands of acres. 200-300 die.

On May 16, the Mill River Valley near Northampton MA overflows destroying several villages; 144 people perish.

On July 24, rain and a tornado at Eureka NV killed 20-30.

On July 25, a cloudburst outside Pittsburgh PA lead to 134 deaths from drowning or crushing.

On September 5, a hurricane struck Bermuda.

On September 3-14, a typhoon struck the Philippines (port of Vigan). A terrible storm lashed the provinces north of Luzon. In the north of Pangasinan, 88 houses of the town of Anda were blown down, 64 houses in Bani, 32 in San Isidro, and 98 in Bolinao were destroyed. Various churches and edifices were damaged in the province of La Union. The storm ruined the Infantry headquarters of Vigan, unroofed the church at Candon and levelled to the earth various granaries of Palay in Santa Lucia.

On September 17, another typhoon struck the Philippines. As a result of this storm which lashed terribly the coasts of Zambales, the courthouses, schools and convents of Santa Cruz, Bani and Anda were dismantled. In Bayombong, rain fell in torrents, accompanied by strong gust from the S. Tuguegarao, the tempest was accompanied by heavy rains and strong winds.

On September 21-22, yet another typhoon struck the Philippines (port of Vigan). It left in its trails desolation and death. This island, Vigan, being very small, and very near to Sabtang and Isbat, the typhoon was experienced in all these places with the same intensity as in the capital. The churches and mission houses received damages, especially on the roofs. The church of the town of San Carlos was completely destroyed. The tribunals and schools were left in pitiable state. Seven houses made of lime and stone in the capital collapsed. One hundred sixty-four houses of wood and cogon were destroyed. It should not escape notice that while in Luzon houses were made earthquake proof, the natives in these isles make their cottages typhoon proof, so that the devastating effects of the typhoons in these islands will ever be as great as in any town of Luzon.

On September 22, a typhoon struck Macao, Hong Kong, etc., causing great damage. An extremely violent typhoon lashed the city of Macao, causing a considerable number of deaths and destroying a great number of public edifices and private houses.

On September 28, another typhoon struck the Philippines (at Sto. Domingo Basco).

On November 2, a tornado in Colbert Co., AL killed 10 people.

On November 9, a typhoon struck the Philippines. The southern part of Samar suffered again from the typhoon of November 9, 1874. The storm destroyed bridges in Borongan, gandara, and Pambujan. The palay, abaca, sugar cane, and camote fields were damaged, either because of the violence of the winds or the excessiveness of the rain.

On November 22, 10 people were killed and 30 were injured in a tornado in Colbert County, AL.

On December 25, a typhoon struck the Philippines. At the dawn of Christmas of 1874, a terrible storm was felt in Cangayan de Misamis, with rain and strong winds from the southeast.

It is the start of a amazingly snowy winter for the UK, especially the South East early on, the first week of December dumped 1-2ft in some places, worst in the South East. March of this month had many snowstorms, and April recorded nearly 2ft of snow in the Midlands! Snowfall was recorded (on a notable scale), in November, December, January, February, March, April, and May!

1875

On January 1, in Mayon, Philippines, a typhoon kills thousands and causes mass mud slides; it is the worst typhoon there since 1766. The storm lashed Samar on the last day of 1874 and the first day of 1875 destroyed bridges and roads, damaged many plantations of abaca, sugar cane, cacao, coconut, and blew down 14 houses in Santa Rita, 60 in Sulat, 61 in Tubia and 60 in Laoang. It caused havoc in Burias, Cuyo and Culion. Several vessels wrecked off the coast of Zambales, resulting in the death of many persons.

On January 1-3, severe snowstorms in Scotland cause several lives to be lost.

In February, very cold in Europe.

On March 12, a severe snowstorm in southern England.

On March 20, the most destructive tornado to date in GA has a path of 200 miles and kills many.

On June 18, a severe coastal storm (or possible hurricane) struck the Atlantic coast from Cape Cod to Nova Scotia. Eastport ME reported wind gusts to 57 MPH.

On June 26, a severe storm at Budapest Hungary killed 200.

On June 22, the Garonne River in southern France overflows flooding Toulouse, Verdun, and many villages and killing 1000.

On July 18-22, a typhoon struck the Phillipines. A terrible storm, accompanied by plenty of rain, was felt in Tacloban, Baybay, Barigo, Capoocan, Inocapan and Hilongos. The losses in rice fields and abaca plantations in the Province of Leyte were considerable.

In August, floods in Northwest India inundate several provinces and kill thousands.

In Kirn, Germany a waterspout burst killing 37 with great property damage.

On September 15-18, an Indianola TX hurricane causes 176 deaths. [NHC rank 42/259 with 800 dead, mostly in Cuba]

On September 22-24, a cyclone in India floods Ahmedabad and leaves 20000 homeless.

On October 11, a typhoon struck the Phillipines (Bataan Islands). The church and school of the town of S. Jose were left in a bad condition, while many houses were unroofed.

On October 24-31, a typhoon struck the Phillipines (brig Progreso and at Manila Bay). The typhoon which lashed the Visayan provinces and southern Luzon at about the end of October must be classed among the destructive typhoons. The following statistics show how great the damages were in Camarines Sur: in Nabua, 781 houses were blown down, and 142 carabaos, 184 cows and 616 horses perished; in Iriga, 140 houses, 70 horses; in Bato, 123 houses, 60 cattle, 190 horses and 165 carabaos; in Tigaon, 113 horses; in San Jose, 150 houses; in Goa, 347 houses and in Libmanan, 193 houses.

On November 15, the Thames rose by more than 28 feet flooding London.

On November 30, a severe early season cold wave set November records in the northeastern United States The temperature dipped to 5 above zero at NYC, 2 below at Boston MA, and 13 below at Eastport ME.

In December, a tornado struck Tuckers Town in Bermuda.

On December 18-20, a typhoon struck the Phillipines. It was not severe.

On December 23-30, a typhoon struck the Phillipines. A very strong storm accompanied by heavy showers and gusts of hurricane wind was felt in the oriental coast of Leyte.

1876

A drought in China with 9.6 million dead (other estimates go from 15 to 50 million).

A drought in northern India with 5 million dead. Between 1876 and 1879, 5 million East Indians

died of famine due to a failed monsoon and drought in China cause 13 million deaths.

In March, severe floods in Holland and France.

In July-August, heat and drought from ME to VA to OH.

A hurricane struck St. Thomas.

On October 31, the Backergunge cyclone causes 50 foot storm surge and kills more than 100000, perhaps 200000, in present day Bangladesh; 215000 perished according to Haydn.

On November 25-27, a typhoon struck the Phillippines. A terrible hurricane, unsurpassed in fury by other similar phenomena for 20 years past, scattered desolation and death in the islands of Mindanao and Visayas. The islands which suffered most from the havoc of this meteor were Bohol, Cebu, Panay, Negros, Calamianes, and the whole northern part of the big island of Mindanao, reaching as far as Paragua. More than 150 persons from distant parts of the Archipelago were the unfortunate victims of this doleful storm. Very many were the herds of live stock which lost their lives either because of the strength of the hurricane, or the impetuosity of the great floods which inundated the valleys.

December 3 at Adrianople, Turkey: the city is flooded and 1000 houses wiped out.

On December 18-21, a typhoon struck the Phillippines. The towns of the provinces of Ambos Camarines, especially Daet, Indang and Labo, received damages. Many houses in Puerto Galera were blown down.

On December 25-31, heavy rains lead to severe floods in England.

Between 1876-1877 cholera kills 3 million in India.

1877

A continued drought in south and central India.

Famine in Bengal with 4 million dead.

In China in 1877-78, 9 million die from famine, probably due to drought.

On April 9, OR Inlet NC was widened three quarters of a mile by a noreaster.

On May 27-28, a "terrific" two day long sandstorm (sand) blasted Yuma AZ.

On June 4, a tornado in Mt. Carmel IL kills 16 and causes extensive damage.

On June 11, the temperature at Los Angeles CA reached 112 degrees during a heat wave. It

would have been the all-time record for Los Angeles but official records did not begin until twenty days later.

In mid-June, floods on the banks of the Thames and throughout England.

In June at Szegedin, Hungary, the Theiss overflows and 6500 houses are submerged.

In July, a heat wave from IA to New England with many deaths.

On July 17-18, a typhoon struck the Phillipines. It seems that a storm of small diameter occurred in southern Visayas at about middle of July. Considerable damage.

From September 21 to October 5, a hurricane in Curacoa Venezuela knocks down all the tall buildings and kills hundreds. The hurricane travels from Barbados to Cape Cod and causes extensive damage. [NHC rank 157/259 with more than 84 dead]

Northern Brazil suffers severe drought and famine kills thousands.

1878

A flood on the Nile in Egypt killed 250.

On March 24 at Ventnor, Isle of Wright, a storm on a narrow strip 400 miles long and 3 miles wide (term "long squalls" originates from this storm). Hundreds of people died.

On Ap 10-11, the Thames floods at London.

On May 23, 30 people were killed in a tornado in Iowa County, WI.

On June 1, 13 people were killed and 70 injured in a tornado in Ray County, MO.

On August 8, the temperature at Denver CO soars to an all-time record high of 105 degrees.

On August 9, the second most deadly tornado in New England history struck Wallingford CT killing 34 persons, injuring 100 others, and completely destroying thirty homes. The tornado started as a waterspout over a dam on the Quinnipiac River. It was 400 to 600 feet wide, and had a short path length of two miles.

On August 27-28, a hurricane struck Bermuda.

On August 30, a tornado struck Miskolcz, Hungary, causing great damage and much loss of life.

A hurricane remained over Florida for three days. A slow-moving hurricane made landfall in the Florida Keys and slowly made its way up the center of the state.

On October 21-24, Havana to Portland hurricane passes through NC, VA, MD, PA, and New England causing extensive damage. The hurricane produced widespread damage across NC, VA, MD, NJ and PA. At Philadelphia PA, the hurricane was the worst of record. [NHC rank 170/259 with more than 72 dead] [NHC rank 246/259 with 27 dead for coastal New England area]

On November 12-15, a typhoon struck the Phillipines. It was keenly felt in Nueva Ecija, Zambales, and Infanta, because of the swell of the rivers and the abundant rain.

On December 3-11, a typhoon in the China Sea moved to WNW through Paracels towards Hainan.

On December 13-15, a typhoon probably formed SW of Manila and in a nearly E-W direction, reached Cambodia, where it caused much damage.

On December 23-30, a typhoon struck the Phillipines. A very furious hurricane, accompanied with copious rains and heavy squalls, was experienced on the eastern coast of Leyte.

In England, the winter of 1878-1879 is another snowy one. In the north, snow cover remained for 3 months. Snow recorded in November, December, January, February, March and April.

1879

Crops fail in Britain and Europe.

A drought in China.

On February 11, a tornado (or hurricane) struck Sabanasnuevas, Cuba.

On February 21-22, a gale struck Gloucester MA wiping out the fishing fleet and killing 157.

On February 26, a hurricane or severe wind storm struck Nuevitas and elsewhere in Cuba.

On March 12-13, storms and rains at Szegedin Hungary destroy 6235 out of 6566 houses; 77 people drown.

On April 16, a tornado struck Walterboro SC and 3 states killing many.

On May 30, a major outbreak of severe weather occurred in KS and western MO. In KS, tornadoes killed 18 persons at Delphos, and 30 persons at Irving. Two tornadoes struck the town of Irving within a few minutes time virtually wiping the small KS community off the map. The second tornado was perhaps two miles wide, and exhibited multiple vortices.

In summer, England is cold.

On June 15, McKinney ND received 7.7 inches of rain in 24 hours, a state record.

In July, typhoon appeared off E of Mindanao and in a NNW direction moved towards NE Formosa; it entered the Continent near Cheekiang, passed W of Shanghai and recurved towards the Yellow Sea.

On August 16-20, a hurricane entered the United States at Cape Lookout NC and skirted the coast to Eastport ME. Extensive damage was done. The Cape Lookout NC to Eastport ME hurricane causes extensive damage with more than 100 vessels sunk; velocity of 138 MPH at Cape Lookout. [NHC rank 205/259 with 46 dead]

On August 22-23, a hurricane made landfall in LA. At Lake Charles, winds increased out of the northeast beginning at 9 am on the 22nd, then veered to east and southeast after dark. According to the Lake Charles Echo, winds were sustained at 40 m.p.h.. The Weekly Calcasieu Gazette reported that during the "night we had a perfect hurricane." Several old buildings were blown down and the spire from the Catholic Church was torn off. Trees were uprooted; fences and chimneys destroyed. Great damage was done to the rice crops, gardens, and orchards.

On September 1, a hurricane makes landfall just west of Morgan City LA only 10 days after the last storm struck the area. In Abbeville, light rain began to fall on the night of the 31st. By 7 am on the 1st, a "perfect gale" was uprooting trees, along with damaging homes and fences. Winds died down at 3 p.m.. Bridges were washed away by the rain and flooding. Their Catholic church's roof partially fell under the weight of a tree, causing its bell to fall to the ground.

On October 8, a typhoon struck the Phillippines. From the towns of Zambales were received reports of the destruction of roads, bridges and public edifices.

On October 16-17 at Murcia, Spain, 2000 houses submerged and the provinces of Andulusia wiped away. 1000 die.

On November 8-10, a typhoon from the Pacific moved in a nearly E-W direction, crossed Nueva Vizcaya and La Union and continued towards N Conchinchina, Phillippines.

On November 19-21, a second November typhoon struck the Phillippines (East Mindoro; 950 mb). The diameter of the cyclone on passing the Archipelago was more than 450 miles. In the province of Batangas, the storm lasted for more than ten hours.

On November 20, a third November typhoon struck the Phillippines.

On December 10, floods in Hungary.

On December 11-14, a typhoon in nearly WSW direction crossed the southern part of Leyte, Cebu, Negros and central Palawan, Phillippines.

On December 12, a second typhoon for December struck the Phillippines. Terrible was the storm which lashed Leyte.

On December 22-26, a third typhoon for December struck the Phillipines. The typhoon formed probably near E of Leyte; it moved WNW through N Cebu and Panay and S Mindoro towards the China Sea.

On December 28, a gale near Dundee Scotland destroyed the Tay bridge and killed 75 on a train crossing it.

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1880

On March 26-27, a major dust storm in Neb, KS, IA, OK, TX, and MO.

On April 18, 101 people killed and 600 injured by 24 tornadoes in MO. More than two dozen tornadoes were reported from KS and AR to WI and MI.

On April 25, 22 were killed and 72 injured in a tornado in Noxubee County, MS.

On May 22-28, a typhoon appeared near SE of Luzon in a nearly E-W direction, crossed the Provinces of Tabayas, Laguna and Cavite: it traversed the China sea moving towards N Conchinchina.

On May 28, 40 were killed and 83 injured in a tornado in Fannin County, TX.

On June 19-23, a typhoon crossed the Provinces of Albay, Nueva Ecija, Pangasinan and La Union and continued toward the China coast south of Swatow.

On June 25-July 12, appearing E of North Samar, a typhoon crossed this island and Sorsogon and recurving to NW across Camarines Norte, a typhoon traversed central Luzon through Nueva Ecija, Pangasinan, Mountain, La Union and Illocos Sur and finally reached the southeast coast of China, S of Swatow.

On August 10-13, offshore of the Yucatan, a hurricane struck. [NHC rank 237/259 with 30 dead]

On August 12-16, appearing between Jolo and Basilan and moving in a NW direction, the typhoon crossed Palawan and reached Hainan.

On August 17-19, the Jamaica hurricane devastated nearly all the island, causing at least 12 deaths. [NHC rank 238/259 with 30 dead]

On August 29, a hurricane struck near Augustine, FL. [NHC rank 175/259 with 68 dead]

On August 29-30, a hurricane struck Bermuda, being the most severe since 1839.



On October 8-15, much flooding in the Midlands of England.

On October 15, a violent early season blizzard raked MN and the Dakotas. Winds gusted to 70 MPH at Yankton SD, and snow drifts 10 to 15 feet high were reported in northwest IA and southeast SD. Saint Paul MN reported a barometric pressure of 28.65 inches on the 16th. Railroads were blocked by drifts of snow which remained throughout the severe winter to follow. Gales did extensive damage to ship on the Great Lakes. (15th-16th).

On October 18-22, the typhoon crossed Luzon thru Manila and then continued to move across the China Sea to the Gulf of Tonkin.

On October 21-31, Appearing S of Basilian and proceeding NW, a typhoon crossed S Palawan and continued towards the Tonkin Gulf.

On December 30, the temperature at Charlotte NC plunged to an all-time record cold reading of 5 degrees below zero, a record which was equaled on the 21st of January in 1985.

1881

A cholera pandemic spreads worldwide in 1881 to 1896.

A severe drought in Southwest United States.

In January, a severe winter in the United States with 0 F in Mobile AL.

On January 6-7, a cyclone in Western Australia killed 16.

On January 18-19 blizzard in England and France with 4-6 feet of snow in southern England and more than 100 killed. London recorded 1ft of snow in 7 hours. In the North, a blizzard dumped 2 feet of snow widely. It also snowed in Paris.

In May, a typhoon struck the Phillipines (Steamship Elguin).

On June 12, severe thunderstorms spawned more than half a dozen tornadoes in the Lower MO Valley. Five of the tornadoes touched down near Saint Joseph MO. In south central KS a tornado nearly wiped out the town of Floral. Hail and high winds struck IA and southern MN. In MN, Blue Earth City reported five inches of rain in one hour.

On June 27, a typhoon struck the Phillipines. The destruction was small in Ambos Camrines. In Laguna and Morong, the storm caused the loss of many houses and considerably damage the bridges and roads. The fish ponds of Laguna were all destroyed.

On July 15, a tornado killed 11 and injured 65 in Brown County, MN.

On August 4, at Seville, Spain, the temperature reached 122F, a record for Europe.

On August 8, a cloudburst and flash flood occurred at Central Springs CO and ID Springs CO.

On August 9-14, a typhoon struck the Philippines (on board the steamer Friederic at 29.6 N and 128 E). In Baler, torrents of rain began to fall at 10 am of the 19th; at 2 pm the rains ceased but the winds gradually increased in force. At 10 pm, the wind reached its maximum force.

In July and August, hot and dry in the United States; NYC runs out of water and many people die from the heat.

On August 16-22, a typhoon struck the Philippines. The typhoon came from near Palaos in NW direction, reached E Luzon and crossed it through Camarines Norte, Nueva Vizcaya, Mountain and La Union. In the China Sea it continued to WNW towards the coast N of Hainan. During this typhoon there occurred in Manila a hail storm and water spout on the 18th. The lighthouse of San Nicolas shoal, in the Bay of Manila, was destroyed with loss of the keeper and his family. Great damage was done to small craft in the Manila port. In the body of the cyclone there developed small whirls or tornadoes which caused considerable damage in several places.

On August 18, a hurricane in Martinique killed 700.

On August 19-20, a typhoon struck the Philippines (at Baler).

On August 24-28, a typhoon appeared NE of Luzon moving to WNW, and inclining to N and NE, moved along the Formosa Channel and the eastern coast of China. Much damage was done in the Shanghai region. The barometric minimum at Zikawei was 747.0 mm.

On August 27, a hurricane kills 700 in Georgia and South Carolina. Savannah and Augusta, Ga., experienced severe damage when this hurricane came ashore in August 1881. Several barrier islands were completely submerged by the storm surge. [NHC rank 45/259 with more than 700 dead]

On September 5-8, a typhoon struck the Philippines (at Tainanfu and then Formosa).

On September 6, forest fires in MI and Ontario resulted in 'Yellow Day' in the northeastern United States Twenty villages in MI burned, and a total of 500 persons were killed. Fires caused 2.3 million dollars in losses near Lake Huron. Candles were needed at the noon hour.

On September 1-10, dark days in New England due to forest fires in MI and Ontario.

On September 7, the temperature soared to 101 degrees at NYC, 102 degrees at Boston MA, and 104 degrees at DC.

On September 16, IA's earliest measurable snow of record fell over western sections of the state. Four to six inches was reported between Stuart and Avoca.

On September 27-October 6, a typhoon near the Philippines (steamer Fleurcastle).A typhoon

appeared ESE of Manila and advanced to WNW through Camarines, Tayabas and Batanges provinces, doing much damage. In the China Sea, it gained tremendous development, wrecked some steamers and invaded Tonkin with a high wave, which caused as much destruction as the fury of the wind. 20000 human corpses were recovered after the storm. The barometric minimum on the steamer Fleurs Castle at about 15°N and 113°E was 717.50 mm.

On October 5-8, a typhoon in Haifong China and Vietnam killed about 300000.

On October 10-14, a typhoon struck the Phillipines (steamship Oaklands near Pratas). The bark Geraldine Paget was wrecked at Pratas. Much damage was experienced at Hong Kong and Macao.

On October 27, Manzanilla hurricane wrecked all vessels and many houses.

On December 8-20, a typhoon struck the Phillipines. Heavy damages were experienced in Albay and Sorsogon.

During 1881, there are reports of 21 typhoons in and around the Phillipines. If major damage or loss of life occurs, it will get a separate report. 1881 is the first year where this procedure is followed.

1882

Crop failures and famine in southern Japan.

On January 14, a snowstorm in southern CA with snow as far south as San Diego.

On January 21 on the Ohio and Mississippi rivers, floods kill 138 and cause \$15 million in damages.

On January 22, a dark day in London (not fog).

On February 22, much flooding in the OH and MS Valleys with many lives lost.

On March 7 a cyclone in Western Australia kills 20.

On April 7-14, a typhoon struck the Phillipines.

On April 18, a tornado killed 8 and injured 150 in Henry and Sabine Counties, MO.

On May 23, an unusual late season snow blanketed eastern IA, with four to six inches reported around WA.

On June 5-6, a cyclone blasted Bombay India killing more than 100000.

On June 17, a tornado traveled more than 200 miles across the state of IA killing 130 persons and injuring 300. It is the most destructive tornado in state history.

On July 9, ice formed on the streets of Cheyenne WY during a rare summer freeze.

On August 8, an August snowstorm was reported by a ship on Lake MI. A thick cloud reportedly burst on the decks covering them with snow and slush six inches deep. Snow showers were observed at shore points that day.

On August 10, Sandusky OH noted a four minute snow squall during the morning, frost was reported in the suburbs of Chicago, and a killing frost was reported at Cresco IA.

On September 7, a hurricane affects extreme Southeast LA coast. Port Eads reported winds gusts to 92 m.p.h. and a pressure of 29.38". One half of the rice crop in Plaquemines Parish was destroyed. When it made landfall in Pensacola, a great deal of crops, shipping, and buildings suffered there.

On September 14, a strong tropical storm made landfall in Southwest LA. That night, a "Hard wind and rain" visited Lake Charles, described as a lively gale". Port Eads had winds of 70 m.p.h. and a pressure of 29.38". Abbeville reported no damage with the storm.

On September 12-15, KS-MS heat wave with foliage of trees burnt.

On September 27-October 6, a typhoon is recorded near the Phillippines (steamer Tanais).

On October 2, an early season windstorm over OR and northern CA blew down thousands of trees and caused great crop damage in the Sacramento Valley.

On October 8-14, Cuban hurricane causes 40 deaths plus thousands of cattle and houses; the same hurricane over the Labrador coast destroys 17 vessels and more than 100 lives. [NHC rank 125/259 with 140 dead]

On October 20-27, a typhoon struck the Phillippines (bark Caridad).

On December 12, Portland OR was drenched with 7.66 inches of rain, a record 24 hour total for that location.

On December 31, 3.5 inches of snow in San Francisco.

During 1882, there are reports of 12 typhoons in and around the Phillippines. If major damage or loss of life occurs, it will get a separate report.

1883

On January 11 at Worms, Germany, floods kill 60.

On February 15, the Ohio River crests at 66 feet, 5 inches; In Cincinnati, 350 homeless people found shelter in a Third Street schoolhouse. On the Licking River in Northern KY, 1700 barrels of whiskey were afloat after coming dislodged from a boat.

On April 21, a tornado in Rochester MN killed 31 and destroyed 1351 buildings.

On April 22, an outbreak of tornadoes from LA to KS claimed the lives to 200 persons. One of the tornadoes destroyed the town of Beauregard, MS.

On April 24-30, a typhoon struck the Philippines (at Taganaan).

On May 17, a three day flood in the Black Hills of western SD resulted in a million dollars damage at Rapid City.

On May 18, a tornado killed 16 and injured 100 in Racine County, WI.

During the summer, there was a drought in the northern Great Plains.

On July 11 in Ontario, Canada, floods in the Thames valley kill 30.

On August 21, a tornado hit Rochester MN killing 31 persons and wrecking 1351 dwellings.

On August 26, a hurricane struck off the Newfoundland Banks. [NHC rank 161/259 with 80 dead]

On August 27, Krakatau Volcano exploded in the East Indies. The explosion was heard more than 2500 miles away, and every barograph around the world recorded the passage of the air wave, up to seven times. Giant waves, 125 feet high and traveling 300 MPH, devastated everything in their path, hurling ashore coral blocks weighing up to 900 tons, and killing more than 36000 persons. Volcanic ash was carried around the globe in thirteen days producing blue and green suns in the tropics, and then vivid red sunsets in higher latitudes. The temperature of the earth was lowered one degree for the next two years, finally recovering to normal by 1888.

On September 4-5, a hurricane struck the Bahamas. [NHC rank 197/259 with 50 dead]

On September 11-23, a hurricane struck the Carolinas killing 53; earlier it destroyed over 100 vessels in the Bahamas. [NHC rank 136/259 with 106 dead]

On October 28-31, a typhoon struck the Philippines (at Manila).

On November 21, a tornadoes killed 5 and injured 162 in AR.

On November 27, fire engines were called out in NYC and New Haven CT as a result of the afterglow of the sunset due to vivid red ash from the Krakatau Volcano explosion in August.

On November 30, a hurricane passed near Bermuda.

During 1883, there are reports of 16 typhoons in and around the Phillipines. If major damage or loss of life occurs, it will get a separate report.

1884

On January 30, a cyclone in Australia left 5 dead.

On February 6, the Ohio River at Pittsburgh PA crests at 36.3 feet.

On February 14, the Ohio River crests at 71.1 feet in what was the biggest flood of the century, flooded-out East End residents took shelter in abandoned railroad cars. Mount Washington and Newtown were cut off from the rest of the city of Cincinnati.

The Great Southern Tornado Outbreak - February 19, 1884. Over 60 tornadoes swept the entire Southeast. At least 170 people were killed, possibly more. It was considered the largest outbreak until the Super Outbreak of April 3-4, 1974.

On April 26, dense black clouds with yellowish tint at Stonyhurst Observatory, England.

June 23 in Galicia, Germany: a flood destroys a railway bridge over the Vistula and kills 21.

On July 28, tornadoes killed 15 and injured 18 in the Dakotas.

On September 9, tornadoes killed 6 and injured 75 in WI.

On December 17, a three week blockade of snow began at Portland OR. A record December total of 34 inches was received.

During 1884, there are reports of 13 typhoons in and around the Phillipines. If major damage or loss of life occurs, it will get a separate report.

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1885

On February 8, a hurricane struck throughout Cuba.

On March 14, a hurricane struck Ramon de las Yaguas, Cuba.

On April 23, the city of Denver CO was in the midst of a storm which produced 23 inches of snow in 24 hours, and at ID Springs CO produced 32 inches of snow.

On April 23-28, a typhoon struck the Phillipines.

In June in Mexico, a cloudburst kills 170 out of 680 in a single town.

In July, a typhoon was seen near the Philippines on a steamship.

On August 3, a tornado hit Philadelphia and Camden along its eight mile path killing 6 and injuring 100.

On August 18-26, a typhoon was seen near the Philippines (on board the ship Ocksan).

On August 23-25, the Charleston SC hurricane causes 21 deaths causing 1.3 million dollars damage. [NHC rank 256/259 with 25 dead]

On September 8, a tornado killed 6 and injured 100 in Fayette, OH.

On September 21, a cyclone in India killed 10000.

On November 6, a typhoon swept the Philippines killing 10000.

During 1885, there are reports of 10 typhoons in and around the Philippines. If major damage or loss of life occurs, it will get a separate report.

1886

In January, a hurricane struck San Juan, Cuba.

In January, a severe ice storm in New England and NY, the worst in a half century.

On January 6-13 in the mid-southeast of the United States, a great blizzard struck without warning IA lost 20 and KS lost 80% of its cattle. In all, 80 people died.

In February, a hurricane struck Sagua la Grande, Cuba.

On March 16, 8-10 minutes of darkness at La Crosse, WI and other cities.

On April 14, tornadoes killed 74 and injured 136 in Benton and Stearns Counties, MN.

On May 12, tornadoes killed 57 in Greene and Huron Counties, OH.

On May 14-15, a tornado in Anderson IN killed 43; its path extended to Seneca County OH.

On June 10, Tarawera New Zealand erupts.

On June 13-14, a tropical storm passed inland near Calcasieu Pass LA. Inundation extended several miles inland, reaching its highest point at 10 am. Winds blew hard at Lake Charles, damaging ½ of the corn crop across Southwest LA. The storm was most severe at Calcasieu Pass,

causing extensive flooding.

On June 30, the second destructive hurricane in nine days hit the Apalachicola-Tallahassee area.

On July 19, a hurricane from the Gulf of Mexico crossed FL causing great damage from Cedar Keys to Jacksonville.

On July 24, rain fell at Lawrence KS for the first time in four weeks. Rain fell over much of the state of KS that day relieving a severe drought which began in May. The very dry weather ruined crops in KS.

On August 4, a hurricane struck Consolacion del Sur, Cuba.

On August 19-20, an Indianola TX hurricane completely destroys the town again with more than 20 lives lost. After flooding the Louisiana coast, the storm moved into Texas where it completely destroyed the city of Indianola. Indianola was never rebuilt. [NHC rank 241/259 with more 28 dead]

From June to October, severe drought in Dakotas and MN.

On September 5-9, a typhoon was seen near the Phillipines (steamer Killarney at 21 N, 128 E).

In October, dark day at Durkhamshire, England.

On October 11-13, a hurricane wrecked Cameron Parish LA, killing 50. On October 12, the hurricane struck Sabine TX, killing 150. Galveston, TX is flooded by a storm and the city ruined with 38 dead. [NHC rank 121/259 with 150 dead]

On October 12-15, a typhoon struck the Phillipines. It was severely felt at Culion.

On October 14-18, a typhoon was seen near the Phillipines (steamship Proponti).

On December 5, a big snowstorm in the southeastern United States produced 11 inches at Montgomery AL, 18.5 inches at Rome GA, and 22.5 inches at Knoxville TN.

On December 6, a great snowstorm hit the southern Appalachian Mountains. The three day storm produced 25 inches at Rome GA, 33 inches at Asheville NC, and 42 inches in the mountains. Montgomery AL received a record eleven inches of snow. Columbia SC received one to two inches of sleet.

During 1886, there are reports of 19 typhoons in and around the Phillipines. If major damage or loss of life occurs, it will get a separate report.

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).



1887

In late January, blizzards in the Great Plains, United States with 60% of the cattle freezing; whole families are found frozen to death.

On February 4-5, 3.7 inches of snow in San Francisco CA.

On March 12, a hurricane struck Santa Maria, Cuba.

On April 21, a tornado killed 20 and injured 237 in Prescott County, KS.

In May, a typhoon was seen near the Phillipines (brig Alic Bowe).

On May 24, a hurricane struck Santa Clara, Cuba.

On May 27-June 3, a typhoon struck the Phillipines. In the whole coast of of ILocos, a strong typhoon from the southwest was felt. The Abra river over flooded its banks. The water carried away some bridges in Pangasinan. In Isabela the typhoon-rains damaged the tobacco leaves which were ready for cutting. The rain accompanied by strong gusts from the south caused great damage to edifices, bridges and culverts made of wood. The wind was very strong in Zambales.

From May to October, there was a severe drought in KT, OH, MI, IN, IL, MS, IA, WI, MN, Neb, ND, and SD.

In India, a cyclone struck near the mouth of the Ganges River, killing thousands.

In July, a typhoon struck Nagasaki, Japan.

In September-October, the Yellow River, China, burst its banks causing flooding of 10000 square miles, and killing between 900000 and 2.5 million.

On September, a typhoon was encountered at sea at 20.5 N and 119 E.

On September 9, a hurricane struck El Caney, Cuba.

On October 16-19, a hurricane hits Southeast LA. On the 16th, a strong northeast wind blew across the area. Winds continued strong until the 18th, when the winds rose to "a regular storm". Rain was steady until the 19th when skies cleared, but the wind remained. Caused much destruction in New Orleans, where the pressure fell to 29.22"; they received their heaviest rain in years.

On November 19, the smoky day in the OH River Valley.

During 1887, there are reports of 34 typhoons in and around the Phillipines. If major damage or loss of life occurs, it will get a separate report.

1888

In January, ice in Sacramento for the first time since 1854.

On January 11-13, MT, SD, ND, and MN experienced the worst blizzard they have ever seen.

On January 13 the mercury plunged to 65 degrees below zero at Fort Keough, located near Miles City MT. The reading stood as a record for the continental United States for 66 years.

In January, the "January Blizzard of 1888" with snow from TX to New England. The Blizzard of 1888 affected the eastern United States from March 10th through March 14th. It began as a weak area of low pressure that formed in the northern Gulf of Mexico on March 10th before tracking up through Georgia to the North Carolina coast by March 11th. Moving slowly northward on March 11th and 12th, the storm remained relatively stationary off the southern New England coast on March 12th and 13th. Light amounts of snow fell from the mountains of Tennessee up through the state of Maryland, while heavier snow fell from New Jersey up through eastern New York, Vermont, New Hampshire and much of southern New England, except Rhode Island and Cape Cod. The largest city in the nation at that time, New York City, was blanketed by snow, as photographs taken after the event showed. After a balmy, unseasonable day before, snow began falling around midnight on the night of March 12th. Blizzard conditions developed as temperatures plummeted and fierce winds began to blow. By the time the storm ended early on March 14th, 22 inches of snow had fallen in New York City. In Brooklyn 26 inches fell with 32 inches in White Plains. The relentless winds associated with the storm blew snow on the ground into tremendous drifts. Over four feet of snow fell in the Albany and Troy areas of northeastern New York state. Similar amounts of snow were measured in areas such as Middletown, Connecticut. More than 400 people lost their lives in the Blizzard of 1888, primarily due to exposure to strong winds and cold temperatures.

On February 19, a tornado with a 62 mile long path near Mt. Vernon IL killed 16.

On March 11-14, 50 inches of snow in western New England in storm killing more than 400; previously the winter was mild.

On March 26-27 in Germany, the Elbe and Vistula overflow and 200 villages are submerged.

On March 28, a storm and storm surge caused great damage in Wellington, New Zealand.

On April 16-17, a hurricane struck Santiago and Havana, Cuba.

On April 30, a hailstorm lasting 2 hours pounded Moradabad India killing 250.

On May 8, the Canton River overflowed at Canton China killing 3000 and submerging hundreds of villages.

Between June 15 and July 25, a heat wave in Lower Egypt.

June 17-20 in Mexico: heavy rains cause floods throughout the country.

On June 26, residents of NY suffered through a record heat wave. Daily average temperatures were above 80 degrees for fourteen straight days. The heat wave was a sharp contrast to the severe blizzard in March of that year, which buried the city under nearly two feet of snow.

On July 11, heavy snow reached almost to the base of Mt Washington NH, and the peaks of the Green Mountains were whitened; the Monongahela River at Charleroi PA floods 26.1 feet.

On August 16-22, a hurricane passes through OH Valley and New England.

On August 18-20, a hurricane was considered the "severest and most extensive" to hit LA since the Racer's Storm of 1837. It affected much of northern Gulf coast. In New Orleans, all electric light, telegraph, and phone wires went down that Sunday night. By Monday morning, the storm was at its height. Ninety mile an hour winds rampaged through the city. Almost the entire city was submerged.

On August 21, a tornado swarm occurred in MD and DE. Many waterspouts were seen over Chesapeake Bay. 12 were killed.

On August 21, the Kiskiminetas River at Avonmore PA floods 31.8 feet; the Youghiogheny River at Connellsville PA floods at 17.8 feet.

August 31 to September 8 in Cuba, a hurricane wiped out whole towns and thousands died. The Turks Islands, Great Inagua, and Mexico were also hit. [NHC rank 40/259 with 921 dead]

On September 7, much of the Middle and Northern Atlantic Coast Region experienced freezing temperatures. Killer frosts resulted in a million dollars damage to crops in ME.

On November 26, a late season hurricane brushed the East Coast with heavy rain and gale force winds. The hurricane passed inside Nantucket and over Cape Cod, then crossed Nova Scotia.

During 1888, there are reports of 17 typhoons in and around the Phillipines. If major damage or loss of life occurs, it will get a separate report.

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1889

The Russian flu (1889-1890) swept the world killing an estimated 1% of the worlds population.

Darkness accompanied with dirty snow in Aitken, MN.

On January 1, the Yellow River in China overflowed killing thousands in Shantung.

On January 16, at Cloncurry, Queensland, the temperature reached 128F, a record for Australia.

On February 13, it was the coldest morning of record along the Gulf Coast. The temperature dipped to 7 above zero at New Orleans LA and Pensacola FL, and plunged to -1 degree at Mobile AL. The mercury dipped to -2 degrees at Tallahassee, the coldest reading of record for the state of FL.

On February 14, a great blizzard struck the eastern United States DC received 20.5 inches of snow to bring their total snow depth to nearly three feet. The storm produced 36 inches of snow at Cape May NJ.

On March 16, a typhoon struck Samoa killing 186 and destroying 4 ships.

On May 31, the Johnstown PA flood kills 6111.

On June 1, the west branch of the Susquehanna River at Williamsport PA floods 32.4 feet; the Juanita River at Newport PA floods 35.9 feet; the Kiskiminetas River at Avonmore PA floods 31.8 feet.

On June 2, the Susquehanna River at Harrisburg PA floods 26.8 feet; a great flood on the Potomac River in DC took out a span of Long Bridge, and flooded streets near the river. The flood stage reached was not again equaled until 1936.

On June 12, a tornado in New Richmond WI killed 119 and injured 146.

On June 13, forest fires in northern WI and northeast MN were in the process of destroying millions of dollars of board feet of timber.

On July 18, a cloudburst in WV along the small creeks in Wirt County, Jackson County and Wood County claimed twenty lives. Rockport WV reported nineteen inches of rain in two hours and ten minutes that Thursday evening. Tygart Creek rose 22 feet in one hour, and villages were swept away on Tygart, Slate, Tucker, and Sandy Creeks.

On September 9-12, a hurricane along the east coast of the United States killed 40. [NHC rank 213/259 with 40 dead]

During 1889, there are reports of 17 typhoons in and around the Phillipines. If major damage or loss of life occurs, it will get a separate report.

1890

On January 1-5, a typhoon struck the Phillipines.

January to April, floods in the Mississippi valley cover 5000+ square miles. 100 die.

The Louisville, Ky Outbreak - March 27, 1890. At least 125 people were killed in Illinois, Indiana, and Kentucky and 76 people alone were killed in the city of Louisville, Kentucky, 44 of those in one building.

On March 31, Saint Louis MO received 20 inches of snow in 24 hours. It was the worst snowstorm of record for the St Louis.

On August 6, thunderstorms left four inches of hail covering the ground in Adair County and Union County in IA. The hail drifted into six foot mounds, and in some places remained on the ground for twenty- six days.

On August 19, a tornado in Wilkes-Barre PA destroyed many structures and killed 16; there have been 4 tornados there between 1860 and 2000.

On September 22, a severe hailstorm struck Strawberry AZ. Fives days after the storm hail still lay in drifts 12 to 18 inches deep.

On September 28-October 3, a typhoon struck the Phillippines (at Tabaco and on the steamship Mount Hebron).The damage done in Manila and its surroundings was considerable.

On November 3, the temperature at Los Angeles CA reached 96 degrees, a November record for 76 years.

During 1890, there are reports of 22 typhoons in and around the Phillippines. If major damage or loss of life occurs, it will get a separate report.

Eyjabakkajökull, an outlet glacier of Vatnajökull (Iceland), surged to its maximum historical limit (Aber).

1891

Crops fail in Russia followed by famine. A major crop failure encourages Ukrainian migration to the Western Canadian Prairies.

On January 7-13, a typhoon struck the Phillippines.

On February 7, severe blizzards in Neb., SD, and other states caused many deaths (est. 23). It has been called the worst blizzard ever to occur there.

On February 17, the Kiskiminetas River at Avonmore PA floods 30.4 feet.

On March 9-13, a blizzard in southern England killed more than 600; it had near hurricane force winds and destroyed 14 ships in the English Channel.

On June 30, a flood in Consuegra Spain killed 1781.

On July 5, sixteen horses were killed by hail, and many more have to be put to death due to injuries from a hailstorm at Rapid City SD.

On July 21 at Foochoo, China, the Yang-tse-Kiang floods with great property destruction.

On July 25, the mercury hit 109 degrees at Los Angeles CA marking the peak of a torrid heat wave.

On July 26 at Posen, Poland, a flood destroys life and property. 100 die.

On August 18-22, a hurricane struck Martinique, Turks, and Puerto Rico killing 700. [NHC rank 44/259 with 703 dead]

On September 19-25, a typhoon struck the Phillippines (at Aparri).

In early October, a hurricane struck Bermuda.

On October 17-18, another hurricane struck Bermuda.

On October 27-28, a typhoon struck Guam.

October 25 at Limoux, France: flood collapses many buildings. 20 die.

On November 11-15, a typhoon caused much destruction in Luzon, S and SE provinces and N Mindoro, Phillippines.

During 1891, there are reports of 30 typhoons or depressions in and around the Phillippines. If major damage or loss of life occurs, it will get a separate report.

1892

Droughts in China from 1892 to 1894 kill one million.

On January 6, a hurricane caused many deaths in GA and neighboring states.

On January 12-14, a typhoon struck the Phillippines.

On February 7, at Verkhoyansk, Russia, the temperature set a record low for Asia of -90F.

On March 8-10, a cyclone in Australia killed 15.

On March 17, a winter storm in southwestern and central TN produced 26 inches of snow at Riddleton, and 18.5 inches at Memphis. It was the deepest snow of record for those areas.

In April, tornados struck several KS towns killing 40.

May 25: the Mississippi floods at St. Louis, MO killing 250.

June 4 at Oil City, PA: floods and fire create an inferno with 130 dead.

On June 14, tornados swept across MN killing 50.

On June 28, the temperature at Orogrande UT soared to 116 degrees to establish a record for the state.

On August 19-20, a hurricane struck Bermuda.

In mid-September, a hurricane struck Southeast LA near Morgan City.

On October 13-15 at Yorkshire, England, York, Leeds and other towns flooded with great loss of livestock. 30 people die.

On October 15 at Genoa, Italy, floods outside the city cause most bridges to collapse. 35 die.

On October 15, a hurricane passed by Bermuda.

On November 24, a typhoon in Japan killed 310.

On December 8, a tremendous ice fall occurred at Gay Hill TX. Ice averaged four to six inches in diameter.

On December 21, Portland OR was buried under a record 27.5 inches of snow.

On December 27, an Atlantic coast storm produced a record 18.6 inches of snow at Norfolk VA, including 17.7 inches in 24 hours. The storm also produced 9.5 inches of snow at Raleigh NC, and brought snow to northern FL for the first time in 35 years.

During 1892, there are reports of 21 typhoons in and around the Phillipines. If major damage or loss of life occurs, it will get a separate report.

Number of typhoons striking Guangdong Province, China this year: 0. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1893

Droughts in Great Plains through 1895.

On March 8-16, a typhoon struck the Phillipines.

On June 21, on the first day of summer the temperature at Dodge City KS soared to 106 degrees during the midst of a blistering heat wave. The heat wave initiated a severe three year drought in

the Central Plains Region. Ironically, at about the same time, heavy rains in the MS Valley were causing the river to swell to its highest level of record at New Orleans LA. 250 people died in the Mississippi River floods.

On July 6, a violent tornado killed 71 persons on its forty-mile track across northwestern IA. Forty-nine persons were killed around Pomeroy, where eighty percent of the buildings were destroyed, with most leveled to the ground. Photos showed most of the town without a wall or tree left standing.

On August 14, the upper part of Hungary is flooded. 48 die.

On August 27-28, the first of three great hurricanes that year struck SC drowning more than 1000 persons in a tidal surge at Charleston. In August, between 1000 and 2000 are killed in a storm that submerged the South Carolina barrier islands. [NHC rank 20/259 with up to 2500 dead]

On September 10-12, a typhoon struck the Philippines (at Aparri and then later at South Cape, Formosa where it was 956 mb).

On September 28, Albuquerque NM was soaked with 2.25 inches of rain, enough to establish a 24 hour record for that city.

On September 28-October 3, a typhoon struck the Philippines (at Cabragan Viejo and others; 940 mb). Moving from the N of the Western Carolines in a WNW direction, the typhoon crossed Luzon through Isabela, Cagayan and Ilocos provinces, inflicting very severe damage as it passed. Then inclining more to the NW, it finally reached the Continent NE of Hainan. The barometric minimum at Cabagan Viejo was 705.0 mm, at Tuguegarao 711.50 mm, at Ilagan was 708.0 mm and at Hongkong 743.26 mm

On October 1-2, the second great hurricane of the 1893 season hit the MS Delta Region; 2000 people died, 779 from Cheniere Caminanda and 250 at Grand Lake alone. [NHC rank 23/259 with 2000 dead]

On October 11-13, a hurricane struck the Carolinas, killing 22; a hurricane struck St. Thomas. [NHC rank 243/259 with 28 dead]

During 1893, there are reports of 33 typhoons or depressions in and around the Philippines. If major damage or loss of life occurs, it will get a separate report.

1894

On January 4, a cyclone in Western Australia left 50 dead.

On March 1-9, a typhoon struck the Philippines.

On March 7-12, a second typhoon struck the Philippines.



On March 14-20, a third typhoon struck the Philippines.

On April 10, a heavy late season snow blanketed parts of the northeastern United States. Heavier snowfall totals included 31.5 inches at Salem Corners PA, 30 inches at LeRoy NY, 26 inches at York PA, 14 inches at Waterbury CT, and 9 inches at Providence RI.

On April 28 at Quebec, Canada: the Noir overflows from a landslide. 24 die and livestock and property are lost.

On May 20, a record late snow of 2 to 8 inches whitened parts of central and eastern KY. Lexington KY received 6 inches of snow.

On May 21, it reached 124 F at Salton CA to be the hottest day in May in the United States ever.

On May 22, the Susquehanna River at Harrisburg PA floods 25.7 feet; about May 22, the west branch of the Susquehanna River at Williamsport PA floods 29 feet; about May 22, the Juanita River at Newport PA floods 30.5 feet.

On May 24, 6 inches of snow blanketed KY. Just 4 days earlier as much as 10 inches of snow had fallen across KY, TN and VA. 6 days earlier a violent storm had wrecked nine ships on Lake MI.

On June 6, one of the greatest floods in United States history occurred as the Willamette River overflowed to inundate half of the business district of Portland OR.

On August 1-12, a typhoon struck Japan (at Hamamatsu and Nemuro).

On September 1, a forest fire driven by high winds burned down the town of Hinkley MN killing 418 persons.

On September 2, dark day in New England.

On September 15-25, a typhoon struck South Isidro and Macao in the Philippines.

On September 21, 4 tornados from IA to MN killed 48.

On September 23-24, a hurricane struck Cuba. [NHC rank 103/259 with 200 dead]

On September 30-October 6, a typhoon struck the Philippines (at South Fdo Union).

On October 8, a hurricane struck Apalachicola FL killing many.

On October 26, a hurricane struck Bermuda.

On November 5, the famous Election Day snowstorm occurred in CT. As much as a foot of wet

snow fell, and the snow and high winds caused great damage to wires and trees. Winds gusted to 60 MPH at Block Island RI.

On November 8-11, a typhoon struck the Phillipines (at Aparri).

On November 15, the Thames overflowed between Oxford and Windsor causing extensive flooding and damage.

On December 29, a severe freeze hit FL destroying fruit and causing considerable damage to trees.

In 1892-1894, drought in China lead to a famine where 1 million people died.

During 1894, there are reports of 39 typhoons in and around the Phillipines. If major damage or loss of life occurs, it will get a separate report.

1895

On January 9 at Menduza, Argentina: floods cause great destruction and 23 die.

On January 16-26, a typhoon struck the Phillipines (at Yap). A typhoon appeared far away east western Carolines, advanced along parallel 9° N and passed over Yap with fearful fury of the wind and extraordinarily mountainous sea. Inclining to WSW it continued through Surigao, southern Negros and Palawan to the China Sea. Yap was totally destroyed. The barometric minimum at Yap was 729.4 mm.

On January 17-26, a second typhoon struck the Phillipines (maybe).

In February in England, "The upper Thames frozen over at Windsor".

On February 7, a hurricane at Camarioca, Cuba, possibly.

On February 15, a big Gulf snowstorm produced six inches at Brownsville TX and Mobile AL, 15 inches at Galveston TX, and 24 inches of snow at Rayne LA in 24 hours. Snow fell at the very mouth of the MS River. Houston TX received 22 inches of snow, and nine inches blanketed New Orleans LA; citrus crops freeze in FL; many low records established in February still stand in 2000.

On May 2, a hurricane at Barrio Taironas, Cuba, possibly.

On May 21, the temperature at Norwalk OH dipped to 19 degrees to set a state record for the month of May.

On July 13, a tornado struck Cherry Hill in NJ causing fifty thousand dollars damage. It also descended into the Harlem and Woodhaven areas of NYC killing one person, and finally ended

as a waterspout in Jamaica Bay.

In July, a typhoon struck Nagasaki, Japan (950 mb).

On August 28-September 9, a typhoon struck Japan (at Kagoshima on the 7<sup>th</sup>; 957 mb).

On September 13-18, a typhoon struck Takow, Formosa.

On September 20-October 1, a hurricane struck Cuba. [NHC rank 186/259 with 56 dead]

On October 20-21, a hurricane struck Sagua and Sierra Morena in Cuba (AAB SECC Expediciones 408.2).

On October 24, a hurricane grazed Bermuda.

On October 28-November 2, a typhoon struck the Philippines (at Tuguegarao).

In November, a hurricane struck San Antonio, Cuba.

On November 18-22, a typhoon struck Guam.

During 1895, there are reports of 30 typhoons or depressions in and around the Philippines. If major damage or loss of life occurs, it will get a separate report.

1896

On March 2 at Mesopotamia, the Tigris floods with great loss of life and property.

On April 25, a half-mile-wide, violent tornado cut a swath across Cloud, Clay and Washington Counties in Kansas. At least nine people, possibly eleven, died, all in Clay County as 27 farm homes were destroyed. Newspapers reported that "everything was leveled as if a roller had passed over it," and the body of a dead child was reportedly carried for a half mile.

On May 14, the mercury plunged to 10 degrees below zero at Climax CO. It was the lowest reading of record for the United States during the month of May.

On May 15, a tornado struck Sherman TX killing 78. This tragic day began with the death of an elderly man in his home at the hands of a 4 AM tornado in McPherson County, Kansas. The major activity was in the Red River area of Texas and Oklahoma. Three of the four members of one tornado family caused deaths and great destruction. The first damaged or destroyed 22 homes southwest of Denton, Texas, killing two people. Three more died north of Denton at the hands of the second member of the tornado family. The third member was among the most intensely devastating tornadoes in the nineteenth century. The funnel seemed to enter its shrinking stage as it turned to its left and cut across the west side of Sherman. At least fifty homes were destroyed, twenty of them completely obliterated. There were multiple deaths in seventeen families. A trunk

lid with the owner's name on it was carried for 35 miles. Many bodies were found a quarter mile from homesites cleaned of every stick of debris. The death toll was at least 73. A new thunderstorm spawned a tornado in Bryan County, killing four members of a family near Blue.

On May 21, the mercury soared to 124 degrees at Salton CA to establish a United States record for May.

On May 25, a tornado in Oakland County MI killed 47; it narrowly missed Detroit. This week of almost continuous strong and violent tornado activity (perhaps the most violent single week of tornado activity in US history) continued with a 1 AM, F4 tornado in Ogle County, Illinois. A mother and three children died as a home was leveled south of Egan. A half hour later, three more died and six were injured in a home south of Davis Junction, Illinois. The late afternoon devastated parts of central and eastern Michigan. At 6 PM, in Tuscola County, Michigan, a home in which a funeral was taking place was destroyed. The thirty people in attendance ran safely to a ditch before the home was "lifted and dashed to the ground." A man in a nearby home was killed by debris as he watched the events from his window. Two hours later, two people were killed as thirty homes were destroyed at Mount Clemons, Michigan. At 9 PM, the third F5 tornado of the year began leveling homes near Ortonville, Oakwood, and Thomas, Michigan. Nine people died in a single home at Ortonville. On the ground for thirty miles, the funnel killed at least forty-seven people.

On May 27, the St Louis tornado kills 306; it is one tornado in an outbreak of 60 (a book on this tornado by Tim O'Neil exists called The Great Cyclone at St. Louis and East St. Louis, May 27, 1896). Called The Saint Louis Outbreak. The outbreak in Missouri and Illinois devastated parts of St. Louis. Of the 305 killed, 255 were in and around St. Louis, Missouri. There were 1000 injuries and \$10 million in damage in St. Louis alone.

On June 15, the temperature at Fort Mojave CA soared to 127 degrees, the hottest reading of record for June for the United States The low that day was 97 degrees. Morning lows of 100 degrees were reported on the 12th, 14th and 16th of the month.

In July, an immense area of Siberia is covered with smoke for 11 days.

On July 23-24, a storm off Shantung China destroyed many vessels and killed hundreds. Much damage was done in Hong Kong, Macao and Canton River.

On September 28-29, a hurricane struck Cedar Keys FL killing 114. It continued into GA and SC. [NHC rank 128/259 with more than 130 dead]

On September 28-October 7, a typhoon was observed at 23 N 112 E (steamship Strathllam).

On October 19-20, a typhoon struck the Phillippines (at Aparri).

On November 2 at Sao Miguel, Azores, floods on the island. 30 die.

On November 7, a hurricane struck Camaguey, Cuba, possibly.

On November 26, snow and high winds hit the Northern Plains and the Upper MS Valley, with a Thanksgiving Day blizzard across ND. The storm was followed by a severe cold wave in the Upper Midwest. The temperature at Pokegama Dam MI plunged to 45 degrees below zero; the mercury plunged to 51 degrees below zero at Havre MT. It marked the culmination of a two week long cold wave caused by a stagnate high pressure area similar to those over Siberia during the winter. During the month of November temperatures across MT and the Dakotas averaged 15 to 25 degrees below normal. 29 people died in this blizzard.

On December 1, the temperature at Kipp MT rose 30 degrees in just seven minutes, and 80 degrees in a matter of a few hours. A thirty-inch snow cover was melted in half a day.

On December 2, an early season snow and ice storm struck the southeastern United States. It produced 11 inches of snow at Charlotte NC, and six inches at Atlanta GA.

December 31 in Greece: floods submerge most northern villages.

During 1896, there are reports of 17 typhoons in and around the Phillipines. If major damage or loss of life occurs, it will get a separate report.

1897

The most powerful earthquake known hits India.

Drought in India leads to the deaths of 5 million.

On January 6-7, a cyclone in Australia killed 30.

On September 1, hailstone drifts six feet deep were reported in Washington County IA.

On September 8, a hurricane disturbs shipping in the north central Atlantic. {NHC rank 208/259 with 45 dead}

On September 12, a hurricane skirted the LA coast near Port Eads, then moved inland into Southeast TX, north near Beaumont. At Port Eads, winds were 72 m.p.h.. In Abbeville, winds were stiff out of the east. The storm vented its fury between dusk and 10 P.M., waning after 11. Damage was inflicted upon the pear, pecan, cotton, and rice crops. At Cheniere au Tigre, boats and schooners were badly damaged and washed up on the beach. Wind mills were blown down.

On September 9-18, a typhoon struck Haichow, China.

On October 7-16, a typhoon struck Guiuan, Samar. Moving from E of the Western Carolines in a direction near E-W, the typhoon crossed Samar and Leyte and then moved over S Mindoro towards the China Sea. The barometric minimum at Guiuan, Samar, was of 710.0 mm. It caused

a tremendous wave which in S Samar and N Leyte destroyed completely several towns and claimed about 1500 human victims. It wrecked numerous boats within the Archipelago and put in great danger of foundering many others in the China Sea, where it inclined to NW.

On December 28, the temperature at Dayville OR hit 81 degrees to establish a state record for December.

In December in Nairnshire, England, a severe drought. For the past few months, complaints have been made among farmers and rural residents in Nairnshire as to the scarcity of water to such an extent as has not been experienced within the memory of older inhabitants.

During 1897, there are reports of 29 typhoons in and around the Phillippines. If major damage or loss of life occurs, it will get a separate report.

1898

On January 12, a tornado struck Ft. Smith AR and killed 51 along a 120 mile path.

On January 31-February 1, the worst blizzard since 1888 struck the east coast killing 26.

On February 20, eastern WI experienced their biggest snowstorm of record. Racine received thirty inches, and drifts around Milwaukee measured fifteen feet high.

On March 5-12, a typhoon struck the Phillippines.

On April 2, a cyclone struck Australia.

On April 25, the temperature at Volcano Springs CA hit 118 degrees to establish a United States record for the month of April.

On May 5-7, a cyclone in Australia killed 100.

On May 14, a severe thunderstorm, with some hailstones up to 9.5 inches in circumference, pounded a four mile wide path across KS City MO. South-facing windows were broken in nearly every house in central and eastern parts of the city, and several persons were injured.

On May 18, storms in the midwest (IL, IA, and WI) killed 40.

On May 28-June 5, a typhoon struck the Phillippines, Formosa, and Japan with a low pressure of 842 mb at Koshun, Formosa.

In July, a typhoon struck Hainan, China.

On July 23, a two hour thunderstorm deluged Atlanta GA with 4.32 inches of rain. More than a foot of water flooded Union Depot. Many street car motors burned out while trying to run

through flooded streets. It grew so dark before the afternoon storm that gas lights were needed.

On July 29, the temperature at Prineville OR soared to 119 degrees to establish a state record.

On August 2-3, a hurricane struck FL killing 27.

On August 10, the temperature at Pendleton OR climbed all the way to 119 degrees to tie a state record.

On August 13-16, a typhoon struck Kagoshima, Japan (967 mb).

On August 18, a typhoon is reported near the Phillipines (report of the Austrian frigate Novara).

On August 28, torrents of rain accompanied by a furious wind upset the rain gage at Fort Mohave AZ. However, water in a wash tub set out on the mesa, clear of everything, measured eight inches after the 45 minute storm.

On September 10-11, a hurricane struck St. Vincent and Barbados. [NHC rank 73/259 with 383 dead]

On October 1-3, a typhoon struck near the Phillipines (on the transport Siam northeast of Luzon).

On October 12, a hurricane struck the GA coast washing away Campbell Island and killing 179 in GA. [NHC rank 116/259 with 179 dead]

On November 27, the "Portland" storm raged across New England producing gale force winds along the coast and heavy snow inland. A foot of snow blanketed Boston MA, and 27 inches fell at New London CT. Winds at Boston gusted to 72 MPH, and wind gusts to 98 MPH were estimated at Block Island RI. A passenger ship, the S. S. Portland, sank off Cape Cod with the loss of all 191 persons aboard, and Boston Harbor was filled with wrecked ships. The storm wrecked 56 vessels resulting in a total of 456 casualties.

During 1898, there are reports of 25 typhoons in and around the Phillipines. If major damage or loss of life occurs, it will get a separate report.

1899

In 1899-1901, droughts in India kill 1.25 to 3 million.

In February, -2 F in FL.

In February, ice floes in Gulf of Mexico; snowstorms from FL to ME with 30 to 40 inches of snow in VA. It is the storm of the century according to the Weather Channel. Between February 1 and 14, 1899, a cold wave caused a massive East Coast blizzard and induced bitter cold temperatures across two-thirds of the Nation, from the Rockies to the Atlantic Ocean. "In a sense

this is probably the first and only time true blizzard conditions existed in the state of Florida. In fact, Florida probably experienced their only blizzard in history with this particular storm," says Paul Kocin.

On February 17, a cyclone struck Madagascar.

On February 18, the temperature at San Francisco soared to 80 degrees to establish a record for month of February.

On March 4-5, a cyclone in Australia left 300 dead.

On March 30, a storm which buried Ruby CO under 141 inches of snow came to an end.

On April 23-28, a typhoon struck the Phillipines.

On April 27, a tornado in Kirksville MO killed 34.

On May 2, a storm buried Havre MT under 24.8 inches of snow, an all-time record for that location. The water equivalent of 2.48 inches was a record 24 hour total for the month of May.

On June 12, a tornado in New Richmond WI killed 100 on Circus Day. Called the New Richmond Tornado. A tornado struck New Richmond, Wisconsin, killing 114 people. Many of those that died were in town attending an outdoor circus.

On July 2-10, a typhoon struck Japan (at Naha, Oshima, and Nagasaki; 956 mb).

On July 5 in TX, the Brazos floods and 200 die.

On July 15-26, a typhoon struck Japan (at Naha, Shangai, Tokyo, and Choshi).

On July 31-August 6, a typhoon struck Taichu, Formosa.

On August 8, a hurricane struck Puerto Rico destroying the coffee crop and killing 3000; called the San Ciriaco hurricane. It was observed later in the Carolinas as late as August 19. [NHC rank 8/259 with 3433 dead]

On August 15-22, a typhoon struck Koshum, China.

On September 4, a hurricane grazed Bermuda.

On September 12-13, a violent hurricane struck Bermuda.

On October 3-8, a typhoon was seen near the Phillipines (steamship Columbia and Ketat; 954 mb).



On October 7-8, floods wipe out villages near Salem, England. 40 die.

On October 30-31, a hurricane took a similar path to Hazel. It was becoming a nontropical low while passing through NC, but that didn't weaken the system at all. Cape Henry saw winds of 74 MPH over a five minute period. Norfolk tides reached 8.9 feet above mean lower low water. Norfolk experienced 50 MPH winds level trees and signs...windows in the area shattered. Brighton experienced the leveling of several homes. Tides again created a break in Willoughby Spit, damaging railroad tracks. In Danville, the gale reached its height between 7 and 8 p.m. on the 30th, unroofing several houses and damaging shade and fruit trees. Winds died down by noon on the 31<sup>st</sup>.

Another severe drought in India this year and next leads to 1.25 million deaths.

During 1899, there are reports of 21 typhoons in and around the Phillippines. If major damage or loss of life occurs, it will get a separate report.

1900

Only nineteen percent of Londoners went to church regularly and the numbers would continue to drop.

Vladimir Ilich Ulyanov (Lenin) (1870-1924) is exiled from Russia.

On February 28, a massive storm spread record snows from KS to NY. Snowfall totals ranged up to 17.5 inches at Springfield IL and 43 inches at Rochester NY, with up to 60 inches in the Adirondack Mountains of NY.

On June 6-8, a cyclone in Australia left 12 dead.

In the summer, drought in India kills 1.25 million people.

In the summer, drought in the Cape Verde Islands kills 11000.

On September 8-9, the greatest weather disaster in United States records occurred when a hurricane struck Galveston TX. A tide fifteen feet high washed over the island demolishing or carrying away buildings, and drowning more than 6000 persons. The hurricane destroyed more than 3600 houses, and total damage was more than thirty million dollars. Winds to 120 MPH, and a 20 foot storm surge accompanied the hurricane. Following the storm, the surf was 300 feet inland from the former water line. The hurricane claimed another 1200 lives outside of the Galveston area. [NHC rank 2/259 with 12000 dead]

On September 17, a hurricane struck Bermuda.

On September 25, in India, an estimated 35 inches of rain flooded Calcutta, submerging half the city.

On November 13-17, One of the most disastrous storms in the memory of the inhabitants of Marianas occurred on November 13th, 1900, and destroyed all crops, fruits and many wooden houses. The United States steamer Yosemite, station ship at Guam, in the early hours of the storm, was driven on the reefs inside Apra Harbor in front of the town of Sumay and severely damaged. During the later shift of the wind, the ship was blown out to sea over the Callan Bank near Spanish Rock, and although the vessel was drawing 40 feet forward the rocks were never touched. Here she lost her remaining anchor. At 4 o'clock the next morning, when the storm subsided, it was seen that the Yosemite was a total derelict; her boats were gone, her rigging torn to pieces, her rudder was gone and the propeller was so badly damaged that it was impossible to make more than 2 knots an hour. After drifting helplessly for 36 hours, the crew were finally taken off the United States steamer Justin, which had weathered the storm in safety. As the Yosemite could not be towed into port, she was sunk after removing all the Government property that could be saved. The loss of life in the island amounted to 20, of whom 4 were members of the crew of the Yosemite. Two years after this event the coconut trees in the island were just beginning to recover from the effects of the storm.

On November 15, a record lake-effect snowstorm at Watertown NY produced 45 inches in 24 hours. The storm total was 49 inches.

On November 20, an unusual tornado outbreak in the Lower MS Valley resulted in 73 deaths and extensive damage across AR, MS and TN.

A severe typhoon followed by a tsunami kill 28 people at Inarajan, Guam.

During 1900, there are reports of 4 typhoons in and around the Phillippines. If major damage or loss of life occurs, it will get a separate report.

Sléttjökull, an outlet glacier of Mýrdalsjökull (Iceland), stood at its Little Ice Age maximum. Other Icelandic glaciers at or near their maxima (Aber).

1901

March 9 – Near Emory, TX, a tornado carried a 4-foot piece of sheet iron 50 miles.

On March 25, a storm struck Birmingham AL killing 25.

On April 20, a spring storm produced unusually heavy snow in northeast OH. Warren received 35.5 inches in thirty-six hours, and 28 inches fell at Green Hill. Akron OH established April records of 15.6 inches in 24 hours, and 26.6 inches for the month. Pittsburgh PA established April records of 12.7 inches in 24 hours, and 13.5 inches for the month.

A very hot July in Great Plains.

On August 14, a hurricane forms northeast of Puerto Rico and moves west through Southern FL and northwest through the Gulf of Mexico before hitting Grand Isle LA on the 14th. The 5-min

average winds reached 56 m.p.h. at Port Eads before the anemometer blew away.

On October 8, a deluge at Galveston TX produced nearly twelve inches of rain in about a six hour period. The rains came precisely thirteen months after the day of the famous Galveston hurricane disaster.

On November 13, a storm off Great Britain wrecked 50 vessels and killed 210.

On December 15, an intense cold front swept across the eastern United States. The cold front produced heavy rain in LA, and heavy snow in the northeastern United States.

Number of typhoons striking Guangdong Province, China this year: 1. Also one of the 20 coldest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1902

On February 28, the Lehigh River at Bethlehem PA floods 25.9 feet; on February 28, the Schuylkill River at Reading PA floods 21.5 feet.

On March 3, the Susquehanna River at Harrisburg PA floods 22.9 feet; on March 7, the north branch of Susquehanna River at Wilkes-Barre PA floods 31.4 feet.

May 18 – In Goliad, TX, a tornado 250 yards wide killed 114 and injured over 250.

On June 23, the temperature at Volcano Springs CA soared to 129 degrees to set a June record for the United States.

On September 12, in western WA, everything was reddish and one could not read outdoors at night.

On October 24, Santa Maria erupts (primary source of stratospheric dust in 1902).

1903

On January 13, a typhoon in the Society Islands (Hawaii) left 1000 dead.

On February 16, the temperature at Pokegama Dam MN plunged to 59 degrees below zero to establish a state record.

On March 9, a cyclone in Australia killed 7.

On April 19-20, a typhoon struck the Philippines.

On June 1, a strong tornado just 50 to 75 yards in width killed many persons (203) around the Gainesville GA Cotton Mill. The tornado strengthened and widened near the end of its four mile

path, killing 40 persons at New Holland GA. A total of 104 persons were killed.

On June 1-3, a typhoon struck the Phillipines.

On June 5, a dark day at Saratoga NY.

On June 14, the "Heppner Disaster" occurred in Oregon. A cloudburst sent a flood down Willow Creek and a 20-foot wall of water swept away a third of the town in minutes, killing 236 residents.

On August 8-15, a hurricane struck the Cayman Islands, Jamaica, and Martinique. [NHC rank 107/259 with more than 188 dead]

On September 15-17, a hurricane struck the mid-Atlantic coast of the United States. [NHC rank 185/259 with 57 dead]

On September 28, a hurricane struck Bermuda; 2 die.

On October 9, NYC was deluged with 11.17 inches of rain 24 hours to establish a state record. Severe flooding occurred in the Passaic Valley of NJ where more than fifteen inches of rain was reported.

On October 10, the Delaware River at Riegelsville PA floods 23.9 feet.

On October 16-27, a typhoon struck the Phillipines.

On October 24-26, a typhoon struck the Phillipines.

1904

The Russo-Japanese War (1904-1905) begins.

On January 5, bitterly cold air gripped the northeastern United States Morning lows of -42 degrees at Smithport PA and -34 at River Vale NJ established state records.

On March 9, the north branch of Susquehanna River at Wilkes-Barre PA floods 30.6 feet.

On April 15, 10 minutes of darkness at Wimbledon, England.

On April 19, a cyclone in Western Australia killed 5.

On June 13-14, a hurricane struck Cuba. [NHC rank 156/259 with more than 87 dead]

On June 23-28, a typhoon struck the Phillipines.

On July 8-11, a cyclone in northeastern Australia killed 40.

On August 7, a flash flood near Pueblo CO washed a train from the tracks killing 89 passengers. A bridge, weakened by the flood waters sweeping through the valley below, gave way under the weight of the train dashing all but the sleeping cars into the torrent drowning the occupants. Rail service was frequently interrupted in the Rocky Mountain Region and southwestern United States that summer due to numerous heavy downpours which washed out the railroad beds delaying trains as much as five days.

On September 23, the temperature at Charlotteburg NJ dipped to 23 degrees, the coldest reading of record for so early in the autumn for the state.

On December 2, 15 minutes of darkness at Memphis TN.

1905

On February 13, morning lows of -29 degrees at Pond AR, -40 degrees at Lebanon KS, and -40 degrees at Warsaw MO established all-time records for those three states.

On April 29, the town of Taylor, in southeastern TX, was deluged with 2.4 inches of rain in fifteen minutes.

On May 9, a tornado wrecked Marquette KS, killing 30.

On May 10, a deadly tornado hit the town of Snyder OK killing 87 persons. The tornado leveled 100 homes in Snyder, and destroyed many others. The large and violent tornado killed a total of 97 persons along its 40 miles path across southwestern OK. Its roar could reportedly be heard up to twelve miles away.

On June 28-July 4, a typhoon struck the Phillipines.

On June 30, a typhoon in the Marshall Islands killed 500.

On July 5, a tornado struck near Montague TX killing 40 and leveling 20 buildings.

On July 7, the mercury soared to 127 degrees at Parker AZ to tie the state record established at Fort Mohave on the 15th of June in 1896.

On July 7, the Republic of Salvador is torn apart by a storm (hurricane?) killing 33.

On July 12-20, a heat wave scorched NYC killing 91.

On July 29, heavy rain in southwestern CT caused a dam break, and the resulting flood caused a quarter of a million dollars damage at Bridgeport. As much as eleven inches of rain fell prior to the flood.

On August 22-31, a typhoon struck the Philippines.

On September 21-29, a typhoon struck the Philippines; the Catabria Typhoon.

On November 28, a storm in MN and over the Great Lakes killed 40.

On December 11, at Rivadavia, Argentina, the temperature reached 120F, a record for South America.

Number of typhoons striking Guangdong Province, China this year: 1. Also one of the 20 warmest years between 1600-1909 based on tree rings and ENSO (Elsner and Liu).

1906

On March 2, a tornado wrecked Meridian MS killing 24.

On March 17, the temperature at Snake River WY dipped to 50 degrees below zero, a record for the United States for the month of March.

On May 22-28, a typhoon struck the Philippines.

On August 23, thunderstorms deluged KS City MO with six inches of rain during the early morning, including nearly three inches in thirty minutes.

On August 24, a cloudburst deluged Guinea VA with more than nine inches of rain in just forty minutes.

On September 9, a hurricane struck Bermuda.

On September 8-18, a typhoon struck the Philippines.

On September 10-20, a typhoon struck the Philippines.

On September 18, a typhoon hit Hong Kong China, killing 10000 to 50000.

On September 27, a hurricane struck Pensacola FL killing 32; it is the worst storm there in 175 years. [NHC rank 127/259 with 134 dead]

On October 17-18, a hurricane struck Cuba and the Florida Keys killing 129. [NHC rank 106/259 with more than 193 dead]

On October 21, a storm devastated Coatepeque, San Salvador, killing hundreds.

On November 12, the mercury soared to 106 degrees at Craftonville CA, a November record for the United States.

1907

Drought and famine in China, toll estimated at 24 million.

On January 10-11, a typhoon struck the Phillipines.

On January 21, the Ohio River crested at 65.2 feet. The levee broke in Lawrenceburg, IN, and the onslaught of water began. It took 750 workers to repair the breach. Aberdeen, OH, in Brown County, was cut off. Maysville, KY, was reeling.

On March 13, a storm produced a record 5.22 inches of rain in 24 hours at Cincinnati OH. (12th-13th).

On March 14, the Kiskiminetas River at Avonmore PA floods 33.8 feet; the Youghiogheny River at Connellsville PA floods at 18.4 feet; on March 15, the Ohio River at Pittsburgh PA crests at 38.5 feet.

On June 1, at Sarmiento, Argentina, a record low for South America of -27F was set.

On June 13, the temperature at Tamarack CA dipped to 2 degrees above zero, the lowest reading of record for June for the United States The high that day was 30 degrees. Tamarack received 42 inches of snow between the 10th and the 13th. On the 13th the snow depth was 130 inches.

On August 19-28, a typhoon struck the Phillipines.

Millions starve during the Russian famine.

The bubonic plague kills 1.3 million in India.

1908

On March 8, a tornado struck Brinkley AR killing 64.

On April 14 at Hau-kau, China, floods and 2000 die.

On April 24-25, 18 tornadoes from LA to GA kill 310 people; severe thunderstorms spawned eighteen tornadoes over across the Central Gulf Coast States claiming the lives of 310 persons. The state of MS was hardest hit. A tornado near Hattiesburg MS killed 143 persons and caused more than half a million dollars damage. Four violent tornadoes accounted for 279 of the 310 deaths. The deadliest of the four tornadoes swelled to a width of 2.5 miles as it passed near Amite LA. The tornado also leveled most of Purvis MS.

On May 23-31, a typhoon struck the Phillipines.

On May 30, a tornado leveled Zephyr TX killing 30.

On June 5, Helena MT was deluged with 3.67 inches of rain to establish their all-time 24 hour rainfall record. (4th-5th).

On June 30, the Tunguska event.

On June 30, one half hour of darkness at Caterham Valley, England.

On August 14, a flood at the junction of the Han-kiang and Yangtze-kiang rivers at Han-kau killed 2000. 100000 are killed by floods in China this year.

On September 18-27, a typhoon struck the Phillippines.

On September 25-28, a hurricane struck the Dominican Republic. [NHC rank 153/259 with 98 dead]

On October 3-11, a typhoon struck the Phillippines.

On October 4-13, a second typhoon struck the Phillippines.

On October 9-15, a third typhoon struck the Phillippines.

On November 15-22, a typhoon struck the Phillippines.

On December 2-8, a typhoon struck the Phillippines.

1909

January – At Helen Mine, CA, a continental United States record 71.54 inches of rain fell during the month.

In January, the most severe ice storm in many years struck OH, NY, and New England.

On March 8, the town of Brinkley AR was struck by a tornado which killed 49 persons and caused 600000 dollars damage. The tornado, which was two-thirds of a mile in width, destroyed 860 buildings. Entire families were killed as houses were completely swept away by the tornado. Tornadoes killed 64 persons and injured 671 others in Dallas and Monroe counties during the AR tornado outbreak.

On July 21, a hurricane struck the TX coast near Galveston killing 41. [NHC rank 211/259 with 41 dead]

On July 27-August 2, a typhoon struck the Phillippines.

On July 31, in Kirin Manchuria a flood submerged 7000 homes and killed 1000.



On August 27-28, a hurricane struck the northeast coast of Mexico killing 1500. [NHC rank 26/259 with 1500 dead]

On August 16, a dry spell began in San Bernardino County of southern CA that lasted until the 6th of May in 1912, a stretch of 994 days! Another dry spell, lasting 767 days, then began in October of 1912.

On August 29, in CA, a massive flood took over 1200 lives in Monterrey.

On September 7, Topeka KS was drenched with 8.08 inches of rain in 24 hours to establish a record for that location. (6th- 7<sup>th</sup>).

On September 19-21, a hurricane in LA/MS/AL kills 350. [NHC rank 75/259 with 353 dead]

On September 27-October 6, a typhoon struck the Phillipines.

On October 10-12, a hurricane struck Key West FL, after passing through Cuba. [NHC rank 228/259 with 34 dead]

On October 17-18, a typhoon struck the Phillipines.

On October 22-26, a typhoon struck the Phillipines.

On November 2-10, a typhoon struck the Phillipines.

On November 9-13, a hurricane struck Jamaica and near Haiti and the Dominican Republic. [NHC rank 129/259/ with more than 130 dead]

On December 25-26, a Christmas snowstorm centered about Boston MA kills 28.

1910

In Niger, the first year of a four year drought. 21250 die this year.

On January 2, a great flood in UT and NV washed out 100 miles of railroad between Salt Lake City UT and Los Angeles CA causing seven million dollars damage.

On January 10, the temperature at Rapid City SD plunged 47 degrees in just fifteen minutes.

On January 26, in Paris France, a flood so big it imperilled the Louvre, at a cost of millions.

On February 26, parts of WA State were in the midst of a storm which produced 129 inches of snow at Laconia between the 24th and the 26th, a single storm record for the state. A series of storms, which began on the 23rd, led to a deadly avalanche on the first of March. By late on the 28th, the snow had changed to rain, setting the stage for disaster.

On March 1, avalanche at Wellington WA kills 96.

On April 11, a typhoon in southern Japan killed 280.

On April 23, the temperature at the Civic Center in Los Angeles CA hit 100 degrees to establish an April record for the city.

On April 25, Chicago IL was blanketed with 2.5 inches of snow, and a total of 6.5 inches between the 22nd and the 26th. It was the latest significant snow of record for the city.

On April 29, the temperature at KS City MO soared to 95 degrees to establish a record for the month of April. Four days earlier the afternoon high in KS City was 44 degrees, following a record cold morning low of 34 degrees.

On June 12, in Hungary, continuous rain caused the Danube and other rivers in the region to flood, taking over 400 lives.

On August 20-25, dark days in northern United States from ID to St. Lawrence River due to the great ID forest fire; 4000 square miles burned.

On August 25-September 2, a typhoon struck the Phillippines.

On September 23-26, a typhoon struck the Phillippines.

On September 24-October 3, a typhoon struck the Phillippines.

On September 25, a hurricane struck Bermuda.

On October 12-21, a hurricane in western Cuba killed 100. [NHC rank 140/259 with 101 dead]

On October 26-November 5, a typhoon struck the Phillippines.

On November 28-December 6, a typhoon struck the Phillippines.

1911

China proclaimed itself as a Republic.

In Niger, the second year of a four year drought. 21250 die this year.

Lowell MA on the Merrimac River is flooded.

On January 31, Tamarack CA was without snow the first eight days of the month, but by the end of January had been buried under 390 inches of snow, a record monthly total for the United States.

On March 11, Tamarack CA reported 451 inches of snow on the ground, a record for the United States.

On March 16, a cyclone in Queensland, Australia, left 2 dead.

On April 13, a tornado hit KS and OK leveling 4 towns and killing 23.

On May 22, the temperature at Lewiston ME soared to 101 degrees. It was the hottest temperature ever recorded in New England during the month of May.

On June 15, a hurricane like storm struck Trieste Italy killing 100.

On June 28-July 5, a typhoon struck the Phillipines.

On July 1, the high of just 79 degrees at Phoenix AZ was their coolest daily maximum of record for the month of July. The normal daily high for July 1st is 105 degrees.

On July 4, the northeastern United States experienced sweltering 100 degree heat. The temperature soared to 105 degrees at Vernon VT and North Bridgton ME, and to 106 degrees at Nashua NH, to establish all-time records for those three states. Afternoon highs of 104 at Boston MA, 104 at Albany NY, and 103 at Portland ME, were all-time records for those three cities; 380 die in the heat wave from July 3 to 11.

On July 11-19, a typhoon struck the Phillipines.

On July 21, the temperature at Painter WY dipped to 10 degrees to equal the record low for July for the continental United States.

On July 25-August 6, a typhoon struck the Phillipines.

On August 21-29, a typhoon struck the Phillipines.

On August 28, Saint George GA was deluged with 18 inches of rain in 24 hours to establish a state record. It was caused by a hurricane in GA and SC. [NHC rank 257/259 with 25 dead]

In September, in China, the Yangtze overflowed forming a lake 80 miles long and 35 miles wide; 100000 died.

On September 21-October 6, a typhoon struck the Phillipines.

On September 22, a hurricane like storm struck Vesuvian Italy killing 50.

On October 9, a hurricane struck Ortiz Mexico killing 27.

On November 11, the central United States experienced perhaps its most dramatic cold wave of

record. During the early morning temperatures across the Central Plains ranged from 68 degrees at KS City to 4 above North Platte Neb. In KS City, the temperature warmed to a record 76 degrees by late morning before the arctic front moved in from the northwest. Skies become overcast, winds shifted to the northwest, and the mercury began to plummet. By early afternoon it was cold enough to snow, and by midnight the temperature had dipped to a record cold reading of 11 degrees above zero. OK City also established a record high of 83 degrees and record low of 17 degrees that same day (11/11/11). In southeastern KS, the temperature at Independence plunged from 83 degrees to 33 degrees in just one hour. The arctic cold front produced severe thunder-storms and tornadoes in the MS Valley, a blizzard in the OH Valley, and a dust storm in OK.

On December 2-11, a typhoon struck the Phillippines.

1912

Two thousand strikes this year in England reflect a deep-rooted dissatisfaction with conditions. Russia also had about 2000 strikes this same year.

In Niger, the third year of a four year drought. 21250 die this year.

On January 12, the morning low of 47 degrees below zero at Washta IA established a state record.

On January 13, the temperature at Oakland MD plunged to 40 degrees below zero to establish a state record.

On March 11, inky darkness with blood rain at Sussex, England.

On March 24, residents of KS City began to dig out from a storm produced 25 inches of snow in 24 hours. The snowfall total was nearly twice that of any other storm of modern record in KS City before or since that time. A record 40 inches of snow fell during the month of March that year, and the total for the winter season of 67 inches was also a record. By late February of that year KS City had received just six inches of snow. Olathe KS received 37 inches of snow in the snowstorm, establishing a single storm record for the state of KS.

On April 1, a tornado with incredible velocity ripped into downtown Houston TX breaking the water table and giving the city its first natural waterspout.

On April 29, at Tuguegarao, Philippines, the temperature reached 108F, a record for Oceania.

In June, Katmai erupts.

Deadliest Canadian Tornado - June 30, 1912. A late afternoon tornado slashed through six city blocks in Regina, killing up to 40 people, injuring 300 others, destroying 500 buildings and leaving a quarter of the population homeless. Better known as the "Regina Cyclone", the tornado

lasted three minutes but it took 46 years to pay for the damages.

In August in China, a typhoon kills 50000 people.

On September 6, near Kiao-chau, China, a flood killed thousands and left 3 million homeless.

On September 16, a typhoon struck Taito Formosa killing 107, injuring 293, and demolishing 91400 houses.

On September 21-October 4, a typhoon struck the Phillipines.

On October 3, the longest dry spell of record in the United States commenced as Bagdad CA went 767 days without rain.

On October 14-18, a typhoon struck the Phillipines.

On October 26-27, a typhoon struck the Phillipines.

On November 8, a typhoon struck the Phillipines.

On November 17-18, a hurricane struck Black River Jamaica with 120 MPH winds, killing 100. [NHC rank 104/259 with 200 dead]

On November 20-27, a typhoon struck the Phillipines.

1913

In Niger, the fourth year of a four year drought. 21250 die this year.

On January 5, the temperature at the east portal to Strawberry Tunnel reached 50 degrees below zero to tie the record established at Woodruff on February 6, 1899.

On January 14, the Ohio River crested at 62.2 feet; The Ohio River spread out 8 miles wide in the lowlands. Hundreds of families fled in the Mill Creek valley. A call went out for help to relieve "great want and suffering".

On February 1-14, a cold wave caused a massive East Coast blizzard and induced bitter cold temperatures across two-thirds of the Nation, from the Rockies to the Atlantic Ocean (called storm of the century by the Weather Channel). Up to two feet of snow fell across much of the Northeast. Washington, D.C., alone accumulated 20 inches from the storm. This is probably the first and only time true blizzard conditions existed in the state of FL.

In late March, OH Valley floods leave 467 drowned.

On March 23, devastating tornadoes marched across east, northeast and west Iowa. The deadliest

tornado struck Omaha, Nebraska, killing 94 and injuring 350. Over 600 homes were lost.

On March 26, the OH River Basin flood reached a peak. Ten inch rains over a wide area of the OH River Basin inundated cities in OH, drowning 467 persons, and causing 147 million dollars damage. The Miami River at Dayton reached a level eight feet higher than ever before. The flood, caused by warm wather and heavy rains, was the second mostly deadly of record for the nation.

On May 3-11, one of the most damaging typhoons in decades smashed into the Phillippines killing hundreds.

On June 12, Canton China was wiped out by flooding and 100000 died.

On July 10, the mercury hit 134 degrees at Greenland Ranch in Death Valley CA, the hottest reading of record for the North American continent. Sandstorm conditions accompanied the heat. The high the previous day was 129 degrees, following a morning low of 93 degrees.

On July 12-23, a typhoon struck the Phillippines.

On August 10-18, a typhoon struck the Phillippines.

On August 29-September 8, a typhoon struck the Phillippines.

On September 6, storms and rain in France and Spain cause great damage killing 26.

On September 10-19, a typhoon struck the Phillippines.

On September 22, Des Moines IA experienced their earliest freeze of record.

On October 13, a hurricane is reported in the central Atlantic. [NHC rank 126/259 with 135 dead]

On October 13, the temperature in Downtown San Francisco soared to 101 degrees to equal their record for October.

Black Sunday Storm - November 7-13, 1913. One of the most severe Great Lakes storms on record swept winds of 140 km/h over lakes Erie and Ontario, taking down 34 ships and 270 sailors. Days later, the crew of one ship was found lashed to the mast, frozen to death -- only the ship survived. Eight large ore carriers on Lake Erie sank drowning 270 sailors. Cleveland OH reported 17.4 inches of snow in 24 hours, and a total of 22.2 inches, both all-time records for that location. During the storm, winds at Cleveland averaged 50 MPH, with gusts to 79 MPH. The storm produced wind gusts to 80 MPH at Buffalo NY, and buried Pickens WV under three feet of snow.

On December 1, a six day front range snowstorm began. It produced a record total of 46 inches at

Denver CO.

On December 11, a tornado in Freetown, Sierra Leone, killed 250 and caused much damage.

1914

Germany and Austria-Hungary made a military alliance. Gavrilo Princip (1895-1918) at Sarajevo assassinated Austrian Archduke Franz Ferdinand (1863-1914) and his Czech wife in Sarajevo (Yugoslavia) sparking the First World War.

The Salinas River floods in CA.

On January 11, a snowstorm isolated much of northwest Russia, killing 250.

On January 14, the North Sea overflowed the Netherlands and killed 10000.

On March 1, high winds and heavy snow crippled NJ and NY. Two feet of snow were reported at Ashbury Park, and at NYC the barometric pressure dropped to a record 28.38 inches. The storm caused complete disruption of electric power in NJ.

On March 25, Society Hill SC was buried under 18 inches of snow, establishing a state record.

On April 1, seventy-seven sealers froze to death during a violent storm on the ice off the southeast coast of Labrador. At the height of the storm, from March 31 to April 2, the temperature was  $-23^{\circ}\text{C}$  with winds from the northwest at 64 km/h.

On June 15-24, a typhoon struck the Philippines.

On June 24, a storm on Lake Constantine, Germany, killed 35 fisherman.

On August 8-18, a typhoon struck the Philippines.

On September 1, the town of Bloomington MI was deluged with 9.78 inches of rain in 24 hours to establish a state record.

On September 6, near Kiao-chau, China, the West river floods killing thousands and leaving 3 million homeless.

On October 27, a mild hurricane struck Bermuda.

On November 9, in Bagdad, CA, rain finally fell ending the longest dry spell in United States weather history at 767 days.

On November 20, the high temperature of 28 degrees at Atlanta GA was their earliest daily high below the freezing mark.

The hurricane season passes with no hurricanes and just one tropical storm in the United States

1915

The Germans first used poison gas this year. The Allies agreed with Italy that the Vatican should have no role in any peace treaty.

Under the guise of the war the Ottoman Turks wiped out a third of the Armenian (Hayastan) population. It is estimated that 1.5 million Armenians were massacred or died during forced marches, deportations and internments in the Syrian deserts.

On February 12, a typhoon struck Manua Island, Samoa, killing 22 and leaving thousands facing starvation; a tsunami and quake accompanied the storm.

On May 6, a hurricane struck LA and MS killing 21.

On June 27, the temperature at Fort Yukon AK soared to 100 degrees to establish a state record.

On July 7, a severe wind and thunderstorm caused heavy damage and 38 deaths in and near Cincinnati OH. Many older buildings were demolished. The steamship "Dick Fulton" was overturned.

On July 25, a typhoon struck Hang Chow Bay, China, killing hundreds.

Between August 5-25, a hurricane in TX/LA kills 275 in Galveston; the same hurricane struck the Caribbean islands with winds of 120 MPH at Cuba. On August 17, the hurricane hit Galveston TX with wind gusts to 120 MPH and a twelve foot storm surge. The storm claimed 275 lives, including 42 on Galveston Island, with most deaths due to drowning. Of 250 homes built outside the seawall (which was constructed after the catastrophic hurricane of 1900), just ten percent were left standing. [NHC rank 67/259 with 405 dead]

On August 26, a typhoon struck Luzon, Phillipines, leveling the town of Tobacco and killing 180.

On August 31, the temperature at Bartlesville OK dipped to 38 degrees to establish a state record for the month of August.

On September 3, a hurricane struck Bermuda (82.5 MPH).

On September 24-29, a hurricane hit the Gulf Coast destroying 90% of the buildings over a wide area, killing 500. [NHC rank 85/259 with 279 dead]

On October 21-28, a typhoon struck the Phillipines.

On October 23-31, a second typhoon struck the Phillipines.



On October 30-November 6, a third typhoon struck the Phillipines.

On November 10, an unusually late season tornado struck the central KS town of Great Bend killing eleven persons along its 35 mile track. The tornado destroyed 160 homes in Great Bend killing 11 persons and causing a million dollars damage. Hundreds of dead ducks dropped from the sky northeast of the track's end.

On December 4-10, a typhoon struck the Phillipines.

On December 13, a heavy snowstorm kicked off the snowiest winter in modern records for western New England.

In England, in late 1916, enormous falls of snow in the mountains, 10 feet in the Pennines, Black Mountains, and the High Peak District. Several general falls of snow recorded. A very snowy year.

1916

The battle of Verdun February 21, 1916 saw 700000 dead and wounded.

On January 10-16, a typhoon struck the Phillipines.

On January 24, the temperature at Browning MT plunged 100 degrees in just 24 hours, from 44 degrees above zero to 56 degrees below zero. It was a record 24 hour temperature drop for the United States.

On February, Victoria's (Canada) Snowstorm of the Century A huge snowstorm clobbered Canada's "snow-free" city with more than 55 cm of snow.

On March 23, Pocatello ID received a record 14.6 inches of snow in 24 hours.

On April 20, a tornado struck KS and MO killing 20.

On May 20, a tornado struck the town of Cordell KS. A tornado struck the town on the same day the following year (1917), and a third tornado hit Cordell on May 20th in 1918.

On June 5, a tornado struck the town of Warren AR killing 83 persons. There were 125 deaths that day in a tornado outbreak across MO and AR.

On July 4-10, a hurricane produced 82 MPH winds, an 11.6 foot tide, and a barometric pressure of 28.92 inches at Mobile AL. [NHC rank 229/259 with 34 dead]

On July 10-29, a heat wave scorched Chicago killing 305.

On July 11, a tornado struck Vienna, Austria, killing 31.

On July 11-15, a dying South Atlantic Coast storm produced torrential rains in the southern Appalachian Mountains. Altapass NC was drenched with more than 22 inches of rain, a 24 hour rainfall record for the state. Flooding resulted in considerable damage, particularly to railroads. [NHC rank 251/259 with 26 dead]

On July 20, a typhoon struck Columbo, Ceylon, killing 200.

On July 24, a hurricane like storm struck Spain and killed 50 in 5 provinces.

On July 29, lightning ignited a forest fire which burned down the towns of Cochrane and Matheson, Ontario, killing 233 people.

On August 15, a hurricane struck Kingstown, Jamaica, causing great damage to the fruit crop and killing 20. On August 15-19, this same hurricane struck the Gulf of Mexico and TX. [NHC rank 248/259 with 27 dead]

On August 16, Altapass NC was deluged with 22.22 inches of rain in 24 hours to establish a state record.

On August 28-September 1, a hurricane hit Dominica wrecking 200 buildings and killing 50. [NHC rank 201/259 with 50 dead]

On September 1-8, a typhoon struck the Phillippines.

On September 23, a terrible hurricane struck Bermuda (84 MPH).

On October 5, a hurricane in the Virgin Islands devastated Tortula, Anagada, and St. John, killing 40.

On October, a large hurricane hit Pensacola FL. Gale force winds lashed Lower Plaquemines Parish LA. The storm produced damage as far west as Burrwood.

On December 1, a cyclone hit Pondicherry, India, killing 1000.

1917

The Russian Revolution began (1917-1920) and evolved into a civil war that would have a most profound impact on the world.

Drought in western United States.

On February 3, downtown Miami FL reported an all-time record low of 27 degrees.

On March 11, a tornado near Newcastle IN killed 24.

On March 23, a tornado killed 45 and left 2500 homeless in New Albany, IN.

On May 4, a late season snowstorm in northwest TX produced up to eight inches of snow in Potter County and Armstrong County.

On May 5, the same storm which a day earlier produced eight inches of snow in the TX panhandle, produced a foot of snow at Denver CO, their heaviest snow of record for the month of May.

On May 25, a tornado ripped through southeast KS, traveling 65 MPH. The average speed was a record for any tornado.

On May 26, 293 mile long track for tornado in IL and IN; the tornado touched down near LA MO about noon and remained on the ground for a distance of 293 miles, finally lifting seven hours and twenty minutes later in eastern Jennings County IN. The twister cut a swath of destruction two and a half miles wide through Mattoon IL. There were 101 persons killed in the tornado, including 53 at Mattoon, and 38 at Charleston IL.

On May 31, a tornado killed 67 and injured 200 in MO and IL.

On June 2, the temperature at Tribune KS dipped to 30 degrees to establish a state record for June.

On June 5, residents near Topeka KS reported disk-shaped hailstones six to ten inches in diameter, and 2 to 3 inches thick, accompanied with a tornado.

On June 5-6, tornados in KS, KY, MI, and MO killed 249.

On June 16, the temperature soared to 124 degrees at Mecca climaxing the most destructive heat wave of record in CA history.

On July 27-August 3, a heat wave hit NYC setting a 25 year record and killing 190.

On August 8-16, a typhoon struck the Phillippines.

On August 13-21, a second typhoon struck the Phillippines.

On September 4, a hurricane struck Bermuda.

On September 19, a typhoon destroyed all the craft in the harbor at Amoy China; 600 were killed.

On September 22-29, a hurricane hit Pensacola FL. Winds gusted to 95 MPH, and the barometric pressure dipped to 28.50 inches. Winds at Mobile AL gusted to 75 MPH. Earlier it had passed through Jamaica and Cuba. [NHC rank 165/259 with 78 dead]

On October 5, the temperature at Sentinel AZ soared to 116 degrees to establish an October record for the nation.

On October 29, the temperature at Denver CO dipped to zero, and at Soda Butte WY the mercury plunged to 33 degrees below zero, a United States record for the month of October.

On December 9, a severe winter storm struck the OH Valley and the Great Lakes Region. With 25+ inches.

On December 16, an ice jam closed the OH River between Warsaw KY and Rising Sun IN for 58 days.

On December 30, a great cold wave set many records in the northeastern United States. The mercury plunged to 13 degrees below zero at NYC, and to 15 degrees below zero at Boston. Temperature readings dipped below zero at Boston five nights in a row. Berlin NH hit 44 degrees below zero in the "Great World War I Cold Wave", and Saint Johnsbury VT reached 43 degrees below zero.

1918

The French lost 1.5 million people killed and 3 million wounded as a result of the First World War. The American flu epidemic caused the death of 15 million people world wide.

Very dry monsoon in southern and central India.

On January 11, a tremendous blizzard completely immobilized the Midwest, stopping mail service for two weeks. The vast storm then moved through the Great Lakes Region and the OH Valley. Winds reached 60 MPH at Toledo OH, and the temperature plunged from 28 above to 15 below zero during passage of the cold front.

On January 20-22, a cyclone in Queensland Australia left 30 dead.

On February 12, the Ohio River crested at 61.8 feet; the flood brought ice floes that smashed steamboat hulls.

On March 9-10, a cyclone in Queensland Australia left 14 dead.

On June 23-July 1, a typhoon struck the Phillipines.

On July 6, a typhoon struck Guam killing 500, leaving the population destitute, and destroying all the crops.

On August 6, a hurricane originating south of Jamaica struck Cameron Parish LA. The storm affected places as far west as Orange, TX and as far east as Jennings LA. It struck without warning. Winds at Lake Charles were estimated to be near 100 m.p.h.; Sulphur reported a

pressure of 28.36" and winds as high as 125 m.p.h.. Johnson's Bayou saw a 2.5 foot storm surge while Morgan City recorded a 3 foot surge. [NHC rank 230/259 with 34 dead]

On August 6, unusually hot weather began to overspread the Atlantic Coast States, from the Carolinas to southern New England. The temperature soared to an all-time record high of 106 degrees at DC, and Cumberland and Keedysville hit 109 degrees to establish a state record for MD. Temperatures were above normal east of the Rockies that month, with readings much above normal in the Lower MO Valley. Omaha Neb reached 110 degrees.

On August 7, Philadelphia PA established an all-time record with a high of 106 degrees. NYC experienced its warmest day and night with a low of 82 degrees and a high of 102 degrees. Afternoon highs of 108 degrees at Flemington NJ and Somerville NJ established state records for the month of August.

On August 21, a tornado struck Tyler MN killing 36 persons and destroying most of the business section of the town resulting in a million dollars damage.

On September 1, a hurricane destroyed a 25 mile wide area in LA and killed 34.

On September 4-5, a hurricane hit Bermuda.

On September 30, a typhoon hit Tokyo, Japan, killing 1619, leaving 1000 homeless, and destroying 2000 boats.

On October 12, forest fires ravaged parts of MN from the Duluth area northeastward, claiming the lives of 600 persons. Smoke with a smell of burnt wood spread to Albany NY and DC in 24 hours. Smoke was noted at Charleston SC on the 14th, and by the 15th was reported in northeastern TX; 250000 acres burnt.

On December 17-30, a typhoon struck the Phillipines; called the Quantico Typhoon.

1919

On March 19, a tornado from Delhi LA to Sunflower County MS killed 35 and did much damage.

On April 8, a tornado swarm in northern TX resulted in the deaths of 64 persons.

On June 21, seven heavy coach cars of a moving train were picked up and thrown from the tracks by tornado winds. A baggage car was set down thirty feet away from the rest of the train.

On June 22, a tornado in Fergus Falls, MN killed 59 leveling the town, including 228 houses.

On August 3-10, a typhoon struck the Phillipines.

On August 13-24, a second typhoon struck the Philippines.

On August 13, high winds and heavy rain struck the Middle Atlantic Coast Region. In NJ, winds gusted to 60 MPH at Atlantic City, and nine inches of rain fell at Tuckerton. The wind and rain leveled crops and stripped trees of fruit causing several million dollars damage.

On September 10, a hurricane struck the FL Keys drowning more than 500 persons (600-900).

On September 14-17, the hurricane struck Corpus Christi TX killing 250- 280 along the Gulf Coast. [NHC rank 50/259 with 600 to 900 dead]

On October 26, the temperature at Bismarck ND plunged to ten degrees below zero, the earliest sub-zero reading of record for the city, and a record for the month of October.

On November 10-22, a typhoon struck the Philippines.

The Russian Revolution had begun without violence but by 1920 the victims of execution, famine and epidemics numbered almost 7 million.

1920

On the Cape Verde Islands, drought kills 24000.

On January 20, a gale off Norway killed 37 fisherman.

On March 28, the worst tornado disaster of record occurred in Chicago IL as a tornado killed 28 persons and caused three million dollars damage; 11 tornados killed 78 in 5 states.

On March 28, 3 tornados killed 38 in AL and GA.

On March 28, tornados near Chicago IL killed 28 in several states.

On March 29, Clear Spring MD received 31 inches of snow in 24 hours to establish a state record.

On April 20, tornadoes in MS and AL killed 219 persons.

On April 25, Atlanta GA received 1.5 inches of snow, and experienced their latest freeze of record with a morning low of 32 degrees. The high of just 39 degrees was only their second daily high colder than 40 degrees in April.

On May 2, a swarm of tornadoes in Rogers, Mayes and Cherokee Counties in OK killed 64 persons.

On May 30, a cloudburst caused the River Lud in England to overflow killing 20.

On July 16, a severe hailstorm over parts of Antelope and Boone counties in Neb stripped trees of bark and foliage, ruined roofs, and broke nearly every window facing north.

On July 20-25, a typhoon struck the Phillipines.

On August 31-September 1, a typhoon struck the Phillipines, called the Manila Typhoon.

In the summer, drought in northern China in causes 500000 to starve to death and affects 20 million.

On September 21-22, a hurricane passed through eastern LA. Pressure fell to 28.99" at Houma with tides up to 6 feet reported in the Mississippi Sound. Fishing villages along Lake Borgne experienced gales on the east side of the system, at times gusting to 48 MPH. Trees were uprooted and lines were downed. As one of the lines fell, a man fell victim.

On October 1, a typhoon struck the east coast of Japan killing hundreds.

On October 31-November 4, a typhoon struck the Phillipines.

1921

On January 29, a small but intense windstorm resulted in the "Great Olympic Blowdown" in the Pacific Northwest. Hurricane force winds, funneled along the mountains, downed vast expanses of Douglas fir trees, and the storm destroyed eight billion board feet of timber. Winds at North Head WA gusted to 113 MPH.

On February 10, a tornado wiped out the hamlet Gardner GA killing 32.

On April 15, two mile high Silver Lake CO received 76 inches of snow in 24 hours, the heaviest 24 hour total of record for North America. The storm left a total of 87 inches in twenty-seven and a half hours.

On April 15-16, a tornado outbreak (30 in the southern United States) killed 97.

On April 28, a severe hailstorm in Anson County NC produced hail the size of baseballs. Gardens, grain fields and trees were destroyed. Pine trees in the storm's path had to be cut for lumber because of the hail damage.

On June 3, a cloudburst near Pikes Peak CO killed 120 people. Pueblo CO was flooded by a twenty-five foot crest of the AR River, killing 70 persons. Fourteen inches of rain was reported at Boggs Flat, where a hard surface road through nearly level country was washed out to a depth of seven feet.

On June 20, Circle MT received 11.5 inches of rain in 24 hours, a record for the state. The town of Circle received a total of 16.79 inches of rain that month to establish a rainfall record for any

town in MT for any month of the year.

On July 14-26, a typhoon struck the Philippines.

On August 1-7, a typhoon struck the Philippines.

On August 23, Denver CO was drenched with 2.20 inches of rain in one hour, a record for that location.

In the summer, drought in the Ukraine and Volga region of the Soviet Union in 1921-22, deaths estimated at 250000 to 5 million.

On September 7-22, a typhoon struck the Philippines.

On September 9, a dying tropical depression unloaded 38.2 inches of rain upon the town of Thrall in southeastern TX killing 224 persons. 36.4 inches fell in 18 hours. [NHC rank 193/259 with 51 dead]

On September 8-15, a hurricane struck Bermuda and the Windward Islands. [NHC rank 158/259 with more than 80 dead]

On October 25, a hurricane with 100 MPH winds hit Tampa FL causing several million dollars damage.

On November 5-17, a typhoon struck the Philippines.

On November 19, the Columbia Gorge ice storm finally came to an end. In OR, 54 inches of snow, sleet and glaze blocked the Columbia River Highway at the Dalles. Apart from traffic on the river itself, all transportation between Walla Walla WA and Portland OR came to a halt. Nine trains were stopped as railroads were blocked for several days.

On November 28, New England was in the midst of a 4 day ice storm, their worst of record. Ice was more than 3" thick in many places following the storm. Northern New England received heavy snow with more than 2 feet reported in some areas. Overnight freezing rains continued through the day at Worcester MA while the wind increased to a gale. Streets become impassable even on foot, and whole towns were plunged into darkness without communication. The storm caused 20 million dollars damage to power lines, telephone lines and trees; 100000 trees were damaged.

On December 24, a storm killed 44 and injured 100 in AR, LA, MA, and TN.

1922

The Benito Mussolini Il Duce (1883-1945) a socialist, gains power in Italy. He promises to have the trains run on time. He achieves this objective by shooting someone if it doesn't run on time.



On January 15-16, a hurricane with torrential rain struck the area around Tamanrasset, Algeria, causing flooding and killing 8.

On January 28, the "Knickerbocker" storm immobilized the city of DC. The storm produced 28 inches of snow in 32 hours, and the heavy snow caused the roof of the Knickerbocker movie theater to collapse killing 96 persons.

On February 25, the temperature at Los Angeles CA soared to 92 degrees to establish a record for the month of February.

On March 10, Dodge City KS reported a record 24 hour total of 17.5 inches of snow.

On April 8, 12 tornados in the southwest United States killed 42.

On April 17, a family of at least six tornadoes caused death and destruction along parts of a 210 mile path from north of Ogden IL to Allen County OH, killing 16 persons. A post card, picked up in Madison County IN, was found 124 miles away near Mount Cory OH; 32 were killed in all.

On May 4, Austin TX was hit twice by tornadoes which struck within thirty minutes of each other. Twelve persons were killed in the tornadoes.

On May 16-26, a typhoon struck the Phillipines.

On May 21, a tornado smashed 4 counties in WI killing 25.

On June 11, a violent storm swept through NY killing 50.

On June 22, multiple tornadoes hit southern Manitoba. Hot and humid air led to the development of several tornadoes in the area. Five deaths and hundreds of injuries were attributed to the event which caused \$2 million in 1922 dollars.

On July 27-August 3, a typhoon struck the Phillipines.

On August 2-3, a typhoon hit Swatlow China killing 60000 plus another 300 fisherman off the Kurile Islands. Other reports say 100000 died.

On September 11-21, a typhoon struck the Phillipines; the Babuyan and Iloca Typhoon.

On September 13, the temperature at El Azizia in Libya soared to 136 degrees to establish a world record and record for Africa. To make matters worse, a severe ghibi (dust storm) was in progress.

On September 21, a hurricane struck Bermuda; 120 MPH.

On September 25-29, a typhoon struck Formosa.

1923

An earthquake kills 132807 in Tokyo, Japan

On February 13-14, a blizzard in MI, ND, SD, and WI killed 28 and had 63 MPH gusts.

On February 28, in NYC, it was so dark that all offices and vehicles had lights on.

In March, a typhoon struck Guam with 156 MPH winds.

On March 11-12, a heavy wet snow in the midwest United States caused much damage and killed 48.

On April 1, residents in the eastern United States awoke on "April Fool's Day" to bitterly cold temperatures. The mercury plunged to -34 degrees at Bergland MI and to 16 degrees in GA.

On April 4, a tornado destroyed Pineville LA killing 14.

On April 25, several towns in OK were hit by tornados killing 100.

On May 14, a tornado in Mitchel County TX killed 21.

On May 27-June 8, a typhoon struck the Phillippines.

On June 23, a massive tornado hit Sandusky, OH then swept across Lake Erie to strike the town of Lorain. The tornado killed 86 people.

On June 26, a cyclone in northeastern Australia left 46 dead.

On June 25-July 3, a typhoon struck the Phillippines.

On June 28, a massive tornado hit Sandusky OH, then swept across Lake Erie to strike the town of Lorain. The tornado killed 86 persons and caused twelve million dollars damage. The tornado outbreak that day was the worst of record for the state of OH up til that time.

On July 10, a hailstorm near Rostov Russia killed 23 people and many cattle.

On July 17-29, a typhoon struck the Phillippines.

On July 23, Sheridan WY was drenched with 4.41 inches of rain, an all-time 24 hour record for that location. Associated flooding washed out 20 miles of railroad track.

On July 29-August 7, a typhoon struck the Phillippines.

On August 11-20, a typhoon struck the Phillippines.

On August 22, The temperature at Anchorage AK reached 82 degrees, a record for August for the location which was later tied on the 2nd in 1978.

On September 30, a hurricane struck Bermuda.

On November 5, storms devastated the area around Qaxaca Mexico, killing 100.

On November 10-23, a typhoon struck the Phillippines.

On December 1, rivers near Dezzo in northern Italy overflowed and 1000 died.

On December 1-6, a typhoon struck the Phillippines.

1924

On January 27, exceptional cold in Saloniki Greece and vicinity resulted in 159 deaths.

On March 15, a tornado struck a train near Bareilly India killing 50.

On March 24, a late winter storm in OK produced nearly a foot of snow at OK City and at Tulsa; on March 27, tornados in KS, OK, MO, and OH killed 24.

On March 29, the Youghiogheny River at Connellsville PA floods at 20.5 feet.

On April 27, a storm struck the Sea of Japan killing 100 fisherman.

On April 29-30, 22 tornados in SC, AL, AR, GA, LA, NC, OK, and VA resulted in 115 deaths.

On May 16, the temperature at Blitzen OR soared to 108 degrees to set a state record for the month of May. The record was later tied at Pelton Dam on the 31st of May in 1986.

On May 26-27, 11 tornados in MS and NC killed 43.

On June 28, 4 tornados in northern OH killed 78 and left 7000 homeless.

On July 15, the Chu-kiang River in China overflowed causing great damage to Canton and Ganon and killing thousands.

On August 10, CO's deadliest tornado killed a woman and nine children in one house along its twenty-mile path east southeast of Thurman. Mennonite men had left the farm to provide possible aid, as the 200-yard wide storm was first seen while far away.

On August 20-25, a typhoon struck the Phillippines.

On August 28-29, a hurricane in Montserrat and the Virgin Islands killed 80 and destroyed

hundreds of houses. [NHC rank 147/259 with more than 100 dead]

On September 12, a typhoon hit Kobe Japan killing 20.

On September 21, a tornado in northern WI killed 60.

On September 30-October 6, a typhoon struck the Phillipines.

On October 10, a typhoon hit Cagayan Valley, Phillipines, killing 30.

In November, at London, a period of darkness of ca. 15 minutes.

On December 11-22, a typhoon struck the Phillipines.

On December 14, The temperature at Helena MT plunged 79 degrees in 24 hours, and 88 degrees in 34 hours. The mercury plummeted from 63 above to 25 below zero. At Fairfield MT the temperature plunged 84 degrees in just 12 hours, from 63 at Noon to 21 below zero at midnight.

On December 17, a severe ice storm struck central Illinois. It coated the ground with nearly 2" of glaze at Springfield. The storm caused 21 million dollars damage along with much hardship. Ice was on the trees until the 4th of January, and electricity was not restored until January 10<sup>th</sup>.

On December 19, the Riverside Ranger Station in Yellowstone Park WY reported a low of 59 degrees below zero, a December record for the United States.

In December, IA experienced it coldest December morning of record. Morning lows averaged 25 degrees below zero for the 104 weather stations across the state.

In December, Stockholm Sweden had the warmest December since 1789.

1925

In January-February, in Europe, one of the mildest winters ever with a lack of snow in Sweden; storks arrive in Kovno in January which is unprecedented; no artificial heat is needed in buildings in Hungary.

On March 18, the great "Tri-State Tornado", the most deadly tornado in United States history, claimed 695 lives as it cut a swath of destruction 219 miles long from central Missouri to southern Indiana.

On April 25, Primorsk Korea is hit by deep snow and 200 die.

On June 8, a heat wave in Philadelphia PA kills 71.

On June 21-27, a typhoon struck the Phillipines.

On June 25, the mercury hit 101 degrees at Portland OR, their earliest 100 degree reading of record.

On June 28, a tornado kills 85 in OH.

On June 28, a typhoon hits the central Phillippines and kills hundreds.

On July 2-12, a typhoon struck the Phillippines.

On July 8-18, a second typhoon struck the Phillippines.

On July 17, rain fell for 11 hours in Hong Kong and 140 die.

On August 10 at Borculo, The Netherlands, a tornado: This tornado is one of most famous tornadoes of the 20th century in the Netherlands and was responsible for the deaths of three people (Geurts and Kuiper 1997). Many buildings in this eastern Dutch town were damaged or destroyed by the storm responsible for the tornado. However, it seems that much damage was caused by gusts from the storm rather than the tornado itself (Geurts 2000). Reynolds (1999), meanwhile, rates this tornado as one of the eight most intense European tornadoes on record to the end of 1997. Other notable tornados occurred in the Netherlands, in 1927, 1948, 1950, 1953, 1967, 1981, and waterspouts in 1972 and 1992. (See <http://www.dandantheweatherman.com/Bereklauw/dutchtns.htm>).

On August 18, during the late morning hours a severe hailstorm struck southeastern IA completely destroying crops along a path six to ten miles wide and 75 miles long. The hail also injured and killed poultry and livestock, and caused a total of 2.5 million dollars damage. The hailstorm flattened fields of corn to such an extent that many had to leave their farms in search of other work. It was one of the worst hailstorms of record for the nation.

On September 5, the temperature at Centerville AL soars to 112 degrees to establish a state record. Every reporting station in AL was 100 degrees or above that afternoon.

On October 11, widespread early season snows fell in the northeastern United States, with as much as two feet in NH and VT. The heavy snow blocked roads and canceled football games.

On October 13-17, a typhoon struck the Phillippines.

On October 23, a cyclone in the Persian Gulf kills thousands in the pearl fleets.

On October 30, Nashville TN was blanketed with an inch of snow, their earliest measurable snow of record.

On December 2, a late season hurricane caused extensive damage across the FL peninsula, then moved off the GA coast crossing Cape Hatteras as a tropical storm. The storm produced whole

gales along the Middle Atlantic and southern New England coast. Winds gusted to 60 MPH at Block Island RI, and reached 64 MPH at Atlantic City NJ. [NHC rank 179/259 with 60 dead]

On December 23, the northern coast of Japan is hit by a storm capsizing 40 vessels and killing 100.

Famine kills 3 million in China.

1926

Iosif Vissarionovich aka Joseph Stalin (1879-1953) takes power in the USSR, he was a ruthless man responsible for millions of deaths.

On April 1, a tornado in Bengal India raises 7 villages and kills 50.

On May 28, a cyclone in Burma kills 2800.

On July 5, a storm in Germany causes great damage and kills 31.

On July 21, a hurricane like storm devastates Rugovo Serbia killing 100.

On July 23-27, a hurricane in the Bahamas, Puerto Rico, and St. Domingo kills hundreds and leaves 4000 homeless. [NHC rank 82/259 with more than 287 dead]

On July 26, a hurricane came inland near Daytona Beach FL. The hurricane caused 2.5 million dollars damage in eastern FL, including the Jacksonville area.

On August 4, the Yangtze near Hupeh China overflowed and killed 3000.

On August 25-26, a hurricane near Houma LA kills 25. [NHC rank 258/259 with 25 dead]

On September 4, a typhoon in Oshima Japan kills 100 and is the worst storm there in recent years.

On September 15-22, the great "Miami Hurricane" produced winds reaching 138 MPH which drove ocean waters into the Biscayne Bay drowning 135 persons. The eye of the hurricane passed over Miami, at which time the barometric pressure reached 27.61 inches. Tides up to twelve feet high accompanied the hurricane, which claimed a total of 372 lives; the devastating hurricane of levels much of Bimini and takes several lives. [NHC rank 76/259 with 349 dead]

On September 20, a storm off Bengal sank native craft and killed 174.

On September 21, a storm gutted several cities near San Andreas Spain killing 51.

On September 22, a hurricane like storm raised dust clouds and killed 178, injured 300, and did

heavy damage in Encarnacion Paraguay.

On September 24, the temperature at Yellowstone Park dipped to nine degrees below zero. It was the coldest reading of record in the United States during September. Severe freezes were widespread over the northwestern United States causing great crop destruction. In WA State, Spokane County experienced their earliest snow of record. Harney Branch Experiment Station in OR reported a temperature of 2 degrees above zero to establish a state record for September.

On September 30, a typhoon in China killed 2000.

On October 5-13, a typhoon struck the Phillippines.

On October 20, a hurricane kills 650 in Havana and offshore Bermuda. [NHC rank 43/259 with 709 dead]

On October 22, the hurricane hit Bermuda killing 100.

On October 26, Barrow AK received a record fifteen inches of snow, and also established a 24 hour precipitation record of 1.00 inch which lasted until the 21st of July in 1987.

On October 26-November 8, a typhoon struck the Phillippines; at Batangas, Phillippines, hundreds were killed.

On November 9, a tornado in Charles County of southern MD killed seventeen persons.

On November 25-26, 14 tornados in AL, AR, MO, and TN kill 78.

On December 3, Yuma AZ was soaked with 1.10 inch of rain, and by the 10th of the month had received 4.43 inches, making it the wettest December of record. The average annual rainfall for Yuma is 3.38 inches.

On December 25, cold weather gripped France causing 20 deaths.

1927

The China Civil War begins.

An iceberg 100 miles long, 100 miles wide, and 130 feet high above the water was reported off Antarctica.

On January 18, a great cold in Russia killed hundreds.

On February 13, Niigata Japan is dazzled by a blizzard and 91 die.

On February 17, a tornado in Pleasant Hill LA kills 40.

On March 2, Raleigh NC was buried under 17.8 inches of snow in 24 hours, a record for that location. Nashville NC received 31 inches of snow. The average snow depth in the state of Carolina was 14 inches.

On March 5, a cyclone hit Madagascar killing 500.

On March 18, tornados in AR killed 40.

In March-April, the great MS flood took 313 lives and flooded 28000 square miles, leaving 650000 homeless.

On April 11, a tornado killed 13 and injured 44 in Sequoyah OK.

On April 12, a tornado wiped out the town of Rock Springs TX killing 72 persons and causing 1.2 million dollars damage. The tornado, more than one mile in width, destroyed 235 of 247 buildings, leaving no trace of lumber or contents in many cases. Many survivors were bruised by large hail which fell after the passage of the tornado.

On April 19, tornados in IL, MO, Neb, and OK kill 31.

On April 22, in TN, a massive flood killed 150 people, leaving 75000 people homeless.

On May 8-9, the "Poplar Bluff Outbreak" of tornados. An F4 tornado ripped through Poplar Bluff, Missouri, killing 83 people. A total of 217 would die from 17 major tornadoes across Missouri, Arkansas, and Texas.

On May 26-June 6, a typhoon struck the Phillippines.

On June 1, a tornado in Germany near Holland wrecks 3 villages and kills 31.

On August 13-22, a typhoon struck the Phillippines.

On August 18, a storm batters the eastern United States seaboard and 28 die.

On August 22-25, an August Gale kills 56 in Newfoundland. A hurricane swept through Atlantic Canada washing out roads, filling basements, and swamping boats. In Newfoundland, 56 people died at sea. [NHC rank 108/259 with 184 dead]

On September 13, a typhoon at Kiushiu Island Japan leaves 719 dead, 2500 acres submerged, and 1850 houses destroyed.

On September 16-21, a typhoon struck the Phillippines.

On September 26-29, a typhoon in Kwangtung China kills 5000.



On September 29, an outbreak of tornadoes from OK to IN caused 81 deaths and 25 million dollars damage. A tornado (possibly two tornadoes) cut an eight-mile long path across Saint Louis MO, to Granite City IL, killing 79 persons. The damage path at times was a mile and a quarter in width. The storm followed a similar path to tornadoes which struck in 1871, 1896, and 1959.

On October 1-9, a typhoon struck the Phillipines.

On October 28, northern England is struck by gales and rain and 22 die.

On October 30, a gale wiped out the Irish fishing fleet killing 50.

On November 3-4, VT flood kills 84; Somerset VT was deluged with 8.77 inches of rain to establish a 24 hour record for the state.

On November 4, a typhoon in North Madras India kills hundreds.

On November 17, a tornado cut a seventeen mile path across Alexandria and southeastern DC injuring 31 persons. The tornado struck the Naval Air Station where a wind gust of 93 MPH was recorded. A waterspout was seen over the Potomac River ninety minutes later.

1928

In 1928-29, drought in China kills 3 million.

On January 3, violent storms in the trans-Caucasian region near Baku, Azerbaijan, leave 100 dead.

On January 12, a blizzard devastated the Djetisuisk, Turkestan region, killing 70.

On January 28, a rain and windstorm from southern England to Scotland killed 20 and injured 300.

On February 4, a violent snowstorm on Hokkaido Island, Japan, capsized fishing boats and killed 40.

On April 28, a coastal storm produced tremendous late season snows in the Central Appalachians, including 35 inches at Bayard WV, 31 inches at Somerset PA, and 30 inches at Grantsville MD. High winds accompanying the heavy wet snow uprooted trees and unroofed a number of homes. The storm caused great damage to fruit trees and wild life.

On May 1, 6 children were killed by hailstones at Klausenburg Romania; 10 others were injured.

On July 6, a hailstorm at Potter Neb produced a stone which was 5.5 inches in diameter, and 17 inches in circumference, weighing a pound and a half.

On July 4, a storm swept ashore in NYC killing 23 and causing 3 million to flee.

On July 7-16, a typhoon struck the Philippines.

On August 4, the Tawen river in Shantung China overflowed killing 2000 and causing great damage.

On August 18, a hurricane in Haiti killed hundreds and left 10000 homeless.

On September 6-20, the Great Okeechobee flood and hurricane killed 1836 in the United States; it also killed 300 in PR and 900 in Guadeloupe; in the West Indies as many as 5000 may have died. [NHC rank 9/259 with 3411 dead]

On September 13, a blizzard in India claimed 60 pilgrims.

On September 20, a typhoon in China killed 5000.

On October 10, the temperature at Minneapolis MN reached 90 degrees, their latest such reading of record.

On November 13, a cyclone swept Villa Maria, Argentina, killing 41.

On November 24, a typhoon in the Philippines did great damage and killed 50.

On November 25, gales in the Netherlands caused great destruction and killed 58.

More than 200000 people die in Nanjing during Japan's occupation of China. Many were beheaded.

1929

On January 2, gales in Hondo Japan destroyed hundreds of homes and killed 150.

On February 11-17, Belgium and Europe suffered through a cold wave and 50 died.

On February 26, a storm in the United States south killed 28.

On April 7, record heat prevailed across New England. Hartford CT reported an afternoon high of 90 degrees.

On April 10, tornados near Swifton AR killed 53 and injured 200.

On April 25, tornados near Statesboro GA killed 48 and injured hundreds.

On May 2, VA's worst tornado disaster occurred. Six tornadoes, two of which were west of the

Blue Mountains, killed 22 people. Twelve children and a teacher were killed at Rye Cove, in Scott County. Four schools were destroyed by the storms.

On May 27, a typhoon in Leyte Philippines killed 119 and inundated 6 villages.

On July 4-13, a typhoon struck the Philippines.

On July 5, a windstorm swept through Austria killed 20 and damaging crops.

On August 7-18, a typhoon struck the Philippines.

On September 1-6, a typhoon in the Luzon and Manila area of the Philippines killed 250 and left thousands homeless.

On September 6, IA's earliest snow of record occurred as a few flakes were noted at 9 AM at Alton.

On September 20, a typhoon struck the Philippines killed 26 and destroying 7000 homes.

On September 27, a storm in Nassau Bahamas killed 20.

On October 27, a snowstorm dumped 27 inches upon Ishpeming MI in 24 hours to establish a state record.

On December 17, an ice storm in western NY resulted in much damage and hardship. A Buffalo report stated, "one was kept awake by the breaking limbs, which snapped off with a report much louder than a rifle shot."

On December 21, an exceptional storm produced snow from the Middle Rio Grande Valley of TX to southern AR. The storm produced 26 inches of snow at Hillsboro TX, 18 inches at El Dorado AR, and 14 inches at Bossier LA; Greenland Ranch, in Death Valley, CA, went the entire year without measurable precipitation.

1930

On January 9, a snow and dust storm in China ravaged the area from the Mongolian deserts to the Yangtze valley, killing hundreds. On January 10, the worst cold in 60 years in inner Mongolia and Suiyuan district of North Shansi killed 15000.

On February 17, Eureka CA reported an all-time record high of 85 degrees, a record which lasted until September of 1983.

On April 18-20, a typhoon hit Leyte Philippines killing hundreds and destroying 14 towns.

On May 1, tornados swept through 4 states and killed 24 in Homer Neb.

On May 3, a typhoon struck Aniwai Bay, Japan, killing hundreds.

On May 5, the temperature at College Park VA soared from 43 degrees to 93 degrees to begin an exceptional heat wave.

On May 6, a tornado leveled Frost TX killing 69 and injuring hundreds.

On May 13, a man was killed when caught in an open field during a hailstorm northwest of Lubbock, TX. It was the first and perhaps the only authentic death by hail in United States history.

On May 24, a tornado touched down near the town of Pratt KS and traveled at the incredibly slow speed of just 5 MPH.

On June 13, a hail storm in Macedonia Greece with stones as large as tennis balls killed 22.

On July 9, a heat wave in the midwest United States broke 29 year old records in 5 states, leading to 109 deaths.

On July 18-25, a typhoon struck the Philippines.

On July 18, torrential rains and a typhoon in Korea and Japan leveled 5400 homes and killed 258.

On July 20, the temperature at DC soared to an all-time record of 106. The next day Millsboro reached 110 to set a record for the state of DE. July 1930 was one of the hottest and driest summers in the United States, particularly in the MO Valley where severe drought conditions developed. Toward the end of the month state records were set for KY with 114, and MS with 115.

On July 25, a wind storm in Piave Valley, Italy, killed 22, injured 100, and damaged 200 homes.

On July 28, the worst tornado in 100 years struck Adrianople Turkey, killing 22 and breaking every window in the city.

On July 28, the temperature at Greensburg KY soared to 114 degrees to set a state record.

In August, drought in the Belgian Congo brought famine to Ruada Province causing 40000 deaths.

On August 4, the temperature at Moorefield WV soared to 112 to establish a state record, having reached 110 the previous day.

On September 1-6, a hurricane struck St. Domingo killing 4000, injuring 5000, and doing great damage. [NHC rank 4/259 with 8000 dead]

On September 21, an equinoctial gale swept through the seaside resorts of Breton France, killing 250.

On October 15, hurricane kills 2000 in Dominican Republic.

On October 18, a big early season lake effect snow burst on the lee shores of Lakes Erie and Ontario produced 47" at Gouverneur NY and 48" just south of Buffalo.

On November 7, a typhoon struck Pulo-Condor Island killing 50.

On November 14, a typhoon at Loochow Is., Japan, killed hundreds with 160 MPH winds.

On November 19, a tornado in Bethany OK killed 23.

On November 21, a blizzard in the Northwest United States killed 23 in 7 states.

On December 9-10, a typhoon struck the Phillippines.

1931

During 1931, 184.5 inches of rain fell at Wynochee Oxbow, WA. That was a record annual rainfall for the continental United States

On January 2-5, a typhoon in Leyte Phillippines devastated the area and killed 100.

On January 12, the north of China suffered extreme cold and hundreds died.

On January 12, a blizzard in japan killed 50 and tore roofs off more than 1000 homes.

On April 27, the temperature at Pahala, located on the main island of HI, soared to 100 degrees to establish a state record.

On June 29, the temperature at Monticello FL hit 109 degrees to establish an all-time record for the state.

In June, the heat wave in the United States struck 12 states and claimed 1016 lives.

On July 5-7, a cyclone in Australia killed 10.

On August 25, a typhoon struck central China and killed hundreds; it was the worst one since 1925; between July and November, the Yellow River overflowed flooding 34000 square miles, killing about 1 million, and leaving 80 million homeless.

In July-August-September, Yangtze River flood, China, 3.7 million killed due to flooding and subsequent disease and starvation; 2 million are left homeless.

On September 10, a hurricane in Belize (British Honduras) killed 1500.

On September 16, a hurricane in Veracruz Mexico wrecked 20 boats and killed 50.

On September 18-29, a typhoon struck the Philippines.

On October 13, wind and rain struck central Japan around Tokyo killing 31 and flooding 6000 homes.

On October 13-21, a typhoon struck the Philippines.

On November 4-10, a typhoon struck the Philippines.

On November 8-12, another typhoon struck the Philippines.

On December 3-8, a typhoon struck the Philippines.

1932

The Kingdom of Saudi Arabia is officially created.

On January 15, 2 inches of snow in Los Angeles, CA.

On February 8, a typhoon smashed into Reunion Island killing 45.

On March 7, a severe coastal storm set barometric pressure records from VA to New England. Block Island RI reported a barometric pressure reading of 28.20 inches.

On March 21-22, a tornado outbreak in 5 southern states kills more than 342.

On April 29-May 30, a typhoon struck the Philippines.

On May 5, a typhoon in Anman, Vietnam, killed 500 and destroyed railroads and homes.

On May 5, a tornado in Mymensingh, India, killed 70.

On June 2, a wind storm struck Ismail, Romania, killed 80 and causing great damage.

On June 22, a hailstorm in Honan China and killed 200.

On July 23-30, a typhoon struck the Philippines.

On August 3, the Sungrai river near Harbin Manchuria overflowed and killed 3000 and destroyed 35000 homes.

On August 13-14, a hurricane hit Galveston TX killing 39 and injuring hundreds. [NHC rank 216/259 with 40 dead]

On August 31, the Tung River in China overflowed and killed 1000.

On September 12, rain and wind storms in Loyang China killed hundreds.

On September 17, Concord NH was drenched with 5.97 inches of rain in 24 hours to establish a record for that location.

On September 26-27, a hurricane struck Puerto Rico. [NHC rank 90/259 with 257 dead]

On October 22-31, a typhoon struck the Philippines.

On November 4-10, a hurricane in Puerto Rico killed 225 and injured 3000. It also struck Cuba and other islands. [NHC rank 10/259 with 3107 dead]

On November 7-16, a typhoon struck the Philippines.

On November 9, a storm wave arising from a hurricane killed 2500 in Santa Cruz del Sur, Cuba; winds clocked 210 MPH.

On November 9, the same hurricane killed 80 on the Cayman Islands.

On November 12, a hurricane struck Bermuda; 91 MPH.

On December 11, very cold weather prevailed along the West Coast. San Francisco received 0.8 inch of snow, and at the airport the temperature dipped to 20 degrees. At Sacramento CA, the mercury dipped to 17 degrees to establish an all-time record low for that location. Morning lows were below freezing from the 9th to the 15th at Sacramento, and the high on the 11th was just 34 degrees. The cold wave dealt severe damage to truck crops and orange groves in the Sacramento Valley.

On December 12, 0.8 inches of snow in San Francisco.

1933

The Dustbowl Era - 1930s. Between 1933 and 1937, the Canadian Prairies experienced only 60% of its normal rainfall. Thousands of livestock were lost to starvation and suffocation, crops withered and 250000 people across the region abandoned their land to seek better lives elsewhere.

On January 19, Giant Forest CA received 60 inches of snow in just 24 hours, a state record, and the second highest 24 hour total of record for the United States.

On February 6, at Oimekon, Russia, the temperature reached a record low for Asia of -90F, tying a record set in 1892.

On February 9, the temperature at Moran WY, located next to Teton National Park, plunged to 63 degrees below zero to establish a state record. The temperature at the Riverside Ranger Station in MT dipped to 66 below zero to establish a record for the state, and a record for the nation which stood until 1954.

On February 10, in China, a storm kills 15000 people.

On March 14, a tornado in TN killed 34 and injured 200.

On March 21, the Ohio River crested at 63.6 feet. The dike held at Lunken Airport in Cincinnati. But a five-story warehouse on Vine Street downtown didn't; it collapsed and others in the Bottoms area were threatened.

On March 30-31, 29 tornados in AL, LA, MS, and TX killed 89.

On April 4, Pigeon River Bridge MN reported 28 inches of snow, which established the state 24 hour snowfall record.

On April 16, Franklin Lake NH was buried under 35 inches of snow.

On April 26, hurricane force winds of 132 MPH struck Bermuda.

On May 1, a tornado in Webster Parish, LA killed 23.

On May 6, Charleston SC was deluged with 10.57 inches of rain, an all- time 24 hour record for that location.

On May 9, a tornado in KY killed 34.

On June 17, a hurricane in Trinidad killed 13 and left thousands homeless.

June 26: The Mayen river floods at Tungjen, China, and thousands die. One estimate says 18000 died in Chinese floods this year.

On June 27-July 3, a hurricane struck Trinidad, Cuba, Venezuela, and Jamaica. [NHC rank 226/259 with 35 dead]

On July 22-25, a tropical storm moved up the TX coast for several days and brought heavy rainfall. An area of over 25000 square miles saw an average of 12.5". A small area of East TX and Western LA measured 20" or more. Logansport recorded 22.3" over a 4 day period.

On August 2, the Wei River in China overflowed killing thousands.



On August 12, the temperature at Greenland Ranch in Death Valley CA hit 127 degrees to establish a United States record for the month of August.

On August 14, fires in western OR burn 200000 acres.

On August 15-16, a hurricane struck Jamaica. [NHC rank 172/259 with 70 dead]

On August 23, the Chesapeake-Potomac hurricane moved over Norfolk VA and DC A tide seven feet above normal flooded businesses in Norfolk; in all 62 died. This year was the busiest hurricane season on record with 21 hurricanes and tropical storms.

On August 30-September 5, a hurricane in Cuba killed 406 and left 100000 homeless. It also struck Turks and south TX [NHC rank 115/259 with 179 dead]

On September 1, the Yellow River in China overflowed near Shenchow killing 50000 and destroying 500000 homes.

On September 5, a hurricane hit Brownsville TX killing 40.

On September 15, a hurricane struck Mexico. [NHC rank 176/259 with 63 dead]

On September 16, a hurricane in NC killed 21.

On September 24, the second hurricane in 10 days struck Tampico, Mexico, killing hundreds. [NHC rank 109/259 with 184 to 200 dead]

On October 30-November 6, a typhoon struck the Phillipines.

On November 3, a typhoon struck the Phillipines killing 20.

On November 13, the first dust storm of the great dust bowl era of the 1930s occurred. The dust storm, which had spread from MT to the OH Valley the day before, prevailed from GA to ME resulting in a black rain over NY and a brown snow in VT. Parts of SD, MN and IA reported zero visibility on the 12th. On the 13th, dust reduced the visibility to half a mile in TN.

On December 13, snow covered Europe and birds fell to the ground in Prussia; 37 died.

Ontario's Coldest Day on Record - December 29, 1933. Fourteen sites recorded their coldest-ever temperature, including Ottawa at -38.9°C and Algonquin Park at -45.0°C. Outside Ontario, record cold temperatures were also set in Manitoba, Quebec and Nova Scotia.

On December 30, the temperature reached 50 degrees below zero at Bloomfield VT. It was the coldest reading in modern records for New England. The temperature at Pittsburgh NH reached 44 degrees below zero; 68 died in the 5 day blizzard in NYC and PA.

On December 31, a 24 hour rainfall of 7.36 inches set the stage for the worst flood in Los Angeles history. Flooding claimed 44 lives.

1934

On January 1, heavy rain which began on December 30th led to flooding in the Los Angeles Basin area of CA. Flooding claimed the lives of at least 45 persons. Walls of water and debris up to 10 feet high were noted in some canyon areas. Rainfall totals ranged up to 16.29" at Azusa, with 8.26" reported in LA.

On January 28, a blizzard swept through Korea killing 41.

In February 1934. A cold wave engulfed the continent from Manitoba to the Atlantic seaboard and down the east coast to Palm Beach, Florida. Ice trapped fishing vessels off Nova Scotia, hospitals were jammed with frostbite victims and, for only the second time in recorded history, Lake Ontario froze completely over.

On February 7, a deep freeze made it possible to drive from Bay Shore to Fire Island NY.

On February 9, the mercury dipped to 51 degrees below zero at Vanderbilt to establish a record for the state of MI. The temperature at Stillwater plunged to 52 degrees below zero to establish a record for the state of NY.

On February 25, tornados in NC isolated 3 cities and killed 20.

On March 15, storms swept Queensland Australia killing 64.

On March 25, a spring storm produced 21 inches of snow at Amarillo TX in 24 hours. However, much of the snow melted as it fell, and as a result, the snow cover was never any deeper than 4.5".

On April 12, winds atop Mount Washington, NH average 186 MPH for 5 minutes, with a peak gust of 231 MPH.

On May 12, a dust storm darkened skies from OK to the Atlantic coast.

On June 4-8, a hurricane in El Salvador and Honduras killed 2000 and left 3000 homeless. [NHC rank 13/259 with more than 3000 dead]

On June 16, Morgan City LA was hit by a hurricane. Not a single building escaped unharmed. Chimneys tumbled, roofs were torn off, and numerous windows were smashed. Pressure fell to 28.52" at Jeanerette. Winds at Morgan City reached 68 m.p.h., but only reached 35 MPH at New Orleans, where the pressure fell to 29.34". Storm killed 7.

On July 4, the Yellow and Yangtze rivers flood and 50000 die and 5 million are homeless.

On July 17, severe storms in Moraxitra Valley, Yugoslavia, killed 30.

On July 17, one of the worst heat waves in the history of the nation commenced. During the last two weeks of the month extreme heat claimed 679 lives in MI, including 300 in Detroit alone.

On July 20, the temperature at Keokuk IA soared to 118 degrees to establish a state record.

On July 21, the temperature reached 109 degrees at Cincinnati OH to cap their hottest summer of record. The state record for OH was established that day with a reading of 113 degrees near the town of Gallipolis.

On July 28, the temperature at Grofino ID climbed to 118 degrees to establish a record for ID.

On September 1-11, a typhoon struck the Phillipines.

On September 21, a typhoon kills 4000 in Honshu Japan.

On September 29-October 11, a typhoon struck the Phillipines.

On October 13-17, a typhoon in Manila Phillipines kills 69.

On October 19-21, a typhoon struck the Phillipines.

On October 21, a severe windstorm lashed the northern Pacific coast. In WA State, the storm claimed the lives of 22 persons, and caused 1.7 million dollars damage, mostly to timber. Winds, gusting to 87 MPH at North Head WA, produced waves 20 feet high.

On November 2, a typhoon hit Annam Vietnam, killing 250.

On November 14, the most violent typhoon in years hit Mauban, Phillipines killing 300 and ruining the town.

On November 24-December 5, a typhoon struck the Phillipines.

1935

Benito Mussolini Il Duce (1883-1945) a Fascist, orders the invasion of Ethiopia using poison gas to subdue the people

On January 19-28, a cold wave freezes Victoria and BC's lower mainland. Winter weather gripped Vancouver, with temperatures dipping to -16°C and snowfall greater than 40 cm. While the extreme cold caused fuel shortages and frozen water supplies, a quick thaw followed by 267 mm of rain over the next four days added extensive roof damage across the city, including the collapse of the Forum -- the city's main hockey and curling rink.

On January 24, snowstorms hit the northeastern United States and the Pacific Northwest producing record 24 hour snowfall totals of 23 inches at Portland ME and 52 inches at Winthrop MA.

On February 4, rainstorms deluged Nablus Palestine killing 24.

On February 11, at Ifrane, Morocco, a record low for Africa of -11F was set.

On February 21, frequent dust storms occurred in eastern CO during the month, forcing schools to close and people to stay indoors. A fatality occurred on this date when two section cars collided on the railroad near Arriba CO, due to poor visibility.

On March 19, suffocating dust storms occurred frequently in southeastern CO between the 12th and the 25th of the month. Six people died, and many livestock starved or suffocated. Up to six feet of dust covered the ground. Schools were closed, and many rural homes were deserted by tenants.

On March 29, a severe dust storm blanketed Amarillo TX for 84 hours. During one six hour period the visibility was near zero.

On April 7, Amarillo TX reported dust obscuring visibility for twenty hours. Blowing dust was reported twenty-seven of thirty days in the month. On several days the visibility was reduced to near zero by the dust.

On April 6, a typhoon in Luzon Phillippines devastated Samar Province and killed 70.

On April 7, a freak tornado killed 26 and injured 150 in LA and MS.

On May 1, snow, ice and sleet brought winter back to parts of southeast MN. Minneapolis received three inches of snow to tie their May record which was established in 1892.

On July 4, the Yellow and Yangtze rivers in Hankow China overflowed wiping out 3 provinces killing 142000, and leaving 5 million homeless.

On August 5, a typhoon hit Fukien Province China killing hundreds.

On August 23-25, a hurricane in Newfoundland killed scores. [NHC rank 196/259 with more than 50 dead]

On August 29-September 10, the FL Keys Hurricane kills 408.

About this time, a cyclone in India kills 60000.

On September 2-3, perhaps the most intense hurricane ever to hit the United States struck the FL Keys with 200 MPH winds. The hurricane produced a fifteen foot tide and waves thirty feet high.

400 persons perished in the storm on that Labor Day. The barometric pressure at Matecumbe Bay FL hits a record low for the United States of 26.35 inches. [NHC rank 66/259 with 409 dead]

On September 23-29, a hurricane struck Cuba and Bimini. [NHC rank 168/259 with 74 dead]

On September 27, rainstorms in Japan killed 254.

On October 19-25, a hurricane struck Jeremie Haiti killing more than 2000. On October 25, a weakened hurricane hit Honduras killing 150. [NHC rank 17/259 with more than 2150 dead]

On December 7, severe flooding hit parts of the Houston TX area. Eight persons were killed as one hundred city blocks were inundated. Satsuma reported 16.49 inches of rain. The Buffalo and White Oak Bayous crested on the 9<sup>th</sup>.

On December 26, a typhoon hit Luzon Philippines killing 39 and hurling a 7000 ton freighter onto rocks.

On December 27-29, the worst ice storm in 3 decades hit GA, AR, and TN halting transportation and killing 212.

1936

The Spanish Civil War (1936-1939) starts.

Benito Mussolini Il Duce (1883-1945) annexes Ethiopia.

In 1936, drought in China lead to the death of 5 million due to famine.

A hot and dry in Great Plains.

The hottest July in 117 years in IA.

The hottest summer ever in 16 states.

Ice chokes the Ohio River for months.

On January 29-30, Birmingham AL established a single storm record and 24 hour record with 11 inches of snow.

On February 8, the temperature at Denver CO plunged to a record 30 degrees below zero.

On February 11, a blizzard in Bulgaria with temperatures of 49 below lead to the death of 100.

On February 15, the temperature at Parshall ND plunged to 60 degrees below zero to establish a state record.

On February 17, the temperature at McIntosh SD plunged to 58 degrees below zero to establish a state record.

On February 21, the temperature at Langdon ND climbed above zero for the first time in 6 weeks. Readings never got above freezing during all 3 winter months.

On February 22, although heat and dust prevailed in the spring and summer, early 1936 brought record cold to parts of the United States Sioux Center IA reported 42 inches of snow on the ground, a state record.

On February 23, a severe blizzard in the Sierra NV Range closed Donner Pass. It stranded 750 motorists and claimed seven lives.

On February 24, VT and NH received brown snow due to dust from storms in the Great Plains Region. A muddy rain fell across parts of northern NY.

On March 12, 1936, rain began falling across Connecticut. The state had already been covered with a blanket of six to eight inches of snow. Rains poured down for the next nine days and dropped up to fourteen inches on already saturated and frozen land. These incredible forces of nature unleashed on Connecticut the greatest floods in its history to that date. The Connecticut and Farmington Rivers and all of their tributaries became raging torrents. Ice flows added to the destruction. Water and ice tore out bridges, highways, roads, and railways. The dam at New Hartford burst, and homes and buildings were washed away or destroyed. Fourteen thousand people were left homeless, several were dead or missing, and epidemic disease threatened the population. The National Guard was called to action as the ravaging floods paralyzed business, traffic, communication, and home life, as the cities and towns along the rivers became the principal centers of destruction.

On March 18, the west branch of the Susquehanna River at Williamsport PA floods 33.6 feet; the Allegheny River at Kittaning floods 26.0 feet; the Kiskiminetas River at Avonmore PA floods 47.2 feet; the Youghioghenny River at Connellsville PA floods 20.3 feet; the Mononghanela River at Charleroi floods 22.5 feet; the Ohio River at Pittsburgh floods 46.0 feet.

On March 19, the Juanita River at Newport PA floods 34.2 feet; the Delaware River at Riegelsville PA floods 32.5 feet; the Susquehanna River at Harrisburg PA floods 29.2 feet.

On March 20, the north branch of Susquehanna River at Wilkes- Barre PA floods 33.1 feet.

On March 22, a great flood crested on rivers from OH to ME. The flood claimed 107 lives and caused 270 million dollars property damage.

In March, 52 towns and cities in NH are flooded for NH's worst natural disaster; also 3008 square miles of PA are flooded.

On April 2, 12 tornados in 4 states; it killed 23 in Cordelle GA.

On April 5-6, the Tupelo-Gainesville Outbreak. Over 10 tornadoes swept across Mississippi, Tennessee, Alabama, Georgia, and South Carolina. Two devastating tornadoes did most of the damage. One hit Tupelo, Mississippi, on the evening of the 5th and leveled over 200 homes, killing 216 people and injuring 700. The next morning another tornado smashed into Gainesville, Georgia, killing 203 and injuring 1600. Between April 2-6, 421 die from tornados.

On May 1, cyclones hit Burma killing 36 and leaving 200000 homeless.

On July 6, a 2 week heat wave in Canada killed 500.

The Deadliest Heat Wave in History - July 5-17, 1936. Temperatures exceeding 44°C in Manitoba and Ontario claimed 1180 Canadians (mostly the elderly and infants) during the longest, deadliest heat wave on record. Four hundred of these deaths were caused by people who drowned seeking refuge from the heat. In fact, the heat was so intense that steel rail lines and bridge girders twisted, sidewalks buckled, crops wilted and fruit baked on trees.

On July 6, the temperature at Steele ND hit 121 degrees, a state record.

On July 9, the temperature hit an all-time record high of 106 degrees at the Central Park Observatory in NYC, a record which lasted until LaGuardia Airport hit 107 degrees on July 3rd in 1966.

On July 10, afternoon highs of 112 degrees at Martinsburg WV, 109 degrees at Cumberland MD and Frederick MD, 110 degrees at Runyon NJ, and 111 degrees at Phoenixville PA, established all-time record highs for those four states. It was the hottest day of record for the Middle Atlantic Coast Region.

On July 14, extreme heat prevailed across the central United States as severe drought raged from TX to the Dakotas. Record high temperatures were established in sixteen states that summer, including readings as high as 120 degrees in the Great Plains Region. On this particular date, afternoon highs for 113 stations across the state of IA averaged 108.7 degrees.

On August 10, the temperature soared to 114 degrees at Plain Dealing LA, and reached 120 degrees at Ozark AR, to establish record highs for those two states.

On August 12, the temperature at Seymour TX hit 120 degrees to establish a state record.

On August 14, temperatures across much of eastern KS soared above 110 degrees. KS City MO hit an all-time record high of 113 degrees. It was one of sixteen consecutive days of 100 degree heat for KS City. During that summer there were a record 53 days of 100 degree heat, and during the three summer months KS City received just 1.12 inches of rain.

On August 16, the worst typhoon since 1922 struck Hong Kong killing 100.

On August 28, a typhoon hit Korea killing 1104 and injuring 1028.

On September 26, Denver CO was buried under 21.3 inches of snow, 19.4 inches of which fell in 24 hours. The heavy wet snow snapped trees and wires causing seven million dollars damage.

On October 2, a typhoon near Japan kills 70, mostly on ships at sea.

On October 11, a typhoon hit Manila killing 546.

On October 28, the temperature at Layton NJ dipped to 9 above zero to establish a state record for the month of October.

On October 30, a tornado in India killed 162 and left 15000 homeless.

In west China, drought and famine lead to 5 million deaths.

1937

Adolf Hitler (1889-1945) an Austrian laid out his plans for world domination.

The 'Rape of Nanking' by Japanese forces killing 250000 civilians.

On January 26, the MS River flooded after heavy rains in the Ohio Valley caused the river to rise 63 feet at Cairo, IL; 12500 square miles were flooded, destroying 13000 homes, and killing 137; at Cincinnati, the Ohio River crested at 79.9 feet, its highest ever recorded.

On January 27, gales and blizzards struck Europe west of the Balkans, killing 57.

On March 10-11, a cyclone in Australia left 4 dead.

On July 5, the temperature at Medicine Lake MT soared to 117 degrees to establish a state record.

On July 5, Midale and Yellow Grass in Saskatchewan hit 113 degrees to establish an all-time record high for Canada that same day.

On August 5, a typhoon in North Korea killed 130 and injured 18.

On August 28-September 1, a typhoon hit near Hong Kong killing 100 and setting a wind velocity record. One estimate says 11000 died.

On September 14, the mercury soared to 92 degrees at Seattle WA, a record for September.

On October 16, an unlikely winter-like storm produced as much as ten inches of snow in MN and IA.

On October 24, a snow squall in Buffalo NY tied up traffic in six inches of slush.



On November 11, a typhoon hit the Philippines killing 30, leaving 3000 homeless in Manila and 30000 homeless in Bulacan Province.

On November 18, another typhoon hit the Philippines killing 247 and wrecking most coconut groves.

1938

March 3: Saudi Arabia, an American engineer unleashed the first commercially viable oil gusher after 15 months of drilling in Saudi Arabia. The middle east was forever changed.

On June 9, the Yellow River, China, flooded killing 500000 and leaving 6 million homeless; it was caused by intentional breaking of dikes in effort to halt the advancing Japanese.

On June 11, the Yangtze river in China overflowed killing 2000.

On June 19, a cloudburst near Custer Creek MT (near Miles City) caused a train wreck killing forty-eight persons. An estimated four to seven inches of rain deluged the head of the creek that evening, and water flowing through the creek weakened the bridge. As a result, a locomotive and seven passenger cars plunged into the swollen creek. One car, a tourist sleeper, was completely submerged.

On August 14, a storm hit the shoreline east of Cameron LA. Grand Cheniere reported winds of hurricane force; one died.

On September 1, the countryside north of Tokyo Japan was struck by a typhoon and 99 died.

On September 18, several hours of darkness in Northwest Siberia.

On September 21, a great hurricane smashed into Long Island and bisected New England causing a massive forest blow down and widespread flooding. Winds gusted to 186 MPH at Blue Hill MA, and a storm surge of nearly thirty feet caused extensive flooding along the coast of RI. The hurricane killed 600 persons and caused 500 million dollars damage. The hurricane, which lasted twelve days, destroyed 275 million trees. Hardest hit were MA, CT, RI and Long Island NY. The "Long Island Express" produced gargantuan waves with its 150 MPH winds, waves which smashed against the New England shore with such force that earthquake-recording machines on the Pacific coast clearly showed the shock of each wave. [NHC rank 48/259 with about 682 dead]

On October 7, a typhoon hit the central Philippines killing 22.

On November 24-25, snowfall records were broken in NY, PA, and VA and 37 died.

On December 8, the temperature at La Mesa CA soared to 108 degrees to set a United States record for the month of December.

1939

The Spanish civil war began by Francisco Franco resulted in the death of 611000 people.

August 22, Adolf Hitler (1889-1945) declared: I have ordered my death units to exterminate without mercy, men, women and children of the Polish speaking race. Russia entered the Second World War in September as an ally of Germany, having signed a non-aggression pact, in order to annex certain areas of Poland inhabited by Byelorussians and Ukrainians.

On January 2, a cold wave struck Istanbul Turkey and 22 died.

On March 10, a series of severe hail storms in Hyderabad, India, struck 17 villages killing 200 cattle and 1000 sheep, plus extensive crop damage; hailstones weighed up to 7.5 pounds.

On April 16-17, 24 tornados in AL, AR, MS, and TX killed 41.

On July 27, the temperature at Lewiston ID hit 117 degrees to establish an all-time record high for that location.

In July-August, floods in Tientsin China kill thousands (500000) and leave millions homeless.

On September 4, a thunderstorm deluged DC with 4.4 inches of rain in two hours. September of that year was very dry across much of the nation, and DC received more rain in that two hour period than most other places in the country that entire month.

On September 15, the temperature at Detroit MI soared to 100 degrees to establish a record for September.

On September 25, a west coast hurricane moved onshore south of Los Angeles bringing unprecedented rains along the southern coast of CA. Nearly five and a half inches of rain drenched Los Angeles during a 24 hour period. The hurricane caused two million dollars damage, mostly to structures along the coast and to crops, and claimed 45 lives at sea. "El Cordonazo" produced 5.66 inches of rain at Los Angeles and 11.6 inches of rain at Mount Wilson, both records for the month of September.

On October 16, a hurricane struck Bermuda.

In September-November, floods devastated China killing 200000 and leaving 10 million homeless.

On December 4, a typhoon swept Masbate Island, Phillippines, killing 23.

1940

On January 21-24, the southern provinces of China had a cold wave and 650 died.

On January 23-24, a snowstorm swept almost to the MS coast and killed 26.

On January 31, the north central area of Japan was hit by blizzards and 78 died.

On February 14, a "Saint Valentine's Day Blizzard" hit the northeastern United States Up to a foot and a half of snow blanketed southern New England, and whole gales accompanied the heavy snow stranding many in downtown Boston.

On April 1, the north branch of Susquehanna River at Wilkes-Barre PA floods 31.5 feet.

On May 24, hail fell near Ada OK to a depth of six to eight inches, and rainfall runoff left drifts of hail up to five feet high.

On July 10, a typhoon hit Seoul Korea, killing 52, making thousands homeless, and destroying 92 bridges.

On July 24, torrential rains inundated the cities of Antofagasta, Tocopilla, Iquique, Taltal, and Colima in Chile for 48 hours, leaving hundreds dead.

On August 7, a hurricane with sustained winds of 80 MPH made landfall across Southwest LA. Hurricane force winds only extended 10 miles on either side of the storm. The hurricane dumps 31.66 inches of rain on Abbeville, LA.

On August 11-12, a major hurricane struck Savannah GA and Charleston SC causing the worst inland flooding since 1607. [NHC rank 202/259 with 50 dead]

On August 25, NJ experienced its coldest August morning of record, with lows of 32 degrees at Layton and Charlotteburg.

On September 7, a typhoon hit Benin Island Japan killing hundreds and leaving thousands homeless.

The strongest typhoon since 1918 strikes Guam.

On September 28, Formosa was struck by a typhoon with 50 died, 5000 homes destroyed, and crops ruined.

On November 11-12, an Armistice Day storm raged across the Great Lakes Region and the Upper Midwest. A blizzard left 49 dead in MN, and gales on Lake MI caused ship wrecks resulting in another 59 deaths. Up to seventeen inches of snow fell in IA, and at Duluth MN the barometric pressure reached 28.66 inches. The blizzard claimed a total of 154 lives, and killed thousands of cattle in IA. Whole towns were isolated by huge snowdrifts.

On December 26, gale force winds and torrential rains in Cuba and Mexico killed 21 and caused great damage.

On December 29, a gale and rainstorm leveled Sanat Madalena Domar in Madiera, sweeping 20 victims out to sea.

1941

Japan occupies Indo-china.

It is the fifth warmest year of 2209 years in Taymir Siberia, based on tree ring observations.

A dry monsoon in south and central India.

On January 31, severe cold took the lives of 200 beggars and indigents in Shanghai China.

On February 16, a storm lashed Spain and Portugal ruining crops and killing 140.

On March 15, one of the worst blizzards of modern times struck the northern plains of United States with more than 70 dead and winds up to 85 MPH. The blizzard hit on a Saturday night while many are traveling, and thus claimed 71 lives. Snow drifts twelve feet high were reported in north central MN. A cold front traveling 30 MPH crossed MN in just 7 hours. 151 died altogether. It was the most severe blizzard of the century.

On April 19, the temperature at Sodus NY soared to 95 degrees.

On April 20, Albany NY reported a record for April of 93 degrees.

On May 21, a tornado at Cape Girardeau MO killed 23 and wrecked 233 homes in 5 minutes.

On May 25, a storm level villages in Barisal India in the Ganges Delta, killing 5000.

On May 31, thunderstorms deluged Burlington KS with 12.59 inches of rain to establish a 24 hour rainfall record for the state.

On July 17, a prolonged heat wave over WA State finally came to an end. Lightning from untimely thunderstorms was responsible for 598 forest fires.

On July 21, a typhoon lashed Japan killing 35 and flooding 26000 homes.

On September 22-24, a hurricane which struck Texas City LA caused hurricane force winds to blast western Cameron parish.

On September 23-28, a hurricane struck Honduras. [NHC rank 203/259 with 50 dead]

On September 29, a hurricane crossed the Caribbean and killed hundreds at Tegucigalpa, Honduras; thousands were left homeless.

On October 1, a typhoon swept the islands of Kyushu and South Hondo, killing hundreds.

On December 5, the temperature at Enosburg Falls soared to 72 degrees to establish a state record for VT for the month of December.

On December 14, flooding and earth slides kill 3000 in Peru.

On December 31, snow which began on New Year's Eve became a major blizzard on New Year's Day, burying Des Moines IA under 19.8 inches of snow in 24 hours, an all-time record for that location.

1942

The Naval Battle of Midway sees a major victory for United States over Japan.

The severest winter in 30 years in Russia.

On February 5-6, 16 tornados in AL, AR, GA, MS, TN and SC left 23 dead.

On February 15, a cold wave struck Shanghai China killing hundreds.

On March 16, two tornadoes, 24 minutes apart, struck Baldwin MS resulting in 65 deaths.

On March 24-25, a cyclone in Western Australia killed 15.

On April 27, a destructive tornado swept across Rogers County and Mayes County in OK. The tornado struck the town of Pryor killing 52 persons and causing two million dollars damage.

On April 29-30, 9 tornados in KS, MO, Neb, OK, and SD killed 21.

On May 23, the Lehigh River at Bethlehem PA floods 23.5 feet.

On May 23, the Schuylkill River at Reading PA floods 22.0 feet.

On May 28, the latest snowstorm of record for the state of IA left 10 inches at LeMars, eight inches at Cherokee, and 7.5 inches at Waukon. Afternoon highs were in the lower 30s in parts of northwestern IA.

On June 12, a tornado struck Oklahoma City OK, killing 35 and destroying 100 homes.

On June 22, at Tirat Tsvi, Israel, the temperature reached 129F, a record for Asia.

On June 30, the temperature at Portland OR hit 102 degrees, an all-time record for that location.

On July 18, a record deluge occurred at Smithport in northern PA, with 30.7 inches in just six

hours. The downpours and resultant flooding in PA were devastating.

On July 24, the temperature at Las Vegas NV hit 117 degrees to set an all-time record for that location.

On August 19-21, a hurricane paralleled the shore before moving westward into Galveston TX.

In the summer, drought in India kills 1.5 million people.

On September 15-19, storm tides reached 4 feet in Lake Pontchartrain LA as a dying tropical storm made landfall east of Lake Charles. Very heavy rain occurred throughout Southern LA, with 19.26" falling at Morgan City.

On September 28, the Yellow river in China overflowed killing 3000 and leaving 40000 homeless.

On October 14-16, a cyclone with 150 MPH winds claims 61000 lives in Bengal India; winds reached 150 MPH.

On October 29, a tornado struck the town of Berryville in northwest AR killing 20 persons and causing half a million dollars damage.

On November 14, a cyclone near Calcutta India killed 670.

On December 20, an early cold wave sent the temperature plunging to 3 degrees below zero at Nantucket MA, and to 11 degrees below zero at Boston MA.

On December 28-30, there is eastern Ontario's Freezing Rain Storm. Ice "as thick as a person's wrist" covered telephone wires, trees and railway tracks. In Ottawa, 50000 workers walked to work for five days. Because of the war, there were few men available to clear the streets and repair lines.

On December 30, the Allegheny River at Kittaning floods 26.0 feet.

On December 31, the Ohio River at Pittsburgh PA crests at 36.6 feet.

1943

In 1943-44, in Bengal India, drought leads to the death of more than 1.5 million people. In 1943, drought in east Africa kills 35000.

On January 22, chinook winds during the early morning hours caused the temperature at Spearfish SD to rise from 4 below zero to 45 above in just two minutes, the most dramatic temperature rise in world weather records. An hour and a half later the mercury plunged from 54 above to 4 below zero in twenty-seven minutes.

On February 16, record cold prevailed in the northeastern United States. The mercury plunged to 43 degrees below zero at Concord NH, and to -39 degrees at Portland ME. The morning low of -32 degrees at Falls Village CT established a state record, yet the afternoon high that day was 20 degrees above zero.

On July 25, a hurricane surprised Houston TX.

On July 26, Tishomingo OK baked in the heat as the mercury soared to 121 degrees, a state record.

On August 4, in Rajputana India, the Khari overflowed and killed 10000.

On October 9, a hurricane struck the Pacific coast of Mexico, killing 52 and injuring 102.

On November 8, an early season snowstorm raged across eastern SD and MN into northern WI. The storm produced 22 inches of snow at Fairbault and Marshall MN, 20 inches at Redwood Falls MN, and 10.1 inches at Minneapolis. Drifts fifteen feet high were reported in Cottonwood County MN. The storm produced up to two feet of snow in SD smothering a million Thanksgiving day turkeys.

On November 23, northern NH was in the grips of a record snowstorm which left a total of 55 inches at Berlin, and 56 inches at Randolph. The 56 inch total at Randolph established a 24 hour snowfall record for the state. In ME, Middle Dam received a record 35 inches of snow in 24 hours.

1944

The Greek civil war begins.

On March 14, a single storm brought a record 21.6 inches of snow to Salt Lake City UT.

On April 16, a tornado in GA and SC killed 38 and injured more than 500.

On April 18, CA experienced its worst hailstorm of record. Damage mounted to two million dollars as two consecutive storms devastated the Sacramento Valley destroying the fruit crop.

On June 16, a tornado in Sioux City IA traveled an odd course. It spun in one place for about twenty minutes, made a U- turn, traveled southeast for about three miles, then traveled south, east, north, and finally east again.

On June 23, 4 tornadoes killed 153 persons and caused five million dollars damage in PA, WV and MD. The tornadoes formed during the evening and moved southeast along parallel paths flattening everything in their way. The town of Shinnston WV was leveled, and was left with the majority of the casualties. Until that time it was believed that damaging tornadoes did not travel across mountainous terrain; on August 11, the temperature at Burlington VT soared to an

all-time record high of 101 degrees.

On August 16-23, a hurricane struck Mexico and offshore Grenada and Jamaica. [NHC rank 94/259 with 216 dead]

On September 9, the "Great Atlantic Hurricane" ravaged the East Coast. The storm killed 22 in the Chesapeake Bay area and another 390 in New England. Wartime shipping affected by deadly storm. A powerful early September storm that lashed much of the East Coast. While this hurricane caused 46 deaths in the United States, the worst effects occurred at sea, where it wreaked havoc on World War II shipping. Five ships, including a United States Navy destroyer and minesweeper, two United States Coast Guard cutters, and a light vessel, were sunk by the storm, causing 344 deaths. On September 14, this very destructive hurricane swept across Cape Hatteras and Chesapeake Bay, side swiped NJ and Long Island, and crossed southeastern MA. The hurricane killed more than four hundred persons, mainly at sea. The hurricane destroyed the Atlantic City NJ boardwalk. [NHC rank 71/259 with 390 dead]

On September 19-20, a hurricane struck Mexico. [NHC rank 96/259 with 203 to 303 dead]

On October 13-21, a hurricane hit Cuba and the United States east coast ruining the citrus crop and killing 300. [NHC rank 78/259 with 318 dead]

On December 11, it was Toronto's worst single-day snowfall. A severe winter storm dumped 48 cm of snow on Toronto's downtown, while gale-force winds piled the snow into huge drifts. A total of 57.2 cm fell over two days. In all, 21 people died -- 13 from overexertion. Funerals were postponed, expectant mothers walked to hospitals, and there were no home deliveries of milk, ice or fuel. Of major concern, factories producing war ammunition had to close temporarily.

On December 17-18, Luzon Islands, Phillipines, was hit by a typhoon sinking 3 vessels in Admiral Halseys Third Fleet; in all 790 people died.

1945

Up to 1.5 million Sinti and Gypsy and 6 million Jews are killed in Europe by the Nazi regime and its puppet states.

On February 12, 7 tornados in AL and MS killed 41.

On March 7, the Ohio River crested at 69.2 feet. The Mill Creek barrier dam failed, sending Ohio River water up the already flooded valley. Northern KY counted 12000 people homeless.

On March 29, Providence RI hit 90 degrees to establish a March record for the New England area.

On April 5, the temperature at Eagles Nest NM plunged to 45 degrees below zero to establish an April record for the United States.



On April 12, a tornado swept through AR into MO killing 112.

On September 14-16, a hurricane struck the Bahamas and FL. [NHC rank 252/259 with 26 dead]

On September 17, a typhoon in Japan killed 3000.

On November 30, a two day storm in New England caused great property damage and killed 34.

On December 15, a record December snowstorm buried Buffalo NY under 36.6 inches of snow, with unofficial totals south of the city ranging up to 70 inches. Travel was brought to a halt by the storm.

On December 24-25, the worst ice storm in two decades struck the Carolinas; 34 people died.

Flooding in North Vietnam kills hundreds of thousand of people (perhaps 1 million people).

Between 1945 and 2002, 1002 typhoons are observed in the eastern Pacific (includes Phillipines, Japan, Kore, Formosa, and Chinese mainland, as well as the open ocean). It is about 21 typhoons per year.

1946

Droughts in Hunan China lead to famine and 60000 deaths.

Blizzards and wet summer in UK/Europe. In 1946-1947 in England, it is one of the snowiest winters to date, probably the worst since 1814. Snow fell on the 19th December in Southern England. Then there was a notable mild spell, extremely mild in parts, with 14c being reached by day. Then from the 22nd January, it began! There was continuous snow cover from this date, right up till 17th March! Late January saw 7 inches of snow in South West England and the Scilly Isles (unusual). Early February saw the turn of the Midlands (Southern) and East Anglia, while Northern England, North Wales and Eastern Scotland saw snow in late February. In early March there was a blizzard in England and Wales, with 1ft widely, and 5ft accumulated on the hills! 12th March saw snow for the Border Country.

On January 4-6, 12 tornados in AR, MS, and TX killed 80.

On May 12, floods in Turkey kill 2000.

On May 28, the west branch of the Susquehanna River at Williamsport PA floods 29.6 feet.

On May 29, the north branch of Susquehanna River at Wilkes- Barre PA floods 32 feet.

On June 17, the Windsor's Killer Tornado. The third worst killer tornado in Canadian history reared up across the Detroit River, killing 17 people and demolishing or damaging 400 homes in Windsor and the surrounding county. The tornado also took down 150 barns and farm buildings,

and uprooted hundreds of orchard trees and full-grown woodlots.

On July 16, the temperature at Medford OR soared to an all-time high of 115 degrees to begin a two week heat wave. During that OR heat wave the mercury hit 100 degrees at Sexton Summit for the only time in forty years of records.

On August 15, Saint Louis MO was deluged with a record 8.78 inches of rain in 24 hours.

On October 8, a hurricane struck Flores, Azores, sinking 57 fishing vessels and killing 27.

On October 22, torrential rains struck northern Italy, killing 22.

On October 27, a storm in Sardinia Italy killed 40 and injured 20.

On November 2, a heavy wet snow began to cover the Southern Rockies. Up to three feet of snow blanketed the mountains of NM, and a 31 inch snow at Denver CO caused roofs to collapse.

On November 13, a typhoon hit Visayas Phillipines submerging Cebu City, killing 400, and leaving thousands homeless.

In December, an Ice storm in NY leaves accretion up to 2 inches thick.

On December 10, the temperature at NYC soared to 70 degrees.

1947

On January 30, a tornado swept through 5 states from AL to MO killing 20.

From January 30-February 8, a cold wave in Germany was the worst in 150 years; 258 died from exposure and starvation.

In January/February, very cold with much snow in Britain.

On January - February 8, the worst blizzard in Canadian Railway History. A ten-day blizzard buried towns and trains from Winnipeg to Calgary, causing some Saskatchewan roads and rail lines to remain plugged with snow until spring. Children stepped over power lines to get to school and built tunnels to get to the outhouse. A Moose Jaw farmer had to cut a hole in the roof of his barn to get in to feed his cows.

On February 3, the coldest temperature ever in North America. The temperature in Snag, Yukon dipped to -63°C, establishing Canada's reputation for extreme cold. (-81.4F)

On February 3, the temperature at Tanacross AK plunged to a record 75 degrees below zero.

On March 31, gales in Britain destroy houses and crops.

On April 9, a family of tornadoes swept through Texas, Oklahoma, and Kansas. The worst tornado of the event was an F5 tornado that razed the town of Glazier, Texas. It was never rebuilt. That tornado killed 181 people and injured 970.

On May 28, a storm produced heavy snow across WI, with ten inches reported at Gay Mills. The snow damaged fruit and other trees, and downed power lines. The storm was followed by the coldest weather of the month for much of the High Plains Region and MO Valley. Williston ND reported a low of 21 degrees the morning of the 28th, and the next morning Cheyenne WY reported a morning low of 16 above zero.

On June 1, a tornado in Pine Bluff AR killed 37 and left 500 homeless.

On June 12, a heavy wet snow blanketed much of southern and central WY, and gave many places their heaviest and latest snow of record. Totals included 18.4 inches at Lander, 8.7 inches at Cheyenne, and 4.5 inches at Casper.

On June 22, 12 inches of rain fell in forty-two minutes at Holt MO establishing a world rainfall record.

On July 6, the Chinkiang river in China overflowed killing 1000.

On August 22, a hurricane passed offshore of Grand Isle LA.

On September 15-19, a typhoon kills 2000 in Honshu Japan and leaves 400000 homeless.

On September 19, the eye of a hurricane passed directly over New Orleans, and the barometric pressure dipped to 28.61 inches. The hurricane killed fifty-one persons, and caused 110 million dollars damage. It produced wind gusts to 155 MPH while making landfall over Fort Lauderdale FL two days earlier. [NHC rank 194/259 with 51 dead]

On September 29, floods in Lahore India kill 1000.

On October 7, a typhoon off Hong Kong struck a fishing fleet and 2000 died.

On October 20, a major hurricane struck Bermuda.

On October 24, the Bar Harbor holocaust occurred in ME when forest fires consumed homes and a medical research institute. The fires claimed 17 lives, and caused thirty million dollars damage.

On October 30, the Donora PA smog disaster finally came to an end. For five days an inversion trapped impurities in the lower atmosphere over the Monongahela Valley killing 20 persons, and leaving more than 2000 others sick.

On December 2, a hurricane like storm struck the fishing fleet off the north coast of Portugal killing 165.

On December 26, a typhoon in the northern Phillipines killed 49.

On December 26, a blizzard in NYC with 27 inches with as much as 32 inches reported in the suburbs; 55 died from the storm.

On December 31, a late afternoon tornado touched down 10 miles north of Shreveport LA, and dissipated south of El Dorado AR. The tornado, as much as 400 yards in width, killed 18 persons. It damaged or destroyed two thirds of the structures at Cotton Valley LA.

1948

On January 24-31, the worst ice storms in 2 decades in AR, MS, and SC cause extensive damage and kill 38.

On January 25, a cold wave in Shanghai kills 150 children.

On January 31, a hurricane hit Reunion Island killing 300.

On March 11, record cold followed in the wake of a KS blizzard. Lows of -25 degrees at Oberlin, Healy and Quinter established a state record for the month of March. Lows of -15 at Dodge City, - 11 at Concordia, and -3 at Wichita were also March records.

On March 19, 42 people are killed by tornadoes in 9 states stretching from TX to NY.

On March 20, a tornado destroyed 50 airplanes at Tinker Air Force Base in Oklahoma.

On March 24, the city of Juneau received 31 inches of snow in 24 hours, a record for the AK capitol.

On March 26, a tornado in IN kills 20.

On April 18, the Ohio River crested at 64.8 feet; West Newport OH prayed its 10-foot sandbag barrier would hold out. On old Front Street in Covington, water seeped into the second floor of homes. Water climbed to just a few feet below the Roebling Suspension Bridge.

In May-June, it was BC's worst flood of the century. BC's Fraser River overflowed, drowning 10, inundating 22200 hectares , destroying 2300 homes and forcing 16000 to flee. Row boats were the only means of transportation in much of the Fraser Valley, and for three weeks Vancouver had no rail connection with the rest of Canada.

On May 22-24, a hurricane struck the Dominican Republic. [NHC rank 162/259 with 80 dead]

On May 30, twenty carloads of glass were needed in Denver CO to replace that destroyed by a severe hailstorm.

On May 31, in OR, a huge flood drove 18,500 people from their homes.

On June 17, a typhoon hits China near Tungting Lake and 190 die.

On June 20, in Foochow China, a flood kills 1000 and leaves 300000 homeless. It was the worst flood there since 1918.

On July 4, a windstorm in Shanghai killed 34 and injured over 100.

On August 7, in China: a Yangtze River flood left three million people homeless and killed 1000.

On August 24-30, a heat wave in NYC set a 50 year record above 99 degrees and 33 died.

On September 3-4, a hurricane hit Timbalier Bay LA.

On September 6, storms near Turin Italy did heavy damage and killed 80.

On September 13, a hurricane struck Bermuda.

On September 17, a typhoon hit Ichinoseki Japan killing 500 and causing great damage over a wide area.

On October 7, a hurricane struck Bermuda; gusts to 110 MPH.

On November 17-20, the November blizzard in the Southwest United States (CO, KS, and Neb) killed 29.

On November 22, a cyclone hit Bombay India stopping power and transportation and killing 35.

On December 19-20, the Northwest United States was blanketed by a 19.5 inch blizzard, the third highest on record.

On December 27, a cold wave in Shanghai killed 43 from exposure.

1949

The Peoples Republic of China is established.

On January 1, snowfall in Tehran Iran left 73000 homeless and killed 60.

On January 1-14, a blizzard began over the Northern Rockies and the Great Plains. The storm produced the most adverse weather conditions in the history of the west; the blizzard results in

about 200 deaths, 125000 sheep, and 25000 cattle.

For January, it is the coldest month ever at many stations in Rockies, Plateau , and southwest United States.

On January 3, a tornado in AR kills 57.

On January 10, snow was reported at San Diego CA for the first and only time since 1882. Snow was noted even on some of the beaches in parts of the Los Angeles metropolitan area. Burbank reported 4.7 inches, and Long Beach and Laguna Beach received one inch of snow.

On January 11, about 1 inch snow in vicinity of Los Angeles.

On January 22-28, a n ice storm struck OK, TX, and WI leaving 28 dead.

On January 31, the temperature at San Antonio TX plunged to a record low of one degree below zero. Helena MT reached 42 degrees below zero.

On March 1, gales in Ruhr Germany devastated the region and killed 30.

On March 24-26, 42 tornados in IL, IN, IA, KS, KY, MO, Neb, and OK kill 57. Girardeau MO had 23 victims.

On June 20, a typhoon hit Kyushu Japan killing hundreds.

On July 17, the Yangtze in China overflowed killing 57000 and leaving 20 million homeless. They are the worst floods since 1931.

On July 23, a typhoon hit the Shanghai-Okinawa region leaving 67 dead and 40000 buildings damaged.

On July 30, the state record for CT was established when the town of Greenville registered an afternoon high of 102 degrees.

On August 7, a typhoon hit the Pootung-Nanhwei area of China killing 1000.

On August 26, a hurricane made landfall at Delray Beach FL. Winds reached 153 MPH at the Jupiter Lighthouse before the anemometer failed. The hurricane caused 45 million dollars damage to crops, and also caught the GA and SC coast resulting in another two million dollars damage.

On September 11, an early snowstorm brought 7.5 inches to Helena MT. In ME, a storm drenched the town of New Brunswick with 8.05 inches of rain in 24 hours, a state record.

On October 4, a storm hit Naples Italy killing 32.

On October 17-19, in Guatemala, 40000 people are killed in a devastating flood caused by a hurricane.

On October 27, a cyclone kills 1000 in southeast India and leaves 50000 homeless.

On October 31-November 2, a typhoon kills 1000 in Phillippines and leaves 20000 homeless. Also Typhoon Alyn strikes Guam.

On December 8, the east coast of Korea is wrecked by a typhoon and thousands die.

1950

The Korean War 1950-1953.

On January 12-14, a great snowfall in the western United States with winds up to 72 MPH at Tatoosh Island OR leaves 75 dead.

On January 29, snow and cold in the Himalayas kills 500 refugees.

On February 13, tornados from AR to LA kill 31 and injure 200.

On March 27, a three day snowstorm in the High Plains Region finally came to an end. The storm produced 34 inches of snow in 24 hours at Dumont, located in the Black Hills of SD, and a total of 50 inches.

On May 5, the Red River in Canada overflows and floods Winnipeg causing 107000 of the 330000 residents to flee. Described as the greatest flood disaster in Canadian history, the Red River crested at 9.2 m above normal near Winnipeg. While 100000 people were evacuated from Southern Manitoba, miraculously only one drowning was reported. Losses included damage to 5000 homes and buildings, totaling \$550 M in property losses. . The Manitoba government decided to construct the Winnipeg Flood way to forestall future flooding.

On July 8, the town of York Neb was deluged with 13.15 inches of rain in 24 hours to establish a state record.

On August 14, a flood in Anhwei Province China kills 500 and leaves 10 million homeless.

On August 25-31, a hurricane struck Cuba and then AI. [NHC rank 253/259 with 26 dead]

On August 27, a tropical storm ripped the western provinces of Chile killing 27.

On September 2, the temperature at Mecca CA soared to 126 degrees to establish a United States record for the month of September. The low that morning was 89 degrees.

On September 3, a typhoon devastated a huge area of Japan; Kobe- Osaka-Kyoto are hardest hit

with 100000 homeless and hundreds (508) dead.

On September 5, Hurricane Easy produced the greatest 24 hour rainfall in United States weather records. The hurricane deluged Yankeetown, on the upper west coast of FL, with 38.7 inches of rain.

On September 20, gales and rains in East Punjab India kill 70 and leaves 200000 homeless.

On September 24, a smoke pall from western Canada forest fires covered much of the eastern United States Daylight was reduced to nighttime darkness in parts of the Northeast. The color of the sun varied from pink to purple, blue, or lavender. Yellow to grey-tan was common.

On September 26, residents of the northeastern United States observed a blue sun and a blue moon, caused by forest fires in British Columbia.

On October 16, a storm hit La India Nicaragua killing 23.

On October 17, small but powerful Hurricane King struck Miami FL. The hurricane packs winded to 122 MPH, with gusts to 150 MPH. Hurricane King then moved up the FL peninsula to GA. Four persons were killed and damage was 28 million dollars.

On October 31, unseasonably warm weather prevailed in the central United States for Halloween. The temperature soared to 83 degrees at Minneapolis MN, their warmest reading of record for so late in the season.

On November 20, a gale in NYC with 62 MPH gusts killed 44 and caused 407000 buildings to lose power.

On November 24, the temperature at Chicago IL dipped to 2 below zero to equal their record for the month established on the 29th in 1872. On the first of the month that year Chicago established a record high for November with a reading of 81 degrees.

On November 25-26, the Great Appalachian storm brought snow and hurricane-force winds to 22 states and claimed 383 lives.

On November 27, a cold wave in Mexico City, Mexico, lead to 27 deaths.

On December 2, a late season tornado killed four persons in Madison County and Bond County, east of St Louis MO. 3 tornadoes touched down in Illinois.

In December an ice storm from New England to SC causes considerable damage to trees and kills 3 in New England.

1951



On January 4, a tornado in Comoro Islands near Madagascar kills 500.

On January 28-February 4, the greatest ice storm of record in the United States produced glaze up to four inches thick from TX to PA causing twenty-five deaths, 500 serious injuries, and 100 million dollars damage. TN was hardest hit by the storm. Communications and utilities were interrupted for a week to ten days. Also the temperature at Taylor Park Dam plunged to 60 degrees below zero, a record for the state of CO.

On February 8, a freak storm struck from the Bay of Biscay to Great Britain killing 22.

On March 10-14, the state of IA experienced a record snowstorm. The storm buried IA City under 27 inches of snow; 23 die.

On May 14, a tornado in Faridpur Pakistan (E. Bengal) killed 100.

On May 29, a massive hailstorm, from Wallace to Kearney County in KS, caused six million dollars damage to crops.

On June 24, twelve inches of hail broke windows and roofs, and dented automobiles, causing more than fourteen million dollars damage. The storm plowed 200 miles from Kingman County KS into MO, with the Wichita area hardest hit. It was the most disastrous hailstorm of record for the state of KS.

On July 2-19, floods in KS kill 41 and leave 200000 homeless; they are the worst floods in United States history, according to Trager.

On July 12, the Kaw River flood occurred. The month of June that year was the wettest of record for the state of KS, and during the four days preceding the flood much of eastern KS and western MO received more than ten inches of rain. Flooding in the Midwest claimed 41 lives, left 200 thousand persons homeless, and caused a billion dollars property damage. KS City was hardest hit. The central industrial district sustained 870 million dollars property damage; on August 1-18, a heat wave roasted TX leading to 42 deaths.

On August 15-20, Hurricane Charlie struck Jamaica killing 154 and leaving thousands homeless; it later killed 50 in Mexico. [NHC rank 87/259 with 259 dead]

On August 19, the Liang river in Mukden Manchuria overflowed killing 1800.

On August 21, a Gulf hurricane hits Tampico Mexico with gusts to 158 MPH; 38 die.

On August 28, a flood kills 500 in Manchuria.

On October 14, a series of typhoons in Kyushu Japan kills 448.

On October 21, a week of storms in Calabria Italy kills 109 and leaves thousands homeless.

On November 6, snow fell from the TX panhandle to the Lower Great Lakes, leaving record totals of 12.5 inches at Saint Louis MO, and 14.1 inches at Springfield MO. Other heavier snowfall totals included 20 inches at NV MO, 13.5 inches at Sedan KS, 13 inches at Decatur IL, and 10 inches at Alva OK. In the Saint Louis area, up to 20 inches was reported in WA County.

On November 22, a typhoon in the Philippines kills 60.

In late November, in England, a noteworthy snowfall of 1 ft in Wales and the Southern Midlands with drifts of 30 feet. Some other falls of 12 inches at the end of this period.

On December 9-10, a typhoon kills 724 in Philippines.

On December 25, a typhoon rips apart Epi Island, New Hebrides and kills 100.

On December 27-30, a hurricane like storm struck Europe from the Bay of Biscay to Great Britain, killing 63.

1952

Drought in southern plains of United States.

On January 15, a 6 day snowstorm was in progress in the western United States. The storm produced 44 inches of snow at Marlette Lake NV, 52 inches at Sun Valley ID, and 149 inches at Tahoe CA, establishing single storm records for each of those three states. In addition, 24 hour snowfall totals of 22 inches at the University of NV, and 26 inches at Arco ID, established records for those two states. The streamliner, 'City of San Francisco' was snowbound in the Sierra NV Range, near Donner Summit.

On January 29, a typhoon swept across the Fiji Islands, killing 30.

On February 2, the only tropical storm of record to hit the United States in February moved out of the Gulf of Mexico and across southern FL. It produced 60 MPH winds, and two to four inches of rain.

On February 4-13, a 9 day snowstorm hits western Europe and 90 die.

On February 28, an intense storm brought coastal sections of southeastern MA to a halt, stranding 3000 motorists on Lower Cape, and leaving 10000 homes on the Cape without electricity. Winds gusting to 72 MPH created mountainous snowdrifts of the 18 inches of snow which buried Nantucket and Hyannis.

On March 21-22, a tornado outbreak in MS Valley kills 724; 31 tornadoes occurred across AR, TN, MO, MS, AL and KY.

On June 16, a heat wave in the eastern United States sent temperatures above 100 in 17 states for

5 days; 160 died.

On June 22, a typhoon in Kyushu Japan killed 23.

On June 24, thunderstorms produced a swath of hail 60 miles long and 3.5 miles wide through parts of Hand, Beadle, Kingsbury, Miner and Jerauld counties in SD. Poultry and livestock were killed, and many persons were injured. Hail ten inches in circumference was reported at Huron SD.

On July 7, thunderstorms helped the temperature at Key West FL to dip to 69 degrees, to equal their July record established on the first of July in 1923.

On July 12, rainstorms devastated western Japan, killing 83.

On July 24, the temperature at Louisville GA soared to 112 degrees to establish a state record.

On July 28, a severe storm with hail up to an inch and a half in diameter broke windows, ruined roofs, and stripped trees of leaves near Benson AZ. The temperature dropped to 37 degrees, as hail was three to four inches deep, with drifts 46 inches high.

On August 12, Petatlan Mexico suffered from a 5 day heat wave and 30 died.

On August 15, a heavy rains and floods kill 34 people in Exmoor, England and destroyed 93 homes.

On September 21, a sudden cloudburst in Tebessna, Africa killed 25.

On September 23, a hurricane in Petatlan Mexico killed 113.

On October 22, a typhoon kills 1000 in Luzon Phillippines.

On Oct 23-25, a hurricane struck Cuba. [NHC rank 54/259 with about 600 dead].

On November 14, a typhoon in Formosa kills 67.

On November 30, a cyclone in Madras State India kills 350 and leaves 200000 homeless.

In December, the Great Smog of London, last 4 days and leads to 12000 deaths (or 4703). The deaths probably arose from a flu epidemic at the time and not the smog.

1953

Drought in southern plains of United States.

On January 8-11, a severe ice storm in the northeastern United States produced up to four inches

of ice in PA, and two to three inches in southeastern NY. In southern New England the ice coated a layer of snow up to 20 inches deep. The storm resulted in 49 deaths.

On January 31-February 1, severe winter storms in North Sea with 1835 dead and 100000 homeless. It is the worst disaster there since 1421.

On February 20, a snowstorm in Neb, SD, IA and MN produced drifts ten feet high which derailed trains; 24 died.

On March 3, snow was reported on the island of Oahu in HI.

On March 13, 17 tornados in AR, MS, OK, TX, and TN leave 20 dead.

On March 23, a cyclone struck Australia.

On April 5, 4 violent tornadoes crossed Bermuda.

On April 17, one of the few severe hailstorms accompanied by snow, sleet, glaze, and rain, pelted parts of Kay, Osage, Creek, Tulsa, WA, and Rogers Counties in northeastern OK late in the day. Nearly 10000 insurance claims were filed.

On April 30, a tornado 300 yards in width leveled homes in Warner- Robins GA.

On May 11, a Waco TX tornado kills 114 (The Tornado by John Weems describes this storm). An F5 tornado smashed into downtown Waco, Texas, killing 114 people. Over 200 businesses were destroyed. Damage reached \$41 million.

On May 23, the temperature at Hollis OK soared from a morning low of 70 to an afternoon high of 110 to establish a state record for the month of May.

On May 29, a tornado, 600 yards wide at times, killed two persons on its 20 mile path from southwest of Fort Rice ND into Emmons County.

On June 6, a typhoon in western Japan kills 29.

On June 8-9, the Flint Tornado and Worcester Tornados occurred. The last single tornado to kill over 100 people struck the north side of Flint, Michigan. 115 were killed and 844 injured on June 8. This weather system would continue eastward spawning another tornado that would become the deadliest New England twister on record. It smashed through eastern Massachusetts, killing 94 people, 60 in Worcester alone on June 9. Over 4000 buildings were damaged or destroyed. New England's most deadly tornado left 90 dead and 1300 injured. The tornado path was nearly 1 mile wide and ran for 46 miles.

On June 11, a record heat wave in Deccan India kills hundreds.

On June 23, a hail storm 200 miles long in KS caused extensive damage to crops and property.

On June 25, the temperature at Anchorage soared to 86 degrees, their hottest reading of record.

On June 26, 101.1 inches of rain falls on Honshu Japan; 134 die.

On July 8, the temperature rose to 111 in Punjab, Pakistan; 111 die.

On July 27, 22 inches of hail fell northeast of Dickinson ND.

On August 22, rain and wind kills 33 in Chile.

On September 3, the temperature at Erie PA reached 99 degrees, and Stroudsburg PA established a state record for September of 106.

On September 5, Hurricane Carol passed near Bermuda; winds of 50-60 MPH.

On September 17, Hurricane Edna struck Bermuda.

On September 25, a typhoon in Nagoya and Osaka, Japan, kills 276 and leaves 1 million homeless; 1300 also died in Vietnam.

On November 8, residents of NYC suffered through ten days of smog resulting in 200 deaths.

On November 13, strong southeasterly winds associated with a Pacific cold front reached 70 MPH at Sacramento CA to equal their all- time record.

On November 17, the temperature at Minneapolis MN reached 71, to establish a record for so late in the autumn.

On December 5, a tornado killed 38 and injured 270 in Vicksburg MS.

Typhoon Alice does extensive damage on Guam (date unknown).

1954

On January 3-10, a Baltic storm caused severe blizzards in central Europe with 80 deaths.

On January 9, at Northice, Greenland, a record low temperature for Greenland of -87F was set.

On January 14, a snowstorm and cold in the northeastern United States.

On January 24, the temperature at Rogers Pass MT plunged to 70 degrees below zero to establish a new record for the lower United States.

On February 2, a week long cold wave in Europe left 100 dead.

On February 19, high winds across the southern half of the Great Plains, gusting to 85 MPH, caused the worst dust storms since the 1930s.

On February 20-22, a cyclone in eastern Australia killed 26.

On March 6, FL received its greatest modern-day snowfall of record, with 4.0 inches at the Milton Experimental Station. Pensacola FL equaled their 24-hour record with 2.1 inches of snow.

On March 12, a blizzard raged from eastern WY into the Black Hills of western SD, while a severe ice storm was in progress from northeastern Neb to central IA. The ice storm isolated 153 towns in IA. Dust from the Great Plains caused brown snow, and hail and muddy rain over parts of WI and MI.

On March 29-30, a cold wave in 26 states in the central United States.

On March 31, the temperature at Rio Grande City TX hit 108, which for 30 years was a United States record for the month of March

On May 1, the temperature at Polebridge MT dipped to 5 degrees below zero to set a state record for May.

On June 21, a severe hailstorm struck Wichita KS and vicinity causing nine million dollars damage.

On June 23, a typhoon hit Japan killing 26.

On June 29, Hurricane Alice dumped as much as 27 inches of rain on the Lower Rio Grande Valley of TX. The Rio Grande River at Laredo reached a level 12.6 feet above its previous highest mark. [NHC rank 189/259 with 55 dead]

On July 15, the temperature at Balcony Falls VA soared to 110 degrees to establish a state record.

On August 1, Mount Rainier in WA State was still covered with 16 inches of snow at the 5500 foot level.

On August 1, the Yangtze river in China overflows killing 40000 and leaving 10 million homeless. The Yangtze floods at a record height of 96.06 feet.

On August 2, severe thunderstorms produced golf ball size hail for thirty minutes in north central KS.

On August 10, at Shigatse, Tibet, floods kill 500 to 1000 people.

On August 17, a typhoon in Kyushu Japan left 30 dead.

On August 25-31, Hurricane Carol swept across eastern New England killing 60. [NHC rank 181/259 with 60 dead]

On September 10-13, Hurricane Edna hit New England leaving 22 dead.

On September 12, a 100 MPH typhoon hit Kyushu Japan killing 80.

On September 17, the Great Iran flood, with 2000 dead.

On September 21, the temperature at Deeth NV soared from a morning low of 12 F to a high of 87, a record daily warm-up for the state.

On September 25-27, Hurricane Gilda struck Honduras. [NHC rank 240/259 with 29 dead]

On September 26, a typhoon struck Hokkaido, Japan, killing 1600.

On October 5-18, Hurricane Hazel kills 410 in Haiti, 99 in United States, and 85 in Canada. Leaving a nightmare of destruction, Hazel dumped an estimated 300 million tonnes of rain on Toronto, causing lost streets, washed out bridges and untold personal tragedy. In all, 85 people died -- some bodies washing up on the shores of Lake Ontario in New York State days later. [NHC rank 38/259 with 1000 dead mostly in the Caribbean]

On October 11, a deluge of 6.72 inches of rain in 48 hours flooded the Chicago River.

On October 16, the Youghiogheny River at Connellsville PA floods at 22.0 feet; the Monongahela River at Charleroi PA floods 21 feet.

On November 26-30, a great windstorm hits southern England leading to 58 deaths; the worst windstorm there in 30 years.

On December 8, a tornado struck west London, England, leaving a track 100-400 yards wide for 9 miles.

In December, in Aberdeen, Scotland, seeing 2ft of snow.

On December 29, Fort Scott KS was buried under 26 inches of snow in 24 hours to establish a state record.

1955

On January 1-7, blizzards and cold waves in western Europe kills 39.

On January 6, a storm in Leyte Phillippines leaves 23 dead and 2000 homeless.

On February 1, a tornado kills 29 in MS.

On February 18-20, severe blizzards in ND, SD, Neb, and WY kill 23.

On March 20-25, heavy snow from CO to MT kills 47.

On March 23, tornadoes kill 47 in eastern and mid-western states.

On April 3, record snows fell in north central WY and south central MT. Billings MT received a storm total of 42.3 inches, and on the 4th reported a record snow depth of 35 inches. Sheridan WY established a 24 hour snowfall record of 26.7 inches.

A hot July and August in northeast United States.

On May 19, Lake Maloya NM received 11.28 inches of rain in 24 hours to establish a state record.

On May 25, two tornadoes struck the town of Blackwell OK killing 18 and injuring 500.

On May 25, a tornado virtually obliterated the small community of Udall KS killing 111 and injuring 270.

On May 26, Santa Catarina Brazil is torn apart by a tornado.

In June, north India is scorched by a heat wave; 23 die.

On July 17, heavy rains in South Korea kill 21.

On August 4-18, hurricanes Connie and Diane produced as much as 19 inches of rain in the northeastern United States. forcing rivers from VA to MA into a high flood. Westfield MA was deluged with 18.15 inches of rain in 24 hours, and at Woonsocket RI the Blackstone River swelled from 70 feet in width to a mile and a half. CT and the DE Valley were hardest hit; flooding claimed 187 lives. [Hurricane Diane NHC rank 105/259 with 200 dead] [Hurricane Connie NHC rank 259/259 with 25 dead]

On August 19, the Delaware River at Riegelsville PA floods 38.9 feet. Also on August 19, the Lehigh River at Bethlehem PA floods 23.4 feet.

On September 1, the temperature at Los Angeles CA soared to an all- time high of 110 during an 8 day string of 100 degree weather; 107 died from the heat wave.

ON September 11-16, Hurricane Hilda hit Cuba and Mexico. [NHC rank 79/259 with 304 dead]

On September 22-28, Hurricane Janet in Mexico and the West Indies kills 750. [NHC rank 49/259 with 681 dead]



On October 7-12, floods kill 1700 in Pakistan and India and leave 100000 homeless.

On October 14-17, a hurricane hits the eastern United States, particularly CT, killing 44.

On November 11, an early arctic outbreak set many November temperature records across OR and WA. Readings plunged to near zero in western WA, and dipped to -19 in eastern WA.

On November 18, an early season cold snap finally came to an end. Helena MT experienced 138 consecutive hours of sub-zero temperatures, including a reading of -29, which surpassed by 7 degrees their previous record for the month of November. Missoula MT broke their November record by 12 degrees with a reading of -23, and Salt Lake City UT smashed their previous November record of zero with a reading of -14.

On December 4, a 3 day rainstorm in Madras India killed 30 and left thousands homeless.

On December 28, Anchorage AK was buried under 17.7 inches of snow in 24 hours, a record for that location.

On December 30, Anchorage AK reported an all-time record snow depth of 47 inches.

In New South Wales Australia, 5 rivers flood killing 50 people and making 40000 homeless (date unknown).

1956

The largest iceberg ever reported was sighted by the USS Glacier, a United States Navy icebreaker, about 150 miles west of Scott Island. This berg was 60 miles wide and 208 miles long, more than twice the size of CT.

Heavy rains in Australia near Hay and Balranald cause a continuous sea 40 miles wide between the two towns (date unknown).

On January 8-10, an ice storm in NY and New England kills 40 and causes widespread damage.

On January 24, 38 inches of rain deluged the Kilauea Sugar Plantation of HI in 24 hours, including 12 inches in just one hour.

On February 1-29, snow and bitter cold besieged Europe from England to Siberia causing 907 deaths.

On February 1-8, a record snowstorm in NM and west TX began on Ground Hog's Day. The storm produced 15 inches of snow at Roswell NM, and up to 33 inches in the TX Panhandle.

On March 9, a whopping 367 inches of snow was measured on the ground at the Ranier Paradise Ranger Station in WA. The snow depth was a state record and the second highest total of record

for the continental United States.

On March 9, the Allegheny River at Kittaning floods 26.0 feet.

On March 19, the second heavy snowstorm in just three days hit Boston. Nearby Blue Hill received 19.5 inches contributing to their snowiest March of record; 162 died from the storm.

On April 2-3, a tornado outbreak in 13 states from MI to TX resulted in 45 deaths.

On April 7, a cyclone in Portuguese East Africa wiped out Memba and killed 107.

On April 15, a tornado near Birmingham AL wrecked a community and killed 22.

On June 1, a cyclone in India kills 480 and leaves 40000 homeless.

On July 4, a world record for the most rain in one minute was set at Unionville MD with a downpour of 1.23 inches.

On July 6, a typhoon hit the Phillipines killing 39.

On August 1, a typhoon kills 1960 in Hangchow China and destroys 30000 homes.

On August 7, another typhoon in China kills 2161 in Chekiang.

On August 11-12, Hurricane Betsy struck Puerto Rico and Guatemala. [NHC rank 227/259 with 34 dead]

On August 17-18, a typhoon hits Japan and Okinawa killing 30.

On September 8-10, Typhoon Emma kills 77 from the Phillipines to Japan.

On September 12, Hurricane Dora struck Mexico. [NHC rank 249/259 with 27 dead]

On September 17, a cyclone in Nemours Algeria kills 21.

On September 22, a hurricane in Grenada kills 250 and leaves 40000 homes destroyed.

On September 24, Hurricane Flossy completely flooded Grand Isle LA; it killed 15 in LA.

On September 26-27, Typhoon Harriet struck Japan killing 23.

On October 29, a violent tornado, or series of tornadoes, moved along a path more than 100 miles in length from south of North Platte Neb into Rock County Neb. It was an unusually late occurrence so far north and west in the United States for such a storm.

On October 30-31, heavy rainstorms in Honshu Japan leave 82 dead.

On November 12, a typhoon hit Vietnam killing 56.

On December 2-8, a typhoon deluges eastern Java and kills 30.

On December 8-9, a typhoon in Jakarta kills 45 and leads to landslides that destroy 7500 homes.

On December 12-16, an ice storm in New England, NJ, and NY leaves 29 dead.

1957

USSR launches the first satellite called Sputnik I.

On January 23-31, a severe ice storm in KS, OK, and TN leaves 23 dead.

On March 22-25, blizzards in KS, NM, and OK kill 40.

On April 2-6, tornados and snowstorms struck the Southwest United States killing 45.

On April 19-27, tornados and rainstorms in TX killed 11.

On May 11, a tornado in East Pakistan capsized 4 river boats killing 50.

On May 16, a tornado killed 21 in Silverton TX.

On May 20, a tornado touched down to the southwest of Kansas City and traveled a distance of 71 miles cutting a swath of near total destruction through the southeastern suburbs of Ruskin Heights and Hickman Mills. The killed 45, and left hundreds homeless. It was the worst weather disaster of record for Kansas City.

On May 25-27, torrential rains hit Hong Kong killing 23.

On June 15, East Saint Louis was deluged with 16.54 inches of rain in 24 hours, a record for IL.

On June 23, a few miles west of Fort Stockton TX, softball size hail injured 21, mostly farm laborers. Some livestock were killed.

On June 25-28, Hurricane Audrey smashed ashore at Cameron LA drowning 390 persons in the storm tide in TX, LA and MS. Audrey left only a brick courthouse and a cement-block icehouse standing in Cameron. Audrey was the deadliest June hurricane in United States history. [NHC rank 56/259 with 550 dead]

On June 27, Typhoon Virginia hit Japan and Formosa killing 86.

On July 2-8, a heat wave in 4 countries in Europe left 340 dead.

On July 13-28, Helsinki had continuous storms with 25 deaths.

On July 14, hail, with some stones up to an inch in diameter, covered the ground to a depth of three inches ruining crops in the Bath area of NH.

On July 25-28, Kyushu Japan had torrential rains killing 513.

On September 21, Hurricane Carrie struck southwest of the Azores. [NHC rank 163/259 with 80 dead]

On September 26, a 146 MPH typhoon hit Okinawa killing 1269.

On October 14, flood waters roared through a migrant labor camp near the town of Picacho AZ flooding fifty cabins and a dozen nearby homes. 250 migrant workers lost their shelters. The month was one of the wettest Octobers in AZ weather history.

On October 18, a hailstorm struck Suleimaniyah Iraq, killing 27.

On October 21, the second in a series of unusual October storms hit southern CA causing widespread thunderstorms. Hail drifted to 18 inches in East Los Angeles.

On November 18, a tornado, 100 yards in width, traveled a nearly "straight as an arrow" 27-mile path from near Rosa AL to near Albertville AL, killing 3.

On November 19, 19 inches of snow covered the ground at Cresco IA, a November record snow depth for the state.

On November 22, extremely destructive Santa Ana winds blew from Oxnard to San Diego and inland parts of southern CA. The high winds produced a 28000 acre brush fire on a 40-mile front west of Crystal Lake.

On November 30, lee slope winds enhanced by Hurricane Nina gusted to 82 MPH at Honolulu, HI, a record wind gust for that location. Wainiha, on Kauai, was deluged with 20.42 inches of rain.

On December 18, a tornado swept across Jackson County, Williamson County and Franklin County in IL killing 11.

On December 19, a tornado, 200 yards in width, killed 2 along its 15-mile path in southwestern AR.

On December 27, a storm hit Bahrein Island killing 20.

Typhoon Lola strikes Guam (date unknown).

1958

On January 26-27, storms off the east coast of Japan wrecked 7 ships causing 271 deaths.

On February 12, snow blanketed northern FL, with Tallahassee reporting a record 2.8 inches. A ship in the Gulf of Mexico, 25 miles south of Fort Morgan AL, reported zero visibility in heavy snow on the afternoon of the 12<sup>th</sup>.

On February 7-17, the greatest snowstorm of the mid 20th century struck the northeastern United States. The storm produced 30 inches of snow in interior New England, including more than 19 inches in 24 hours at the Boston Airport. The same storm produced up to three feet of snow in the Middle Atlantic Coast Region, with 14 inches at DC, and 15.5 inches at Baltimore MD. The storm resulted in 43 deaths and 500 million dollars damage over the Middle Atlantic Coast States.

On March 19-22, a blizzard hit NY, PA, and VA causing 63 deaths.

On April 15, a tornado 300 yards in width skipped along a five mile path near Frostproof FL. A 2500 gallon water tank was found one mile from its original position (it is not known how much water was in the tank at the time).

On April 21, portions of MT were in the midst of a spring snowburst. Snowfall amounts ranged up to 55 inches at Red Lodge, 61 inches at Nye Mine, and 72 inches at Mystic Lake.

On May 27-June 3, a heat wave in west Bengal, Behar, and Orissa India caused 100 deaths.

On June 4, a tornado near Colfax WI killed 30 and injured 350.

On June 16, a Pacific storm hit Caxaca State Mexico wrecking 21 fishing vessels and killing 200.

On June 18, hailstones up to four inches in diameter killed livestock as a storm passed from Joliet to Belfry in Carbon County MT.

On June 28, a heat wave in Saudi Arabia struck 600,000 pilgrims at Mecca causing 35 deaths.

On July 17, a typhoon hit Japan killing 24.

On August 30-September 6, Hurricane Ella struck Haiti and Cuba. [NHC rank 221/259 with 37 to 39 dead]

On September 22-23, Typhoon Vera in Japan, with 5000 (or 681 in Tokyo according to JP) dead on September 21; the same typhoon kills 679 in Honshu.

On September 28, Hurricanes Helene and Ilsa graze Bermuda.

On November 15-19, blizzards and gales struck the Rocky Mtn. States killing 34.

On November 16, more than six inches of snow fell at Tucson AZ.

On December 7 to 11, in Oswego, NY, 33 inches of snow fell during the first 22 hours of a storm that dumped a total of 66.7 inches of snow on the city.

On December 20-21, heavy rains around Rio de Janeiro Brazil left 46 dead.

On December 26-27, coastal storms off Japan surprised fisherman killing 60.

On December 28, Albuquerque NM received 14.2 inches of snow to establish a 24 hour record.

1959

In February, a severe ice storm in New England.

On February 10, a tornado struck residential areas of St. Louis MO, killing 22 and leaving 5000 homeless.

On February 13-19, some of the higher elevations of CA were in the midst of a five day storm which produced 189 inches of snow, a single storm record for North America.

On February 16, there is a deadly snowstorm in St. John's, Newfoundland, Canada. A snowstorm with strong winds created 7-meter drifts, blocking main streets and causing six casualties. Another 70000 Newfoundlanders were left without power, crippled telephone service, and blocked highways, streets and railways. Scores of motorists spent the night at homes along the highways after drifts buried their stalled cars.

On February 28, a windstorm swept Bahrein killing 500.

On March 7, a heavy snowstorm in the mid-west United States caused multiple accidents and 46 deaths.

On March 11-13, snowfall of 20 inches fell from NY to New England and 93 died.

On March 26-29, torrential rains in Malagache Republic killed 100 and left 100000 homeless.

On April 24, cyclones in Madagascar killed 305 and left 83200 homeless.

On June 3, thunderstorms in northwestern KS produced up to eighteen inches of hail near Salden during the early evening. Crops were completely destroyed. Hail fell for a record eighty-five minutes. The temperature dropped from near 80 degrees prior to the storm to 38 degrees at the

height of the storm.

A hot June and July in Yuma and southwestern United States.

On June 19-20, there is a fishing fleet disaster off Esuminac, New Brunswick. More than 30 fishermen drowned in the worst storm disaster ever to hit the Gulf of St. Lawrence fishing fleet. Twenty-two salmon boats sank by a sudden, smashing north-easterly gale. [NHC rank 233/259 with 33 dead]

In July, in China, floods lead to 2 million dead.

On July 11, heavy rains in southern Korea leave 57 dead.

On August 14, Typhoon Georgia hits central Japan killing 137.

On August 20, Typhoon Iris kills 2334 on Fukien coast China.

On September 17-19, Typhoon Sarah hits Japan and South Korea, killing 699.

On September 26-27, a Typhoon Vera kills more than 4400 in Honshu Japan; it has 160 MPH winds; 1 million are left homeless.

On September 27, a tornado 440 yards in width traveled twenty miles from near Hollow OK to western Cherokee County KS. Although a strong tornado, it was very slow moving, and gave a tremendous warning roar, and as a result no one was killed.

On September 29, a storm produced 28 inches of snow at CO Springs CO.

On September 30, three tornadoes spawned by the remnants of Hurricane Gracie killed 12 persons at Ivy VA.

In the autumn, a hurricane kills more than 1000 in Jalisco and Colima Mexico.

In the autumn, a cyclone from the Bay of Bengal left 100000 homeless in the Ganges Delta, India.

On October 2, a tornado struck the town of Ivy VA (located near Charlottesville). Eleven persons were killed, including ten from one family.

On October 16, Typhoon Charlotte hits Okinawa killing 28.

On October 27, a Pacific hurricane struck Manzanillo Mexico killing 1452 with huge mud slides.

On November 12, between Noon on the 11th and Noon on the 12th, a winter storm buried Helena MT under 21.5 inches of snow, which surpassed their previous 24 hour record by seven

inches.

On November 16, the most severe November cold wave in United States history was in progress. A weather observing station located 14 miles northeast of Lincoln MT reported a reading of 53 degrees below zero, which established an all-time record low temperature for the nation for the month of November. Their high that day was one degree above zero.

On December 6-10, storms struck England and Europe, killing 132.

1960

For 1960-1970, the driest decade in Chile since the 1770s and 1790s.

On February 12, a snowstorm in the Deep South produced more than a foot of snow in LA, MS and AL; 43 die from the storm.

On March 1, a typhoon hit Mauritius Island killing 42 and leaving 68000 homeless.

On March 5, eastern MA's greatest March snowstorm of record began to abate. The storm produced record 24 hour snowfall totals of 27.2 inches at Blue Hill Observatory, 17.7 inches at Worcester, and 16.6 inches at Boston. Winds gusted to 70 MPH.

On March 9, a winter storm produced a narrow band of heavy snow from north central KY into VA and the mountains of NC. Snowfall amounts ranged from 12 to 24 inches, with drifts up to 11 feet high in western VA.

On March 14, northern GA was between snowstorms. Gainesville GA received 17 inches of snow during the month, and reported at least a trace of snow on the ground 22 days in March. Snow was on roofs in Hartwell GA from the 2nd to the 29<sup>th</sup>.

On May 5-6, tornados and storms in OK kill 30.

On May 18, Salt Lake City UT received an inch of snow. It marked their latest measurable snowfall of record.

On May 22, Typhoon Lucille hits the Phillipines killing 113.

On June 1-21, a heat wave in northern India kills 395.

On June 9, 135 MPH Typhoon Mary struck Hong Kong killing 30.

On June 27, Typhoon Olive hit Luzon Phillipines killing 104 and leaving 60000 homeless.

On July 19, Cow Creek and Greenland Ranch in Death Valley CA reported morning lows of 102 degrees. The afternoon high at Greenland Ranch was 124 degrees, and the high at Cow Creek



that afternoon was 126 degrees. The coolest low for the entire month for both locations was 82 degrees.

On July 26, the temperature at Salt Lake City UT hit 107 degrees, an all-time record high for that location.

On July 31, Typhoon Shirley hit Taiwan killing 104 and leaving 50000 homeless.

On August 26, Typhoon Carmen hit South Korea killing 24.

On August 31, Typhoon Della hit southern Japan killing 41.

On September 4-12, Hurricane Donna killed 106 in Puerto Rico.

On September 10, Hurricane Donna struck the FL Keys, with winds gusting to 180 MPH and a 13 foot storm surge. The hurricane then moved north along the eastern coast of FL and inundated Naples before moving out to sea. Hurricane Donna claimed 50 lives, and injured 1800. Hurricane Donna wreaked havoc from FL to ME, with wind gusts to 100 MPH along much of the coast. Hurricane Donna produced wind gusts to 121 MPH at Charleston SC on the 11th, and wind gusts to 138 MPH at Blue Hill Observatory MA on the 12th. The hurricane finally died over ME two days later, producing more than five inches of rain over the state; of snow at Nantucket MA, and 20 inches at Newark NJ. [NHC rank 74/259 with more than 364 dead]

On September 15, Hurricane Ethel hit the Gulf Coast.

On October 7, Typhoon Kit struck the Phillippines killing 51.

On October 10 and 31, cyclones kill more than 10000 in Pakistan.

On October 13, Typhoon Loal struck the Phillippines killing 41.

On October 31, a cyclone hit East Pakistan and India devastating the islands of Ramgati and Hatia and killing 4000; 900000 homes were destroyed and 150000 cattle died.

On November 3, storms and floods in Nicaragua killed 325.

On November 28, a severe storm produced waves 20 to 40 feet high on Lake Superior. Duluth MN was buried under a foot of snow, and clocked wind gusts to 73 MPH. The northern shore of Lake Superior was flooded, and property along the shore was battered. Thousands of cords of pulpwood were washed into Lake Superior.

On December 10-12, the first of three Middle Atlantic snowstorms produced a foot of snow at Baltimore MD. A pre-winter blizzard struck the northeastern United States producing wind gusts as high as 51 MPH, along with 16 inches; 108 died from the storm.

On December 13, a blizzard in New England caused 29 deaths.

1961

Western Canada Records Single Driest Year - 1961. Many areas in the drought-stricken Prairies received only 45% of normal precipitation. In Regina, every month but May was drier than normal, and for the 12-month crop year the precipitation total was the lowest ever. The duration, severity and size of the area effectively made this drought the worst on record. Losses in wheat production alone were \$668 million, 30% more than in the previous worst year, 1936.

On January 2, the coldest temperature of record for the state of HI was established with a reading of 14F degrees atop Haleakela Summit.

On January 3, a three day long ice storm was in progress over northern ID which produced an accumulation of ice eight inches thick, a United States record. Heavy fog, which blanketed much of northern ID from Grangeville to the Canadian border, deposited the ice on power and phone lines causing widespread power outages.

On January 19-20, in NY and New England one of the most severe ice storms in recent history occurred killing 4.

On February 4, the third great snowstorm of the winter season struck the northeastern United States Cortland NY received 40 inches of snow.

On March 19, tornados devastated Colla, East Pakistan, killing 266.

On May 9, a cyclone kills more than 2000 in Pakistan. One estimate says 11000 died.

On August 4, Spokane WA reached an all-time record high of 108 degrees. Kalispell MT set an all-time record with a reading of 105 degrees.

On August 5, the temperature at Ice Harbor Dam WA soared to 118 degrees to equal the state record established at Wahluke on the 24th of July in 1928. The afternoon high of 111 degrees at Havre MT was an all-time record for that location.

On September 3, Denver CO received 4.2 inches of snow, their earliest snow of record. Higher elevations in the area had 2 to 3 feet of snow that closed roads for the Labor Day weekend.

On September 11-14, very large and slow moving Hurricane Carla made landfall near Port Lavaca TX. Carla battered the central TX coast with wind gusts to 175 MPH, and up to 16 inches of rain, and spawned a vicious tornado which swept across Galveston Island killing 8. The hurricane claimed 45 lives. [NHC rank 206/259 with 46 dead]

On September 16-17, Typhoon Muroto II (or Nancy) kills 185 in Japan and leaves 137000 homeless.

On September 22, Hurricane Esther made a near complete circle south of Cape Cod. The hurricane then passed over Cape Cod and hit ME causing flooding.

On October 6-7, Hurricane Frances missed Bermuda.

On October 9, floods in Bihar India killed 1000.

On October 19, rain changed to a record early season, heavy wet snow over the southern mountains of WV, making the worst forest disaster since fires in 1952-53.

On October 26-31, Hurricane Hattie devastates Belize killing 314 and destroying 40% of the buildings in the capital. [NHC rank 86/259 with 275 dead]

On November 2, the temperature at Atlanta GA reached 84 degrees to establish a record for November.

On November 3, a rare November thunderstorm produced snow at Casper WY.

On November 5, strong Santa Ana winds fanned the flames of the Bel Air and Brentwood fires in southern CA destroying many homes.

On November 14, a hurricane kills 330 in southern Mexico.

On December 22, 5 to 15 inches of snow fell in northeastern KS, and adjacent parts of MO, IA and Neb.

1962

On March 5, a tremendous storm raged along the Atlantic coast. The great Atlantic storm caused more than 200 million dollars property damage from FL to New England. Winds along the Middle Atlantic Coast reached 70 MPH raising forty foot waves, and as much as 33 inches of snow blanketed the mountains of VA. The VA shoreline was rearranged by historic tidal flooding. It is called the Ash Wednesday Storm.

On March 11, one of the most paralyzing snowstorms in decades produced record March snowfalls in IA. 4 feet of snow covered the ground at Inwood.

On March 31, a tornado struck the town of Milton FL killing 17 persons and injuring 100 others. It was the worst tornado disaster in FL history.

On May 24, a heat wave in Mexico lead to 50 deaths.

On July 8, a typhoon smashed into Kyushu Japan killing 50.

On August 5, a typhoon hit Yilan Taiwan killing 87, injuring 1400 and destroying 1000 houses.

On August 9, a typhoon hit the Philippines killing 23.

On August 29, Hackberry LA was deluged with twenty-two inches of rain in 24 hours, establishing a state record.

On September 1, a typhoon killed 128 and left 27000 homeless in Hong Kong.

On September 27, a flash flood in Barcelona Spain kills 470.

On October 6, Hurricane Daisy passed 120 miles from Bermuda.

On October 12, the "Columbus Day Big Blow" occurred in the Pacific Northwest. It was probably the most damaging windstorm of record west of the Cascade Mountains. Winds reached hurricane force, with gusts above 100 MPH. More than 3.5 billion board feet of timber were blown down. The storm claimed 48 lives (West Coast Disaster by Dorothy Franklin documents the storm). The storm was a remnant of Typhoon Freda.

On October 20, Hurricane Ella passed by Bermuda.

On October 26, a storm brought 5 to 6 inches of snow to VT and NH, with up to 10 inches in the mountains.

On October 27, an early season winter storm over New England blanketed northern ME with 7 to 16 inches of snow, and southeastern New England with up to 3 inches of snow.

On October 27, a typhoon kills 769 in southern Thailand.

In Guam , super Typhoon Karen hits with 255 MPH winds, causing massive destruction. Many Inarajan, Guam residents begin to relocate to Malojloj.

On December 3-7, London has its worst fog in 10 years; 136 die in London and the Midlands.

On December 13, a severe FL freeze occurred. Morning lows reached 35 degrees at Miami, 18 degrees at Tampa, and 12 degrees at Jacksonville. It was the coldest December weather of the 20th century.

On December 31, a winter storm in northern Europe kills 309 in Germany and more in other countries.

On December 31, Perhaps the worst blizzard in the history of the state of ME finally came to an end. The storm produced 40 inches in 24 hours at Orono, and a total of 46 inches at Ripogenus Dam. Gale force winds produced snow drifts twenty feet high around Bangor. A disastrous ice storm was over GA and SC. It ravaged the two states for days causing more than seven million dollars damage.

For 1962-63, the coldest winter in England since 1740. Mid November saw snow in the South West. Late December (commencing Boxing Day: the start of the bitter cold) saw blizzards in Southern England. London had 12 inches of drifting snow. January and February had widespread falls, especially Devon and North East England with 2ft.

For 1962-65, driest four year period in the eastern United States since records began in 1738.

1963

Lake Constance in central Europe froze over for the first time since 1829.

On January 24, a great arctic outbreak reached the southern United States. The cold wave broke many records for duration of cold weather along the Gulf Coast. A reading of 15 degrees below zero at Nashville TN was an all-time record low for that location.

On January 28, the low of -34 degrees at Cynthiana KY equalled the state record established just four days earlier at Bonneville.

On March 20, Agung erupts.

On April 29, a tornado, as much as 100 yards in width, touched down south of Shannon MS. The tornado destroyed twenty-seven homes along its eighteen mile path, killing three persons. Asphalt was torn from Highway 45 and thrown hundreds of yards away. Little rain or snow accompanied the tornado, so it was visible for miles.

On May 20, at Pine Barrens NJ, a fire burns 200000 acres.

On May 28-29, a cyclone hits Chittagong, East Pakistan, killing 22000 and destroying 1 million mud homes; it has twice the impact of the 1960 storm.

On June 21, storms in South Korea kill 186 and injure 175; in the summer, a major drought in the northeastern United States leads to conservation of water in NYC.

On August, Hurricane Arlene passed directly over Bermuda.

On September 8, Hurricane Betsy hits FL, then later LA and MS killing 23 in 15 days.

On September 11, Typhoon Gloria hits China killing 92.

On September 17, nearly two and a half inches of rain fell at Yuma AZ in 24 hours. It was the most intense rain for Yuma during the period between 1909 and 1977.

On September 26, San Diego CA reached an all-time record high of 111 degrees. Los Angeles hit 109 degrees.

On September 30, Hurricane Flora struck Trinidad killing 24.

On October 1-9, Hurricane Flora kills 5000 in Haiti and Cuba and leaves 250000 homeless.  
[NHC rank 5/259 with 8000 dead]

On October 8, a typhoon in East Pakistan kills 79 and leaves 1 million homeless.

On October 9, rain leads to landslides that destroy a reservoir causing the flooding of the towns Pirago, Villanova, and Rivalta in Italy, killing 2600 people.

On November 14-15, floods and landslides in Haiti kill 500 on November 14- 15.

On December 31, a snowstorm struck the Deep South. Meridian, MS received 15 inches of snow, 10.5 inches blanketed Bay St. Louis, MS, and 4.5 inches fell at New Orleans, LA.

On December 31, a snowstorm struck the Deep South. Meridian MS received 15 inches of snow, 10.5 inches blanketed Bay St Louis MS, and 4.5 inches fell at New Orleans LA. Freezing temperatures then prevailed for New Year's Day.

1964

On January 16, Fort Worth TX received 7.5 inches of snow, and Dallas reported a foot of snow; on March 11, the Ohio River crested at 66.2 feet; Thousands of refugees fled flooded lowlands. At least 775 people spent the night in local shelters, and 110000 were homeless in a five-state area.

On April 12, a cyclone hits Jessore Pakistan killing 400.

On May 7, the temperature at White Mountain 2, located in CA, dipped to 15 degrees below zero to set a record for May for the continental United States.

On May 20, a squall line producing large hail swept through central Illinois. A second squall line moved through during the early morning hours of the 21st, and a third one moved through shortly after dawn. The series of hailstorms caused nine million dollars damage. Hailstones as large as grapefruit caused heavy damage to trees, utility lines, crops and buildings. The thunderstorms also produced as much as five inches of rain in an eight hour period.

On June 13-14, rain and windstorms in Hyderabad Pakistan kill 332 and level hundreds of homes.

On June 30, a typhoon struck Manila and North Luzon, being the worst since 1882; 43 are killed.

On July 24, the worst heat wave in 30 years hits Italy causing 21 deaths.

On July 30, a heat wave along the coast of Brazil leaves 21 dead.

On August 7-14, a 7 day rainstorm in South Korea kills 69.

On August 27, Hurricane Cleo battered Miami and the South FL area. It was the first direct hit for Miami in fourteen years. Winds gusted to 135 MPH, and the hurricane caused 125 million dollars damage; 138 died from the hurricane in Haiti. [NHC rank 93/259 with 217 dead]

On September 5, a typhoon during the Olympics in Hong Kong leads to 700 deaths.

On September 11-12, Typhoon Gloria struck Taiwan killing 330.

On September 12, a 3 hour rainstorm in South Korea kills hundreds.

On October 3-4, Hurricane Hilda struck LA spawning many tornadoes, and claimed 34 lives. [NHC rank 219/259 with 38 dead]

On October 13, Tropical Storm Isabel killed 3 in Cuba.

On October 13, heavy rains in Java leave 34 dead.

On November 14, with the help of a fresh three inch cover of snow, the temperature at Ely NV dipped to 15 degrees below zero to establish an all-time record low for the month of November. That record of -15 degrees was later equaled on the 19th of November in 1985.

On November 19, a typhoon in the Phillipines kills hundreds and leaves 100000 homeless.

In December, a one inch ice storm in IL, NY, and New England caused some deaths.

On December 1-2, a violent storm strikes the Maritimes in Canada. One of the most violent storms in years struck the Maritime provinces with gales reaching gust speeds of 160 km/h. Three fishing boats, including two large draggers, were lost in the storm accounting for the loss of 23 lives. Halifax and Charlottetown recorded their all-time lowest sea-level pressure ever.

On December 15, in Canada, a "Great Blizzard" lashes the southern Prairies. Heavy snows, accompanied by 90 km/h winds and -34°C temperatures, paralyzed the southern Prairies. Three people froze to death and thousands of animals perished.

On December 21, a great warm surge from the Pacific Ocean across OR and northern CA brought torrential rains on a deep snow cover resulting in record floods.

On December 23, a cyclone in Ceylon and India causes a tidal wave to sweep the area killing 1800.

1965

The India-Pakistan War

O January 25, Alta UT was buried under 105 inches of snow, a record for the state.

On April 11-12, Palm Sunday tornadoes kill 257 in IN, MI, and OH.

On April 17, the MS River reached a flood crest at Saint Paul MN 4 feet higher than any previous mark. During the next 2 weeks record levels were reached along the MS between Saint Paul and Hannibal MO. 12 were killed.

On May 11-12, a cyclone in East Pakistan kills 36000 and destroys 5 million homes.

On June 1-2, a cyclone in East Pakistan causes a tidal wave that kills 12047 and leaves millions homeless; thousands later starved to death.

On June 16, a heat wave of 107 in Assam India lead to 144 deaths.

On June 16, Holly CO was deluged with 11.08 inches of rain to establish a state 24 hour rainfall record.

On June 18, Typhoon Dinah killed 31 and injured 89 in Taiwan.

On July 19, the worst rainstorm in 10 years killed 96 and left 100000 homeless in Chile.

On July 30, the temperature at Portland OR reached 107 degrees to equal their all-time record high.

On August 5, storms in Okinawa killed 26.

On August 26, late night severe thunderstorms associated with an unusually strong late summer cold front produced 100 MPH winds straight line winds in the Chicago area and northwest IN.

On August 28, the temperature at Midway Airport in Chicago dipped to 43 degrees, for an August record.

On August 29, a national record for the month of August was established when 2.5 inches of snow fell atop Mount Washington NH. Temperatures in New England dipped to 39 degrees at Nantucket MA, and to 25 degrees in VT. For many locations it was the earliest freeze of record.

In the summer, droughts in India cause 500000 to die.

On September 7-10, Hurricane Betsy in FL and LA kills 81. The storm plowed through the Bahamas, then mauled South Florida a day later. The tempest, more than 600 miles from edge to edge, flooded Miami and Fort Lauderdale with a six-foot tide. [NHC rank 166/259 with 76 dead]

On September 10, a typhoon hit Japan killing 114.



On September 17, a storm produced a band of heavy snow across parts of WY. Totals of 23 inches at Rawlins and 20.7 inches at Lander easily surpassed previous snowfall record totals for so early in the season.

On October 14, heavy rains hit the coastal areas of southeastern FL. In a 24 hour period rains of 20 inches were reported from Deerfield Beach to Ft Lauderdale, with 25.28 inches in Ft Lauderdale.

On October 22, the temperature soared to 104 degrees at San Diego CA. Southern CA was in the midst of a late October heat wave that year. Los Angeles had ten consecutive days with afternoon highs reaching 100.

On October 31, Fort Lauderdale FL was deluged with 13.81 inches of rain, which brought their rainfall total for the month of October to an all-time record of 42.43 inches.

On December 15, a cyclone kills 15000 in East Pakistan; all structures on Kutubdia Island are destroyed; it is the third cyclone this year.

On December 27, 135 children in Sao Paulo die from the heat.

For 1965-66, the Baltic Ocean is frozen over completely. Violent winter storms along the coasts of northern Europe with 2000 lives lost.

1966

On January 27, Oswego NY was in the midst of a five day lake effect storm which left the town buried under 102 inches of snow.

On January 30, a typhoon struck Samoa killing 90.

On January 31, a blizzard struck the northeastern United States. When the storm came to an end, twenty inches of snow covered the ground at DC.

On March 3, a tornado hit Jackson MS killing 54 persons.

On March 2-5, a severe blizzard raged across MN and ND. The blizzard lasted four days producing up to 35 inches of snow, and wind gusting to 100 MPH produced snow drifts 30 to 40 feet high. Bismarck ND reported zero visibility for 11 hours. Traffic was paralyzed for three days.

On March 4, it was Winnipeg's snowstorm of the century. This winter blizzard dropped 35 cm of snow with winds blowing at 120 km/h, paralyzing the city for two days. Winnipeg's mayor issued a warning for everyone to stay at home. The drifting snow blocked all highways in southern Manitoba and forced the cancellation of all air travel in and out of the Winnipeg airport.

On March 28-29, rainstorms in Rio de Janeiro kill 73.

On May 9, record snows fell in the northeastern OH and western PA, including 3.1 inches at Pittsburgh PA and 5.4 inches at Youngstown OH. Snow also extended across parts of NY, with eight inches reported in the southern Adirondacks.

On May 10, morning lows of 21 degrees at Bloomington-Normal IL and Aurora IL established a state record for the month of May.

On May 11, the 1.6 inch snow at Chicago IL was their latest measurable snow of record. Previously the record was 3.7 inches on the 1st and 2nd of May set in 1940.

On June 4-11, a heat wave in Bihar India kills 300.

On June 4-8, Hurricane Alam struck Honduras, Cuba, and Florida. 30 inches of rain in San Rafael, Honduras, kills 73. [NHC rank 155/259 with 90 dead]

On June 8, a tornado ripped right through the heart of the capitol city of Topeka KS killing 16 persons. The tornado cut a swath of near total destruction eight miles long and four blocks wide. It was the most destructive tornado of record up until that time.

On June 9, Hurricane Alma left 85 dead in central America, Cuba, and the United States.

On June 28, a typhoon in Honshu Japan kills 32.

On July 1-13, the northeastern United States was in the midst of a sweltering heat wave. The temperature at Philadelphia reached 104 degrees. Afternoon highs of 102 degrees at Hartford CT, 105 degrees at Allentown PA, and 107 degrees at La Guardia Airport in NYC established all-time records for those two locations.

On July 11-17, a heat wave in St. Louis MO had 100+ temperatures each day and 146 died as a result.

On July 15-26, heavy rains in Seoul kill 67.

In the summer, droughts in India cause 500000 to die for the second year in a row.

On September 24, Typhoons Ida and Helen hit Japan with 202 MPH winds killing 174 and leveling 17000 homes.

On September 25-October 1, Hurricane Inez kills 3600 in the Caribbean and Mexico. [NHC rank 39/259 with 1000 dead]

On October 2, a typhoon in East Pakistan kills 35.

On October 15, IA experienced its worst late season tornado of record. In just one minute a twister tore through the town of Belmont leveling 75 percent of the businesses, and 100 homes, causing more than eleven million dollars damage.

On November 1, Santa Ana winds fanned fires, and brought record November heat to parts of coastal CA. November records included 86 degrees at San Francisco, 97 degrees at San Diego, and 101 degrees at the International airport in Los Angeles. Fires claimed the lives of at least sixteen firefighters.

On November 2, a storm brought 18 inches of snow to Celia KY in 24 hours. It tied the state 24 hour snowfall record first established at Bowling Green.

On November 3, the Arno River in Italy overflowed, flooding Florence and killing 35.

On November 8, The temperature in downtown San Francisco reached a November record of 86 degrees.

On December 15, a deluge and landslides in Rio de Janeiro kills over 30.

On December 25, a white Christmas was enjoyed by residents from NC to New England in the wake of a major snowstorm. Even coastal VA was white.

1967

The Biafran War (1967-1970) begins and the Nigerian Government imposed a blockade around Biafria, effectively cutting off food supplies. About 100000 military died in this civil war.

In January-March, floods kill more than 600 in southern Brazil.

On January 7, a snowstorm in the Great Lakes kills 23.

On January 9, a snowstorm in Mexico City takes 20 lives.

On January 27, residents of Chicago IL began to dig out from a storm which produced 23 inches of snow in 29 hours. The snow paralyzed the city and suburbs for days, and business losses were enormous. Over a two day span, the city experienced its worst blizzard on record as an astounding 24 inches of snow fell in 29 hours and 8 minutes. For several days in a row, a city generally used to the hardships of snowy weather was paralyzed as close to 24 million tons of snow lay across the area. Cars and buses were stranded all over the city, while trains were frozen in and could not make their usual commuter runs. O'Hare Field, now O'Hare International Airport, was closed for an unprecedented three days!

On March 12, a tremendous four day storm raged across CA. Winds of 90 MPH closed mountain passes, heavy rains flooded the lowlands, and in sixty hours Squaw Valley CA was buried under 96 inches (eight feet) of snow.

On April 17-20 and April 27-29, there were blizzards in southern Alberta. A series of intense winter storms dropped a record 175 cm of snow on southern Alberta. Thousands of cattle, unable to forage for food in the deep snow, perished on the open range. Army units were dispatched to assist in snow clearing, while food, fuel and feed were airlifted into the province.

On April 21, severe thunderstorms spawned 48 tornadoes in the Upper Midwest. Hardest hit was northern Illinois where sixteen tornadoes touched down during the afternoon and evening hours causing fifty million dollars damage. On that Friday afternoon tornadoes struck Belvedere IL, and the Chicago suburb of Oak Lawn, killing 57 persons.

On May 2, a cyclone in Munshiganj India devastates a wide area and kills 80.

On May 10, a heat wave in Guadalajara Mexico kills 70.

On June 2, a heat wave in Bihar and west Bengal India kills 37.

On July 9, Typhoon Billie hits Kobe South Korea killing 347.

On August 15, the "sundance fire" in northern ID was started by lightning. Winds of 50 MPH carried firebrands as much as ten miles in advance to ignite new fires, and as a result, the forest fire spread twenty miles across the Selkirk Mountains in just twelve hours, burning 56000 acres. The heat of the fire produced whirlwinds of flame with winds up to 300 MPH which flung giant trees about like matchsticks.

In the summer, droughts in India cause 500000 to die for the third year in a row.

On September 19-20, Hurricane Beulah deluged Brownsville TX with 12.19 inches of rain in 24 hours, to establish a record for that location. Hurricane Beulah made landfall on the 20th near the mouth of the Rio Grande River, where a wind gust to 135 MPH was reported by a ship in the port. Beulah spawned a record 115 tornadoes. [NHC rank 183/259 with 59 dead]

On October 6, the greatest rainfall in one day ever in Canada. A one-day rainfall of 489.2 mm occurred at Ucluelet Brynnor Mines, BC - a Canadian weather record that still stands.

On October 11, a storm in the Bay of Bengal India kills 51.

On October 19, Typhoon Carla struck Taiwan and the northern Phillipines killing 73.

On October 28, Typhoon Dinah hits Japan killing 30.

On November 4, Typhoon Emma hits the Phillipines killing 24.

On November 15, a surprise snow and ice coating paralyzed Boston during the evening rush hour.

On November 21, excessive rains in southern CA caused the most severe flooding and the most damaging mud slides in 33 years. Downtown Los Angeles received eight inches of rain, and 14 inches fell in the mountains.

On November 26, floods in Lisbon kill 457.

On November 30, a record November snowstorm struck the DC area. It produced up to a foot of snow in a 12 hour period.

On December 13, traces of snow fall in San Diego.

On December 19, a record 83 inches of snow covered the ground at Flagstaff AZ. The heavy snows inflicted great hardships on reservations.

1968

For the first time since 1888, ice half surrounded Iceland.

On January 15, a storm with 125 MPH winds hits Glasgow Scotland killing 20 and damaging 70000 tenements.

On May 3 (or 6), 45 tornados in the mid-west United States kill 71.

On May 15, a tornado touched down southwest of Anchorage AK. It was the second of just three tornadoes reported in AK since 1950.

On May 15, the most destructive tornado in Iowa of the century reduced the town of Charles City to rubble and caused 13 deaths and 30 million dollars in damage.

On May 29, a heat wave in Durango Mexico kills 70.

On July 9, Columbus MS received 15.68 inches of rain in 24 hours to establish a record for the state.

In July-September, in Nigeria drought leads to famine with 800000 deaths.

On July 12, a heat wave in Mexicali Mexico kills 40.

On July 22, a heat wave in Japan kills 72.

On July 28, a typhoon struck southern Japan killing 22.

On August 8-14, floods kill 1000 in Gujarat India.

On October 1-4, floods in three northeast India states kill 1000.

On November 1, a cyclone hits Orissa India killing 35.

On November 12, a severe coastal storm produced high winds and record early snows from GA to ME. Winds reached 90 MPH in MA, and ten inches of snow blanketed interior ME.

1969

On January 3, a heat wave in Rio de Janeiro kills 25.

On January 23, a tornado in MS kills 29.

On January 25-29, floods kill 95 in southern CA.

On February 9-10, a blizzard kills 64 in northeast United States. The Lindsay Storm. From February 8 through 10, 1969, the New York City and Boston metropolitan areas were under the brunt of a blizzard. Beginning as an area of low pressure that came out of the Rocky Mountains, it moved up through the Ohio Valley and began to weaken. Meanwhile a secondary area of low pressure formed off the Virginia coast, intensified rapidly and moved up to the east of Cape Cod. The heaviest snow fell in the New York metro area, the higher elevations of western Connecticut and Massachusetts and from the Boston metro area up through the White Mountains of New Hampshire eastward into southern Maine. Both the New York City and Boston areas received an average of 25 inches of snow each. The storm is known as the Lindsay Storm because Mayor John Lindsay's hopes for reelection were dashed when angry voters blamed him for the fact that snow removal crews were slow to respond due to inaccurate forecasts throughout this entire winter weather event.

On February 27, a record snowstorm in ME came to an end. Two to four feet of snow buried southern and central ME, with a state record of 57 inches reported at West Forks. Drifts covered many single story homes, and the weight of the snow collapsed many roofs. Two to four feet of snow also buried northeastern VT and northeastern MA. In NH, Mount Washington NH reported 97.8 inches of snow, a record storm total for New England.

On April 15, a cyclone kills 500 in Pakistan.

On May 22, a cyclone in the Bay of Bengal and Pakistan kills hundreds (618).

On June 12, record late season snows covered parts of MT. Five inches was reported at Great Falls and east of Broadus. Billings MT tied their June record with lows of 32 degrees on the 12th and the 13<sup>th</sup>.

On July 4, thunderstorms called the largest weather disaster in OH history affects 14 counties and kills 41.

On July 21, Neil Armstrong and Buzz Aldrin become the first men on the moon. It was sunny with clear skies.

On August 2, rains kill 85 and leave 12000 homeless in South Korea.

On August 9, a tornado hit Cincinnati OH killing four persons and causing fifteen million dollars property damage. The tornado moved in a southeasterly direction at 40 to 50 MPH.

On August 17-19, Camille, the second worst hurricane in United States history, smashed into the MS coast. Winds gusted to 172 MPH at Main Pass Block LA, and to 190 MPH near Bay Saint Louis MS. The hurricane claimed 256 lives, and caused 1.3 billion dollars damage. Several ocean going ships were carried over seven miles inland by the hurricane. The hurricane produced winds to 200 MPH, and a storm surge of 24.6 feet. Complete destruction occurred in some coastal areas near the eye of the hurricane. [NHC rank 89/259 with 259 dead]

On August 28-September 4, Hurricane Francella struck Guatemala. [NHC rank 148/259 with more than 100 dead]

On September 15, the worst rainstorms in 60 years hit Pusan South Korea, killing 250.

On September 27, Typhoon Elsie hits Taiwan killing 47.

On October 4, Typhoon Flossie floods Taipei Taiwan killing 75.

On October 4, Denver CO received 9.6 inches of snow. October of that year proved to be the coldest and snowiest of record for Denver, with a total snowfall for the month of 31.2 inches.

On October 8, 10 days of rainstorms in Tunisia destroy 50000 homes and kill 500.

On October 24, unseasonably cold air gripped the northeastern United States Lows of 10 degrees at Concord NH and 6 degrees at Albany NY established October records.

On October 24, severe flooding in Tunisia left 300 dead and 150000 homeless.

On November 10, a heat wave in Rio de Janeiro kills 35.

On December 8, the worst tornado of record for western WA State tracked south of Seattle, traveling five miles, from Des Moines to Kent. The tornado, 50 to 200 yards in width, began as a waterspout over Puget Sound. One person was injured and the tornado caused half a million dollars damage.

In December, a severe ice storm in New England causes unbelievable havoc in VT and considerable damage in southern ME.

1970

Droughts in the early part of the year in Yemen cause famine with 300 deaths.

On February 10, at Val d'Isere, France, an avalanche kills 39.

On April 16, another avalanche kills 72 in France.

On April 18, Rapid City SD received a record 22 inches of snow in 24 hours.

On April 18, tornados in the panhandle of TX kill 25.

On May 11, a very powerful tornado struck the city of Lubbock TX killing 26 persons, injuring more than 500 others, and causing 135 million dollars damage.

On June 17, heavy rains in PR cause floods and kill 50.

On June 18, wind and rain, and hail up to seven inches deep, caused more than five million dollars damage at Oberlin KS.

On July 22, a flash flood in New Delhi kills 600.

On August 3, Hurricane Celia struck the coast of TX producing wind gusts to 161 MPH at Corpus Christi, and estimated wind gusts of 180 MPH at AR Pass. The hurricane was the most destructive of record along the TX coast causing 454 million dollars damage, and also claimed eleven lives.

On August 20, Hurricane Dorothy struck Martinique and Dominica. [NHC rank 195/259 with 51 dead]

On August 22, Typhoon Anita hit Japan killing 20.

On August 23, dry thunderstorms ignited more than one hundred fires in the Wenatchee and Okanogan National Forests of WA State. Hot, dry, and windy weather spread the fires, a few of which burned out of control through the end of the month. More than 100000 acres burned.

On August 27, Elko NV was deluged with 3.66 inches of rain in just one hour, establishing a state record.

On September 3, during the early evening hours, in the midst of a severe hailstorm at Coffeyville KS, a stone 17.5 inches in circumference and nearly two pounds in weight was recovered. It was the largest measured hailstone in United States weather records. Average stone size from the storm was five inches in diameter, with another stone reportedly eight inches in diameter.

On September 4, the greatest natural disaster of record for AZ occurred. Unprecedented rains caused rivers in central AZ to rise five to ten feet per hour, sweeping cars and buildings as far as 30 to 40 miles downstream. Flooding claimed the lives of 23 persons, mainly campers, and caused millions of dollars damage. Water crested 36 feet above normal near Sunflower AZ. Workman's Creek was deluged with 11.40 inches of rain in 24 hours to establish a state record.



Moisture from Pacific Tropical Storm Norma led to the severe flooding; on September 8, torrential rains in Pinyinana, Burma, kill 90.

On September 11, a typhoon hits the Phillipines killing 144.

On September 14, the temperature at Fremont OR dipped to 2 above zero to equal the state record for September set on the 24th in 1926.

On September 18, torrential rains in S. Korea kill 28 and leave 7000 homeless.

On September 26, Santa Ana winds brought fires to Los Angeles County, and to points south and east. Half a million acres were consumed by the fires, as were 1000 structures. Twenty firemen were injured.

On September 27, afternoon highs of 103 degrees at Long Beach CA and 105 degrees at the Los Angeles Civic Center were the hottest since September records were established in 1963. Fierce Santa Ana winds accompanying the extreme heat resulted in destructive fires.

On September 30, a nineteen month drought in southern CA came to a climax. The drought, which made brush and buildings tinder dry, set up the worst fire conditions in CA history as hot Santa Anna winds sent the temperature soaring to 105 degrees at Los Angeles, and to 97 degrees at San Diego. During that last week of September whole communities of interior San Diego County were consumed by fire. Half a million acres were burned, and the fires caused fifty million dollars damage.

On October 7, widespread flooding took place across PR. Rainfall amounts for the day ranged up to seventeen inches at Aibonito. A slow moving tropical depression was responsible for six days of torrential rains across the island. Totals in the Eastern Interior Division averaged thirty inches, with 38.4 inches at Jayuya. Flooding claimed eighteen lives, and resulted in 62 million dollars damage.

On October 14-15, 2 typhoons hit the Phillipines in 10 days killing 1500 and leaving 500000 homeless.

On October 23, a cyclone hits Dacca E. Pakistan killing 100.

On November 12, a cyclone and tidal wave hits India and E. Pakistan killing 300000 to 500000 ; 1 million cattle died too.

On November 19, a typhoon in the Phillipines destroys 25% of Manila and kills 30.

On November 25, the temperature at Tallahassee FL dipped to 13 degrees, following a high of 40 degrees the previous day. The mercury then reached 67 degrees on the 26th, and highs were in the 70s the rest of the month.

On December 2, a tornado, 400 yards in width, touched down about one mile below the summit of Timpanogos Divide. Trees up to 18 inches in diameter were snapped, and some of the 38 inch snow cover was carried 1000 feet above the ground as the tornado traveled one mile.

On December 31, there is a record snowfall in the Rhone Valley France with 21 deaths.

1971

India-Pakistan War begins.

On January 4, a blizzard raged from KS to WI, claiming 27 lives in IA. Winds reached 50 MPH, and the storm produced up to 20 inches of snow.

On January 7, the temperature at Hawley Lake, located southeast of McNary AZ, plunged to 40 degrees below zero to establish a state record.

On January 23, the temperature at Prospect Creek AK plunged to 80 degrees below zero, the coldest reading of record for the United States.

On January 31, the Zambezi, in Mozambique, flooded killing 1000.

On February 21, an outbreak of tornadoes hit northeastern LA and northern and central MS. The tornadoes claimed 121 lives, including 110 in MS. Three tornadoes accounted for 118 of the deaths. There are 1600 persons injured, 900 homes were destroyed or badly damaged, and total damage was 19 million dollars. Also Elk City OK was buried under 36 inches of snow to establish a 24 hour snowfall record for the state.

On February 27, heavy rains around Rio de Janeiro leave 130 dead.

On March 4, it was Montreal's snowstorm of the century. Montreal's worst snowstorm killed 17 people and dumped 47 cm of snow on the city with winds of 110 km/h producing second-storey drifts. Winds snapped power poles and felled cables, cutting electricity for up to ten days in some areas. In total, the city hauled away 500000 truckloads of snow.

On March 18, high winds accompanied a low pressure system from the Rocky Mountains to the Great Lakes. Winds gusted to 100 MPH at Hastings Neb, and reached 115 MPH at Hays KS. High winds caused two million dollars damage in KS. Fire burned 50000 forest acres in eastern OK.

On March 26, parts of northern and central GA experienced their worst snow and ice storm since 1935. 2 persons were killed when a tree landed on their car.

On May 4, tragedy struck the village of St-Jean-Vianney, Quebec when heavy rains caused a sinkhole 600 m wide and 30 m deep to appear in a residential area. The crater/mudslide killed 31 people and swallowed up 35 homes, a bus and several cars.

On May 12, dust storms suddenly reduced visibilities to near zero on Interstate Highway 10 near casa Grande AZ. Chain reaction accidents involving cars and trucks resulted, killing seven persons.

On July 18, torrential rains in Seoul kill 70.

On August 6, a typhoon hits Japan and South Korea killing 78.

On August 15, Hurricane Beth soaks Nova Scotia. Hurricane Beth brought punishing winds and up to 300 mm of rain, causing considerable crop damage and swamping highways and bridges, temporarily isolating communities on the eastern mainland of Nova Scotia. More rain fell during Beth than during Hazel in 1954.

On August 17, a 120 MPH typhoon hits Hong Kong killing 130.

On August 28, heavy rains from Tropical Storm Doria caused devastating floods in central and northeast NJ resulting in 138 million dollars damage. In southeastern PA, high winds downed trees and power lines, and in NYC, heavy rains flooded streets and subways.

On August 30, floods in North Vietnam kill hundreds of thousands.

In August, there was record warmth in Death Valley CA.

On September 6-11, Hurricane Edith hit Nicaragua and Aruba. [ NHC rank 239/259 with 30 dead]

On September 7, Typhoon Virginia hit Japan killing 38.

On September 9, Hurricane Ginger formed, and remained a hurricane until the 5th of October. The 27 day life span was the longest for any hurricane in the North Atlantic.

On October 23, Typhoon Hester caused flooding in Vietnam, with 100000 killed; (or 89 according to Nash).

On October 28, a severe early season blizzard raged across the Plateau Region and Rocky Mountain Region. Lander WY received 27 inches of snow, and the temperature at Big Piney WY plunged to 15 degrees below zero.

On October 29, a cyclone in Orissa State India kills 10000 and leaves 100000 homeless.

On October 30, a massive snowstorm in UT and WY left 3 ft. Drifts and killed 24.

On November 25, a typhoon off Java killed 90 fisherman.

For 1971-72, coldest winter in 200+ years in Russia and Turkey.

1972

One Cold Year -1972. The only year on record when all weather-reporting stations in Canada reported temperatures below normal on an annual basis.

The Sahel drought in Africa drought kills 62500.

A drought and crop failure in USSR/China.

On January 3, a 10 day heat wave in Argentina kills 100.

On January 11, downslope winds hit the eastern slopes of the Rockies in northern CO and southeastern WY. Boulder CO reported wind gusts to 143 MPH and twenty-five million dollars property damage.

On January 17, a single storm unloaded 77.5 inches of snow at Summit MT to establish a state record.

On February 10 in Iran, a week long snow dumped 26 foot drifts across the country and thousands died (4000 estimated).

On March 12, in Peru, rain fell for a month leaving 150000 homeless.

On April 2, a tornado in Nasirabad, Bangladesh kills 200 and leaves 25000 homeless.

On April 5, a tornado, 500 yards wide at times, touched down at a marina on the OR side of the Columbia River, and then tore through Vancouver WA killing six persons, injuring 300 others, and causing more than five million dollars damage. It was the deadliest tornado of the year, and the worst of record for WA.

On May 2, thunderstorms in Mexico City leave 150000 homeless.

On May 8, a month long heat wave in India with highs at 120 kills 676.

On May 12, in TX, a cloudburst dumped sixteen inches of rain north of New Braunfels killing 18.

On May 15, the worst ice jam flooding of memory for long-time residents took place along the Kuskokwim River and Yukon River in AK. It was the first time since 1890 that the two rivers "flowed as one".

In May in India, drought caused widespread suffering but only 800 died from famine compared to many thousands in previous droughts.

In June, the monsoons come to India later than any time in the century.

On June 6, Richmond VA experienced its worst flood of record as rains from Hurricane Agnes pushed the water level at the city locks to a height of 36.5 feet, easily topping the previous record of thirty feet set in 1771.

On June 9, Rapid City IA flood kills 427. A cloudburst along the eastern slopes of the Black Hills of South Dakota produced as much as 14 inches of rain in 4 hours, resulting in the Rapid City flash flood disaster. When the Canyon Lake Dam collapsed, a wall of water swept through the city killing 237 people.

On June 11, heavy showers brought 1.64 inches of rain to Phoenix AZ, a record for the month of June.

On June 21-26, Hurricane Agnes moved onshore near Cape San Blas FL with wind gusts to 80 MPH, and exited ME on the 26th. There were 117 deaths. [NHC rank 130/259 with 129 dead]

On June 23, the Juanita River at Newport PA floods 34 feet; the west branch of the Susquehanna River at Williamsport PA floods 34.8 feet; the Lehigh River at Bethlehem PA floods 20.9 feet; the Schuylkill River at Reading PA floods 31.5 feet; the Allegheny River at Kittanning PA floods 25.3 feet.

On June 24, the north branch of Susquehanna River at Wilkes- Barre PA floods 40.9 feet; the Susquehanna River at Harrisburg PA floods 32.6 feet; the Youghiogheny River at Connellsville PA floods 16.5 feet; the Monongahela River at Charlot PA floods 35.4 feet; the Ohio River at Pittsburgh floods 35.9 feet.

In July, the greatest heat wave in northern Finland and northern Russia ever recorded.

On June 24-25, Typhoon Ora in the Philippines killed 100.

In June-September, seasonal rains failed in the Ethiopian highlands leading to the loss of 80% of the cattle and many camels, plus causing 100000 to 150000 people to die.

In July-August, a typhoon in Philippines kills 427.

On August 12-September 4, in Punjab India, the Indus overflowed killing 3000, wiping out 3000 villages, and submerging 2 million acres. It is called the worst natural disaster in the nation's history.

On August 19, Agnes hits Florida, floods the Mid-Atlantic. Agnes hit the Florida panhandle, moved into Georgia and headed north, reaching New York on the 22nd. Rains produced widespread severe flooding from Virginia northward to New York and caused 122 deaths in the United States.

On September 16-17, Typhoon Helen killed 50 in Japan.

On October 5, heavy rains, mostly the remnants of Tropical Storm Joanne, fell across much of AZ. It was believed to be the first time in AZ weather history that a tropical storm entered the state with its circulation still intact.

On December 2, a storm hit Japan killing 75.

1973

United States troops abandon South Vietnam.

The Sahel drought in Africa drought kills 62500. It the second year of the drought.

On January 8, a severe ice storm struck Atlanta GA. The storm paralyzed the city closing schools and businesses, and damage from the storm was estimated at 25 million dollars. One to four inches of ice coated northern GA leaving 300000 persons without electricity for up to a week. Between 7 PM and 9 PM on the 7th, 2.27 inches (liquid content) of freezing rain, sleet and snow coated Atlanta, as the temperature hovered at 32 degrees.

On January 10, a tornado in San Justo, Argentina killed 60 and injured 300.

On January 17, hurricane force winds struck Spain and Portugal killing at least 19.

On February 10, a major snowstorm struck the southeastern United States It produced as much as 18 inches in GA, and up to two feet of snow in SC.

On March 26, the Caratinga River, Brazil, flooded killing at least 20.

On March 31, a devastating tornado took a nearly continuous 75 mile path through north central GA causing more than 113 million dollars damage, the highest total of record for a natural disaster in the state.

In March-April, floods in Tunisia killed at least 90, plus 10000 cattle.

In April, spring storms in Indonesia kill 1650.

On April 8, a severe storm brought high winds and heavy snow to IA. Belle Plain received 20 inches of snow, and 19 inches blanketed Dubuque, record totals for both locations for so late in the season. Snow drifts up to sixteen feet high closed highways.

On April 12-14, typhoon force winds struck Bangladesh killing 200 to thousands.

On April 19, Glenrock WY received 41 inches of snow in just 24 hours, and a storm total of 58 inches, to establish two state records.

On April 29, the MS River reached a crest of 43.4 feet, breaking the previous record of 42 feet

established in 1785.

On May 21, a windstorm injured 100 in Pakistan.

On July 8, intense rains lead to flooding in San Pedro Itzican, Ocotlan, and Mazcola, Mexico, killing at least 30.

On July 14-15, rains lead to flooding in the Italian Riviera, killing 14.

In August, prolonged rains in Irapuato, Mexico, killed 200 and left 150000 homeless.

In the summer, drought in Ethiopia kills 100000. It is the first year of a three year drought.

On September 24, northern Japan had a 12 inch deluge killing 60.

On October 10, fifteen to 20 inch rains deluged north central OK in thirteen hours producing record flooding. Enid was drenched with 15.68 inches of rain from the nearly stationary thunderstorms, which established a state 24 hour rainfall record. Dover OK reported 125 of 150 homes damaged by flooding.

On October 19-21, floods in Spain killed at least 500.

On December 16-17, a severe ice storm in CT.

In 1973-74, floods exceeding all records in central Australia.

1974

The Sahel drought in Africa drought kills 62500. It the third year of the drought.

On January 5, at Vanda Station, Scott Coast, the temperature reached 59F, a record high for Antarctica.

On January 16, the worst storm in 20 years in the English Channel killed 35.

In February, heavy rain northwestern Argentina killed more than 100.

On February 10, intense rain in Natal led to 50 deaths.

On March 25, a storm in Bangladesh killed 300.

In late March, in Tubarao, Brazil, torrential rains killed 1000 to 1500 and left 60000 homeless.

On April 3, a tornado outbreak, when 148 tornadoes swept through the country from the Great Lakes to AL and MS. The tornadoes killed 335 people and injured 6100 others. One tornado

destroyed half of the town of Xenia, Ohio.

On April 3, at Windsor, Ontario, one funnel cloud touched down at several locations taking eight lives at the Windsor Curling Club.

In early May, floods in northeastern Brazil killed 200.

On June 8, severe thunderstorms spawned at least twenty-three tornadoes in OK during the afternoon and evening hours. One of the tornadoes struck the town Drumright killing 16 and injuring 150 others. It was the worst natural disaster of record for Tulsa.

On July 11, Typhoon Gilda hit Japan and S. Korea killing 108.

On August 10, monsoon rains in Bangladesh kill 3000.

In the summer, a drought in Ethiopia kills 200000.

In the summer, a drought in Somalia kills 19000.

On September 7-8, Hurricane Carmen caused 3 deaths on the Gulf Coast.

On September 18-19, Hurricane Fifi struck Honduras and kills 8000. The hurricane, which hit on September 18 and 19, destroyed 80 percent of the banana crop and drowned two-fifths of the country's cattle. [NHC rank 3/259 with up to 10000 dead]

On November 1, a typhoon in the Phillipines kills 52.

On November 12, a great AK storm in the Bering Sea caused the worst coastal flooding of memory at Nome AK with a tide of 13.2 feet. The flooding caused 12 million dollars damage, however no lives are lost.

On November 14, a storm produced 15 inches of snow at the Buffalo NY airport, and 30 inches on the south shore of Lake Erie.

On December 24-25, the Darwin, Australia hurricane destroys 10000 homes killing many; called Cyclone Tracy.

It is the mildest winter in England since 1834.

1975

On January 10, a blizzard in MN with up to 2 feet of snow, 35 fatalities, and wind chills of -80 F. The "Storm of the Century" hit MN. A severe blizzard moved northward across the state producing up to two feet of snow. High winds drove wind chill readings to 80 degrees below zero, and at Duluth MN the barometric pressure dipped to 28.55 inches. The storm, which



claimed 35 lives, occurred on the 102nd anniversary of the infamous "Pioneer Blizzard" in MN.

On January 10, a tornado destroyed a mall in MS and killed 12.

On January 10-11, floods in southern Thailand kill 130.

On January 27, a typhoon in the Phillipines kills 30.

On March 16, a single storm brought 119 inches of snow to Crater Lake OR establishing a state record.

On April 2, the northeastern United States was in the grips of a severe storm which produced hurricane force winds along the coast, and two to three feet of snow in ME and NH. Winds atop Mount Washington NH gusted to 140 MPH. The biggest snowstorm of record for so late in the season paralyzed Chicago IL. Up to 20 inches of snow fell in extreme northeastern Illinois, and 10.9 inches of snow closed Chicago's O'Hare Airport.

On May 6, a massive tornado hit Omaha Neb killing three persons, injuring 133 others, and causing 150 million dollars damage. The tornado struck during the late afternoon moving northeastward through the industrial and residential areas of west central Omaha, and lifting over the northern section of the city. The twister, which cut a swath ten miles long and as much as a quarter of a mile wide, was the mostly costly in United States history up til that time.

On May 11, a cyclone in Burma kills 187.

On May 19, thunderstorms produced golf ball size hail and wind gusts to 110 MPH in MN, between Fridley and Hugo. Fifty persons were injured. The hail and high winds destroyed fifty mobile homes, and a dozen aircraft, and also destroyed a third of the Brighton Elementary School.

On July 13, Dover DE was deluged with 8.50 inches of rain to establish a 24 hour record for the state.

In August, drought in Honduras destroys 90% of the bean and corn crops leading to the starvation of hundreds.

On August 2, record heat gripped New England. Highs of 104 degrees at Providence RI, and 107 degrees at Chester MA and New Bedford MA, established state records. The heat along the coast of ME was unprecedented, with afternoon highs of 101 degrees at Bar Harbor and 104 degrees at Jonesboro.

On August 5, Yangtze River, China. 63 dams failed, killing an estimated 80000 to 200000 people from floods and subsequent famine. The Chinese government never acknowledged the event.

On August 24, Typhoon Rita in Japan kills 22 and destroys 22000 homes.

On September 13-24, Hurricane Eloise hit PR, Haiti, and D. Rep., killing 71; it later caused severe damage in the northeastern United States. [NHC rank 164/259 with 80 dead]

On October 24, Hurricane Olivia hit Matzalan Mexico killing 29.

On November 10, the Edmund Fitzgerald sinks in Great Lakes storm. A severe storm causes the largest Great Lakes bulk ore carrier ever to break up and sink in 20 m-high waves, killing the entire 29-man crew. Canadian musician Gordon Lightfoot later immortalized the ship in a folk song.

On November 27, the Red River was buried under 34 inches of snow in 24 hours, establishing a record for the state of NM.

In 1975-76, a great European drought with the lowest soil moisture since 1698 in London.

In 1975-76, great heat waves in Denmark and the Netherlands.

1976

On January 2-3, hurricane force winds struck Europe killing 55 in 9 countries.

On January 9, lake effect snow squalls buried the town of Adams NY under 68 inches of snow.

On February 1, drought in CA forces water rationing.

On February 2, the Groundhog Day Storm batters the Bay of Fundy. One of the fiercest storms ever in the Maritimes slammed into Saint John, New Brunswick. Winds were clocked at 188 km/h, generating 12-m waves and swells as high as 10 m. Everything coated with salt spray for miles inland and huge chunks of coastline eroded.

In March, an ice storm in western NY causes power outages for several days.

On April 10, a tornado in Bangladesh killed 19 and injured 200.

On April 19, the northeastern United States was in the midst of an early season heat wave, and the Boston Marathon took place in 90 degree heat. At Providence RI the mercury hit 98 degrees.

In May, Typhoon Olga struck the Phillipines killing 215 and leaving 600000 homeless.

On July 31, the Big Thompson Canyon flood in CO kills 156. A stationary thunderstorm produced more than 10 inches of rain, which funneled into the narrow Thompson River Canyon of northeastern Colorado. A wall of water 25 feet high wreaked a 25-mile path of destruction from Estes Park to Loveland, killing 156 people.

On August 10, the Ravi River in northern Pakistan overflowed killing more than 150.

On August 25, a typhoon hit Hong Kong killing 11.

On August 26, a weak tornado touched down briefly in the Hockley Hills near Kiana AK, about 29 miles north of the Arctic Circle.

On September 3-4, Hurricane Emmy struck the Azores. [NHC rank 174/259 with 68 dead]

On September 5, a flood in Baluchistan Province Pakistan inundated 5000 square miles and swept away entire villages.

On October 1, Hurricane Liza struck La Paz Mexico killing 630 and leaving tens of thousands homeless.

On October 17, a hurricane struck far eastern USSR causing widespread damage and forest fires.

On November 6, heavy rains in Trapani Sicily killed 10.

In November, heavy rain in Java killed at least 136.

On December 20, heavy rain in Aceh, Sumatra killed at least 25.

Super Typhoon Pamela strikes Guam with winds of 190 MPH, devastating the island and leaving 5000 people homeless (date unknown).

In 1976-77, the severest winter in eastern United States since records began in 1738.

1977

In January, rains and floods in southeastern Brazil kill 60.

On January 19, snowflakes fell in Homestead and Miami Beach FL in extreme southern Florida.

On January 30, the great "Buffalo Blizzard" finally abated after three days. The storm added a foot of new snow to 33 inches already on the ground. Winds gusting to 75 MPH reduced visibilities to near zero, produced snow drifts twenty-five feet high, and kept wind chill readings 50 degrees below zero. The blizzard paralyzed the city, and caused 250 million dollars damage.

In January-February, major United States rivers freeze over as part of the coldest winter on record; Cincinnati (-25 F) and Miami (25 F) have all time record lows.

In February, a cyclone struck Madagascar killing 31, destroying 31000 homes, and destroying 230 square miles.

On February 25, dust reduced visibilities from eastern VA through the southeastern states to FL between the 24th and the 28th. The dust originated in the western Great Plains on the 22nd and

23rd, with wind gusts above 100 MPH reported at Guadalupe Pass TX, at White Sands NM, in Sherman County KS, and in eastern CO.

On March 30, Hartford CT hit 87 degrees to establish a record for the month of March.

In March in CO, Neb, and KS 15 die from a late season snowstorm.

On April 1, a tornado in Bangladesh killed 600 and injured 1500.

On April 4, tornados and floods in VA, WV, AL, MS, GA, TN, and KY kill 40.

On May 4, a tornado 500 yards in width struck Pleasant Hill MO severely damaging the high school and grade school.

On May 9, a late season snowstorm hit parts of PA, NY, and southern and central New England. Heavier snowfall totals included 27 inches at Slide Mountain NY and 20 inches at Norwalk CT. At Boston it was the first May snow in 107 years of records. The homes of half a million persons were without power following the storm.

On May 20, a tornado in Chad killed 13 and injured 100.

In June, a cyclone hit Oman leading to more than 100 deaths.

On June 6, severe thunderstorms with large hail and winds to 100 MPH caused one million dollars damage around Norfolk VA.

In July, flooding in South Korea killed at least 200.

On July 19, thunderstorms produced torrential rains over parts of southwestern PA. Some places receive more than 12 inches in a 7 hour period. The cloudburst floods Johnstown with up to ten feet of water resulting in 76 deaths, countless injuries.

On July 25, Typhoon Thelma hit Taiwan killing 31.

In September, flooding in Taipei Taiwan kills 14.

On September 30, the temperature at Wichita Falls TX soared to 108 degrees to establish a record for September.

In October, flooding in northwestern Italy kills 15.

On November 2-3, flooding in Greece kills 26.

On November 8, flash floods in Kerala India kill 24.

On November 12, a cyclone hit Tamil India killing 400. Another estimate says 14204 people died due to the cyclone.

On November 14, a typhoon hit the northern Phillipines killing 30 and leaving 50000 homeless.

In November, heavy rainfall helped to weaken an earthen dam near Toccoa, Georgia. The ensuing dam failure lead to the deaths of 40 people, half of them children. Most had lived mobile homes, less than a mile below the dam.

On November 19, a cyclone hit Andhra Pradesh India washing away 21 villages and killing 20000; 2 million were left homeless.

1978

On January 12, along the east coast of the UK rainstorms and 75 MPH winds caused extensive damage and flooding, killing 24.

On January 13, floods in southern Columbia kill 13.

On January 13-17, floods in southern Brazil kill 26.

On January 21, a paralyzing "Noreaster" produced a record 21 inches of snow at Boston, 15 to 20 inches in RI, and one to two feet of snow in PA. Winds along the coast of CT gusted to 70 MPH.

On January 26, a paralyzing blizzard struck the Midwest. One to three feet of snow fell in MI, and 20 to 40 inches was reported across IN. Winds reached 70 MPH in MI, and gusted above 100 MPH in OH. The high winds produced snow drifts 20 feet high in MI and IN stranding thousands on the interstate highways. Temperatures in OH dropped from the 40s to near zero during the storm.

On January 26-30, flooding in east Java killed 26.

On January 28-30, flooding in Transvaal killed 26.

On February 6-7, a New England blizzard paralyzed New England for a week; more than 27 inches in Boston and more than 100 killed. The Blizzard Of 1978: Although the winters of the late '70s were notable for their length and severity across the Northeast, some events stand out. On February 5 through 7, 1978, a weak area of low pressure moved across the Great Lakes and weakened even further. Meanwhile, a secondary area of low pressure developed off the middle Atlantic coast and underwent rapid intensification before drifted slowly to the north. It became nearly stationary off the southern New England coast for over 24 hours. Tremendous amounts of snow fell and winds exceeding hurricane force were felt along the southern New England coast. Over three feet of snow fell in some areas, as heavy snow fell from the upper Chesapeake Bay area, up through the mountains of New Hampshire, with the heaviest falling from Long Island through Rhode Island. The storm caused major problems when the snow moved into New York

City at the height of the morning commute to work. Drifting northward, heavy snow moved into New England, paralyzing the region for the remainder of the week. Some areas of Rhode Island reported snowfall of four feet, not including drifts, while over 23 inches of snow fell in Boston in 24 hours.

In February, record low temperatures and heavy snowfalls in western Europe caused at least 19 deaths.

On February 10, as much as eight inches of rain drenched southern CA resulting in widespread flooding and mud slides. The heavy rainfall produced a wall of water that ripped through the mountain resort community of Hidden Springs drowning at least 25.

In March, extremely cold weather in Mexico City left 88 dead and 620 hospitalized; rain, sleet, and snow fell.

On March 5, storms in southern CA and northern Mexico kill 25.

On March 17, a tornado in New Delhi India kills 32 and injures 700.

In April, a tornado in West Bengal India killed 100.

On April 16, a tornado in Orissa State India killed about 500.

In May, in India, the worst heat in more than 80 years caused at least 120 deaths around New Delhi alone; temperatures reached 117 F daily for more than a week.

On May 3, persistent thunderstorms caused widespread flooding in southeastern LA and extreme southeastern MS. Rainfall totals of 10 to 13.5 inches were reported around New Orleans causing the worst flooding in thirty years. The water depth reached 3 to 4 feet in several hundred homes.

On May 16, floods in North Sumatra Indonesia kill 21.

In mid-June, torrential rains in South Korea kills at least 17.

On July 10, a flood on the Afghanistan-Pakistan border killed 120.

On August 1, heavy rainfall in TX lead to 25 deaths.

In August, the Hab River in Pakistan overflowed killing more than 100.

In August, floods in the Phillippines kill 45 and leave thousands homeless.

On October 26, Typhoon Rita struck the Phillippines killing 200 and destroying 10000 homes.

On November 23, a cyclone hit Sri Lanka killing at least 1500 and destroying 500000 buildings.

In 1978-79, the severest winter and lowest temperatures recorded in 200 years in parts of northern Europe.

1979

On January 1, the temperature at Maybell CO plunged to 60 degrees below zero to tie the state record set back in 1951 at Taylor Park.

On January 9-10, a severe ice storm in Portland OR.

On January 14, Chicago IL was in the midst of their second heaviest snow of record as, in thirty hours, the city was buried under 20.7 inches of snow. The twenty-nine inch snow cover following the storm was an all-time record for Chicago.

In January, a 2 inch ice storm in ME and NH.

On February 8-9, in Canada, a blizzard isolates the Iqaluit. Weather with -40°C temperatures, 100 km/h winds and zero visibility in snow kept residents of Iqaluit indoors for 10 days.

On February 19, a blizzard in NY/NJ killed 13. It is called the Presidents Day Storm. On February 22, 1979, snow and winds blanketed much of the Northeast, closing down Washington, D.C. and icing up the Potomac. Parts of the Mid-Atlantic region experienced over 20 inches of snow. At one point, reports showed Baltimore receiving a snowfall rate of 5 inches an hour.

In March, heavy rains in the Flores Islands killed 97.

On March 27, Cyclone Meli struck Fiji killing 50 and destroying 1000 homes.

On April 10, a massive tornado smashed into Wichita Falls TX killing 43 persons, injuring 1740 persons, and causing 300 million dollars damage. Another tornado struck Vernon TX killing eleven persons.

On April 16-17, a typhoon struck the Phillipines killing 12.

On May 12-13, a cyclone hit India killing more than 350.

On May 17, a reading of 12 degrees at Mauna Kea Observatory established an all-time record low for the state of HI and for Oceania as a whole.

On June 13, a flood in Borneo kills 13.

In June, a flood caused by heavy rain kills 32 in Jamaica.

On July 1, it snowed almost half a foot (5.8 inches) at Stampede Pass WA, a July record.

On July 22, a flash flood in Spain kills 22.

On July 10, the temperature at El Paso TX hit 112 degrees, an all-time record for that location. The next day was 110 degrees.

On July 30, a forty-minute hailstorm bombed Fort Collins CO with baseball to softball size hail. Two thousand homes and 2500 automobiles were damaged, and about 25 persons were injured, mainly when hit on the head by the huge stones.

On August 11, heavy rain in Morvi India kills at 5000.

On August 25-26, Typhoon Judy killed 60 in South Korea.

On August 29-September 5, Hurricane David killed more than 1000 in the West Indies; it had 150 MPH winds. It hit the Dominican Republic and Dominica. [NHC rank 18/259 with 2068 dead]

On September 12, Hurricane Frederick smashed into the Mobile Bay area of AL packing 132 MPH winds. Winds gusts to 145 MPH were reported as the eye of the hurricane moved over Dauphin Island AL, just west of Mobile. The hurricane was the costliest in United States history causing 2.3 billion dollars damage.

On October 3, the first killer tornado of record in October in CT destroyed sixteen vintage aircraft at the Bradley Air Museum in Windsor Locks. The tornado damaged more than one hundred homes causing 200 million dollars damage. 3 were killed, and 500 were injured.

On October 10, a storm blanketed Worcester MA with 7.5 inches of snow, a record snowfall total for so early.

On October 19, Typhoon Tip hit Japan killing 36.

On November 20, a blizzard struck Cheyenne WY producing a record 19.8 inches of snow in 24 hours, and a record total of 25.6 inches in forty hours. Strong winds created huge drifts stopping all transportation; at least 10 died.

On November 25, the Playonero River in Columbia overflowed and at least 62 died.

1980

Saddam Majid Hussein b-1937, a Sunni Muslim, of Iraq attacks Iran starting an eight year war 1880-1888. One million Iranians are killed. Iraq used poison gas against Iran.

In January, Cyclone Hyacinthe hit Reunion Island, killing 20.

In February, floods and mud slides in CA, AZ, and Mexico kill 36.



On March 2, a blizzard in NC, SC, OH, MO, TN, PA, KY, VA, MD, and FL kills 36.

On March 27-28, heavy rains in Turkey lead to 75 deaths.

In April, heavy rains kill 90 in Peru.

On April 21, the temperature at International Falls MN hit 90 degrees.

On April 22, a record April heat wave sent the mercury up to the 100 degree mark in IA.

On May 13, a tornado in Kalamazoo MI kills 5.

On May 18, Mt. St. Helens erupts.

On May 21, the temperature at Williston ND reached 102 degrees to set a record for May, and the next day the mercury hit 106 degrees.

On June 28, the temperature at Wichita Falls TX soared to 117 degrees, their hottest reading of record. Daily highs were 110 degrees or above between the 24th of June and the 3rd of July; on July 10, the temperature in downtown KS City MO hit 109 degrees, following a sultry overnight low of 89 degrees. The daily low of 89 was the warmest ever for KS City, and overall it was the hottest July day of record, the mean temperature being 90.2.

On July 23, Typhoon Joe struck North Vietnam killing 130.

In August, thousands in China died from an overflowing lake.

On August 4, a record 42 consecutive days of 100 degree heat finally came to an end at the Dallas-Fort Worth Airport. July 1980 proved to be the hottest month of record with a mean temperature of 92. There was just one day of rain in July, and there was no measurable rain in August. There were 18 more days of 100 degree heat in August, and 4 in September. Hot weather that summer contributed to the deaths of 1200 people nationally.

On August 4-7, Hurricane Allen came ashore above Brownsville TX dropping 15 inches of rain near San Antonio, and up to 20 inches in the Lower Rio Grande Valley. Hurricane Allen packed winds to 150 MPH, and also spawned 29 tornadoes; 270 died in the West Indies. [NHC rank 88/259 with 259 dead]

On August 13, the afternoon high at NYC was just 89 degrees. But there were fifteen days of 90 degree heat during the month, their hottest August of record.

On August 30-31, Hurricane David hits Dominica and the Dominican Republic killing 22 and 600 and leaving 60000 and 150000 homeless, respectively.

In August-September, monsoon rains in West Bengal kill 1500.

In September 1-3, a flood from rains kills 100 in Arandas Mexico.

On September 15-16, Typhoon Ruth kills 164 in Vietnam.

In September, heavy rains and bursting dam kills 200 in Orissa India.

In September, floods in Bangladesh kill 655.

On December 25, it was the coldest Christmas Day of modern record in the northeastern United States. Temperatures as cold as 36 below zero were reported in NY, and as the sharp cold front swept southeastward the temperature at Boston MA plunged from 34 to seven degrees below zero during the day.

1981

On January 24-25, the Buffels River, South Africa, overflowed killing 200.

In March, in northeastern Brazil floods kill 30 and leave 50000 homeless.

In April, floods in Columbia kill 65 and leave 14000 homeless.

On April 12, a tornado in Bangladesh killed 70, injured 1500, and destroyed 15000 homes.

In May floods and mud slides in Java killed 127.

On May 8, the Dallas/Fort Worth area experienced its worst hailstorm of record as baseball to grapefruit size hail, accompanied by 100 MPH winds. Hail accumulated eight inches deep at Cedar Hill TX.

On July 1, Typhoon Kelly hit the Phillippines and killed 140.

On July 7, MT was in the midst of a snowstorm that dumped ten inches at Glacier National Park, and produced winds to 90 MPH. Meanwhile, Denver CO set a record high with a reading of 101.

On July 12-14, the Yangtze flooded killing 1300 and leaving 1.5 million homeless.

On July 19, Typhoon Maury hit Taiwan killing 26.

On July 19, floods in India kill 500 and leave 100000 homeless.

On August 17, the Salamina River, Columbia, overflowed killing 150.

On August 23, Typhoon Tad hit Japan killing 40 and leaving 20000 homeless.

On September 1, Typhoon Agnes struck South Korea killing 120.

On September 3, floods in Algeria kill 43.

On September 21, 80 MPH winds hit the UK killing 12.

On September 21, Typhoon Clara struck China.

On September 29, floods in Nepal kill 500.

In October, floods in Sichuan Province China kill 240.

On October 2, severe thunderstorms raked Phoenix AZ with heavy rain, high winds, and hail up to an inch and a half in diameter, for the second day in a row. Thunderstorms on the 1st deluged Phoenix with .68 inch of rain in five minutes, equaling their all-time record.

On October 7, Seattle WA received four inches of rain in 24 hours, a record for the city.

On October 9, the temperature at San Juan, PR, soared to 98 degrees to establish an all-time record for that location.

On November 13, a powerful cyclone brought high winds to WA State and OR. The cyclone, which formed about 1000 miles west of San Francisco, intensified rapidly as it approached the OR coast with the central pressure reaching 28.22 inches (956 millibars). A wind trace from the Whiskey Run Turbine Site, about 12 miles south of Coos Bay in OR, showed peak gusts to 97 MPH fifty feet above ground level. The wind caused widespread damage in WA and OR, with 12 deaths reported. As much as four feet of snow fell in the Sierra NV Range of northern CA.

On November 19, an unusually early snowstorm struck the Twin Cities of MN, with as much as a foot of snow reported. The weight of the snow caused the newly inflated fabric dome of the Humphrey Metrodome to collapse and rip.

On November 24, Typhoon Emma hit the Phillipines, killing 270 and leaving 250000 homeless.

On December 11, a typhoon hit India/Bangladesh killing 27.

On December 18, a heavy lake-effect snow blanketed the southern and southeast shores of Lake MI leaving up to 22 inches of snow at Valparaiso IN.

1982

On January 4, Milwaukee WI was shut down completely as a storm buried the city under 16 inches of snow in 24 hours. It was the worst storm in thirty-five years.

In January-March, 5 cyclones hit Madagascar, killing 100 and leaving 117000 homeless.

On January 9-12, blizzards in England/Wales have snowdrifts up to 12 feet deep; 25 die; Wales

cut off from England.

On January 23-24, the Chuntayaco River, Peru, flooded killing about 2600.

On February 15, an intense storm off the Atlantic coast capsized a drilling rig killing 84 people and sank a Soviet freighter resulting in 33 more deaths.

On February 22-24, a blizzard marooned Prince Edward Island in Canada. A huge snowstorm with up to 60 cm of snow, 100 km/h winds, zero visibility and wind chills of  $-35^{\circ}\text{C}$  paralyzed the Island for a week. The storm buried vehicles, snowplows and trains in 5 to 7 meter drifts and cut off all ties with the mainland.

In March, Typhoons Mamie and Nelson hit the Phillipines killing 90.

On April 2-3, tornados in OH, TX, AR, MS, and MO killed 31.

On April 4, El Chichon in Mexico erupts (stratospheric cloud).

On April 5, an unprecedented April blizzard began in the northeastern United States 1 to 2 feet of snow fell across MA and CT, and up to 26 inches was reported in ME. NYC received a foot of snow. Winds reached 70 to 80 MPH during the storm; on May 12, a late season snowstorm struck the Front Range of the CO Rockies. The storm produced 46 inches of snow at Coal Creek Canyon, located near Boulder.

In May, flooding in China kills 430 and destroys 46000 homes.

In May, flooding in Nicaragua and Honduras killed 200.

On May 29, a tornado in Marion IL killed at least 10.

On June 4, a four day storm began over New England which produced up to 14 inches of rain in southern CT breaching 23 dams and breaking two others.

On June 4, a 137 MPH cyclone hit India killing 200 and leaving 200000 homeless.

On August 28-29, Hurricane Beryl struck the Cape Verde Islands. [NHC rank 135/259 with 115 dead]

On August 30, record cold gripped the northeastern United States Thirty-one cities in New England reported record lows.

On September 15, a snowstorm over WY produced 16.9 inches at Lander to establish a 24 hour record for September for that location.

In September, monsoon rains in India kill 1000 and leave 5 million marooned on high ground.

On September 17-21, floods and mud slides in El Salvador kill 700, injure 18000, and leave 55000 homeless.

On September 30, Hurricane Paul hit western Mexico leaving 50000 homeless.

On October 8, an unusually early snowstorm hit the northern Black Hills of WY and SD. The storm produced up to 54 inches of snow; in October, a typhoon struck Vietnam killing hundreds.

On November 8, a cyclone hit Gujarat India killing 275 and destroying 30000 homes.

On November 9, 7 tornadoes touched down in southern CA, 3 of which began as waterspouts.

On November 24, Hurricane Iwa lashed the HI Islands of Niihau, Kauai, and Oahu. Winds gusted to 120 MPH. It marked the first time in 25 years that HI had been affected by a hurricane.

On December 4, the temperature in NYC's Central Park reached 72 degrees to establish a record high for December. The month was also the warmest of record.

On December 23, a major winter storm struck CO producing heavy snow and blizzard conditions. A record 2 feet fell in Denver.

On December 27, the worst LA rainstorm in more than 100 years ended. More than 18 inches fell at Vinton LA during the 3 day storm.

1983

The worst drought in western United States since 1936.

On February 11-12, a blizzard in the northeastern United States killed 11.

On March 20-21, floods and mud slides in Peru and Bolivia leave 260 dead and hundreds missing.

In April, a cyclone in West Bengal kills 76 and injures 1500.

On April 14, floods in Peru kill 37.

In May, tornados in Vietnam killed more than 76.

On May 18-20, 59 tornados in 7 United States kill 24.

In June, widespread flooding in Ecuador kills 300.

In June, flooding in Gujarat India kills 935.

On June 12, the state of UT was besieged by floods and mud slides.

On June 28, record heat prevailed from TX to MI. Alpena MI hit 98.

In late June, the Yangtze overflows killing hundreds.

On July 21, at Vostok, the temperature reached -129F, a record low for Antarctica.

In July, floods and mud slides at Masada Japan kill 82.

On August 8, the temperature at Big Horn Basin WY reached 115 degrees to establish a state record.

On August 18, Hurricane Alicia ravaged southeastern TX. Just 13 were killed, but 1800 others were injured. The hurricane packed winds to 130 MPH as it crossed Galveston Island, and spawned 22 tornadoes in less than 24 hours as it made landfall.

On August 21, the temperature at Fayetteville NC soared to 110 degrees to establish a state record.

On September 22, 41 cities reported record cold temperatures during the morning. Houston TX hit 50, and Williston ND plunged to 19.

On September 29, Typhoon Forest hit Japan killing 16 and flooding 30000 homes.

On October 20, Hurricane Tico hit western Mexico killing 105.

On October 26, a heat wave was in progress over the Northern Rockies, with record highs of 81 at Sheridan WY and Billings MT.

On November 25, the "Great Thanksgiving Weekend Blizzard" hit Denver CO. The storm produced 21.5 inches of snow in 37 hours. Visibility at Limon CO was down to zero for 24 hours.

On December 18, record cold hit the north central states. At Havre MT the mercury plunged to a record reading of 34 degrees below zero.

On December 22, on the first day of winter 75 cities reported record low temperatures for the date, with 12 cities reporting record low temperatures for the month as a whole. The mercury plunged to 51 degrees below zero at Wisdom MT, and Waco TX set an all-time record low a reading of 12 above zero. For December 22 to 26, in Chicago, IL, the temperature was below zero for 100 consecutive hours for the first time in history. Daily record low temperatures were set on the 23rd, 24th, 25th, and 26th.

On December 25, it was the coldest Christmas Day of modern record for the central and eastern

United States More than 125 cities reported record low temperatures for the date, and 34 of those cities reported all- time records for the month of December. The temperature plunged to one degree below zero at Huntsville AL, and dipped to 14 at Galveston TX; orange groves in FL are damaged.

On December 26, Miami FL established a December record with a morning low of 33. Just 3 days earlier, and again 3 days later, record warm temperatures were reported in FL, with daytime highs in the 80s.

1984

On January 12-16, gales and snowstorms in northern Europe kill 22 in the UK.

On January 31-February 2, Cyclone Domonia hit Mozambique killing 124.

On February 4, blizzards in the United States kill 33.

On February 7, blizzards in Europe kill 13.

On February 28, blizzards from MO to NY kill 29.

On March 14, blizzards in the eastern United States kill 23.

On March 19-23, blizzards in the western United States kill 27.

On March 28-29, tornadoes kill 65 in the Carolinas. A violent outbreak of tornadoes hit the Carolinas. During the late afternoon and evening, 22 tornadoes killed 54 people and injured 1248 others. Nearly half the deaths occurred in mobile homes. One tornado was 2.5 miles in width.

On April 13, the Newfoundland glaze storm cuts power to 200000. Residents of the Avalon Peninsula were without electricity for days when cylinders of ice as large as 15 cm in diameter formed on overhead wires. The severe, two-day ice storm covered all of southeastern Newfoundland with 25 mm of glaze.

On April 21, a tornado in Water Valley MS kills 15.

On April 25, a late season snowstorm struck the Northern Rockies and the Northern Plains. The town of Lead, located in the Black Hills of western SD, was buried under 67 inches of snow. Red Lodge, located in the mountains of southern MT, reported 72 inches of snow. Up to 60 inches blanketed the mountains of northern WY. It was rated the worst late season storm of record for much of the affected area.

On April 26, severe thunderstorms associated with an intense cyclone spawned a total of 47 tornadoes in 2 days from LA to Upper MI. The tornadoes killed 16 persons and injured 259.

On May 13-16, floods in Bangladesh kill 136.

On May 26, thunderstorms during the late evening and early morning hours produced 6 to 13 inches of rain at Tulsa OK in six hours (8.63 inches at the airport). Flooding claimed 14.

On June 8, 49 tornados in the midwest United States kill 9.

On June 9-10, tornados in Russia kill hundreds.

On June 13, severe thunderstorms struck Denver deluging the city with five inches of rain and golf ball size hail.

On August 31, lightning ignited several forest fires in MT, one of which burned through 100000 acres of timber and grassland.

In the summer, a drought in Ethiopia kills 300000.

In the summer, a drought in the Sudan kills 150000.

In September, floods in Nepal kill more than 150 people.

On September 2-3, Typhoon Ike hit the Phillippines killing 1300 and leaving 1.12 million homeless.

On September 13, Hurricane Diana, after making a complete loop off the Carolina coast, made landfall and moved across eastern NC. Diana deluged Cape Fear with more than eighteen inches of rain, and caused 78 million dollars damage in NC.

On September 15-19, Hurricane Fran struck the Cape Verde Islands. [NHC rank 235/259 with 31 dead]

On October 6, the temperature at Honolulu, HI, reached 94 degrees to establish an all-time record at that location.

On October 9, a tornado in Maravilha Brazil kills at least 10.

On October 17, a snowstorm struck northern UT producing a record 18 inches in 24 hours at Salt Lake City, and 40 inches at the nearby Alta Ski Resort. The town of Magna, located ten miles west of Salt Lake City, did not receive any snow at all.

In November, Typhoon Agnes hit the Phillippines killing 300 and leaving 100000 homeless.

On November 24, hurricane force winds in England and Europe kill 14.

On December 29, one hundred cities in the central and eastern United States reported record high



temperatures. KS City MO experienced its warmest December day of record with a morning low of 60 degrees and an afternoon high of 71 degrees.

1985

In January, flooding in Brazil takes 71 lives.

On January 21, every official weather observation site in North Carolina set or tied their all-time record low temperature. At Mt. Mitchell, the low of -34 degrees set the state record.

On January 22, Cyclones Eric and Nigel struck Fiji killing 23.

On February 21, monsoon rains in Indonesia kill 21.

In April, flooding in Brazil kills 21.

On May 25, a cyclone hit India/Bangladesh killing 2540 to 11000.

On May 31, severe thunderstorms spawned 41 tornadoes across the Lower Great Lakes Region and southeastern Ontario which killed 74 persons. An additional 12 perished in Canada. The damage reached over \$450 million. Three confirmed tornadoes struck the Ontario communities of Barrie, Grand Valley, Orangeville and Tottenham. The Barrie tornado was the fourth most damaging and had the longest track (200 km) in Canadian history. In all, the family of tornadoes killed 11 people, injured hundreds of others, and destroyed or damaged 1000 buildings.

On June 6, floods in Guangxi China kill 64.

On July 30, a typhoon struck Zhejiang Province China killing 177.

In August, typhoons in China kill more than 500 and leave 14000 homeless.

On August 13, hail larger than golf balls, driven by 70 MPH winds, moved down crops, stripped trees, and broke windows, near Logan KS. Road graders cleared three foot drifts of hail on KS Highway 9 east of Logan.

On September 2, after teasing residents along the Gulf of Mexico for two days, Hurricane Elena finally came ashore at Biloxi MS. The hurricane, packing winds of 127 MPH, caused more than a billion dollars damage.

On September 27, a record early season snowstorm struck the Central High Plains Region. The storm left up to nineteen inches of snow along the CO Front Range, and as much as a foot of snow in the High Plains Region.

On October 6-7, a tropical wave, later to become Tropical Storm Isabel, struck PR. As much as 24 inches of rain fell in 24 hours, and the severe flooding and numerous landslides resulting from

the rain claimed about 180 lives. [NHC rank 114/259 with 180 dead]

On October 19, Typhoon Dot destroyed 90% of Cabanatuan Phillipines; 63 people died.

On October 27-31, Hurricane Juan took 19 lives in the Gulf states.

On November 4, a super wet Gulf storm dumped upwards of 15 inches of rain in the mountains of VA and WV causing devastating damage and claiming 40 lives.

On November 15, Hurricane Kate made landfall during the evening hours near Mexico Beach FL. Wind gusts to 100 MPH were reported at Cape San Blas FL. It was the latest known hurricane to hit the United States so far north; 24 died in Cuba.

On November 27, the temperature at Bismarck ND plunged to 30 degrees below zero to establish their record low for the month of November. The high that day was 4 degrees below zero.

In December floods in Saudi Arabia kill 32 and leave 31 missing.

In Mozambique this year, 100000 die due to drought.

1986

In January, floods and landslides in Sri Lanka kill 43.

On March 17, Typhoon Honorinnia hit Madagascar killing 32 and leaving 20000 homeless.

On March 24, hurricane force winds in western Europe kill 17.

On April 23, heavy wet snow brought traffic to a standstill in parts of the Poconos and Catskills. Two feet of snow fell in Tobyhana, PA and Eldred, NY.

On May 19, Typhoon Namu hit the Solomon Islands killing more than 100 and leaving 90000 homeless.

On June 26, Hurricane Bonnie, a minimal hurricane, entered LA.

On July 9-11, Typhoon Peggy in the Phillipines and China kills more than 240 and destroys 250000 homes.

On August 22, a typhoon struck Taiwan killing 22.

On August 25, Hurricane Charley struck the UK killing 11.

On September 4, a typhoon struck Vietnam killing 400 and injuring 2500.

On October 6, floods in and around Manila kill 6.

On October 13, four tornadoes struck southeastern VA late in the night causing three million dollars damage. Tornadoes at Falls Church VA caused a million dollars damage.

On November 14, an early season cold wave set more than 200 records from the northwestern United States to the east coast over a seven day period. For some places it proved to be the coldest weather of the winter season.

1987

Saddam Majid Hussein, a Sunni Muslim, b-1937, dictator of Iraq ordered 'The Anfal Campaign' (1987-1988) against the Kurds, 180000 Kurds disappeared and 4000 villages were destroyed.

In January, floods in Sao Paula Brazil kill 75.

On January 22, a blizzard from FL to ME kills 37.

In February, floods and mud slides in Peru kill more than 100.

On February 8, a powerful storm produced blizzard conditions in the Great Lakes Region. Winds gusted to 86 MPH at Jonesville, WI and Cleveland, OH received 12 inches of snow. North winds of 50 to 70 MPH raised the water level of southern Lake Michigan two feet and produced waves of 12 to 18 feet, causing 7 million dollars damage along the Chicago shoreline.

On March 9, floods around Lima Peru kill 100 and leave 25000 homeless.

On May 7, 31 cities in the western United States reported record high temperatures for the date. Highs of 93 at Portland OR and San Jose CA were the warmest of record for so early in the season. The high of 92 at Quillayute WA was a record for the month of May. The temperature at Sacramento CA hit 105.

On May 22, a tornado in Saragosa TX kills 29.

On June 23, a massive hailstorm hit eastern CO causing an estimated 60 to 70 million dollars damage. At La Junta CO, hail as large as softballs caused 37 million dollars damage.

On July 6, thunderstorm rains during the mid morning hours, and again during the evening, produced major flash-flooding at Leavenworth KS. The official rainfall total was 10.37 inches, but unofficial totals exceeded twelve inches. At nearby KS City, the rainfall total of 5.08 inches was a daily record for July.

On July 15, Typhoon Thelma kills 125 in South Korea.

On July 20, the temperature at Charleston SC hit 104 degrees for the second day in a row to tie

their all-time record high.

On July 24, floods in Iran kill more than 100.

On July 25, tremendous hailstones pounded parts of SD damaging crops, buildings and vehicles. Hail piled two feet deep at Black Hawk and northern Rapid City. Hail an inch and a quarter in diameter fell for 85 minutes near Miller and Huron, piling up to depths of two feet.

On July 31, 5 tornados near Edmonton Alberta kill more than 25. The so-called Black Friday Tornado, one of Canada's most intense tornadoes ever, struck Edmonton and killed 27 people -- the second worst killer tornado in Canada. Winds reached 400 km/h, cutting a swath of death and destruction 40 km long and as much as 1 km wide. In addition, hail as large as softballs and 40 to 50 mm of flooding rain fell on the city.

In August, floods in Bangladesh kill more than 1000.

In August, Super Typhoon Ruby rips thru Subic in the Phillippines.

On August 19, temperature at San Antonio TX soared to an all-time record high of 108 degrees.

On August 28, the temperature at Apalachicola FL dipped to 62 to shatter their previous August record by four degrees, having tied their August record high of 99 on the 2nd of the month.

In September, floods in Venezuela kill 500.

In September, floods in western India kill more 1200.

On September 14, Barrow AK received 5.1 inches of snow, a record for September.

On September 25-29, floods in Natal South Africa kill 174 and leave more than 50000 homeless.

On September 27, heavy rains and mud slides kill about 500 in Villa Tina Columbia.

From September 1987 to August 1988, across the southern Prairies of Canada, the hottest summer on record, combined with half the normal growing season rainfall and a virtually snow-free previous winter, produced a drought that rivaled the 1930s in terms of intensity and duration of the dry spell. About 10% of farmers and farm workers left agriculture in 1988. Effects of the drought were felt across the country as lower agricultural yields led to higher food and beverage prices for consumers.

On October 3, remnants of Hurricane Paine deluged OK and southeastern KS with 6 to 10 inch overnight rains. Hardy OK was drenched with 21.79 inches.

On October 4, excessive flooding was reported along the MS River and all over the Midwest, from OH to the Milk River in MT. In some places it was the worst flooding of record.

On October 16, hurricane force winds in UK knock down thousands of trees and cause great damage.

On November 26, Typhoon Nina in the Phillipines claims 500 lives.

On December 12-16, blizzards in the midwestern United States kill 73.

On December 25, floods in Sulawesi Indonesia claim at least 92 lives.

1988

In the United States , "Old Man Winter" took a siesta, with snow a scarcity across the United States.

On January 2-8, blizzards in the United States kill at least 33.

On February 7, floods near Rio de Janeiro Brazil kill more than 280.

Warmest Winter Olympics - February 1988. The Winter Olympics in Calgary experienced some of the warmest temperatures ever for late February. On February 26, Miami's high temperature of 19.4°C was only a shade warmer than Calgary's maximum of 18.1°C.

In May, floods in southeastern China kill at least 149.

On May 7, a powerful storm in the north central United States produced up to three feet of snow in the Bighorn Mountains of WY and the mountains of south central MT. Up to five inches of rain drenched central MT in less than 24 hours.

On July 29-30, floods in Zhejiang Province China kill 264.

In August, the Nile burst its banks in the Sudan killing 90 and leaving 2 million homeless.

In August-September, unusually heavy monsoon rains in Bangladesh kill more than 2000, flood 75% of the country, and leave 30 million homeless.

Summer – During the hot summer of 1988, more than 2000 daily high temperature records were broken. Philadelphia, PA had a record 18 consecutive 90-degree or higher days. Baltimore, MD and Washington DC both had a record 21 consecutive 90-degree days.

In September, floods in southern China kill at least 170.

On September 14, Hurricane Gilbert made the first of its two landfalls on Mexico, producing 170 MPH winds at Cozumel; 260 died in TX and 200 in Mexico. [NHC rank 77/259 with 327 dead]

In September-October, floods in northwestern India kill 1000.

On October 22-27, Hurricane Joan struck the Caribbean and South America killing at least 111 and leaving 3000 homeless. [NHC rank 95/259 with 216 dead]

On October 24-25, Typhoon Ruby hit the Philippines killing about 500.

On November 7, Typhoon Ruby killed 129 in the Philippines.

In November-December, heavy monsoon rains killed more than 400 in Thailand.

On November 29, a cyclone struck Bangladesh killing up to 3000.

In December, floods and mud slides kill at least 40 in Java.

1989

The Berlin Wall comes down.

A very mild Dutch winter.

On January 28, a record wind chill in Canada. It was bad enough when the temperature dropped to -51°C in Pelly Bay, NWT but the wind made the air feel even colder when the wind chill equivalent reached -91 C.

On January 28-29, Cyclone Firinga struck Reunion Island killing at least 10 and leaving 6000 homeless.

In February, floods in Peru kill 57.

On February 25-26, hurricane force winds in Spain kill at least 12.

In March, floods in Yemen kill at least 23.

On March 4, freezing rain and heavy snow took a toll on the poultry industry in OK, AR, and MO. Hundreds of chicken houses collapsed from the weight of ice and snow, killing 4.4 million chickens.

On April 19, floods and avalanches take at least 50 lives in the Republic of Georgia.

On April 26, a tornado in Bangladesh struck more than 20 villages killing up to 1000 and injuring 12000; 30000 were homeless.

On May 6, tornados in TX, VA, NC, SC, LA, and OK kill 23.

On May 7, 32 cities in the central and eastern United States reported record low temperatures for the date, and 24 hour snowfall totals of 7.2 inches at Buffalo NY and 10.7 inches at Rochester

NY were records for the month of May.

On May 25-26, Typhoon Cecil struck Vietnam killing 140 and destroying 30000 homes.

On May 27, a cyclone struck Bangladesh killing 200.

In June, monsoon rains in Sri Lanka kill 300 and leave 125000 homeless.

In June-July, floods in Sichuan Province China kill more than 1300 and leave 30000 homeless. 100.0 million people are affected in some way by the floods. It is a new statistic established this way to gauge floods by OFDA/CRED. It is reported below in future years for numbers above 100 million (6 cases).

In June-July, blizzards in western China kill at least 67.

On July 16, Typhoon Gordon hit the Phillippines killing 33.

On July 24, Typhoon Irving hit Vietnam killing 200.

In July, Typhoon Judy struck South Korea.

On September 11, Typhoon Sarah struck Taiwan killing 13.

On September 16, Typhoon Vera struck Zhejiang Province, China, killing 162 and injuring 692.

On September 17-21, Hurricane Hugo struck the United States and Caribbean killing 41. Almost everyone in Montserrat was left homeless; in Antigua, 99% of the homes were destroyed; in St. Croix, 90% were homeless; in PR and Folly Beach SC, 80% were homeless. After passing over Puerto Rico and the Virgin Islands, Hugo made landfall near Charleston, S.C., on September 22. Storm surges swamped the coast from Charleston to Myrtle Beach, with maximum tides of 20 feet. Hugo was responsible for 21 deaths in mainland United States, five more in Puerto Rico and the United States Virgin Islands, and 24 elsewhere in the Caribbean. Damage estimates are \$7 billion in the mainland United States. [NHC rank 188/259 with 56 dead]

In October, Typhoon Angela hit the Phillippines killing 50.

On October 2-13, three typhoons hit Hainan Province China, killing 63.

On October 10, Typhoon Elsie hit the Phillippines, killing 43 and leaving 32000 homeless.

On October 19, Typhoon Dan struck the Phillippines killing 30 and leaving 332000 homeless.

On November 4-5, Typhoon Gay struck Thailand, killing 365 and destroying 30000 homes; 1124 died if India is included.

On November 9, a cyclone struck southern India killing 9.

On November 15, a tornado in Huntsville AL killed 15 and destroyed 119 homes.

In December, floods in Brazil killed 35 and left 200000 homeless.

1990

August 2: Saddam Majid Hussein b-1937, a Sunni Muslim, of Iraq invades Kuwait 1990-1991.

A very mild Dutch winter.

In January, a cyclone struck Madagascar, killing at least 12.

On January 20-24, floods in Tunisia killed 30 and left 9500 homeless.

On January 25, hurricane force winds struck Europe, killing 45 in the UK, 19 in the Netherlands, 10 in Belgium, 8 in France, 7 in Germany, and 4 in Denmark.

On January 27-28, floods and land slides in Java kill more than 130.

On February 3, hurricane force winds in France and Germany kill 29 and take tiles off the Chartres Cathedral.

On February 26,, hurricane force winds in Europe kill 51.

In March-April, floods in Kenya and Tanzania kill 140 and leave 25000 homeless.

On May 9, a cyclone in Andhra Pradesh India kills 962 and left thousands unaccounted for.

In June, floods in Hunan and Jiangxi Provinces China kill more than 100 and destroy 16000 homes.

On June 20, floods in Turkey kill 48.

On June 23-24, Typhoon Ofelia kills 57 in the Phillipines, Taiwan, and China.

In July, floods in Yunnan Province China kill 108.

On July 11, the costliest hailstorm in United States history in CO. A massive hailstorm from Estes Park to Colorado Springs, CO injured 47 people. There was over 505 million dollars damage, making it the costliest hailstorm in United States history.

In July, floods around Lake Baikal cause extensive damage and kill many.



In August, a typhoon struck Guangdong and Fujian Provinces, China, killing 108.

In August, Typhoon Yancy killed 12 in the Phillipines and 216 in China.

On August 5-8, Hurricane Diana struck Mexico. [NHC rank 154/259 with 96 dead]

On August 28, a tornado in Plainfield IL killed 29.

On August 31, Typhoon Abe struck China killing 48.

On September 11-12, floods and mud slides killed at least 83 in South Korea.

On September 16-17, Typhoon Flo struck Honshu Japan killing 32.

On September 22-23, flash floods in Chihuahua Mexico killed 45.

In October, storm surges in Bangladesh kill perhaps as many as 3000.

On October 23, Typhoon Vera struck Vietnam killing 15 and leaving thousands homeless.

On November 14, Typhoon Mike struck the Phillipines, killing 190 and leaving 120000 homeless.

Typhoon Russ strikes Guam around Christmas time.

1991

On March 10, floods in Mulanje Malawi kill more than 500 and leave 150000 homeless.

On March 18, heavy rains resulted in flooding and mud slides in California. More than 4 inches of rain fell at Santa Barbara and Santa Maria. More than 10 inches of rain fell at Gibraltar Dam. In addition to the heavy rain, the wind gusted to 125 MPH at Laguna Peak.

On April 10, a tornado struck a textile mill in Sripur Bangladesh killing 60.

On April 26, more than 70 tornadoes kill 26 in KS. Called the Andover Outbreak, the worst tornadoes occurred in southern Kansas and northern Oklahoma, the most notable being the one that struck Andover, Kansas, killing 17 people, 13 in a mobile home trailer park. There were 308 injuries and over \$280 million damage.

On April 30, a 20 foot storm surge from a cyclone in Bangladesh kills 138866 and destroys 80% of the livestock.

In May, a devastating ice storm in Rochester NY with ice and power outages all the way to northern ME.

On May 7, a tornado in Tungi Bangladesh killed 100.

On May 9, a tornado in Sirajgani Bangladesh killed 13.

In May-August, floods in China kill at least 1800. On May 18, a flood affects 210.2 million people.

In June, flash floods in Jowzjan Province Afghanistan killed up to 5000.

On June 15, Mt. Pinatubo erupts.

On July 28, prolonged rain in Onesti Romania caused a dam to burst killing more than 100.

On August 18-20, Hurricane Bob killed 16 in the eastern United States.

On August 23, Typhoon Gladys killed 72 in South Korea.

In September, floods in Cambodia kill 100.

In September, floods in Bangladesh kill 250.

On September 7, a hailstorm strikes Calgary, Alberta, Canada. A supper-hour storm lasting 30 minutes dropped 10-cm diameter hail in Calgary subdivisions, splitting trees, breaking windows and siding, and crushing birds. Homeowners filed a record 116000 insurance claims, with property damage losses exceeding \$300 million -- the most destructive hailstorm ever and the second costliest storm in Canada.

On October 27-November 8, Typhoon Thelma in the Philippines, with 6000 fatalities.

In November, floods in southern India kill 125.

On December 6-10, Typhoon Val hit Western Samoa killing 12 and leaving 4000 homeless.

On December 21-22, floods in TX kill 15.

1992

On February 1-7, blizzards in southern Turkey caused avalanches killing 201.

On May 13-15, floods in Tajikstan kill at least 200.

In May-June, heavy rains in Paraguay kill 28 and cause 220000 to evacuate.

On August 16-26, Hurricane Andrew, kills 38 and causes \$25 billion in damage in FL and LA; 63000 homes are destroyed in FL; 44000 are left homeless in LA. Hurricane Andrew devastates

South Florida. The most destructive United States hurricane of record, Andrew blasted its way across South Florida on August 24, continued westward into the Gulf of Mexico and struck the Louisiana coast on August 26. Andrew is responsible for 23 deaths in the United States and three in the Bahamas. The hurricane caused \$26.5 billion in damage in the United States, of which \$1 billion occurred in Louisiana and the rest in South Florida. The storm surge was 17 feet. Homestead Air Force Base was almost totally wrecked. The National Hurricane Center in Coral Gables had a wind gust of 164 MPH. [NHC rank 255/259 with 26 dead]

In July, floods in Fujian and Zhejiang Provinces China killed more than 1000.

On August 30-31, Tropical Storm Polly caused a 20 foot storm surge in Tianjin China, killing 165 and leaving 5 million homeless.

On September 2, flash floods in Gulbahar Afghanistan killed up to 3000.

On September 11-16, monsoon rains cause the Indus to overflow killing 2000 in Pakistan and 500 in India.

On September 22, flash floods near Ardeche France kill up to 110.

In October, flash floods in Kerala India killed 60 and left thousands homeless.

In November, floods and mud slides in southern India killed 230 and left thousands homeless.

On November 21-25, a tornado outbreak in 11 states from TX to OH killed 25. A late season outbreak covered a widespread area from Houston, Texas, to Raleigh, North Carolina, and from the Gulf Coast to the Ohio Valley. 94 tornadoes killed 26 people and injured 641. Total damage was over \$300 million.

On December 10-11, heavy rain and snow in the northeastern United States killed 17.

1993

On January 2-3, Cyclone Kina struck Fiji killing 12.

On January 7-20, floods in Mexico/CA region kill 30.

On January 8, a tornado in Bangladesh kills 32.

In February, floods in Iran kill 500 and cause extensive damage.

On March 12-15, a winter super-storm battered the eastern United States seaboard and claimed at least 238 lives. Record snowfalls paralyzed GA, TN, and the Appalachians with up to 50 inches falling; More than a foot of snow fell from AL into ME, combined with record cold in the storm's aftermath. Seventy record lows were set on March 14, with an additional 75 that following

morning. Many stations from Alabama to New England set single storm or 24-hour snowfall records. Near Key West, the wind gusted to 109 MPH.

On April 9, a tornado killed 100 in West Bengal India.

On April 26, floods in Columbia kill up to 100 people.

In June-August, the Great Midwest Flood, the costliest flood in United States history, claimed 48 lives and caused \$18 billion in damage in 9 states. More than 50000 homes were damaged, and 12000 miles of farmland were washed out.

In June, floods in Dhaka Bangladesh kill 200.

In July-August, monsoon rains in Bangladesh, Nepal, and India kill thousands.

On July 6-7, Hurricane Calvin struck Mexico killing 28.

On August 8, Tropical Storm Bret killed at least 100 in Venezuela. [NHC rank 110/259 with 184 dead]

In August, Hurricane Emily passes off coast of NC.

On September 14-21, Hurricane Gert struck Mexico, Honduras, and Nicaragua. [NHC rank 167/259 with 76 dead]

On October 31-November 2, mud slides in northern Honduras killed 400.

In December, hurricane force winds struck the UK killing 12.

1994

April 6: A campaign of genocide began after the Rwandan Presidents jet was shot down over Kigali, Rwanda. A 100 day campaign saw the slaughter of 500000 Tutsis and politically moderate Hutus. Others suggest the death of one million people within a three month period.

On February 2-4, Cyclone Geralda struck Madagascar killing 70 and leaving 500000 homeless.

On March 27-28, a tornado outbreak in AL, GA, NC, SC, and TN killed 42. The Palm Sunday Outbreak. A devastating mid-morning tornado hit the Goshen United Methodist Church in Piedmont, Alabama, during Palm Sunday services, killing 20 people. The rest of the afternoon and evening tornadoes would go on to ravage Georgia and South Carolina, killing a total of 42 and injuring 320.

In March, a cyclone struck Mozambique killing 34 and leaving 1.5 million homeless.

On May 2, a cyclone hit Bangladesh killing 233.

In June, floods in China kill up to 400 people.

On June 29, at Charlotte Pass, New South Wales, a record low for Australia of -9.4F was set.

On July 4-7, Tropical Storm Alberto, which formed near the western tip of Cuba, was notorious for the tremendous floods that it caused in GA, FL, and AL. These floods claimed at least 28 lives in Georgia and 2 in AL. The town of Americus received 21.90 inches of rain. [NHC rank 236/259 with 30 dead]

On August 20, Typhoon Fred struck Zhejiang Province China killing 1000.

On November 4-5, floods in northern Italy killed about 100.

On November 8-21, Hurricane Gordon followed an unusual, erratic path over Nicaragua, the western Caribbean Sea, Jamaica, Cuba, the Bahamas, FL and the southwest North Atlantic killing up to 2000 in Haiti. [NHC rank 30/259 with 1145 dead]

1995

In January, floods in CA kill 11

In March, floods in CA kill 12.

In late January-early February, heavy rains and melting snow cause the Rhine, Main, Mosel, Meuse, Waal, and Nahe rivers to overflow causing widespread floods in France, Germany, Belgium, and the Netherlands; 30 people died; it is the worst flood in 150 years.

In May, rain, hail, tornadoes and flooding in TX, OK, LA and MS kills 32.

On March 27, heavy rain in Afghanistan triggered a mud slide that destroyed a village and killed 354.

In early May, floods and land slides in northern Sumatra kill 55 and leave 17,500 homeless.

In May, floods in China affect 114.5 million people.

On May 17, heavy rains and a storm surge kill 100 in Bangladesh.

On June 14-22, Cyclone Agnes hit Australia.

In June-July, heavy rains in 3 Chinese provinces kill at least 1200 and destroy 900000 homes.

In mid-July, widespread floods in Bangladesh kill 150 and in Pakistan kill 600.

In July, Hurricane Erin struck both Florida's east coast and western panhandle, causing an estimated \$700 million in damage and six deaths.

In July, a heat wave caused 700 deaths in the Chicago area.

On August 17, flash floods in Morocco kill 230 to 730.

On September 11, Canada's Only World-Weather Record is set. The QE2 ocean liner was struck by a 30-meter wave during Hurricane Luis off the coast of Newfoundland, marking the largest measured wave height in the world. The massive storm covered almost the entire North Atlantic, almost 2000 km across.

On September 14, Hurricane Ismael struck western Mexico killing 107.

On September 15-16, Hurricane Marilyn struck the United States Virgin Islands, causing losses of \$1.5 billion and 9 deaths; 80% of the homes on the Virgin Islands were destroyed.

On September 30-October, 4, Hurricane Opal struck Guatemala, Mexico, and the southeast United States. [NHC rank 182/259 with 59 dead]

On October 1, Tropical Storm Sybil struck the Philippines, killing more than 100.

On September 27-October 5, Hurricane Opal struck Guatemala, Mexico, and FL/MS killing 59. Hurricane Opal came ashore with sustained winds of 125 MPH just east of Pensacola, FL. Wind gusts reached 144 MPH near Fort Walton Beach, FL. The Pensacola Beach fishing pier was near demolished.

In October, Hurricane Roxanne killed 14 in Mexico.

On October 26, fierce blizzards in Flatyeri Iceland lead to a snow slide that killed 20.

On November 1, a cyclone in India killed 3.

On November 3, Typhoon Angelica killed 700, destroyed 15000 homes, and left 200000 homeless in the Philippines.

On December 25, flash floods in Natal South Africa killed at least 130.

In late December, extreme cold and blizzards affected Europe and Asia from the UK to Bangladesh; more than 350 died, many in Moscow.

This year the hurricane season brings 19 named storms. With 19 storms, the 1995 season goes down as the second-busiest season on record, trailing only 1933, when 21 storms formed.

1996

On January 6-9, the worst blizzards in 70 years swept the eastern United States, at least 23 died; 9 states were declared disaster areas. The "Blizzard of '96" wreaks havoc across the eastern third of the country. Boston, New York City, Philadelphia, and Washington DC are completely paralyzed. Many single storm snowfall records are set.

On January 24, the Ohio River crested at 57.3 feet; Hundreds were left homeless as parts of the region were thrown into a state of emergency. Hardest hit were Clermont County, Anderson Township and Cincinnati's east side. In Hamilton County, flood water damaged at least 300 homes. In Clermont County, 84 homes were damaged.

On May 13, a tornado killed more than 430 people in Bangladesh; 32000 more were injured and 80 villages destroyed.

On June 16, a cyclone in southern India killed up to 190.

On June 19, severe flooding in Tuscany Italy killed up to 41 people.

In late June through August, the Ganges and Brahmaputra rivers overflowed flooding about one third of Bangladesh; at least 115 died and 6 million lost their homes and crops; flooding continued to July 25, but returned in August.

On July 6, snowstorms affected large parts of eastern South Africa; it was the heaviest and most sustained there since 1962; in Free State Province, it was the first snowfall in 50 years.

On July 7, heavy rains killed 100 campers in the Spanish Pyrenees.

On July 8-12, Hurricane Bertha pounded the Virgin Islands to the Carolina coast.

In mid-July, a tornado in China killed 21 and destroyed several hundred houses.

On July 18, Typhoon Eve struck Japan.

On July 20-21, 11 inches of rain fell near the Saguenay River in southern Quebec; at least 8 died. Canada's first billion dollar disaster, this deluge triggered a surge of water, rocks, trees and mud that killed 10 people and forced 12000 residents to flee their homes. Many roads and bridges in the region disappeared.

On July 23, Tropical Storm Frankie struck Vietnam killing 41.

On July 24, a hailstorm pounds Calgary and Winnipeg. Orange-sized hailstones racked up close to \$300 million in property losses. Hail clogged storm sewers, causing extensive flooding in both cities and in Winnipeg, at least a third of the cars damaged had to be written off.

On July 25, Typhoon Gloria struck the Phillipines; it was the sixth storm to strike there in 1996.

On July 25-28, Hurricane Cesar struck Nicaragua, Honduras, and El Salvador. [NHC rank 192/259 with 51 dead]

In late July, heavy rains kill 230 in North Korea and destroyed 20% of the crops.

In July, floods in China affect 154.6 million people.

On July 31, Typhoon Herb hit Taiwan killing about 75 ; it was the worst typhoon in 30 years.

On August 14, Typhoon Kirk hit Japan; later in China it caused 845 villages on the Yellow River to be inundated.

In mid-August, heavy rains in far eastern Russia flooded 8 towns and 126 villages.

In August, Hurricanes Cesar and Dolly killed at least 65 people in Central America and Mexico.

In September, Hurricane Fran struck NC causing at least 34 deaths.

On September 7, Hurricane Hortense pummeled PR and affected the United States Virgin Islands. Torrential rains devastated portions of PR, triggering mud slides, which killed 18 people.

On September 10, Typhoon Sally struck Hong Kong killing 130 and destroying 400000 homes.

On November 1, Cyclone 04B struck India killing more than 2000.

On December 25, Tropical Storm Greg killed 90 in Indonesia.

On December 22-30, a cyclone struck south western Australia.

On December 28-29, Victoria's (British Columbia, Canada) snowstorm of the century. The December storm dropped 80 cm of snow in 24 hours, 125 cm in five days with cleanup costs exceeding \$200 million (including a record insurance payout for BC of \$80 million).

Six hurricanes reach Category 3 or higher. After 1995's near-record hurricane season, experts figured 1996 could not be as bad. But it was worse, killing more people and spawning stronger storms. Hurricanes caused \$4.1 billion in damage in the United States and killed 147 people in the United States, Mexico, Central America and the Caribbean islands.

1997

Droughts and forest fires in Indonesia.

Harsh winter in western Europe.

In early January, tremendous amounts of rain and snow to parts of the states of WA, OR, ID, CA,



NV, and MT causing widespread flooding.

On January 10-16, Cyclone Gretelle struck Madagascar killing 140.

On January 24, severe storms blasted places from AR and LA to AL and the Carolinas killing one.

On March 1-2, tornadoes in AR killed 25 people, with 36 more deaths in a half-dozen other states due to flash floods and winds gusting to 100 MPH. At least a dozen tornadoes ravaged Arkansas, with other tornadoes touching down in Tennessee, Mississippi, and Kentucky. Twenty-seven people were killed. Arkadelphia, Arkansas, was particularly hard hit as were the southern suburbs of Little Rock.

On March 1-12, the OH River floods in KY and 17 OH counties are declared disaster areas.

On March 7--1 Cyclone Gavin struck Fiji killing 20.

On March 13-21, Cyclone Hena strikes Tonga causing considerable damage and killing 12.

On March 31-April 1, a snowstorm two to three feet of snow across parts of eastern NY, northeastern PA, and southern and central New England.

In early April, a blizzard, which dumped up to 3 feet of snow in parts of the northern Plains, eventually leads to the Red River flood, which broke a 100 year flood crest record of 39.1 feet at Fargo, ND on April 17th, when the river crested at 39.6 feet. About 2000 square km of valley lands were flooded as the Red River rose 12 m above winter levels. Thousands of volunteers and soldiers fought rising waters for days. Damage estimates reached a half a billion dollars.

On May 27, a tornado with 265 MPH winds killed 27 people in Jarrell TX. An F5 tornado (winds in excess of 260 MPH) ripped through Jarrell, TX during the evening obliterating most of the town. Asphalt roadways were ripped up and 32 people were killed.

In June, in Chile, 3 weeks of practically non-stop rain left 18 dead and 45000 homeless.

In July, Hurricane Danny is the only land striking one in the United States, entering AL.

In July, in Guangdong Province near Hong Kong, the worst flooding in 20 years occurred.

In July, in Poland, 180 towns are completely under water, 140 are partially flooded and more than 100000 people have been evacuated. In the Czech Republic, 40 percent of the territory is affected and more than 60000 people have been moved to safety. In Slovakia more than 17000 have been evacuated. Millions of acres of farmland has been inundated as well.

On July 21, Okanagan's \$100 million hailstorm. A destructive hail and wind storm ripped through the orchards of the Okanagan. It was the worst storm in memory with nearly 40% of the

crop deemed unsuitable for fresh market. The rain and hail was accompanied by winds gusting to 100 km/h that capsized boats in the interior lakes, and caused power outages and traffic accidents.

On August 12-13, floods in the Himalayas in northern India kill 110.

On October 8-9, Hurricane Pauline kills 400 in Southwest Mexico.

On October 14-19, Typhoon Ivan struck the Philippines.

On October 15-22, Typhoon Joan struck the Philippines.

On December 17, Typhoon Paka hits Guam with 150 MPH winds and injures 20.

Quiet year with only three hurricanes. This was an unusually quiet year in the tropics, one that crossed up forecasters and was a welcome relief from the ferocious 1995 and 1996 seasons.

1998

A Year-Long Heat Wave - 1998. Canada experienced its second warmest winter and warmest spring, summer and fall on record. Temperatures in 1998 were an average of 2.4 degrees warmer than normal and likely the warmest year this century.

In January and February, the coldest winter of the century in Tibet with 50 straight days of snow, thousands of cattle and livestock dead, thousands of people isolated and without food, and winter is not over yet. It is reported to be the coldest winter of the century in Tibet.

On January 4-9, the Ice Storm of the Century in Canada. One of the most destructive and disruptive storms in Canadian history hit Eastern Canada causing hardship for 4 million people and costing \$3 billion. Losses included millions of trees, 130 transmission towers and 120000 km of power and telephone lines. Power outages lasted from several hours to four weeks.

In February, a tornado outbreak in FL killed 36 and injured 250.

In April, Australia's Davis Station in Antarctica reported it had its coldest April on record. Mean daily maximums were only -34 C, and hit a record 1-day low of -41 C.

In April-May, the worst flooding in Uruguay's history leads to 68 deaths and extensive damage in the region.

On May 1-7, near Naples Italy, 148 die from flooding and mud slides due to heavy rain.

On June 6, Fresno, CA set a record for June monthly rainfall in one day when 1.77 inches of rain fell. The old record for the month was 1.66 inches.

In June 9-11, 1126 people were killed by a cyclone in western India.

In June-September, flooding in China kills 3004 in the worst Yangtze flooding since 1954; flooding affected over 240 million people in China.

In July-August, torrential rains in Korea kill 273.

In July-September, monsoonal rains in Bangladesh kill 2632 in some of the worst flooding in 80 years.

In August, Hurricane Bonnie hit NC with wind up to 100 MPH killing 3.

During the summer, Bangladesh suffered its most extensive flood of the century.

During the summer, there was a record heat wave in TX.

On August 6, floods in China affect 238.9 million people.

In September, there were four hurricanes at once - Georges, Ivan, Jeanne, and Karl - for the first time since 1893.

In late September, Hurricane Georges struck PR, FL, and MS, killing 353 in PR and nearby islands.

On September 14, the heaviest rains in nearly 60 years hammered Belgium and parts of the Netherlands.

In early October, devastating frosts wreaked havoc to wheat crops in Western Australia, with estimated damages of A\$300 million.

On October 9-17, Typhoon Zeb delivered a one-two punch to southeast Asia killing 92 in the Philippines and Taiwan; plus 12 in Japan.

On October 13-21, Typhoon Babs kills 132 in the Philippines and leaves 320000 homeless.

On October 25, Hurricane Mitch struck Central America, with an estimated 11000 dead, the region's greatest hurricane loss since 1780 and third deadliest hurricane ever.

On November 1, Hurricane Georges devastates the Caribbean killing 602.

On November 4-14, Typhoon Elvis hits Vietnam killing 50; it the third typhoon in 3 weeks to strike Vietnam claiming 267 altogether.

On November 5, the worst rain in 50 years in the Ukraine and the Balkans kills 25000 and leaves

millions homeless.

## 1999

On January 2-15, it is Toronto's Snowstorm of the Century. A series of storms stalked the city, dumping nearly a year's amount of snow in less than two weeks. In all, the city recorded the greatest January snowfall total ever with 118.4 cm and the greatest snow on the ground at any one time with 65 cm. The storms cost the city nearly twice the annual budget in snow removal.

On January 28, temperatures in Northern Norway fell to minus 51.2C., the coldest this century; record cold temperatures were set in Russia too.

On February 11, the greatest single day snowfall record is set in Tahtsa Lake, BC, which received 145 cm of snow, a new Canadian single-day snowfall record, but well below the world's record of 192 cm at Silver Lake, Colorado on April 15, 1921.

In May, a tornado outbreak in the United States.

On May 3, in OK, a tornado, up to a mile wide, on a 60-mile destruction path, leaving 44 people dead, almost 800 injured and more than 8000 homes damaged or destroyed. More than 59 tornadoes struck western and central Oklahoma. In the Oklahoma City area, rows of homes were flattened and schools and businesses were damaged. At least 40 died and more than 675 were injured.

In June-August, 725 die in floods in China. Floods affect 101.0 million people.

On July 13, a tenth of Bangladesh is under water.

On July 19-21, monsoonal rains in northern Bangladesh flood 10 villages; 356 die.

On July 30-August 8, Typhoon Olga in the Phillipines and Korea kills 252.

On August 22, Typhoon Sam hits Hong Kong causing a jetliner to crash, killing 2.

On September 7-9, Hurricane Greg batters northwestern Mexico, killing 9.

On September 9, Hurricane Floyd causes severe flooding in eastern NC. This storm came ashore near Cape Fear, N.C., on September 16 and continued along the coast into New England. Storm-produced floods were responsible for 50 of the 56 deaths caused by Floyd in the United States.

On September 22, Typhoon Bart hits southern Japan causing widespread damage.

In October, Hurricane Irene worsens NC flooding.

On October 7, the volcano Guagua Pichincha in Ecuador sent a mushroom shape cloud 12 km high (stratospheric?).

On October 29-November 12, a cyclone in eastern India destroys 1500 villages, kills 9803, and leaves 10 million homeless.

An early cold winter in Europe.

On November 21, the people of the sub-tropical island of Majorca woke to find the interior of the island covered in deep snow for the first time ever in November.

In November, in southern France a 70-mile stretch of motorway was closed by freak early blizzards stranding a hundred motorists in their cars. These areas have never recorded snow in November making these events even more remarkable. Record low temperatures were recorded throughout this area.

In November, for the second year running, Moscow has endured record low temperatures for November.

On 25th November the maximum temperature was a bone chilling -17C., 16 degrees below normal.

In November, Hurricane Lenny kills 9 in the Caribbean.

On December 15, Cyclone John pounds northwestern Australia; it is one of the most powerful cyclones ever there, but no one is injured.

On December 15, floods in Venezuela kill 30000.

On December 25, a great wind storm (Lothar) hits the UK and France knocking down 270 million trees and killing 130 (perhaps similar to wind storms of 1612 and 1703).

On December 27, winter storm Martin hits southwest France, causing extensive damage.

## 2000

In early January, cold weather in eastern India kills more than 100.

In January, ice in the Bering sea extends further south than it has at any time in the previous 25 years.

On January 25, Raleigh NC has 20 inches of snow, breaking the 24 hour snowfall record of 17.4 inches set on March 2, 1927.

On January 28, the Adriatic Sea froze for the first time in almost half a century as a Siberian chill

gripped Europe and the Middle East; Jerusalem, Israel had an unusual snowstorm.

On January 31, Butuan City, Philippines: At least 11 were killed and over 20000 were forced to evacuate as torrential rains caused floods and landslides.

On February 13, in southwest GA, tornados killed at least 22; it is the worst outbreak there in 50 years.

February, southeastern Africa: Weeks of rain resulted in deadly floods. More than 200000 were left homeless in Mozambique and another 80000 in Zimbabwe. Madagascar also affected. About 700 people total were killed.

In late February, a third of Queensland, Australia's second largest state, was underwater and monsoon rains continued to deluge vast tracts of land in New South Wales State and the Northern Territory.

Starting in October 1999 through April 2000, harsh weather kills more than 2 million head of livestock in central Mongolia; it is the harshest winter the region has experienced since 1944.

In March, in Bolivia the crops of 22000 families were destroyed by flooding and at least 10000 cattle killed, as well as hundreds of people left homeless.

In March, more than two meters (6 feet) of snow fell in Tromso (northern Norway's biggest city), a record snowfall for March

On May 28, the capital city of sunny Australia, Canberra, was plunged into freezing temperatures as driving snow enveloped the city. It was the result of a blast of cold Antarctic air funneled up by strong southerly winds. When the day was done, the weather bureau announced this was the coldest May day ever recorded in Canberra.

early July, southern Europe: Recording breaking heat wave in Italy and the Balkans resulted in dozens of deaths and set the stage for numerous wildfires damaging crops and forests. Temperatures in some areas climbed as high as 50° C (122° F).

On July 3, Typhoon Kirogi, packing sustained winds of 130 MPH, battered the northern main island of Luzon from the east, while a tropical depression blew off the western coast. Combined, the 2 storms brought heavy rains as far inland as the central Philippines. Floods and ensuing mud slides forced the evacuation of as many as 16000 families, and were responsible for at least 7 deaths.

On July 14, a tornado in Pine Lake, Alberta, killed 11.

July 19, Bombay, India: Monsoon rains set off a landslide, burying a shanty town on a hillside in the eastern part of the city. More than 50 people were believed dead.

July 20, central China: The death toll rose to 213 after a week of floods and landslides in Shaanxi province. Thousands of homes were destroyed, and roads and telephone communications were also badly damaged.

Early August, northeastern India, northern Bangladesh, southern Bhutan: Torrential rains causing flash floods left about 300 dead and more than three million homeless.

August 22–23, Andhra Pradesh, India: Heavy rains and flash flooding left 120 dead and nearly 100,000 homeless in the southern Indian state.

August 23, Taiwan: At least 11 people died in the wake of Typhoon Bilis, which cut a path 373 mi. (600 km) wide with winds gusting up to 200 MPH (320 km/h).

Mid-September, Thailand, Cambodia, and Vietnam: Rising flood waters from the Mekong River and its tributaries destroyed crops and livestock and left at least 235 people dead and 4.5 million homeless. Damages were estimated at \$50 million in Cambodia and \$24 million in Thailand.

In late September and early October, floods in western India and Bangladesh kill 1020 in India and 120 in Bangladesh. 10 million people are displaced; "Flooding is common in the eastern India and Bangladesh at this time of year, but it is usually not as extensive or sudden."

October 16–18, Switzerland, France, and Italy: Heavy rains in the Alpine region of Switzerland, France, and Italy caused flooding and rock- and mud slides, which left more than two dozen people dead and forced the evacuation of thousands more.

October–November, western Europe: Weeks of rain caused widespread flooding in much of Great Britain, southern France, and northern Spain and Italy.

November 3, Philippines: A typhoon packing winds of up to 75 MPH slammed into the island of Luzon, killing at least 24 and forcing the evacuation of over 100,000.

November 27, Sumatra, Indonesia: Torrential rains triggered landslides and floods, killing at least 119 people on the island of Sumatra.

December 16, Tuscaloosa, Ala.: Tornado with winds averaging between 175 and 200 MPH ripped through the city along a 12-mile path of destruction, killing 12 people. According to officials it was the deadliest United States tornado this year.

No major landfalls in the United States There was an above-average number of tropical storms and hurricanes in 2000, but there were no hurricane landfalls in the United States

## 2001

In January, in northern China, government sources said on Monday that thousands were facing starvation after a devastating storm of sand and snow that began on New Year's Eve and has left

at least 21 people dead. The three-day storm dumped 60 centimeters (24 inches) of snow mixed with sand from the Gobi desert and stranded herdsman and their families in deep drifts. It was the worst in 50 years to lash vast stretches of Inner Mongolia, according to a Chinese Red Cross official.

February 21, Mozambique: Floods left 41 people dead and 77,400 homeless.

February 24, Pontotoc, MS.: Tornado struck the northern part of the state, carving a 23-mile path of destruction through Pontotoc County and leaving five people dead. The twister was part of a larger storm system that caused blizzard conditions in the northern Plains and Midwest and heavy rains and flooding in the nation's mid-section.

June 6, Bangladesh: Severe flooding caused by heavy monsoon rains inundated several villages and left some 100,000 Bangladeshis stranded.

June 8–15, Gulf Coast to southern New England: Tropical Storm Allison caused severe flooding, especially around Houston, where 20,000 residents were evacuated from their homes. Rainfall totals reached 40 in. in parts of Tex. and La. Storm-related fatalities included 23 in Tex., 1 in La., 1 in MS., 8 in FL, 7 in PA, and 1 in VA.

June 11–12, near Quito, Ecuador: At least 38 people died and thousands were evacuated from their homes after torrential rains flooded rivers and triggered landslides.

June 23–24, Taiwan and Fujian Province, China: Typhoon Chebi killed 9 people in Taiwan and 73 people in Fujian Province in southeast China. A total of 109 fishing boats and four yachts sank in the Pescadores, off Taiwan's western coast. Damages to crops in Taiwan were estimated at \$13.3 million.

July 6, northern Philippines, Taiwan, southern China: Typhoon Utor, one of the worst storms to hit the area in years, left more than 160 dead (121 in the Philippines, 46 in China, and 1 in Taiwan). High winds and landslides leveled houses and knocked out roads and bridges. Damages were estimated at \$286 million in China and \$11.2 million in the Philippines.

July 30–31, Taiwan and southern China: Typhoon Toraji slammed central Taiwan, causing flash floods and mud slides. At least 61 people were killed. Damages were estimated at \$20 million.

August 1, Nias Island, off western Sumatra, Indonesia: Flooding and landslides caused by heavy rains swept away entire villages and killed at least 31 people.

September 11; The World Trade Center towers are destroyed in a terrorist attack and about 3,000 people die.

September 17–18, Taiwan: Typhoon Nari caused 79 deaths.

September 24, Maryland and Virginia: Tornado tore a path of destruction from Culpeper, VA., to



Laurel, Md., leaving three dead and causing millions of dollars of damage.

October 8, near Big Creek village, Belize: Hurricane Iris roared onto the coast of southern Belize, killing an estimated 25 people. The dead included 17 Americans from a diving club in Richmond, VA., whose boat capsized during the storm.

early October, central and southern United States: A record 83 tornadoes swept through portions of the United States in the first half of October, the highest number of twisters ever recorded for that time period. The states most affected were Alabama, Arkansas, Florida, Louisiana, Mississippi, Missouri, Nebraska, Oklahoma, and Texas. The previous record for the first two weeks of October was 47 confirmed tornadoes, set in 1998.

November 4–5, Cuba: Hurricane Michelle destroyed tens of thousands of homes and caused widespread agricultural damage; five people died. Before striking Cuba, Hurricane Michelle wiped out homes, roads, and bridges and killed 12 people in Honduras, Nicaragua, and Jamaica.

November 8–9, central and southern Philippines: Tropical storm Lingling triggered floods and landslides that left some 350 people dead or missing.

November 10–12, Algiers, Algeria: Heavy rains caused the worst flooding in two decades; official death toll stood at 651 (701 nationwide) as of November 15 but was expected to rise.

November 11–12, central Vietnam: Tropical storm Lingling continued to wreak havoc, with torrential rains and gusting winds that destroyed 15000 homes and left 20 people dead. The storm caused an estimated \$25 million in damage.

November 15–16, central and southern Texas: Massive downpours and heavy winds caused extensive flooding that damaged hundreds of homes and killed 10 people. Rising waters not only wrecked homes but also caused severe sewage spills in the area.

November 24, Mississippi, Arkansas, Alabama: Fierce thunderstorms, which spawned a series of tornadoes, ripped through the area, killing at least 11 people.

December 23–31, Rio de Janeiro state, Brazil: Flooding and landslides caused by heavy rains killed 60–70 people, mainly in the mountain resort city of Petropolis near Rio de Janeiro on Christmas Eve. Downpours on New Year's Eve destroyed part of the historic town of Goias Velho, a United Nations World Heritage Site.

## 2002

The United States leads a war in Afghanistan (2002-2003).

February 19, La Paz, Bolivia: Heavy rains collapsed scores of homes and caused flash flooding in the city, resulting in 69 deaths and approximately \$60 million in damage.

April 28, east-central United States: Outbreak of tornadoes caused pockets of devastation from Maryland to Missouri. In southern Maryland a powerful F-5 tornado, with winds ranging over 261 MPH, killed 3 people and nearly leveled the town of La Plata. In Missouri, Kentucky, and Illinois, one person was killed in each state.

May, southern India: Brutal heat wave, particularly in Andhra Pradesh State, left more than 600 dead nationwide.

May 2–5, southern W. VA. and southwest VA.: Storm system moving through Appalachian region dumped some 6 in. of rain in 4 just hours, causing major landslides and flooding. At least a dozen people died and nearly 2000 homes and businesses were destroyed. The same region also suffered devastating floods in May and July of 2001.

June, central and southeast China: Torrential rainfall produced floods and mud slides that left more than 750 people dead and tens of thousands more homeless in Shaanxi, Sichuan, Hubei, Hunan, Guangxi, Jiangxi, and Fujian provinces. Officials estimated that more than 5 million acres of crops had been destroyed, and numerous bridges, roads, and power and telephone lines had been wiped out.

June 21–29, southern Russia: Heavy rains caused the worst flooding in 10 years. Areas hardest hit were the Stavropol and Krasnodar regions, the republics of Chechnya, Dagestan, Karachayevo-Cherkessia, North Ossetia, and Kabardino-Balkaria. The flooding left 93 people dead and 87000 homeless. Damages estimated at \$385 million were expected to rise.

July 1–6, south-central Texas: Heavy rains and severe flooding resulted in damage to at least 48000 houses, at a cost of tens of millions of dollars.

July 16, Philippines and Japan: Typhoon Halong caused widespread evacuations in Japan and left 61 people dead in the Philippines. In all, four typhoons (Rammasun, Chata'an, Nakri, and Halong) swept through region in early July, killing about 100 people in Micronesia, the Philippines, China, and the Korean Peninsula.

August, central and western Europe: Torrential rains and flooding wreaked havoc across the region, from Germany to Russia, causing at least 71 deaths. The Black Sea area, in Russia, was among the hardest hit; flash floods swept houses and bridges into the sea and left thousands of vacationers stranded. In Czech Republic, thousands of people were evacuated from Prague as flood waters deluged the city center, and Salzburg, Austria, was declared a disaster zone, with 1000 buildings partially or totally submerged. The heavy rains also triggered landslides in Germany and Switzerland and caused major crop damage in northern Italy. Bulgaria and Romania were also the scenes of destructive flooding.

August, southeast China: Torrential rains triggered floods and landslides that left about 200 people dead (as of August 16) in Hunan Province. In the province of Yunnan, 25 people were killed and another 44 were said to be missing following a massive landslide (August 16). An earlier landslide in the province left at least 16 dead (August 12). The total death toll due to

flooding this year in China has risen to about 1000.

August, India, Nepal, and Bangladesh: Monsoon floods and mud slides resulted in 323 deaths in India; 424 in Nepal; and 157 in Bangladesh. In addition, there was a widespread loss of crops and livestock across the region.

August 31, southern and eastern South Korea: Typhoon Rusa triggered flash floods and landslides, leaving more than 100 dead or missing. Wind gusts up to 127 MPH uprooted trees and left more than a million homes without power. South Korea's worst typhoon in 40 years.

November 9–11, central and southeast United States: A series of more than 70 tornadoes flattened homes and other buildings across 14 states from Mississippi to Pennsylvania, killing some 36 people. Most of the deaths occurred in Tenn. (17); 12 died in Ala., 5 in Ohio, 1 in Pa., and 1 in MS.

December 4–5, eastern United States: A major winter storm swept across the country from Oklahoma and the Texas panhandle all the way to the Carolinas and the northeast coast. Ice and snow downed power lines, delayed travelers, and closed schools in half a dozen states. North Carolina was the hardest hit, with more than one million homes and businesses left without power. At least 29 people nationwide died as a result of the storm.

December 8, Angra Dos Reis, Brazil: Torrential rains (more than 5 inches in 24 hours) caused mud slides that killed at least 39 people in a seaside town near Rio de Janeiro.

December 29, Southwest Pacific: Cyclone Zoe, a category 5 cyclone, with high winds and massive waves raced across the tiny islands of Tikopia and Anuta in the Solomon Islands chain located about 1900 miles northeast of Australia. Homes and crops were destroyed but the inhabitants survived by fleeing to mountain caves.

July: Gigantic jets of lightning are discovered over the South China Sea. The scientists think this upper atmospheric activity may play a role in ozone formation.

## 2003

January. 1–8, Bangladesh and Northern India: Nearly 400 people perished from cold weather and icy winds in an area where millions of people have no heat, electricity, or warm clothing.

February 14–18, eastern United States: The President's Day blizzard moved through the Midwest and up the East coast of the United States burying cities in record snowfall amounts, stranding travelers, and costing millions in cleanup and lost revenues. The storm claimed the lives of 42 people. It was the worst snowstorm for the region since the Blizzard of 1996.

February 25, south-central United States: Snow and freezing rain in the south-central states caused the deaths of at least 14 people and closed highways across the region. The storm moved eastward causing widespread electrical outages and 2 more deaths.

March 17–19, Denver, Colorado: Colorado's biggest storm of the year dumped several feet of snow in the Rockies, 87.5 inches in Gilpin county, and the second largest recorded amount of snow in Denver.

April-May, Horn of Africa: Flooding in Uganda, Kenya, Somalia, and Ethiopia killed more than 150 people.

May 1– 11, United States: A series of tornadoes battered the Midwest and Southern states during May. In the first 11 days there were 412 tornadoes which broke the previous record in 1999 of about 200 tornadoes in a 10–day period (record keeping began in 1950).

May 4, Kansas, Missouri, Arkansas, and Tennessee: A series of tornadoes ripped through four states, Kansas, Missouri, Arkansas, and Tennessee causing at least 38 deaths and extensive damage to buildings and homes. The hardest hit area was Lawrence County, Missouri. Officials from Federal Emergency Management Agency (FEMA) reported sightings of more than 80 tornadoes in parts of central and southeastern United States. Strong storms and tornadoes continued to hit the South and Midwest through the week, bringing the total number of deaths to more than 41. Some towns in Missouri closed schools for the year.

May 17–18, Sri Lanka: Floods and landslides in south-central Sri Lanka killed more than 300 people, left more than 200 missing, and more than 150000 homeless. Although May through September is typically the monsoon season, these downpours were the worst in 60 years.

May 14–June 5, India: A 3–week heat wave with temperatures over 120° F. (48° C) left more than 1200 people dead from sunstroke and dehydration. Most of the deaths occurred in the southern Andhra Pradesh state where a similar heat wave last year killed more than 1000 people.

July 1, Louisiana Tropical Depression Bill moved through Louisiana, Alabama, Georgia, Tennessee, and North Carolina, leaving four dead and 30 million dollars in damage.

July 15, Gulf Coast, Texas: Hurricane Claudette, a Category I hurricane, packing winds up to 85 MPH, killed three people and left battered buildings, trailers, and downed trees in its wake. Claudette was the first hurricane of the 2003 season. President Bush declared nine counties as disaster areas.

July 22–26, Manila, Philippines and southern China: Typhoon Imbudo, with winds up to 143 MPH, struck the Northern Philippines, killing at least 20 people. The typhoon, one of the most powerful in years, continued on to southern China where it killed 20 more people, destroyed crops, and devastated houses.

June-July, Jiangsu and Anhui provinces, China: The worst flooding from the monsoons in years forced the evacuation of millions, left more than 3.5 million homeless, and killed more than 500 people. Some of the worst flooding was along the Huai River

July, Kulu, India: Flash floods in the Kulu district north of New Delhi killed more than 100

people, bringing the total toll of people killed from the monsoon rains this year in Southeast Asia (India, Nepal, and Bangladesh) to about 400. Thousands of people were driven from their homes as landslides washed away homes and crops.

July-August, Europe: A three-week heat wave dominated Europe where temperatures, the highest in decades, ranged from the upper 90s to 104 degrees (F.), breaking records in Britain, Italy, Germany, Austria, Portugal, and Spain. Amarelejo, Portugal recorded the highest temperature since 1856. Fires raged in Portugal, Spain, Italy, and the French Riviera. Fires in Portugal caused more than one billion in damages. Glacial ice melted in the Alps, violent storms hit England, and nuclear power stations cut back due to overheated water. Thousands died with the toll highest among the elderly. The death toll in France was estimated at more than 14000.

August, British Columbia, Canada: A summer of heat waves and very low precipitation caused hundreds of fires in the British Columbia province, making it the worst Canadian fire season in decades. The Okanagan Mountain fire that lasted more than 23 days destroyed 230 homes and forced tens of thousands to evacuate from the town of Kelowna.

September 2, Guangdong Province, China: The storm system, Dujuan, swept through Taiwan and then southern China with gale force winds, killing 40, injuring more than 100, and destroying houses, trees, crops, and the electric and telecommunications infrastructure. Dujuan, downgraded to a tropical depression, had been a Category 3 typhoon hitting Taiwan with 200 MPH. winds.

September 5, Bermuda: Hurricane Fabian slammed Bermuda for four hours with 120 MPH winds, killing four, and bringing down trees and power lines. A category 3 storm, Fabian was the worst hurricane to hit Bermuda since 1926. Very strict building codes in Bermuda, that required buildings to withstand wind gusts of 150 MPH, limited the amount of damage.

September 12, South Korea: With winds up to 130 MPH, Typhoon Maemi, one of the most powerful typhoons to hit South Korea in a century, killed at least 110 people, disrupted electrical power and communications systems, knocked over ships in the port, and forced the evacuation of thousands from their homes.

September 18, North Carolina and Virginia: Hurricane Isabel, which reached the status of a Category 5 storm while in the Atlantic, hit the North Carolina coast as a Category 2 storm causing extensive storm surge flooding all up the Chesapeake Bay and Potomac and James Rivers. Isabel continued north through Ohio and Pennsylvania dumping heavy amounts of rain in its tracks. At least 50 deaths resulted from Isabel and damages were estimated at \$3.7 billion dollars.

September 28, Halifax, Nova Scotia, Canada: Hurricane Juan made landfall near Halifax and stormed across Nova Scotia to Prince Edward Island heavily damaging farms, causing power outages that lasted more than two weeks in some areas, and killing eight people. Damages were estimated at \$100 million

November 2, Bohorok, Indonesia: Flash floods struck the tourist town of Bohorok, near an Indonesia's nation park and orangutan reserve, wiping out many guesthouses near the river banks and killing more than 150 people. Frequent floods in Indonesia result from the heavy illegal deforestation.

December 2–3, southeastern France: Floods, resulting from three days of rain and winds, killed 7 and left thousands homeless in the Rhone River and its tributaries in southeast France.

December 5–7, northeastern United States: Record snowstorms dumped up to three feet of snow on towns in Massachusetts, Connecticut, Maine and New Hampshire. President Bush approved Federal emergency funds for affected counties in each of these states.

December 17–23, central and southern Philippines: Heavy rains resulted in landslides and flooding across central and southern Philippines killing more than 200 people and causing a ferry to sink.

December 25, San Bernardino Mountains, Ca: Heavy rains triggered flash floods and mud slides, killing 14 people in campsites around the area. October forest fires had left the hillsides barren of vegetation.

December 26: A 6.7 magnitude earthquake struck southeastern Iran, a city called Bam, leveling half the city houses and killing an estimated 40000 people.

## 2004

January 11–17, eastern Canada and United States: Record low temperatures more than 9° below normal.

January 24–29, eastern Europe and Mediterranean: Snow and high winds swept across Romania, Bulgaria, Italy, and Turkey. Turkey closed many shipping channels causing shortages in natural gas and disruptions to electricity and water supplies. Three freighters sunk in the eastern Mediterranean and shipping routes were closed. The Greek-owned cargo ship Kephi sank killing 15 of the 17–member crew. High winds and a sandstorm from this same system closed shipping lanes in the Suez Canal.

January 24–27, midwest and eastern United States Snow, ice, and freezing cold spread across the mid-west, the northern Plains, and eastern United States from Atlanta, Georgia north through Pennsylvania. At least 56 deaths were blamed on the weather.

In January, in American Samoa, Typhoon Heta, which plowed through American Samoa and neighboring Samoa with winds gusting to 200 mph. Heta damaged more than 4,600 homes in American Samoa, according to the American Red Cross. It also devastated up to 90 percent of the crops on Samoa.

February, Canada, United States, and Europe: Record cold and record snowfalls in the month of

February were seen: blizzard conditions in North Dakota, exceedingly heavy snowfalls in North Carolina, and heavy snowfall in the eastern Mediterranean and in western Europe.

March 8, Antalaha, Madagascar : Cyclone Gafilo with winds of 160 MPH and heavy rains left hundreds of thousands homeless and killed 295 people. More than 100 were on a ferry that sank off the island of Comoros.

March 8, Baltimore, MD: Thunderstorms and strong winds gusting to 55 MPH swept through Baltimore overturning a water taxi in the inner harbor, killing 5.

March 28, Santa Catarina, Brazil: The first documented hurricane in the South Atlantic, since records began in 1966, struck Brazil, killing 3 people.

April 1–5, New Mexico and Texas: Torrential rains flooded rivers, closed roads, and forced many to evacuate their homes. A foot of hail fell in Fort Stockton.

April 4–6, Piedras Negras, Mexico: Flash flooding from torrential rains in the Rio Grande and Escondido rivers killed 37 Mexicans and forced many others to flee to shelters. Mexican President Vincente Fox declared a state of emergency.

April 20, Utica, IL: More than 52 tornadoes struck Illinois and other Midwest states devastating Utica, IL, southwest of Chicago, and killing 8 people in the basement of the Millstone Tavern.

May 18, Philippines: Typhoon Nida, the fourth to hit the Philippines this year, killed more than 25 people.

May 18–26, Dominican Republic and Haiti: Several days of torrential rains caused the Soliel River, which runs through both countries, to overflow its banks, causing floods and mud slides that destroyed entire villages. More than 3000 people were killed. The damage was particularly devastating in Haiti because of massive deforestation and poorly built homes.

May 23, Paris, France: A section of a new terminal at Charles DeGaulle airport collapsed killing 4 people and injuring 3. The terminal, built a year ago at the cost of \$900 million dollars, was an unconventional design of glass and concrete tubes. Preliminary reports blame problems with the concrete.

May 29–30; midwest, United States: Over the Memorial Day weekend tornadoes, high winds, and heavy thunderstorms from Louisiana to the Great Lakes killed 10 people, closed roads, caused power outages, flooded towns, and destroyed homes and buildings.

June 29–30, Philippines: Typhoon Mindulle struck the Philippines, killing 30.

June, July, and August, South Asia: The worst monsoon flooding in fifteen years in India, Nepal, and Bangladesh left up to 5 million homeless, killed more than 1800 people with at least 600 in Bangladesh, and destroyed much of the infrastructure. Many people died from drinking polluted

water. Hundreds of people in South Asia die every year from the flooding and landslides caused by the monsoon rains.

July 1–3, Taiwan: Flooding from tropical storm Mindulle and the heavy rains that followed killed at least 27 people and left 13 missing. Agricultural losses were very heavy.

July 5–11, Romania: A heat wave killed 22 people in Romania and left many more sweltering in southern Europe.

July 12, Burlington County, NJ: Up to 13 inches of rains caused dams to break and severe flooding conditions in Burlington and Camden Country. More than 750 people were evacuated.

August 11, Havana , Cuba: Charley, a category 2 hurricane, caused damage exceeding \$1 billion.

August 12, Zhejiang Province, China: Typhoon Rananim, the most powerful storm of the season, killed 164 people and caused extensive damage.

August 12, FL: Tropical storm Bonnie made landfall in the Florida panhandle.

August 13, Punta Gorda, FL: Charley, a category 4 hurricane, struck the southwest coast of Florida with 145 mile per hour winds, killing 31 people in storm-related deaths in the United States, 4 in Cuba, and 1 in Jamaica. Damages estimated at \$7.4. More than 2 million people were evacuated and ten of thousands were left homeless as thousands of buildings were damaged and mobile home parks were demolished. It was the worst hurricane in Florida since Andrew in 1992. Electricity remained out for more than 350000 customers up to five days after the storm.

August 24–25, Taiwan and China: Typhoon Aere swept through Taipei, Taiwan, causing flooding and landslides that killed 39 people in Taiwan and 12 in the Philippines. Aere moved on to China where nearly 1 million people were evacuated.

August 29, southwestern Japan: Typhoon Chaba, with record high winds, killed at least 9 people and caused flooding. Earlier in the month, Typhoon Megi killed 9 in Japan.

August 29–31, SC, NC, and VA: Tropical storm Gaston made landfall in McClellanville, South Carolina and then moved through North Carolina and Virginia. Heavy rains dumped up to 14 inches on Richmond, VA. and the surrounding area, devastating the historic downtown area. The death toll from Gaston; 8 people.

September 5–8, east and west coast, FL: Hurricane Frances, downgraded from a Category 4 to a Category 2 storm, made landfall on the Atlantic coast of Florida, near Stuart, on September 5, moved across the state dropping up to 13 inches of rain. Frances made a second Florida landfall, as a tropical storm, at St. Marks on the Panhandle on September 8. More than 2.8 million people were evacuated and damages estimated at \$9 billion. The storm killed at least 38 people.

September 3–8, Sichuan province, China: Five days of downpours have left 172 people dead.



The flooding led to concerns about damage to the Three Gorges Dam.

September 7–8, Japan: Typhoon Songda, a powerful typhoon, killed 31 people in Japan and on freighters at sea. Songda was the seventh typhoon to hit Japan this season; there have been nineteen Pacific typhoons this year.

September 8, Caribbean: Hurricane Ivan, a Category 4 hurricane, ripped through Grenada, damaging an estimated 90 percent of the homes on the island. There was wide-spread destruction in St. George's, to the main hospital, the emergency control center, and the prison. Ivan, continued north, hitting Jamaica and battering the Caymans. Both islands experienced storm surges, major flooding, and destroyed homes. A total of 66 people died.

September 16, AL, FL, LA, and MS: Hurricane Ivan, made landfall at Gulf Shores, Alabama, as a Category 3 hurricane, causing severe flooding and power outages from Louisiana to Florida, with some of the worst damage in the Florida Panhandle, where the storm spawned deadly hurricanes. The death toll is at least 52 and damages are estimated at \$12 billion. Heavy rainfall and tornadoes spread into N.C. and Tenn.

September 18, Gonaives, Haiti: Tropical storm Jeanne brought torrential rains and flooding to Haiti, killing more than 2500 with more than 1000 still missing. The storm killed 31 more in the Caribbean.

September 25, Atlantic Coast, FL: Hurricane Jeanne, the fourth hurricane to hit Florida in 6 weeks, made landfall at almost the same area as Frances, three weeks earlier. Jeanne brought strong winds and more flooding to an already saturated state and then continued north through Georgia and South Carolina with heavy rains, killing 28. Total damages for the 4 hurricanes estimated to be more than for Andrew in 1992.

October 20, Japan: Typhoon Tokage, the deadliest typhoon to hit Japan in more than two decades, killed at least 80 people as heavy rains flooded tens of thousands of houses and triggered numerous landslides. The typhoon produced a record (since 1970) 80 ft (24 m) high wave, eight-stories high. A record ten typhoons have struck Japan this season, killing more than 100 people, and causing damages estimated at \$6.7 billion.

November 7, southern Philippines: Southern Philippines hit by tropical storm Lingling experienced flash floods and landslides that killed at least 115.

November 20–21, El Campo, TX: Fifteen inches of rain flooded El Campo and parts of southeast Texas. More than 250 were evacuated.

November 22–26, Philippines and Vietnam: Tropical storm Muifa sank several boats and pounded the Philippine coast, killing at least 60. In Vietnam, torrential rains from Muifa killed at least 45 people, flooded more than 170000 houses, and blocked roads, hampering rescue efforts and the delivery of relief supplies. Flooding also threatened the World Heritage site of Hoi An in Vietnam.

November 27–28, Sierra Nevadas and Rocky Mountains: Holiday storms dumped up to three feet of snow in California, New Mexico, Colorado, and Nebraska bringing holiday travel to a halt.

November 29, eastern coast and Quezon province, Philippines: Flash floods and landslides from Typhoon Winnie killed more than 500 people and hundreds are still missing. Because of the many landslides, many areas were inaccessible to rescue and clean-up crews. The landslides were caused by the deforestation from both illegal and legal logging.

December 2–3, eastern coast and Luzon, Philippines: Typhoon Nanmadol, a major storm, hit an area already devastated by two previous torrential storms that struck the northeastern region of the Philippines in the last two weeks. More than 1800 people died in storm related deaths from the three storms since November. It was the worst storm season for the Philippines in 13 years. Much of the devastation is due to massive landslides resulting from the deforestation by both legal and illegal logging. President Gloria Macapagal Arroyo has canceled all logging permits and security forces are cracking down on illegal logging.

December 19, Mercer County, PA: Heavy snows and a whiteout caused a pileup of 70 cars on Interstate 80 in western Pennsylvania. No one was killed.

## 2005

On December 31-January 2, parts of Washoe County, NV, received as much as 4 feet of snow during those three days, when the average accumulation has been 4 inches. It was a record snowfall for NV in January. Another large snowstorm also hit NV on January 6-10.

January 6–11, CA to PA. In California, a low-pressure system with drenching rains and heavy snows at higher elevations, dumped up to 11 inches of rain and caused a large mudslide in La Conchita, killing 10. Total storm-related deaths reached 25. Since the end of December, the Reno-Lake Tahoe area has up to 19 feet of snow, the most since 1916.

January 8–10, Europe: Wild storms battered many European countries, leaving 19 dead. High winds and flooding left people without power and shut down ferries, trains, and highways.

On January 15-16, in MT: Miles City never had it so cold. From Thursday through Sunday, new record lows were set or old records were tied when a nasty mass of Arctic air settled over Montana. On Thursday, the Custer County seat dropped to a new record of 32 below for Jan. 13, and Friday set a new record with 34 below for that date. On Saturday, temperature plummeted all the way to 39 below, beating the old Jan. 15 record set in 1950 by 10 degrees. Sunday's low of 27 below tied 1937 for honors at the bottom of the temperature table for Jan. 16.

On January 20-24, what started out as a clipper system diving into the northern Plains, quickly turned into an unusual type of blizzard as it hit the Lower Great Lakes. A large swath of heavy snow blanketed much of the Upper Midwest, northern Ohio Valley, and most of New England. Snowfall totals ranged from 5 to 13 inches across the Midwest (locally 15 to 16 inches near Lake Michigan) to 8 to locally 37 inches across southern New England. Areas around Boston reported

snowfall rates of 3 to 5 inches per hour for a time. One nearby city recorded 7 inches of snow in 75 minutes!! Boston officially recorded 22.5 inches, which contributed largely to breaking an all time record for the amount of monthly snowfall (43.3 inches) for any month. In addition to record snowfall, winds gusted in excess of 60 MPH across portions of the Midwest and up to 85 MPH across portions of southern New England. Widespread white-out conditions resulted, and entire cities were shut down in the northeast. Portions of Massachusetts reported 6 foot snow drifts.

On January 31, in Russia, the heaviest snowfall ever hits Moscow. Pedestrians waded through meter-high snowdrifts on Friday as the heaviest one-day snowfall on record raged through Moscow. Indeed, January may turn out to be the snowiest since city weather records began in the 19th century, second only to January 1970. This January's snowfall is twice the January average, and more snow is expected throughout the week. It took a total of 25,000 workers and 5,000 snowplows labored to clean up the main highways.

On February 2-3, in Australia: About 100 temperature and rainfall records have been smashed around Australia within the first few days of what is usually the hottest month of the year. Nine were set in South Australia. For example, the tiny town of Nonning, on upper Eyre Peninsula, had its coldest February night – on the third – in the three decades of data collection, with a chilly 6.5C. Mt Barker residents shivered their way through the state's coldest February day at 15.5C on February 3. In total, 43 locations across Australia had their coldest February day on record, on either February 2 or 3, with some records broken by three degrees or more.

On February 8, in Tehran, Iran: (AFP) - Parts of northern Iran and the capital Tehran were paralyzed Tuesday after being hit by several days of record snowfall, with dozens of flights cancelled and key roads also blocked. According to state media, up to 1.5 meters (five feet) of snow had fallen in the Islamic republic's north over the past few days, the heaviest in at least 10 years. Parts of Tehran have been blanketed with up to 70 centimeters of powder, and weather forecasts predict no let up in snowfall before Friday.

On February 10-11, in Maine, all time record 24 hour snowfalls were recorded in 13 of 16 counties in the state. Records ranged from 17 to 32 inches. Some areas were out of power for three days. Dover-Foxcroft broke its old record of 16 inches with a 32 inch snowfall.

On February, 11, in the Balkans: Snowbound villagers fought off starving wolves (at least one person was devoured by wolves) as a Siberian frost gripped much of the Balkans for the second week in a row, killing at least a dozen people. Serbia, Croatia, Bosnia, Montenegro, Kosovo, Macedonia, Bulgaria, Romania and Albania all registered record or near-record low temperatures. In Karajukica Bunari on the Serbia-Montenegro border the temperature fell to -34C (-29F), almost breaking the record of -38.4 set in January 1954. Temperatures in Sevlievo, Bulgaria fell to -34C, breaking a 50-year record, and the River Danube was iced up in dozens of places from Hungary to Romania. In Albania and western Kosovo, villagers in remote areas had to drive off wolves and wild boar searching for food. Villages lie two meters (six feet) deep in snow in the mountains near Elbasan. In Kosovo, temperatures hovered below minus 20C. A state of emergency was in force in the Serbian town of Sjenica, near the Montenegro border, after six

days of minus 30 degree frost.

On February 15, in Afghanistan: In the higher altitudes of Afghanistan where at least 104 people have died, access to many mountain communities has been blocked by deep snow. Some died when their houses collapsed under the weight of the snow. Freezing temperatures have killed others in camps for the displaced. Abdul Qadir, the head of meteorology at the Ministry of Aviation and Tourism, said this is the most severe winter weather Afghanistan has had in more than 15 years. Heavy winter storms, torrential rain and record cold have combined to cause floods, avalanches and deaths by hypothermia across parts of Afghanistan and Pakistan creating havoc and claiming more than 500 lives.

The Kyoto Accord goes into effect on February 16.

On February 17, the Mexican government said the decline of 75% in monarch butterflies was due to a number of factors, including an unusually cold summer in the United States and a high mortality rate for the butterflies in Mexico in 2003 due to cold, wet conditions. However, "The main problem is the illegal loggers," Aridjis, a Mexican spokesman, said.

On February 19, in India at Srinagar in Kashmir: When residents of Srinagar woke up this morning, the city looked like a cluster of ancient villages, isolated and disconnected. A heavy snowfall, the first such since 1994, has cut off all roads, disrupted phone services, damaged electric polls and brought life to a sudden halt. A serious shortage of petrol, diesel, kerosene oil and cooking gas has led to panic as people are trying to hoard essential commodities. The Meteorological Department says Srinagar received 2.5 feet of snowfall last night, while thick flakes of snow kept falling constantly. Kashmir's upper reaches received a record five feet snow in Banihal, Panthal and Patnitop areas. One report on the blizzard: "India's northern reaches reel under their heaviest snowfall in over 20 years."

On February 19, in Pakistan, at Islamabad: Constant snowfall has broken all previous records in Northern Areas, Abbotabad and Gallyat, while Margalla hills in Islamabad also receiving blizzard. Margalla hills in Islamabad received third snowfall of the current winter this morning causing new spell of intense cold in twin cities of Rawalpindi and Islamabad. Murree received two feet more snow last night setting new highest record of 16 feet at the hill station.

On March 1, in Europe, snow and fog triggered massive pile-ups and the cancellation of air and train traffic throughout Europe on Tuesday as temperatures fell to a 100-year low in Germany. Temperatures also plunged to record levels as the continent experienced one of its worst cold snaps in years. Records were broken across the continent. The mass of snow covering the Czech Republic was "probably the largest in the last 40 years," said hydrologist Jan Danhelka. The Swiss capital Bern registered minus 15.6 degrees Celsius, its coldest ever at this time of the year since data began to be collected in 1901. Croatia had its coldest night since 1963, with minus 21 degrees Celsius in the central parts of the country. France beat records set in 1971. It was coldest in the village of Saugues in the western region of Haute-Loire where thermometers registered minus 29.5 degrees Celsius this morning. Worst hit though was the Berchtesgaden region near Germany's border with Austria, with temperatures of minus 43.6 degrees Celsius, close to the

minus 45.9 degree Celsius record set in 2001. At Stuttgart airport, the mercury dropped to minus 18.6 degrees Celsius - the lowest temperature in March in 105 years - while in the central German city of Hanover heating was installed in cages at the local zoo to keep lions and leopards warm.

On March 3, temperatures in Rome plunged to their lowest level in 200 years. In fact, much of Europe shivered under near record lows. Temperatures in Bucharest , Romania fell to their lowest since 1932. In Switzerland , temperatures near the French border sank to minus 34.4C. In Guarda , Portugal , the main hospital had to cancel all non-emergency surgery when water pipes froze. In Austria , fuel oil suppliers said they were running out of stock. Temperatures fell to -21C in Oslo , Norway , with a day-time high of -11C, some 7C below normal. Paris awoke to a thin carpet of snow, and icy roads covered much of northern France . Heavy snow fell on Berlin , and thick ice hampered ship traffic on the canal linking Berlin with the Polish port of Szczecin. Britain called in the army to help deal with disruption caused by heavy snow, and Bulgarian ski resorts enjoyed their heaviest snowfalls in 20 years.

On March 4, in the Netherlands, the coldest March temperature in a century and half was recorded overnight, with the mercury plunging to minus 20.7 degrees Celsius in the village of Marknesse in the province of Flevoland. Meteorology bureau KNMI said the Marknesse temperature — recorded at 1.30am — topped the 20th century record of minus 18.7 degrees, reported in Wageningen on 7 March 1971. The freeze follows two days of snowfalls this week in what is being described as the most extreme snowfalls in the Netherlands in 50 years. A temperature of minus 21 degrees was reported in Groningen on 14 March 1845. That was the coldest March in three centuries.

On March 5, elsewhere in Europe, the Italian farmers' confederation estimates the damage done so far to crops by the unseasonably cold weather at 650 million euros (800 million dollars). Sporting events were cancelled in Austria as heavy snowfalls continued across the country, although the weather services stressed that the condition were not unusual for the season. The whole of Hungary was also blanketed in thick snow, with serious traffic problems reported in the capital. In southern Europe, Lisbon was forced to set up emergency shelters for the homeless, caught unaware by the cold, and Italy sounded the alarm, warning the country could face a major gas shortage if the cold conditions persist. In Turin, the thermometer fell to -8 C overnight, 1.5 C lower than the previous record low for March set in 1971, while Rome suffered its coldest March for 18 years.

In May, eastern Ethiopia: Torrential rains caused flooding of the Wabe Shebelle river in the eastern Somali region, killing 112 people and leaving many homeless.

On May 18, Los Barros Range, Chile: A fierce snow storm in the Los Barros range of the Andes mountains killed at least 46 soldiers on training on an army exercise.

June, Southern China: Widespread flooding for the month of June, particularly in southern China, has killed 536 people. In addition the floods have damaged dikes, reservoirs, roads, rail lines, and millions of acres of crops.

June 12, Northwest China: A flash flood triggered by torrential rain swept through an elementary school in Ning'an, in northeast Heilongjiang province, killing at least 117 of which 105 were children.

June 18–19, Calgary, Alberta, Canada: Flooding of the Elbow and Bow rivers from a week of rain impacted hundreds of homes, forcing the evacuation of more than 1,500.

July 10, Pensacola Fl.: Hurricane Dennis made landfall near Pensacola, Florida with 120 mph winds and 10 ft storm surges, leaving thousands without electricity. Dennis killed at least 40 people in Haiti, 16 in Cuba, and 1 in Jamaica as it swept through those islands destroying thousands of homes. Damages in the U.S. estimated at \$2 billion with 12 deaths. This was the fifth hurricane to hit Florida in less than a year. The Florida Panhandle was severely damaged by Hurricane Ivan in 2004.

July 18, Yucatan Peninsula, Mexico: Hurricane Emily made landfall at Cozumel, a resort town, and blasted the Yucatan Peninsula with 135 mph winds. Thousands lost power and many crops were damaged but the death toll was low due to the emergency measures instituted since Hurricane Gilbert killed 327 people in 1988. Emily was the second Category 4 hurricane this season. Emily swept out to the Gulf of Mexico, regained strength, and returned on July 20th to hit the northeastern coast of Mexico.

July 26, Mumbai, India: a record 37 in of rain fell in Mumbai (Bombay) in a 24 hour period, the most ever recorded in India. A week of relentless monsoon rains left 1,000 dead in western India.

July, Phoenix, Ariz.: a heat wave, since the end of June, of above average temperatures is blamed in the deaths of 21 people, of which 18 were homeless.

July, Niger: famine caused by drought and locusts have left more than 3.6 million people in Niger facing starvation since November.

Aug. 25, Ft. Lauderdale, Fl.: Hurricane Katrina brought heavy rains and winds to southeastern Florida, killing 14.

Europe: days of heavy rains in Austria, Bulgaria, Germany, Romania, and Switzerland inundated rivers and lakes, flooded cities and towns, damaged roads and railways, and killed at least 42 people, 31 of them in Romania.

Aug. 29–30, La. and Miss.: Hurricane Katrina, a Category 3 hurricane and one of the most powerful and deadliest to hit the U.S., devastated the La. and Miss. coast, landing just east of New Orleans with 127 mph winds. The high winds and massive flooding miles inland left thousands homeless, 2.3 million without electricity, roads and bridges destroyed, and communications inoperable. Storm surges, up to 25 ft, swamped the Miss. Gulf Coast destroying hundreds of homes, roads, and much of the coastal infrastructure. Loss of casinos on the Gulf coast and damage to oil rigs increased the economic devastation to the area and the entire

country. The breach of two levees in New Orleans, the day after the storm, submerged 80 percent of the city with flood waters that reached up to 20 ft. greatly increasing the damage from the hurricane, shutting down the entire city, and leaving thousands of New Orleans residents trapped on rooftops and in the evacuation centers without food, water, or other services. Widespread looting occurred and troops were called in to restore order. On Monday, Sept. 5th, the levees were patched and water began to be pumped from the city, a process which took more than a month. The mayor ordered the city evacuated because of the health risk. In all, the Coast Guard evacuated 30,000 people who were stranded by Katrina. The death toll reached 1,323, with 1,075 in La. and 230 in Miss., making it the third deadliest hurricane in the U.S. Katrina was one the most devastating hurricanes to hit the U.S. with estimates of \$100 billion in losses, \$34 billion insured losses. The initial local and federal government response to the hurricane was slow and inadequate, leaving thousands, primarily the poor who were unable to evacuate, without water, food, or shelter for days.

Sept. 1–3, China: Typhoon Talim caused major flooding and landslides, extensive crop damage, and killed at least 129 people.

Sept. 6–7, Japan: powerful typhoon Nabi killed at least 18 people in Japan.

Sept. 14–15, S.C. and N.C.: a meandering Hurricane Ophelia never made landfall, but dumped up to 18 in of rain from Myrtle Beach, S.C. to Wilmington, N.C. One person died in Florida.

Sept. 20, Fla. Keys: Hurricane Rita dumped heavy rains on the Florida Keys and then headed west towards Texas, gaining strength over the Gulf of Mexico.

Sept. 24–25, Gulf Coast, Tex., La.: Rita intensified over the Gulf of Mexico, then made landfall at Sabine Pass, along the Texas-Louisiana border, as a Category 3 hurricane. Over 3 million people evacuated the Houston and Galveston area causing horrendous traffic jams. A bus carrying people from a nursing home, caught fire, killing 23 people. Strong storm surges and heavy winds caused major damage in the Louisiana and Texas coastal areas. Heavy rains also drenched New Orleans, causing the Industrial Canal levee to breach, re-flooding parts the 9th ward of the city. Damages estimated at \$8 billion and related deaths at 119.

Sept. 20–25, Philippines, China, Thailand, Nepal: powerful typhoon Damrey killed at least 122, primarily from flooding.

Oct. 2, China: Typhoon Longwang hit Taiwan and China killing 65.

Oct. 1–5, Central America: Hurricane Stan brought landslides and floods to El Salvador, Guatemala, Nicaragua, Honduras, and Mexico, killing more than 2,000, and forcing hundreds of thousands to evacuate. In El Salvador more than 130,000 people were evacuated and 80% of the roads were affected. In Guatemala, continuous torrential rains brought floods and mudslides that killed more than 2,000 and buried the whole village of Panabáj.

Oct. 7–Oct. 14, Northeast U.S.: Torrential rains caused flooded in several states in the Northeast, especially New Jersey and New Hampshire, killing 10.

Oct. 18–Oct. 24, Caribbean, Mexico, and Fla.: Wilma moved through Haiti, killing 11, and Jamaica, then strengthened to a Category 5 and the most intense hurricane in the Atlantic on record with a pressure reaching 882 mb. This was the third storm in the season to reach Category 5. Wilma struck the Yucatan Peninsula battering the tourist areas of Cozumel, Cancun, and Playa del Carmen for more than 24 hours destroying hotels and thousands of homes. Moving back to the east, she made landfall at Naples, Fla. and raced across the state, severely damaging all of southern Fla. from the Keys through to the east coast areas of Dade and Broward county, leaving 35 dead and 6 million without power, and estimated damages over \$10 billion. Extensive flooding also occurred in Cuba.

Oct. 22, Haiti: Heavy rainfall and flooding in Haiti from Hurricane Alpha killed 12.

Oct. 30, Nicaragua and Honduras: Heavy rainfall and flooding were caused by Hurricane Beta when it hit Nicaragua and Honduras. Beta was the 23rd named storm in the Atlantic this year, breaking the record of named Atlantic storms since 1851. It was the 13th Atlantic hurricane also breaking previous records.

Nov. 6, Knight Township, Ind.: A fast moving line of thunderstorms spawned a tornado in southwestern Indiana and northern Kentucky that destroyed 130 mobile homes and killed 23 people.

Nov. 12, Iowa: An outbreak of 9 tornadoes struck Iowa, killing 1.

Nov. 15, Midwest U.S.: A series of thunderstorms moved through the Midwest from the Gulf of Mexico to the Great Lakes spawning 30 tornadoes in 6 states, Missouri, Kentucky, Indiana, Illinois and Tennessee, that destroyed houses and killed 2 people.

Nov. 20, Honduras: Heavy rainfall caused by Tropical Storm Gamma killed 37. Gamma was the 24th named storm in the Atlantic this year, breaking the record of named Atlantic storms since 1851.

Nov. 27–28, Midwest, U.S.: Blizzard conditions and storms from Texas to the Dakotas caused treacherous travel, shutting down miles of highways, and stranding Thanksgiving holiday travelers. The same storm spawned several tornadoes in Kansas and Arkansas damaging homes.

Nov. 29, Atlantic: Hurricane Epsilon was the 25th named storm in the Atlantic this year and the 14th hurricane, breaking the record of named Atlantic storms since 1851.

Dec. 30, Atlantic: Tropical Storm Zeta was the 27th named storm in the Atlantic this year, breaking the record of named Atlantic storms since 1851.

2006

Jan. 2, Bad Reichenhall, Germany: a heavy snowfall caused the roof of an ice skating rink to collapse, killing 15.



Jan. 28, Katowice, Poland: 67 people died from the collapse of the roof of the International Exhibition Hall due to excessive snow. There had been 500 people inside at the time.

Feb. 11–12, New York City, N.Y.: a record-breaking 26.9 in of snow fell in Central Park.

Mar. 11–13, Southern Plains and Midwest, U.S.: over 100 tornadoes hit 5 states, killing 10.

Apr. 2, Ark., Ind., Ill., Iowa, Ky., Ohio, Miss., and Tenn.: tornadoes, at least 63, and strong storms swept eight states, destroying buildings and killing 28 people.

Apr. 7–8, Southeast, U.S.: more strong weather and tornadoes battered the southeastern states, killing 12 people in Tenn.

May 9–16, New England: nearly 13 inches of rain fall over eight days in much of New England, causing the region's worst flooding in 70 years.

June 19, Houston, Tex.: eleven inches of rain drenched the Houston area.

June 22–28, Northeastern United States: a week of heavy rain on the East Coast killed 16 people in storm-related deaths and caused extensive flooding and road damage. Rainfall records were set in many areas with rainfall exceeding 10 to 14 inches.

June, southern China: the worst flooding in 30 years caused more than 340 storm-related deaths in June

June, southern United States: a significant drought has persisted across the southern states since October 2005.

July 14, Fujian, Guangdong and Hunan provinces, China: tropical storm Bilis flooded the Chinese provinces causing millions to be evacuated and killing more than 500.

July 19, Europe: record hot weather caused 13 deaths in Europe.

mid-July, North Korea: severe floods killed hundreds, perhaps 800–900. North Korea has not officially released information on this disaster.

July 16–25, United States: in the warmest summer on record, heat waves and blackouts have contributed to more than 150 related deaths. Storms with heavy winds knocked out power to than 600,000 homes in Missouri leaving many without electricity for more than a week during the heat wave. In the Queens borough of New York City, more than 100,000 were without electricity for up to 9 days. California sweltered under an historic heat wave lasting 11 days that caused more than 56 heat-related deaths.

Aug. 6, Dire Dawa, Ethiopia: flash floods on the Dechatu River killed more than 200 persons with many still missing.

Aug., India and Pakistan: flooding from heavy rains killed more than 300.

July-Aug. , Ethiopia: flooding in Ethiopia since July has killed at least 870 people.

Sept. 22, Ky.: heavy rains triggered floods in fifteen counties, killing 10 people .

Sept. 27–28, Luzon, Philippines: Typhoon Xangsane hit the island of Luzon causing flooding and killing 110. It was the worst to hit the city in over 35 years.

Oct. 1, Vietnam Typhoon Xangsane hits central Vietnam, killing 68.

Oct. 12–13, Buffalo, NY.: a freak early snowstorm dropped 2 feet of snow on Buffalo, causing widespread outrages and disruptions and killing three people.

Oct. 16, Rome, Houston-Galveston area Tex.: torrential rains in southeast Texas flooded roads, spawned tornados, and killed 4 people.

Oct. 21–23, North Korea: strong storms left more than 7,300 homeless, however, due to early evacuation there were no casualties.

Oct. 22, Midwest and South, U.S.: strong storms and tornadoes destroyed more than 400 structures and killed 13.

Oct. 26, Colorado: more than 25 inches of snow hit parts of Colorado causing power failures and setting off avalanches and rockslides.

Nov. 1–2, southeast Turkey: flash flooding in southeast Turkey killed 32 people.

Nov. 7, Saroma, Japan: the deadliest tornado in Japan, where tornadoes are rare, knocked out power, damaged cars, and killed 9 people.

Nov. 14–16, La., Ala., Miss., N.C., Md., Penn., N.Y.: wind storms and tornadoes swept through six states killing 12. Dozens others are injured.

Nov. 30, Padang, Philippines Typhoon Durian with winds of 162 mph caused a massive mudslide from Mount Mayon burying more than 500 people under volcanic ash, boulders, and water.

Nov., Seattle, Wash.: rainfall of 15.59 in made it the wettest month on record (115 years of record-keeping).

Dec. 14–15, Northwest U.S.: heavy rains and winds knocked out power to 1.5 million residents in Washington and Oregon and caused 14 deaths, many due to carbon monoxide poisonings from people using generators in their homes.

Dec. 20, Colo.: a blizzard brought more than 2 ft of snow to Denver, paralyzed road and airport travel, and left thousands stranded just before Christmas.

Dec. 29, Colo., Kan., Neb. and Okla., : the second blizzard of the month closed roads and airports, left thousands without electricity and telephones, and caused drifts of 15 ft, There were 12 storm-related deaths.

Dec. 29, Java Sea, Indonesia: a ferry carrying 600 people sinks during a heavy storm, at least 400 people are still missing.

2007

Jan. 12–16, Tex., Okla, Mo., Mich., Ind., Iowa, N.Y., N.H., Maine: a winter storm with heavy sleet, ice, and snow moved across 9 states, from Texas to Maine, resulting in extensive power outages and causing 65 storm-related deaths of which 23 were in Oklahoma. Washington state, Oregon, and California also experienced freezing weather.

Feb. 2, Florida: At least 20 people died when tornadoes and thunderstorms ripped through central Florida.

March 1, Ala., Minn., Miss., and Ga.: Storms hit Alabama, Minnesota, Missouri, and Georgia, killing about 20 people, including eight high school students.

May 7, Greensburg, Kansas: A tornado destroyed a small farming town, killing 10.

June 10, Chittagong, Bangladesh and Beijing, China: Mudslides set off by heavy monsoon rains killed at least 62 people in Bangladesh. Torrential rains in southern China caused flooding in small cities and farming villages, killing at least 66.

June 24, Karachi, Pakistan: More than 200 people died during severe storms in Karachi, Pakistan's biggest city.

July 8, West Bengal, India: Monsoon rains and flooding left 660 dead and more than a million stranded.

Aug. 13–23, Caribbean and Mexico: “Dean,” a category 5 hurricane with winds reaching 150 mph, took 32 lives and caused more than \$200 million in damage.

August 14, North Korea: Hundreds are reported dead or missing after a week of heavy rain in central and southern North Korea. Huge areas of farmland were washed away, provoking fears that North Korea's food crisis could worsen.

Aug.18, Taiwan: Typhoon Sepat, hit Taiwan with winds over 120 mph, cutting power supplies to nearly 57,000 homes, killing over 40 people, injuring 12 more, and forcing more than a thousand others to evacuate.

Aug. 31–Sept. 5, Caribbean, Nicaragua, and Honduras: “Felix,” a category 5 hurricane with winds reaching 150 mph, took at least 130 lives and left 70 others missing.

September 24, Sudan: Over 20 people die, at least 13,000 livestock are lost, and 65 people are injured by flooding in central Sudan during August and September. Over half a million people countrywide are affected by the floods. Clean water is provided to 2.2 million people to prevent deadly epidemics.

October 31, Caribbean: 107 people die during Tropical Storm Noel. 66 people die, 27 are missing, 6,300 homes are destroyed, and more than 62,000 people are homeless when two rivers burst 26 miles outside Santo Domingo, Dominican Republic. At least 40 people die and 400 homes are destroyed in Haiti. In Cuba, 24,000 people are evacuated from low-lying areas and 2,000 homes are damaged by floods.

November 3, Mexico: Villahermosa, the capital of the southeastern state of Tabasco, remains paralyzed with no clean drinking water and electricity after severe flooding caused by five days of torrential rain. At least 300,000 people evacuate their homes, and one person dies. Most of the state's crops are destroyed and 4,000 schools are damaged.

November 12, southern Russia: During a severe storm in the Black Sea 11 ships sink, 3 people die, and 20 sailors go missing. The tanker, Volganef-139, splits apart and dumps 1,300 tons (about 360,000 gallons) of oil into the sea killing marine habitat, and fish, and covering 30,000 seabirds in oil.

November 15, Bangladesh: Cyclone Sidr, with winds over 100 miles per hour, kills nearly 3,500 people in southern Bangladesh. The United Nations reports that a million people are without homes.

2008

Jan. 7–8, Ark., Ill., Mo., Wis.: a series of tornadoes caused by record-breaking temperatures kill at least six people, including two children, destroy houses, and flood roads.

Jan. 28, eastern and southern China: severe snowstorms leave at least 24 people dead and affect 78 million people overall, including 827,000 emergency evacuees. About half of the 31 provinces are without power, which strands at least 600,000 train passengers, and at least 19 major airports close. The economic cost of the storm is projected to be \$3.2 billion.

Feb. 5–6, Tenn., Ark., Ala., Ky., Mo.: at least 55 people are killed and hundreds more injured after violent tornadoes rip through the southern United States. According to emergency officials, the victims include 31 people in Tennessee, 13 in Arkansas, 7 in Kentucky, and 3 in Alabama.

March 14–15, Georgia: two people are killed and at least 30 people are injured when violent tornadoes strike Atlanta and northwestern counties of Georgia including Polk County and Floyd County. The storms cause damage to the CNN Center, the Georgia Dome, and the Convention

Center in Atlanta, and leave thousands of homes without power statewide.

March 17–19, Ark., Ill., Ky., Mo., Ohio: 13 people die, hundreds of people are evacuated from their homes, and hundreds of roads are closed during major floods that stretch from Texas to Pennsylvania.

May 3, Myanmar: Cyclone Nargis hits the Irrawaddy Delta and the city of Yangon, killing about 78,000 people. Most of the deaths and destruction were caused by a 12-foot high tidal wave that formed during the storm. Cyclone Nargis is the worst natural disaster since the tsunami in 2004. June 9–18, Ind., Iowa, Ill., Mo. and Wis.: severe flooding from storms cause already swollen rivers and lakes to flood, killing 10 people, breaking three dams, and causing thousands to evacuate their homes. In addition, at least 90 roads are closed. According to the National Weather Service, the Cedar River is 17 feet above flood stage, the worst flooding Cedar Rapids has ever seen.

June 17, southern China: the worst flooding in 50 years kills over 60 people, destroys 5.4 million acres of crops, causes landslides, and leaves 13 people missing in nine southern Chinese provinces.

June 21, the Philippines: a ferry, the Princess of the Stars, is struck by Typhoon Fengshen, killing most of the 865 passengers and crew. There are 59 known survivors. Almost 500 other people die during the storm.

July 27, southeastern Europe: five days of heavy rain caused major flooding in the Ukraine and Romania, killing 18 people and causing at least \$300 million in damages.

July 28, Taiwan: Typhoon Fung Wong, hit the east central coast of Taiwan with winds over 105 mph, only a week after a tropical storm killed 19 people.

Aug. 1, Pakistan: a large mass of ice broke on K2, the world's second-highest mountain, causing an avalanche that killed 11 climbers and injured several others.

Aug. 25, Chamonix, France: eight climbers died after an avalanche near Mount Blanc buried them under 165 feet of ice.

Aug. 28–Sept. 1, India: flooding from the Kosi River causes the deaths of at least 75 people and the displacement of over 2 million more from their homes in the northern state of Bihar. At least half a million people are left stranded, while half a million others are living in unsanitary relief camps.

Aug. 28–Sept. 2, Caribbean and Gulf Coast: "Gustav" killed at least 137 people and injured many more when it made landfall in Haiti and the Dominican Republic. Thousands were left homeless and without food and water. In the U.S., "Gustav" forced the entire city of New Orleans to evacuate and left 26 people dead in three states.

Sept. 7–8, Haiti, Cuba, Turks and Caicos islands: “Ike,” a category 2 hurricane with winds reaching 120 mph, took at least 61 lives in Haiti, left more than 80% of homes destroyed on Turks and Caicos islands, and caused four deaths and 800,000 people to evacuate their homes in Cuba.

Nov. 8, Cuba: “Paloma,” a category 3 hurricane with winds reaching 120 mph, forced more than 300,000 people in Cuba to evacuate their homes and caused about \$9.4 billion in damages.

Dec. 28, Canada: eleven people on snowmobiles are buried when two avalanches hit Harvey Pass, a popular backcountry snowmobile destination in British Columbia. Three snowmobilers survived, while eight others remained buried.

2009

Jan. 26, Turkey: an avalanche slams into a group of 17 Turkish hikers on Mount Zigana, dragging them more than 1,640 feet and killing 10 of them.

Aug. 7, Philippines: at least 22 tourists on Mount Pinatubo were trapped and killed when heavy rain caused flooding and landslides.

Aug. 10, Taiwan: Typhoon Morakot caused a mudslide that buried schools, homes, and at least 100 people in southern Taiwan.

2010

Feb. 27, Chile: a magnitude 8.8 earthquake triggers tidal waves that wreak havoc along the coast.

May 3, Tenn.: Southeast flooding kills at least 24.

June 11, Ark.: Caddo and Little Missouri Rivers reportedly surge 20 ft. due to flash floods which kill 18.

July 30, Pakistan: massive flooding in Pakistan, following two days of record rainfall, kills over 1,600 people and leaves millions homeless.

Sept. 28, Mexico: a landslide following a period of heavy rain buries hundreds of homes and kills at least 11.

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Notes:

NYC = New York City

Numbers over a million are written as x.xx million.

Weather Event Type	Number/Year Worldwide	Source
Hurricanes (Atlantic Ocean)	13.3	Weather Almanac (1996; p. 67)
Typhoons (Pacific Ocean)	20	Estimate
Cyclones (Indian Ocean)	10	Estimate
Global Number:	43	
Tornadoes (U.S.)	820	Weather Almanac (1996, p. 86)
Tornadoes (outside U.S.)	400	Estimate
Global Number:	1220	
Blizzards (U.S.)	5	Estimate
Blizzards (Canada/Alaska)	10	Estimate
Blizzards (Europe)	5	Estimate
Blizzards (Russia)	15	Estimate
Blizzards (SH)	20	Estimate at one half NH
Global Number:	60	
Record High Monthly Mean Temperature, for a given century (i.e., worst of the century heat waves, each year):	26	Assuming 720 statistically independent regions globally ( $720 * 12 * 0.3 / 100$ )
Record Low Monthly Mean Temperature, for a given century (Cold waves):	26	Assuming 720 statistically independent regions globally
Record High Monthly Precipitation causing a Flood, for a given century:	26	Assuming 720 statistically independent regions globally
Record Low Monthly Precipitation causing Drought, for a given century:	26	Assuming 720 statistically independent regions globally

Daily record high temperatures in one year using a network of 720 equal area stations operating for one century 2628

Daily record low temperatures in one year using a network of 720 equal area stations operating for one century 2628

Number of floods each year 100

Dartmouth Flood Observatory

Grand total, all types of weather events and records worthy of comment in any one year 6783  
18.5 events per day, average (weather stations could pick up about 5 of these events each day)