5. Observers in the belt of totality are requested to take the magnetic reading every thirty seconds during the interval, 10 minutes before and 10 minutes after the time of totality, and to read temperature also every thirty seconds, between the magnetic readings.

It is hoped that full reports will be forwarded as soon as possible for publication in the journal of *Terrestrial Magnetism and Atmospheric Electricity.*

LOUIS A. BAUER

WASHINGTON,
May 8, 1918

PROGRESSIVE DEGLACIATION AND THE AMELIORATION OF CLIMATE

IN SCIENCE of March 1, 1918,[1] Professor Mather criticizes the interpretation of the writer regarding the corroborating evidence of Antarctic deglaciation as being indicative of the amelioration of climate which has been a cumulative, although variable, process since the culmination of the Ice Age. This retreat of Antarctic glaciation is not the only record upon which the writer based his interpretation. He also used "the greater and still more impressive evidence of the comparatively recent uncovering of temperate land areas."[2] Professor Mather appears to dissent also from the opinions of Scott,[3] Shackleton,[4] Taylor,[5] Ferrar[6] and David.[7]

These authorities, with every other explorer of these regions, make especial mention of the marked extent of the deglaciation which has recorded its extent from "south pole to Antarctic circle" (David).

Professor Mather would also wait for observations extending over centuries and omits to make note of the progressive deglaciation of temperate latitudes which has legibly recorded itself for several hundred centuries, within which time the glacial lake beds of Canada have become one of the world's richest grain fields. This evidence is more impressive and conclusive than the vast evidences in Antarctica where "the ice is everywhere retreating" (Scott).

Nor do discussions as to whether this deglaciation is due to wet or dry glaciers or to a possible decrease in precipitation add anything of moment to the great facts pointing to an amelioration of the climate of the earth so that it "is now warmer than it was during the episodes of extensive glaciation characterizing the Pleistocene Ice Age," this being due to the rewarming under solar control inaugurated at the culmination of that age.

The writer does not agree with the idea that the present distribution and development of climates is "abnormal," but holds that it is in the orderly development of climates passing from the conditions of "geological climates" into those of solar control; and also holds that present climatic tendencies and zonal control no more point to a possible return to the non-zonal distribution and control of geological climates than the present developments of life point to a redevelopment of the extinct orders of life of previous ages.

As to the climatic influence of carbonic acid generated by the combustion of fuels, carbonic acid has two narrow bands of almost complete absorption in that part of the spectrum limiting the wave-lengths emitted by the earth. These bands are at 4.5μ and 14.7μ. The first is in a region of very slight terrestrial radiation and therefore unimportant; the second is in a region of strong vapor absorption and there is sufficient water vapor in the air to completely cover this field. Since "the efficiency of the water vapor is several times that

[1] "Diminution of the Antarctic Ice Cap and the Amelioration of Climate," SCIENCE, N. S., Vol. 47, No. 1200, pp. 218–19.

[2] SCIENCE, N. S., Vol. 46, No. 1200, pp. 639–40.

[3] "The Voyage of the Discovery," Vol. II., pp. 416, 423, 424, 425. National Antarctic Expedition, 1900–1904, Vol. 1, p. 94. Scott's Last Expedition, Vol. II., p. 204.

[4] *Ib.*, pp. 286, 288.

[5] Address to Commonwealth Club, November 17, 1916.

[6] National Antarctic Expedition, Vol. I., 1900–1904, Report of H. T. Ferrar, A.M., F.G.S., geologist of the Expedition.

[7] *Geographical Journal,* Vol. XLIII., pp. 622–623.

of the dioxide[8] there is little left in this restricted field as water vapor covers the whole range of terrestrial radiation very effectively. Abbot and Fowle, after very elaborate studies and observations and a review of the available data on the subject, sum up as follows:

> It therefore does not appear possible that the presence or absence, or increase or decrease, of the carbonic acid contents of the air are likely to appreciably influence the temperature of the earth's surface.[9]

There is no evidence showing that the temperatures of the depths of the Atlantic ocean are affected by the salter waters of the Mediterranean Sea. The temperatures of the depths of the Mediterranean Sea are controlled by that of the Atlantic at the depth of the sill of the Straits of Gibraltar, over which there is an inflow into the Mediterranean to replace evaporation and surface outflow less about 30 inches of precipitation. The temperatures of the depths of the Atlantic are controlled by those of polar waters.[10]

The area of the Mediterranean and tributary seas is about 1,149,000 square miles; of polar oceans down to the parallels of 60 degrees about 187,890,000 square miles. The relative influence of Mediterranean outflow upon abysmal depths of the Atlantic, according to the conclusions of Professors Chamberlin and Salisbury, is probably negligible.

Marsden Manson

San Francisco, Calif.,
March 18, 1918

TRANSLATIONS MADE ACCESSIBLE

I read with much interest in the last number of your paper a communication from Mr. Burling regarding translations of foreign literature. If anything is contemplated in the way of a central bureau we would submit for your information that the Technical Section of the Canadian Pulp and Paper Association and the Technical Association of the Pulp and Paper Industry (U. S.) through their committees on Abstracts are publishing each week in *Paper*, New York, and the *Pulp and Paper Magazine* of Canada, Montreal, abstracts of the literature relating to this industry.

These abstracts include reviews of articles appearing in American, Canadian, British and Scandinavian Journals relating to pulp and paper-making, lumber and forestry and will in time embrace those in other languages when such periodicals are again available. The committees are ready to loan original copies of the periodicals reviewed and to supply translations where they are desired.

You are probably aware that *Industrial Management* of New York has a similar department relating to engineering and similar topics and that their organization is also prepared to supply translations of such articles.

J. N. Stephenson,
Chairman Committee on Abstracts,
Technical Section, C. P. & P. A.

A NEW CALENDAR

On April 16 Hon. J. M. C. Smith, of Michigan, introduced into Congress, at the request of Mr. C. W. Bennett of Coldwater, Michigan, a bill providing:

> That beginning with the year nineteen hundred and twenty each year shall have thirteen months of four weeks, or twenty-eight days each, the added month to be called Sol (from solstice) and to follow June.
>
> *Sec. 2.* That Monday shall be the first day of the week and the first, eighth, fifteenth and twenty-second days of every month; the other days of the week to follow in rotation by number, making Sunday the seventh day of the week and the seventh, fourteenth, twenty-first and twenty-eighth days of every month.
>
> *Sec. 3.* That the day following the last day of December, nineteen hundred and nineteen, and the last day of December in each subsequent year shall be called New Year Day. It shall be legal holiday, the first day of the new or following year, but not a part of January.
>
> *Sec. 4.* That in the year nineteen hundred and twenty and every fourth year thereafter shall be an extra day called Leap Day, to be placed between June and Sol, but not to be a part of either

[8] Chamberlain and Salisbury, "Geology," Vol. II., p. 672.

[9] *Ann. Astrophysical Obs. Smithsonian Institution,* Vol. II., pp. 172–73.

[10] Chamberlin and Salisbury, "Geology," Vol. II., 658–60.