Middletown. The results and their recommendations have now been printed in a pamphlet with an introductory article by Professor Winslow.

UNIVERSITY AND EDUCATIONAL NEWS

Plans are announced for the establishment of a new college for political science in New York City, for which it is said that an annual income of $150,000 is largely secured. The faculty will elect not only the professors but also the trustees, and it is intended that the fullest freedom of teaching and of research shall be given to the professors.

Mr. William H. Porter, of New York, has given $50,000 to Middlebury College, to build a hospital.

By opening its school of medicine to women on the same terms as to men Washington University becomes coeducational in all its departments, similar change having been ordered a few weeks since in the school of dentistry.

It is announced that McGill University hereafter will admit women to the study of medicine and dentistry.

Dr. Herbert E. Hawkes, professor of mathematics, who has been acting dean of Columbia College during the absence on leave of Dr. F. P. Keppel, has been appointed by the trustees to be dean of the college, Dr. Keppel having resigned to accept the third assistant secretaryship of war.

Dr. Florian Cajori has resigned his position of dean of the department of engineering and professor of mathematics at Colorado College, and has accepted the appointment as professor of the history of mathematics in the University of California.

Professor Otto Glaser, of the University of Michigan, has been appointed professor of biology at Amherst College.

DISCUSSION AND CORRESPONDENCE

PROPOSED MAGNETIC AND ALLIED OBSERVATIONS DURING THE TOTAL SOLAR ECLIPSE OF JUNE 8, 1918

Special magnetic and allied observations will be made at various points inside and outside the shadow belt of the coming total solar eclipse, by the department of terrestrial magnetism of the Carnegie Institution of Washington, the Coast and Geodetic Survey, and some other institutions and individuals who have offered their cooperation.

The general scheme of work proposed by the Carnegie Institution Department of Terrestrial Magnetism embraces the following:

1. Simultaneous magnetic observations of any or all of the elements according to the instruments at the observer's disposal, every minute from June 8, 1918, 7 P.M. to 1 A.M., June 9, Greenwich civil mean time, or from June 8, 7^h to 13^h Greenwich astronomical mean time.

(To insure the highest degree of accuracy, the observer should begin work early enough to have everything in complete readiness in proper time. See precautions taken in previous eclipse work as described in the journal *Terrestrial Magnetism*, Vol. V., page 146, and Vol. VII., page 16. *Past experience has shown it to be essential that the same observer make the readings throughout the entire interval.*)

2. At magnetic observatories, all necessary precautions should be taken to insure that the self-recording instruments will be in good operation not only during the proposed interval but also for some time before and after, and eye-readings should be taken in addition wherever it is possible and convenient. (*It is recommended that, in general, the magnetograph be run on the usual speed throughout the interval, and that, if a change in recording speed be made, every precaution possible be taken to guard against instrumental changes likely to affect the continuity of the base line.*)

3. Atmospheric-electric observations should be made to the extent possible with the observer's equipment and personnel at his disposal.

4. Meteorological observations in accordance with the observer's equipment should be made at convenient periods (as short as possible) throughout the interval. It is suggested that, at least, temperature be read every fifth minute (directly after the magnetic reading for that minute).

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.