

The following papers were then declared ready for reading: "Observations on Ice and Icebergs" by H. A. Clift, Q.C., Harbor Grace, Newfoundland; "Geology and Genesis" (second paper), by W. J. Brown, Brooklyn, N.Y.; "Volcanic Eruptions of Mauna Loa" by D. Logan, Honolulu; and "The Thermal Condition and Color of Mars" by A. J. Pigeon, Montreal.

The President remarked that the eruption of Mauna Loa, on Jan. 17, had occurred with Mars at perihelion, Uranus "stationary" and Mercury in aphelion.

It was decided to hear Mr. Pigeon's paper first.

In his essay Mr. Pigeon apportioned the seasons on the ruddy planet as follows:—

Spring 191, Summer 181, Autumn 149, and Winter 147 days. The meteorology of Mars was described as similar to that of the Earth, the summers, however, being less hot and the winters less cold than ours. This theory Mr. Pigeon attempted to prove by maps of his own construction, showing clearly the winter snow and the ice caps of the Earth and Mars. Snow, it was mentioned, sometimes reached down as far as 30° N. on the Earth, but on Mars it was seldom noticed south of what coincides with the latitude of Cape Farewell, Greenland. Eminent astronomers, such as Lockyer and Schiaparelli, had watched the snow on Mars melt down from 28° to 7° in a little over two months. The thermal poles of Mars, like those of the Earth, it was explained, did not coincide with the poles of longitude. In warm summers the polar ice cap of the Earth melted away to 25°, or 1,500 geographical miles. On Mars, under similar conditions, the polar cap melted down to 7° or between 60 and 70 miles. Such facts as these went a long way toward establishing the fact that life might exist on Mars. The ruddy appearance was also considered, Mr. Pigeon believing it due to some element in the Martian atmosphere having the property of absorbing the blue and violet rays, and transmitting the red and yellow rays only. The paper concluded with a thorough description of the spectrum analysis made by Vogel, and expressed a hope that the very favorable opposition of 1892 would allow of the solution of the questions as yet unanswered by telescope and spectroscope concerning the condition of Mars.

The paper was illustrated by slides specially prepared from photographs by Mr. Pigeon.

A discussion followed in which the President read a chapter from his romance "The World of Mars" the beginning of which is now first printed in *ASTRONOMY AND METEOROLOGY*. The chapter described "Dave's Continent" in 15° N. Martian latitude, and mentioned the probable geographical strata, forests, agriculture, irrigation, methods of locomotion, etc., on that part of Mars.

Mr. H. A. Clift's paper on "Ice and Icebergs" descriptive of the packing and opening out of the ice off the coast of Newfoundland, and the relation of meteorology to the well-being of the seal fishery, the most important industry of that part of Newfoundland, having been read, the meeting adjourned at 10.15 to meet on the evening of the first Friday in April.

"Why do you have lady members?" was a question recently put to me, as president of the Astro-Meteorological Association. My reply was: "Because ladies often make more efficient workers where the object to be obtained is not lucre, as well as for the reason that some of our best astronomers have been ladies in the past. Take the late Caroline Herschel for instance, and remember how for more than forty years she assisted her brother William, how she published a catalogue of stars and prepared another of nebulae and clusters, and finally received as a reward of her labors the Astronomical Society's gold medal. Then there was Jeanie Dumée, who successfully studied the Copernican theory; Marie Caunitz, who helped her husband make up his mathematical tables; not to speak of Mrs. Hall, whose energy is said to have greatly helped Prof. Hall in his discoveries of the moons of Mars a few years since."

Correspondence.

All letters should be addressed:—
"Walter H. Smith, 31 Arcade Street,
"Montreal, Canada." For a personal
reply enclose stamp.

WANTS THE LECTURES PRINTED.

[1.] Your monthly will, I know, be decidedly nice, and should be popular. Will your lectures "How I forecast the Weather," and "The Worlds Around Us," be printed in it?

Malone, N.Y. M. T. C.

Ans.—Yes, in future numbers, if space permits.

LUNAR INFLUENCE ON VEGETATION.

[2.] In your *Almanac* you offer to give information in regard to planting, etc. Please tell me, 1. At what times to set out strawberry plants. 2. How prepare the ground. 3. When best to plant rose slips.

Harrisonburgh, Va. C. C.

Ans.—1. March 28 from 5.35 to 8.00 p.m. March 31 and April 1, 5.20 to 7.45 p.m. (☾ in ♄ with ♀ rising). 2. Cultivate deep, dress with well decomposed manure, and carefully pulverize the soil. 3. April 7 and 8, 5.00 to 7.05 p.m. (☾ in ♀ rising).

FOUND THE FORECASTS CORRECT.

[3.] In comparing your forecasts with my journal for the months of Jan. and Feb., 1887, I find a pretty near agreement, and up to this date (8th) for March, correct.

Utica, N.Y. METEOROLOGIST.

THE MILD CHANGE CAME.

[4.] The sun is out (Mar. 8) for the first time for several days. It is mild and pleasant. No wonder, for on turning up your *Almanac*, it reads.—"Fine, a mild change, spring-like."

Washington, D.C. C. R. F.

Meteorology.

Bishop Clut was at Good Hope, N.W.T., from October 1, 1885, to May 1, 1886, during which time the thermometer never rose above zero. In February, 1886, it was 52° below. The bishop reports having seen ice on Great Slave Lake as late as July 3, and on the McKenzie River—the latter beyond the Arctic circle—as early as Sept. 17.

December in Canada was remarkable for the number of depression areas which swept over the country. It was also noticeable for its low temperature. The average was below the normal except in Nova Scotia and British Columbia. The snow and rainfall was heavy.

The mean temperature at Montreal for December was 14° 21', or 4° 32' lower than the average. For January the mean was but 6° 78', or 4° 67' below the average.

At Toronto, the mean temperature of 1886 was 43° 71'. The highest recorded was 89° 5' on July 6, and the lowest 22° 8' below zero on Feb. 5. The yearly range was 112° 3'.

Excessive precipitation characterized January in Quebec, the Maritime Provinces and British Columbia.

The Dominion Meteorological Service issued 659 predictions in January, of which 480 were fully verified, or 72.8 percent. Will some reader send the number of forecasts in my *Planetary Almanac* fully verified in his section that month?

January in Canada was also remarkable for its storms. The average temperature was below the normal in Manitoba, Ontario, Quebec and New Brunswick.

February at Montreal gave ten days with readings below zero, the lowest being 11° below on 2. The highest reading was 45° on 8, and the mean, 13° 97', as against 15° 81' for the past 13 years. Snow and rain fell on 16 days, the former to the amount of 34.1 inches, and the latter 0.79 inch. The maximum barometer was 31.006 on 5, the highest recorded in 13 years.