discussion of the hourly frequency and quantity of rain in a period of seven years (1878–84), derived from a self-registering Casella's hyetograph. The results do not seem of much practical importance. In the rainy season the rain is least frequent at the hour of maximum pressure, and most frequent at the coldest hour. At other seasons, dust-storms, with rain, are commonest in the evening. The greatest and least rainfall occur in general at the hours of greatest and least frequency.

III.—"The Meteorological Features of the Southern Part of the Bay of Bengal," by W. L. Dallas (pp. 11, and 1 plate). This is a discussion of the meteorology of a square district of 4° by 4° of the Indian Ocean, about half way between Ceylon and Sumatra, derived from the logs of ships. The air-pressure is at a maximum in January and at a minimum in May, with slight minima in July and October, which seem related to the occurrence of cyclones. The diurnal variation is extremely regular, the minima falling about 3h. 30m. and 15h 40m., and the maxima about 9h. and 22h. The range is markedly largest in April and September, *i.e.* at the two great seasonal changes. The mean temperature is 80°·9, and the range of the mean monthly temperature is only 3°, which is smaller than at any coast station: the diurnal range of the year is about 2°·7, varying from 3°·75 in April to 1°·8 in May, the maximum and minimum being thus close together. In the summer (south-west) monsoon calms are rare. From April to September the wind is pretty steady from south-west to west-south-west, and, from December to March, generally from north to north-east. Only thirteen gales are recorded in twenty-five years, and none of them over force 9 of the Beaufort scale.

Mr. Blanford's "Report" for 1884 is a discussion of the meteorology of India in 1884, on the same general plan as adopted for the ten years preceding. The discussion rests on observations supplied from 134 reporting-stations. Each meteorological element is discussed separately, beginning with the solar radiation as being the prime cause of all meteorological change; next, earth-radiation, temperature, humidity, cloudiness; and, lastly, rainfall. The great extent of India, and its isolation by ocean and mountain from other countries, render it a country most favourable for meteorological study. One singular feature is, that most considerable variations are of a somewhat lasting character, sometimes lasting two seasons, *e.g.* heavy snow in the spring in the Himálya is followed by steady north-west winds over the plains of Northern India, afterwards turning into the hot west winds.

The year under review was in some ways peculiar. Perhaps the most striking feature brought out is that, ever since 1878, the temperature of insolation and of the air have both steadily fallen, and were lowest in 1884 (1°·2 less than in 1878), although the sky was slightly less cloudy than in 1883: it seems likely that this is part of a cyclic change connected with that of the sunspots, the temperature being highest at the sunspot minimum, and *vice versâ*. The mean air-pressure was slightly (0″·01) above that of past years, and also much steadier. The average humidity was rather lower, and the average clearness of sky somewhat greater than in the recent years, and yet the total rainfall was somewhat greater: this was chiefly due to excess of rain in North-West, Central, and South-East India. Heavy snow fell in the North-West Himálya early in the year, bringing rain to the North-West Punjab, and dry north-west winds in North India generally, followed by a hotter summer than usual. The south-west monsoon bringing the rain sets in in North India in June. The storms of the year were somewhat singular. From July to September a series of cyclones formed in the Bay of Bengal, and followed a north and west course far into the plains of India: this course seems to be the usual cyclone track of the Bay of Bengal. One of these, in July, crossed the entire breadth of India, and one, in September, lasted over a fortnight. Heavy snow fell in the outer Himálya in September and October, followed by north-west winds in North India, and by an unusually cool winter in India generally. Twelve charts accompany this Report, showing the mean monthly temperature, air-pressure, and wind; the isotherms, isobars, and wind-resultants being plotted in colours on each monthly chart. This annual Report, of which a very brief summary only is here given, is the outcome of an enormous amount of labour: the detailed tables of data covering 305 quarto pages, these tables being themselves mostly the result of laborious computation from the data furnished by the observatories.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The Mathematical Examiners have bracketed as Senior Wranglers Messrs. Baker and Flux of St. John's, and Iles and Michell of Trinity. It is unprecedented to have a bracketed Senior Wrangler. No women students have this year been placed as Wranglers.

The following women students have been placed in the first class of the Natural Sciences Tripos, Part I., E. E. Field, A. J. Flavell, and M. M. Smith, all of Newnham College.

The Honorary Degree of Doctor in Science has been conferred on Prof. Asa Gray, of Harvard.

SCIENTIFIC SERIALS.

Annalen der Physik und Chemie, No. 6, June.—R. Emden, on the vapour-pressures of saline solutions. Criticism of prior results, and fresh experiments conducted according to the method of Konowalow. Babo's law, that the vapour-tension of saline solutions is always proportional to that of pure water at the same temperature, is shown to be true between 20° C. and 95° C.—Max Planck, on the principle of increase of entropy. Application of this principle in the study of dissociation of gases.—C. R. Schulze, on the amount of water of crystallization held in various salts. Proves the existence of a new form of sulphate of magnesia having density 1·8981, containing six molecules of water, and therefore differing from Mitscherlich's salt of same composition of density 1·6151.—W. Voigt, on the theory of light for absorbing isotropic media. A development of the theory propounded by the author three years ago.—C. L. Weber, on the galvanic conductivity of amalgams. The amalgams examined were of tin, bismuth, lead, cadmium. Addition of tin increases conductivity of mercury; bismuth increases it until 10 per cent. of bismuth has been added, after which further addition decreases the conductivity; lead shows a maximum at about 25 per cent.; cadmium produces a steady increase in conductivity.—Adolf Koepsel, determination of magnetic moments and absolute strength of currents by means of the balance. The method is due to R. von Helmholtz, and is independent of the earth's magnetic field or its variations. The author has made by this method a new determination of the electro-chemical equivalent of silver, which he gives as 0·011740 ± 0·0000022 in C.G.S. measure. Lord Rayleigh's value was 0·011794.—Walter König, magnetic researches on crystals. A very careful research on magnetic susceptibility of quartz and calc-spar in magnetic fields of various degrees of intensity. The two principal permeabilities in calc-spar possess a constant difference in fields of various strengths up to 3000 C.G.S.; for quartz, the difference diminishes as the field is strengthened, and is less than that of calc-spar.—R. Clausius, reply to some remarks of Lorberg upon dynamo-electric machines.—A. Foeppl, electricity as an elastic fluid. A speculative paper: the author thinks the existence of the Hall effect a criterion of his theory.—K. Wesondonck, on the absence of polar difference in spark-potential.—G. Meyer, note on the index of refraction of ice; the value for sodium light is 1·3133.—E. Ketteler, on the dispersion of rock-salt. The author thinks he has established the law that the absorbing power of substances for heat-rays is proportional to the negative coefficient of the term in λ^2 in the formula which he uses in place of Cauchy's for the law of dispersion.—W. Voigt, reply to Wernicke's remarks on elliptic polarization.—F. Braun, on the diminution of the compressibility of solutions of sal-ammoniac with increase in temperature.—A. Overbeck, on the signification of the absolute system of measurement.

SOCIETIES AND ACADEMIES.

LONDON.

Geological Society, May 25.—Prof. J. W. Judd, F.R.S., President, in the chair.—The following communications were read:—On the remains of fishes from the Keuper of Warwick and Nottingham, by Mr. E. T. Newton; with notes on their mode of occurrence by the Rev. P. B. Brodie and Mr. E. Wilson.—Considerations on the date, duration, and conditions of the Glacial period with reference to the antiquity of man, by Prof. Joseph Prestwich. After showing how the discoveries in the valley of the Somme and elsewhere, twenty-eight years ago, led geologists who had previously been disposed to restrict the age of man to exaggerate the period during which the human race had existed, the author proceeded to