CURRENT NOTES ON METEOROLOGY.

PERUVIAN METEOROLOGY.

THE meteorological work of the Harvard College Observatory in Peru has frequently been brought to the attention of the readers of SCIENCE in these notes, especially during the visit of the present compiler of these notes to South America in 1897–8. In 1899 there was published the first volume on 'Peruvian Meteorology, 1888–1890,' containing observations made at Mollendo, Arequipa, Vincocaya, Puno and near Chosica (*Annals Harv. Coll. Obs'y*, XXXIX., Pt. I.). In this same volume there was an account of the volcano El Misti, on whose summit there was maintained for some years the highest meteorological observatory in the world, and also a paper on the configuration and heights of the Andes. Both of these chapters were written by Professor Solon I. Bailey, and the compilation and reduction of the observations was also carried out by him. We now have a second publication, entitled 'Peruvian Meteorology, 1892–1895' (*Annals Harv. Coll. Obs'y*, XXXIX., Pt. II., 1906), in which there are tabulations of the observations made at Mollendo (80 ft.), La Joya (4,140 ft.), Arequipa (8,050 ft.), Chachani (16,650 ft.), Misti Summit (19,200 ft.), Mt. Blanc (15,600 ft.), Huesos (13,300 ft.), Cuzco (11,100 ft.) and Santa Ana (3,400 ft.). Mollendo is on the seacoast; La Joya is on the Desert of Islay; the Chachani station was, until the establishment of that on the Misti, the highest meteorological station in the world. The so-called Mt. Blanc station is on the flank of the Misti, at about the altitude of the top of Mont Blanc, and the Huesos shelter is on a lofty pampas at the base of the Misti. Cuzco is the old Inca capital. And Santa Ana is beyond the eastern Cordillera, near the limits of civilization. Details concerning the location and establishment of these different stations are given in the introduction, and also a description of the tables. The extraordinary interest which has attached to these meteorological undertakings in Peru, carried on under great difficulties and often also, in the establishment of some of these stations, at considerable risk, has made the meteorological world impatient to have access to the records. This volume will, therefore, be given a warm welcome. In spite of breaks in some records here, and inaccuracies in other records there, the publication is one of unusual value. Excellent views are given of each of the stations; a cross-section shows the relative distances and altitudes in each case, and curves are given in some cases. A discussion of the famous crescentic sand dunes of the desert of Islay will prove interesting to geologists and physiographers. The volume was compiled and prepared for publication by Professor Solon I. Bailey.

CIRRUS AND RAIN.

AT the Royal Observatory of Belgium, in Uccle, Vanderlinden has, for the years 1892–1905, studied the relation between the direction of movement of cirrus clouds and the subsequent occurrence of rain. The directions which are oftenest followed by rain are S.W., W. and N.W. The opposite directions are in the majority of cases followed by days without rain. The latter are, however, seldom observed, and the general result is that, omitting the S.E., E. and N.E. cases, there is almost always the same probability of rain or no rain. The probability exceeds 50 per cent. in the case of the W. and S.W. octants only. Cirrus clouds, then, do not appear always to be the prognostics of rain which they have been said to be. It may be noted that at Blue Hill Mr. H. H. Clayton has shown that cirrus clouds are not, as a whole, an indication of coming rain, but are somewhat less frequently followed by rain than the average probability of rain (*Annals Harv. Coll. Obs'y*, XXX., Pt. IV., 474).

METEOROLOGICAL NOTES IN LABRADOR.

ALTHOUGH the Moravian missionaries on the Labrador coast have supplied remarkably complete series of meteorological data from that region, the interior of Labrador is very little known meteorologically, and even fragmentary accounts are of interest. In an account of 'Labrador, from Lake Melville to Ungava Bay' (*Bull. Amer. Geogr. Soc.*, 38,

1906, 529–539), Mrs. Leonidas Hubbard, Jr., notes that during her trip in June–August, 1905, the weather was very fine. The maximum temperature was 77°. In the higher lake country the clear nights were frosty, and on August 10 a coating of ice an eighth of an inch thick formed on a basin of water outdoors. Snow flurries occurred on three days. Thunderstorms were rare and very mild. Passing showers gave rise to remarkably beautiful rainbows. The clearness of the atmosphere made objects miles away seem very near. The plague of flies and mosquitoes, which is a well-known characteristic of some northern lands in summer, is noted as one of the disagreeable features of the trip.

AFRICA AND THE WHITE MAN.

Reports from Africa note the increase of the white populations in regions which have hitherto been occupied by natives only. Boer farmers are immigrating into the northern part of German East Africa, which is described as an 'elevated and healthful region.' These Boers are chiefly cattle-raisers. Mr. H. Buttengach, a mining engineer who has spent two years in Katanga, the southeastern province of the Congo Free State, is convinced that European colonization is warranted by the climate of this high plateau (*Bull. Soc. Belge d'Etudes Coloniales,* No. 6, 1906), and that agriculture may have great development on these wide alluvial plains. M. Auguste Chevalier believes that the cultivation of cacao will have enormous growth in French West Africa. The seventh report on the German cotton experiments in German Africa (*Der Tropenpflanzer,* No. 6, 1906) shows that the natives are making good progress under German tuition. The prospects in the Cameroons are encouraging in certain districts, as they are in the northern part of German Southwest Africa.

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PALEONTOLOGICAL NOTES.

FOSSIL CHRYSOCHLORIDÆ IN NORTH AMERICA.

The Chrysochloridæ, or golden moles, are one of the several mole-like types which take the place of the true moles in the southern continents. True moles (family Talpidæ) are found in the subarctic and temperate zones of all the northern continents, but not in or south of the tropics. But in the south temperate zone several animals are known which have adopted mole-like habits, and superficially resemble the true moles to a greater or less degree. In Australia there is a marsupial mole, *Notoryctes;* in Madagascar certain members of the Centetidæ are mole-like; and in South Africa we have the Chrysochloridæ. The latter two families are, like the true moles, included in the order Insectivora, but belong to the primitive or archaic division of Zalambdodonta, while the true moles belong to the more progressive, modernized and dominant group of Dilambdodonta. In South America there are at present no mole-like Insectivores or Marsupials, but in the Upper Miocene (Santa Cruz formation) of Patagonia have been found remains of an extinct mole, *Necrolestes,* of the Chrysochlorid family, most nearly related to the modern Golden Mole of South Africa.

The geographical range of these Chrysochloridæ, limited to the southern extremities of the two southern continents, and their supposed absence from any of the modern or fossil faunas of the northern continents, is not easily explained with the present distribution of land and water on the earth's surface. They form one of several peculiar elements common to the fauna and flora of the two continents which have suggested former land connection, probably *via* the Antarctic continent at a time when the polar climate was comparatively warm and Antarctica a habitable region. There is a considerable weight of evidence for the former connection of Australia and South America *via* Antarctica, but the evidence that South Africa was formerly connected is much weaker, and the geological and physiographic difficulties in the way are much more serious, as a much broader ocean intervenes, of abyssal depth and every indication of long permanency.

The discovery of Chrysochlorid moles in a Lower Miocene formation in North America,