

Finally, the numerous events which were so greatly widening men's ideas and altering the prevalent conceptions of the world—the discovery of America, the circumnavigation of the globe and the other great exploring expeditions which followed, the overthrow of the Ptolemaic system of astronomy, et. al.—so helped to loosen the old foundations and to make plain the need for a new structure, that near the end of the sixteenth century a general reconstruction of all scientific ideas commenced. The Aristotelian writings and methods were bitterly assailed, and their influence commenced to wane. The new philosophy of Francis Bacon (1561–1626) was expounded in opposition to Aristotle's philosophy; the separate sciences became differentiated and classified, the scientific method emerged, and marked progress soon took place along both theoretical and experimental lines. Science in general, and meteorology in particular, entered upon a new era.<sup>18</sup>

#### UNUSUAL AURORA AT JUNEAU, ALASKA.

On the night of September 1, there occurred what is said by old residents to have been one of the most brilliant auroral displays that has been observed in Juneau in the last 20 years.

While the aurora began about 9 p. m. and continued until nearly midnight, it was most brilliant from 9:10 to 9:50 and from 11:35 to 11:55. The characteristic feature of the first period of brilliancy was a vivid band of white light, almost as bright as the full moon, that arched the sky from the western to the eastern horizon and about 5 degrees south of the zenith. This band varied in width, but averaged about 5 degrees. At frequent intervals there developed from it appendages of white light and weird shape, sometimes like "mare's tails" cirrus clouds and again like tongues of flame. Occasionally there would form on the northern side of the arch a wide appendage radiant with all the colors of the spectrum and that would shimmer in the most fascinating manner. These various appendages assumed form and disappeared gradually, and not with the rapidity that sometimes attends auroral formations. During the prevalence of the arch a faint glow of white light spanned the southern sky about azimuth 60 to 300, and with its crest at altitude about 40 degrees.

About 11:45, a long streamer of intense green shot from the southeast, extending past the zenith and curling and twisting like a whip-lash. Almost immediately further flashes appeared on the entire arc of horizon from south-

east through north to west. These grew in brilliancy and depth of coloring, and soon had become so strong that their light caused the neighboring landscape to be clearly visible, objects at the far side of town, nearly a mile away, being distinguishable.

The display continued to increase in intensity until 11:55, when it ceased with an abruptness that was startling. As though the "current had been shut off," every indication of the aurora vanished almost instantly and there was no further display during the night so far as known.

Earth currents attending the phenomenon affected the submarine cable connecting Juneau and Sitka to such an extent that from 9:20 to 10:25 p. m. and from 11:40 to midnight, when cable service closes for the night, it was utterly impossible to transmit or receive messages.—*M. B. Summers.*

#### HEAVY RAINS AND FLOODS IN LUZON, PHILIPPINES, AUGUST, 1921.

By JOSÉ CORONAS, S. J.

[Weather Bureau, Manila, P. I., Sept. 14, 1921.]

Although not a single typhoon traversed the Island of Luzon during the month of August, several distant typhoons that passed to the north were the cause of heavy rains and consequent floods over the western part of Luzon, particularly toward the middle of the month. Considerable damage was done to several Provinces by these floods. Manila was also flooded on the 16th, the water reaching the height of 1 meter (3 feet) in several portions of the city.

Following is the monthly total rainfall for a few of our stations as compared with the normal for August:

Station.	Amount.		Difference from the normal.	
	Millimeters.	Inches.	Millimeters.	Inches.
Manila.....	1,000.8	39.40	+598.5	+23.56
Baguio.....	1,843.8	72.79	+638.7	+25.15
Laosag.....	1,244.1	48.97	+424.2	+16.70
Vigan.....	1,821.6	59.90	+802.5	+31.60
Iba.....	1,097.9	43.23	+ 97.4	+ 3.83

The maximum rainfall in 24 hours for the same stations was as follows:

Station.	Amount.		Date.
	Millimeters.	Inches.	
Manila.....	246.3	9.70	Aug. 15
Baguio.....	272.7	10.74	Aug. 14
Laosag.....	278.7	10.97	Aug. 19
Vigan.....	243.9	9.60	Aug. 20
Iba.....	195.0	7.68	Aug. 15

<sup>18</sup> Cf. Walter Libby. *An Introduction to the History of Science*. New York, 1917. In the preparation of this paper use has been made of: H. H. Hildebrandsson and L. Teisserenc de Bort, *Les Bases de la Météorologie Dynamique*, Tome I, Paris, 1907; G. Hellmann's *Neudrucke von Schriften und Karten über Meteorologie und Erdmagnetismus*; and the unpublished U. S. Signal Corps *Bibliography of Meteorology*, edited by O. L. Fassig, Part III, Winds Part IV, Storms.