

the continental land masses through the middle latitudes to regions as far north as the Arctic Circle" (p. 269).

Turning now to theory: practically all reasonable theories receive attention in one or other of the articles; but without any positive conclusions. The outstanding contribution to climatic theory is one made by H. C. Willett and to this I will devote the small space remaining: for we shall hear a great deal about it in the future.

It has long been known that the variations in the ultraviolet radiation from the sun are much larger than is warranted by the thermal changes in the sun which are clearly indicated by the remainder of the solar spectrum. The presence and intensity of this ultraviolet light can hardly, if at all, be measured at the surface; but they are clearly indicated in the activity of sunspots, chromospheric eruptions, solar coronal disturbances, ionospheric and geomagnetic disturbances. Shortly expressed Willett considers that this solar activity affects in some way the general pattern of the atmospheric circulation and so the climate. He admits that he knows of no physical connexion between these indications of what he calls "solar irritations" and terrestrial climate and "consequently the argument for this hypothesis is perforce essentially statistical at the present time" (p. 62). He gives a few cases in which a statistical relationship has been suggested (if not actually confirmed); for example "the rather abrupt transition from very high to very low solar activity, following major sunspot maxima in 1787, 1871, and 1947 are followed by most pronounced reactions from exceptionally mild to exceptionally severe climatic conditions in middle latitudes."

I cannot go further here into the evidences which Willett brings forward in support of his hypothesis nor would it be profitable, for one will have to give much study to it before a considered judgement can be given; but at least one can say that he has made out a *prima facie* case. I would, however, like to express the opinion that the judgement would have been more likely to have been in his favour if he had limited his claim to the small irregular changes in the general circulation of the atmosphere for which the meteorologist has not yet even an hypothesis.

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LA NEIGE. CHARLES-PIERRE PÉGUY. (Series "Que sais-je?" No. 538.) Paris, Presses Universitaires de France, 1952. 120 pages, 17 text-figures. Price 150 F. francs.

CHARLES-PIERRE PÉGUY, Professor of Physical Geography at the University of Rennes, is the author of this book which forms part of the series "Que sais-je?" It consists of an agreeable discussion covering a most interesting subject and showing the importance of snow to men and mankind.

The first chapter, the meteorology of snow, explains when snow is to be expected. It gives as the known maximum of the total depth ever measured—the world record—27.45 m. during the winter of 1906–7 at Tamarack, California, at an altitude of 2438 m. The author adds that there are surely places where this depth of snow should be much larger. He defines the several basic measurements of snow precipitation. Subsequent chapters deal with the nivometric regimes, annual snowfalls throughout the world, the metamorphosis of snow on the ground (crystallography) and the mechanical and physical properties of the snow cover (avalanches), the extent and duration of the snow cover in various parts of the world, everlasting snow, and finally the climatology of snow and its influence on Man.

This small book is not only interesting, it covers the subject with competence and is a valuable handbook as an introduction to any study in connexion with snow.

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