CLOUDINESS VS. INSOLATION

In a brief article, "On the relation which exists between insolation and cloudiness," [1] published by the Academy of Athens, the author, A. N. Livathinos, points out the discrepancies between the fraction of insolation and the complement of the percentage of cloudiness as observed at Athens during the 10-year period, 1906-1915. Because the differences between these—cloudiness on the one hand and insolation on the other—are negative in winter and positive in summer, they cannot be due entirely to personal evaluation. Hence, the author has applied a series of corrections which reduce the differences anywhere from zero in July and August to as much as 11 (on the basis of 100) in February. These take into account the failure of the heliograph to register near sunrise and sunset, as well as the nature and movement of clouds. Thus, the differences resulting after the corrections have been applied must be due to inaccuracies of personal observation because the differences are zero in July and August when there are no clouds between sunrise and sunset, and greatest in winter when there are the most clouds. The author concludes by saying that "if the relation in question is not verified in practice, the reason for it is in part due to the failure of the heliograph and in part to errors in personally estimating cloudiness."—*C. E. K.*

CLIMATE AND GEOGRAPHY

O. J. R. HOWARTH

49 pages, with tables and diagrams. Oxford University Press, New York and London. 1927. 50 cents.

This interesting little volume is virtually a summary of certain facts and principles of meteorology and climatology, by a geographical author. Mr. Howarth discusses in a very simple and lucid style, the nature and measurement of the various climatic elements, their distribution locally about barometric "depressions," and their world distribution. He further outlines some important relationships between these elements and topography and relief, such as "Named Winds," "Rainfall on Windward Mountain-slopes," and "Ocean Currents and Air Temperatures." At the conclusion, he states very briefly the rainfall and temperature characteristics of 61 well selected places, supporting these with tables of monthly and annual means.

Mr. Howarth has done a very useful and accurate piece of work in preparing this convenient booklet which will be of immediate value and interest to all students of meteorology, climatology, and general geography. —*C. E. Koeppe,* Clark University.

FENCING AROUND RAIN GAUGES

In the August number of the *Meteorological Magazine* is found an article by Spencer Russell concerning fencing around rain gauges. A

[1] "Sur la relation qui existe entre l'insolation et la nébulosité."

rain gauge at the Telegraphic Reporting Station, Portland Bill, Dorset, was so located as to get the full effect of the wind coming off the English Channel. A pale fence three feet, six inches in height, and thirty feet in diameter, was placed around the rain gauge to avoid interference by visitors. It was expected that the fence would break the effect of the wind to some extent and would therefore record more rainfall than one freely exposed to the wind, but after fourteen months of observations there was recorded five-tenths of a millimeter less than in an unfenced gauge fifty yards away.—*J. L. P.*

SUN SPOTS AND RAINFALL IN MEXICO CITY

The January to April number of the *Sociedad Cientifica "Antonio Alzate,"* of Mexico City, contains an article by Joaquin Gallo on "Sun spot maximum and rainfall in Mexico City." Graphs containing the curves for sun spots and rainfall are shown for the period 1878-1926 inclusive. He has shown a close correlation between sun spots and rainfall in the eleven-year sun-spot cycle. With a maximum of sun spots there is a minimum of rainfall except for 1907. There is a closer correlation between the sun spots and minimum rainfall than between sun spots and average rainfall.—*J. L. P.*

SOUTHERN BRAZIL

We have recently received the annual summaries of the weather in Brazil's southernmost state, Rio Grande do Sul, issued by the Instituto Astronomico e Meteorologico under the direction of L. Coussirat de Araujo. These books contain monthly summaries of the weather of every state, including interesting maps of temperatures and rainfall. Comparing these monthly maps of one year with another, the variability of both rainfall and temperature is very evident. Large maps of annual temperature and rainfall are also published, and these show a considerable difference between 1924 and 1925. The rainfall of 1924 was generally lighter than that of 1925; the amounts ranging from less than 750 mm. (about 30 inches) to over 1500 mm. (about 60 inches), while in 1925 the values ranged from a little under a thousand to over 2000 in three areas, and 2250 in one place. In general, the lightest rainfall is along the coast, and the heaviest in the interior.

ACTION CENTERS OF WORLD WEATHER

Nowadays when the weather of any part of the world appears to be badly out of joint, meteorologists are likely to look for an explanation to the "centers of action." It is a remarkable fact that, although these interesting regulators of weather have been known to science for nearly half a century, they have never acquired popular renown. Their importance in the economy of the atmosphere was first recognized by a French meteorologist, L. Teisserenc de Bort, who was trying to find out why the winter of 1879-80 in central Europe was one of the most severe ever known. He drew charts of the distribution of atmospheric pressure,