

servations has led the authors to the conclusion that the nocturnal periodicity of the larvæ is primarily dependent upon periodic variations in the arterial supply of larvæ to the cutaneous vessels. The periods of sleep and activity of the patient were reversed, and there resulted a gradual change in regard to the period of the cutaneous immigration of the larvæ. After four days the maximum concentration of the larvæ in the cutaneous vessels had been changed from midnight to 6 a.m., and after eleven days to midday. Graphs showing the number of larvæ per c.c. of blood passed in the urine reveal the existence of a regular periodicity corresponding with that of the larvæ in the cutaneous blood, with the difference that the time of maximum concentration of larvæ in the renal and vesical vessels was several hours later. Messrs. Malins Smith and Matthews give, in the same number of the *Annals*, further records of the occurrence of intestinal protozoa in non-dysenteric cases. Their results show that among the 200 returned soldiers examined in Liverpool *Entamoeba histolytica* was present in twelve of the 158 cases, with no previous history of dysentery.

Dr. N. A. Cobb, of the United States Department of Agriculture, has published (in *Nematology*, vol. iii., pp. 431-86) an account of the nematode genus *Mononchus*. The genus is of world-wide distribution, and some of the species are cosmopolitan. *Mononchs* are regularly present in arable land of a sandy or loamy nature, and sometimes occur in great numbers; the author estimates that there were at least thirty millions per acre in the top six inches of a field of maize in New Jersey. Most mononchs are carnivorous; they have been found to feed on protozoa, on rotifers, and on other nematodes. One cosmopolitan species was found by the author in Florida feeding on the larvæ of *Heterodera radiculicola*, a serious root-pest, and it is suggested that further investigations may reveal the possibility of utilising mononchs to reduce the enormous losses in crops due to plant-infesting nematodes. A description of the characters and anatomy of the genus is given, and it is stated that the females of many, probably of most, species are really hermaphrodite, the gonad producing also spermatozoa, which are so minute that they have apparently hitherto escaped notice. Males, if found at all, are nearly always rare, and of most of the species males are not known. A key is provided to the subgenera and to the fifty-seven species—including twenty-eight described as new in this memoir—and the text has seventy-five excellent figures.

RAINFALL DISTRIBUTION OVER FRANCE.¹

THIS is the first portion of a contemplated large investigation into the rainfall distribution over France, and deals with the régime over the North-West Provinces. Other memoirs will contain a discussion of the data for the south-west, north-east, and south-east of the country for the fifty years 1851-1900. In the work under notice, which is an extract from the memoirs of the French Central Meteorological Office, full particulars are given of the data used in compiling the maps of average rainfall based on a fifty years' normal, by a comparison of short-period data with standard stations, affording records for the complete series. In some cases the standard stations seem to be at a considerable distance from the short-period record to be corrected to the fifty years' normal.

The variability of rainfall based on records for sixteen stations in France and adjacent countries during the

¹ "Etudes sur le Climat de la France. Régime des Pluies. Première Partie. Considérations générales: Région du nord-ouest." Par M. Alfred Angot. Pp. 128+13 plates.

second half of last century is discussed, from which it is shown that the departures of individual years from the normal are in accordance with the theory of probabilities. A list of the stations arranged in river basins is given by departments, along with the altitude and the period of observation. Monthly isohyets are drawn at intervals of 10 mm. up to 100 mm., but at 120 mm. and 150 mm. thereafter, while on the annual maps the intervals extend to 100 mm. A summary of the leading features governing the rainfall distribution is given for each month and for the year.

In almost all the regions considered October is the wettest month, the rainfall exceeding 100 mm. in the country of Caux, the department of the Manche, the western part of Brittany, and the heights of Gâtine, the maximum being 151 mm. at Saussemesnil; while the driest areas in this month are the middle valley of the Seine, the basin of the Eure, and on the Beauce, where the rainfall is between 50 mm. and 60 mm., but not under the former value. The driest month is February, not only as regards the actual quantity, but also taking into consideration the shortness of the month.

For the whole year the driest regions are the basins of the Seine, the Loire, and the Oise, where the precipitation varies between 500 mm. and 600 mm. The stations where more than one metre of rain falls are extremely few, and are mostly located in mountainous areas, the maximum being 1181 mm. in the Monts d'Arrée. No detailed description appears of the methods of mapping the material utilised. Rivers are shown, but towns, railways, and departments are not indicated, nor are the orographical features shown. The maps clearly indicate the very patchy distribution of rainfall, and have evidently been drawn with much care. The originals were on a scale of 1:1,500,000, or twenty-two miles to an inch, and then reduced for publication on a scale of thirty-nine miles to an inch.

MINERAL PRODUCTION OF PERU AND THE PHILIPPINE ISLANDS.

THE official report upon the mineral production of the Philippine Islands for the year 1915 has recently been issued by the Division of Mines, Bureau of Science, of the Government of the Philippine Islands. The importance of the gold production far outweighs that of any other mineral; its value is returned as 2,633,523 pesos, say about 274,000l., being an increase of 12.1 per cent. above that of 1914. The gold bullion, of course, also carries a certain amount of silver, which is valued separately. The only other metallic product is iron, of which ninety-six tons appear to have been produced, this being only about one-half of the production of the previous year. This iron is all produced in small native furnaces, and is worked up into ploughshares or similar articles; the main reason in the falling off is the competition of inferior articles, made from scrap-iron. There is no production of native coal, none having been worked since 1912. The other minerals, of which returns are included, are salt, sand and gravel, clay products, stone, lime, and mineral waters. The total value of all these is estimated at rather less than the value of the gold output.

The mineral statistics of Peru for the year 1915 show a considerable increase in most of the products according to the report (No. 83) recently published in Lima. The total value is given as 5,930,000l., being an increase of 42 per cent. above that of 1914. This increase is due in part to the important rise in the value of mineral products, but it must be noted that this rise did not extend to the value of silver, and as