NOTES, ABSTRACTS, AND REVIEWS.

MEETING OF THE AMERICAN METEOROLOGICAL SOCIETY TO BE HELD IN LOS ANGELES, CALIFORNIA, SEPTEMBER 17-19, 1923.

The Pacific Branch of the Association for the Advancement of Science has kindly invited the western members of the American Meteorological Society to meet with them at their annual meeting in Los Angeles, Calif., on September 17, 18, 19, 1923. In response to a questionnaire about 22 members of the A. M. S. have signified their desire to attend and present papers on that occasion. This will insure a successful meeting, as very likely there will be more to come later. Quite a number stated they could not this early say positively that they would be on hand for the meetings; but would advise the secretary pro tem at a later date if they found it possible to be there.

It is proposed to hold a symposium on the relation of the weather to forest fires, which will be of interest to the meteorologists and to Forest officials connected with our National Forests, as well as to those interested in privately owned timber. Also at least half a day will be taken up with matters pertaining to evaporation and to precipitation in the mountains as affecting the run-off of streams from which water is employed for irrigation and hydroelectric purposes.

Other papers will be presented pertaining to nearly every branch of meteorology and these, together with their discussion, will provide food for thought for some time to come. Our members will be invited to the entertainments given by the citizens of Los Angeles to the Pacific Branch of the American Association for the Advancement of Science, and all will share in the reduced transportation rates that will be available at the time of the meeting.—*E. A. Beals, Secretary Pro-tem.*

POLAR-FRONT THEORY OF THE STRUCTURE OF CYCLONES DISCUSSED BY THE ROYAL METEOROLOGICAL SOCIETY.

[Reprinted from *The Meteorological Magazine*, May, 1923, p. 84.]

The monthly meeting of the society was held on Wednesday, April 18, 1923, at 49 Cromwell Road, South Kensington, Dr. C. Chree, F. R. S., president, in the chair.

W. H. Dines, F. R. S., and L. H. G. Dines, M. A.—An examination of British upper-air data in the light of the Norwegian theory of the structure of the cyclone.

The theories of the Norwegian school of meteorologists, which have occupied so much attention during the last few years, were formulated without much reference to upper-air observations, and the desirability of a scrutiny of such observations as are available is manifest. Such a scrutiny has been made by the authors of this paper, and the results are disappointing.

The first method adopted was to select from the occasions on which *ballon sonde* records were available, those on which the synoptic charts indicated that it was likely that the balloon had passed through the polar front. Graphs showing the relation of temperature to height were drawn for these occasions, and compared with graphs for other occasions, selected more or less at random. It was found that there were no striking differences between the two groups, inversions of temperature occurring with about the same frequency.

A second problem, the relation between humidity and temperature, was attacked by utilizing the kite ascents made at Pyrton Hill. It was found that an inversion of temperature was nearly always associated with a decrease in the humidity, whereas the Norwegian theory requires an increase.

The conclusion reached is that the observational evidence fails to support the hypothesis that the superposition of equatorial over polar air is a characteristic feature of the structure of a cyclone. The speakers who took part in the discussion showed great reluctance to to accept this conclusion. Further examination of the material is evidently desirable.

FROST RECESSION FROM GROUND IN ALASKA.

[Reprinted from *The Official Record*, Department of Agriculture, Washington, June 6, 1923.]

Travelers and others in Alaska have frequently commented on the frozen earth that lies just under the blanket of moss so common throughout much of the Territory, and this has led many to believe that crop production could not be made successful in much of that country. The experience at the experiment stations in the interior of Alaska is quite to the contrary. In many parts the ice is not permanent except under the layer of moss. When this is removed the stratum of permanent ice recedes and agriculture becomes possible.

At the Rampart station, which is situated within about 50 miles of the Arctic Circle, grain growing has been carried on successfully for more than 20 years. The first clearing was made in 1900 and a layer of moss removed from the land. At that time the soil was frozen to within 8 inches of the surface. After one summer's exposure the ice had melted to a sufficient depth to permit the first crop to be planted. The ice layer has now receded to a depth of 6 or 7 feet and it is still gradually being lowered.

The presence of this frozen subsoil is not without advantage in the interior of Alaska, where the rainfall is light and dry seasons sometimes prevail. At such times the moisture from below is brought to the roots of plants by capillarity and crop production is assured.

The receding of the permanent ice is shown in other ways. At the Holy Cross Mission, on the lower Yukon River, a well was dug in the summer of 1899 to a depth of 25 feet and no permanent ice encountered. The place where the well was dug had been under cultivation for about 10 years.

At the Fairbanks station in the spring of 1909 a well 40 feet deep was dug and no frost met with except in the first 2 feet on land cleared in 1907.

These instances show that if the moss is removed the ice will thaw to a greater depth in summer than it freezes in winter.

WATER BALANCE IN THE PANAMA CANAL, DRY SEASON OF 1923.

By R. Z. KIRKPATRICK, Chief Hydrographer.

Figure 1 shows concisely the amount of water available for all uses at the Panama Canal during the dry season of 1923 and the amount available as storage at the beginning of the rainy season May 1, 1923.

MORTALITY FROM HEAT AND SUNSTROKE.

[Reprinted from *Statistical Bulletin*, Metropolitan Life Insurance Co., May, 1923, p. 6-8.]

The greatest variations occur from year to year in the number of cases of and deaths from heat prostration and