

attempts to correct the aim by automatic sights have been made, but the most effective measure is to fire as many rounds as possible during the combat; hence the frequent duplication of a forward fixed gun.

M. Lefranc concludes his article with a brief description of the types of bullet used by the Germans. He mentions four types: the ordinary bullet, the perforating bullet for destroying the engines and metal parts of a machine, the incendiary bullet, and the explosive bullet. The article is liberally illustrated with sketches and diagrams, and is well worthy of perusal. Any attempt to trace developments further than M. Lefranc has done would doubtless be censored; indeed, some ten lines of the article in question have been censored as it is. We have, therefore, contented ourselves with a brief *résumé* of the most important points of the article, as they will doubtless be of interest to those who follow the progress of the scientific development of aircraft.

REPORTS ON CLIMATES.

AN interesting memoir on the climate of Bagdad ("Sul Clima di Bagdad"), by Prof. Filippo Eredia, appears in a recent issue of the *Bollettino della Reale Società Geografica Italiana*, under the auspices of which a mission was dispatched in 1908, led by Dr. A. Lanzani. Prof. Eredia summarises the more salient features of this expedition's work, and further utilises information given in various papers by Eliot, Hann, and Gilbert Walker. Bagdad is in lat. $33^{\circ} 19' N.$, long. $44^{\circ} 26' E.$, the height of the cistern of the barometer above sea-level being 127 ft. The mean barometric pressure at $32^{\circ} F.$ sea-level and lat. 45° is 29.893 in., being highest, 30.149 in., in January, and lowest, 29.543 in., in July, a variation in the monthly means of 0.60 in. The mean annual temperature is $73.0^{\circ} F.$, ranging from 94.5° in July and August to 48.9° in January. The mean of the daily maxima is 86.0° , the mean monthly values ranging from 109.9° in August to 59.5° in January. The mean of the night minima is 60.1° , highest in July, 79.5° , and lowest in January, 38.1° . The highest temperature recorded was 122° , and frost is not uncommon from November to February. The mean daily range of temperature varies from 33° in August and September to 20° in December. The relative humidity is 58, rising to 80 per cent. of saturation in December and January, and falling to 38 per cent. in June. The mean cloud amount (overcast sky = 100) is only 16, the extremes being 29 in March and 1 in July. Various authorities place the annual rainfall between 6.94 in. and 9.04 in., practically all of which falls between November and April. June, July, and September are rainless, but slight showers have fallen in May, August, and October.

A useful paper appears in the *Bollettino d'Informazione* (Anno iv., N. 7-8-9) of the Italian Ministry for the Colonies, by Prof. Eredia, on the climate of Derna, an important commercial centre of Bengasi, situated in lat. $32^{\circ} 45' N.$, long. $22^{\circ} 40' E.$ Some fragmentary data collected by previous writers is first summarised, but the greater part of the paper is taken up with a discussion of observations extending from March, 1913, to December, 1915, made with a complete instrumental installation. The observations made at 9 a.m., 3 p.m., and 9 p.m. are collected in ten-day periods for each of the three hours. The mean annual temperature is $68^{\circ} F.$, of August, the warmest month, 78.3° , and of January, the coldest month, 57.4° . The extremes noted have been 112° and 40° . The mean annual barometric pressure is exactly 30 in., showing a range of 0.17 in. between December (the month of highest pressure) and July

(the month of lowest pressure). The annual rainfall is 7.94 in., of which 86 per cent. falls between November and February. There are fifty-one days in the year with precipitation, July and August being rainless. In spite of the small rainfall heavy downpours are occasionally observed. Thus 3.13 in. have fallen in two days, and three daily falls exceeding an inch have occurred. The prevailing wind, except in December and January, is north-west, one result of this being the remarkable steadiness of the relative humidity, which in no month differs appreciably from the annual mean of 62. The mean amount of cloud varies from 9 per cent. in July to 57 per cent. in February.

Prof. Eredia discusses in vol. xxvi. of the *Rendiconto della R. Accademia dei Lincei* the monthly variations of barometric pressure at twelve places in Italy, based on data for the thirty-five years 1881-1915. The maximum is in January and the minimum in April at all stations. At Pesaro, Florence, Rome, and Lecce there is a well-marked secondary minimum in July. The variation in the monthly means diminishes appreciably with latitude, the amplitude between the months of highest and lowest pressure being 0.07 in. less on the southern coasts than at northern inland stations. Prof. Eredia also contributes a paper, "Le Brine in Italia," to a recent issue of the *Bollettino Bimensuale della Società Meteor. Ital.*, in which he summarises the results of an investigation into the frequency of hoar frost in Italy. The mean monthly number of cases is given for fifty stations well distributed over the country for the five months, November to March, during the twenty years ending 1915. The greatest number of cases is in January, closely followed by December. Pavia, in Lombardy, has an average of forty-one cases during the five months under consideration, whilst at Naples the mean frequency is only 0.4. In most districts coastal stations have a relatively small number of cases as compared with inland stations contiguous. The distribution of pressure and also local conditions favourable to the production of hoar frost are discussed in considerable detail. The insertion of a small map showing the position of the stations utilised would add much to the interest of Prof. Eredia's valuable investigations into various phases of Italian climatology.

R. C. M.

EVOLUTION OF THE PRIMATES.

DR. W. K. GREGORY, of the American Museum of Natural History, New York, has contributed to the Bulletin of that institution a series of studies on the "Evolution of the Primates." In part i. he reviews the theory of cusp-formation which was first formulated by Cope and afterwards elaborated and perfected by Osborn, and contends that all later discoveries have justified their supposition that the upper molars of primates (and also of all typical placental mammals) are modifications of a common tritubercular type, while the lower molars are modifications of a "tuberculo-sectorial" form. In his opinion the similarity of the molar type in all forms of man and anthropoid, both living and extinct, is a matter beyond dispute.

In part ii. Dr. Gregory discusses the phylogeny of the known anthropoid and human types. He regards the chimpanzee and gorilla as man's nearest allies, and, on the present evidence, thinks the common stock from which all three arose may have been in existence during the Miocene period. His review of the dental characters of extinct anthropoids is most welcome. He cannot agree that the genus *Sivapithecus*, recently described by Dr. G. E. Pilgrim, of the Geological Survey of India, stands in the direct line of human