

ance with the distribution of barometric pressure over the British Isles according to the Buys Ballot's law, which asserts that the winds blow counter-clockwise round areas of low pressure, such an area lying to the north of the British Isles. But the Ben Nevis winds do not fit in with such a distribution of pressure at all, which indicates that isobars drawn at the level of Ben Nevis (4400 feet) have directions differing entirely from the directions of sea-level isobars. In other words, the distribution of average barometric pressure which extends over the North Atlantic and North-western Europe, and dominates the surface wind over that area, does not in this country extend to a vertical height of one mile. Precautions were taken to make certain that this difference was not due to a difference between the methods of observation at Ben Nevis and at low-level stations. If a cyclonic storm of small area is lying to the north-eastward, the sea-level winds are west or north-west; but the Ben Nevis winds may be north-east, blowing straight out from the centre of the area of low pressure. In larger storms the Ben Nevis winds are practically identical with the sea-level winds, which indicates that a storm has a vertical extent proportionate in some way to the horizontal area which it covers. The outflowing wind seldom or never occurs when the centre is to the south or west, but only when it is to the north or east; and it is most strongly marked when an anticyclone lies on the other side. The outflowing current seems to carry the ascending air of the cyclone to the descending anticyclonic regions. The non-observation of the outward current when the centre of the cyclone lies on the south or west may be due to the fact that it passes at a higher level than the top of the mountain, for it then consists of air passing from hotter to colder regions, which will presumably rise to a higher level. The veering of the wind at great heights, which should occur according to the usual theory of cyclones, is very rarely observed.—Dr. Crum Brown read a paper, by Dr. A. B. Griffiths, on the blood of the Invertebrata.

## PARIS.

Academy of Sciences, June 15.—M. Duclartre in the chair.—On the deformation and extinction of isolated or periodic aerial waves propagated in the interior of delivery tubes without water and of indefinite length, by M. J. Boussinesq.—On a volatile compound of iron and carbonic oxide-iron-carbonyl, and on nickel-carbonyl, by M. M. Berthelot. The author finds that iron, taken in a particular state, combines directly with carbonic oxide at ordinary temperatures (about 45° C. gives the best results) to form a very volatile compound. The required state is attained by reducing precipitated iron peroxide by hydrogen, or by decomposing ferrous oxalate by heat, and completing the reduction with hydrogen. Iron-carbonyl is analogous to nickel-carbonyl, discovered by Mond, Lang, and Quincke (Journ. Chem. Soc., vol. lvii. p. 749, 1890). M. Berthelot has investigated the stability of the latter compound and its reactions with oxygen, sulphuric acid, ammonia, and nitrogen dioxide.—*Résumé* of meteorological observations made at Ecorchebœuf, near Dieppe, from 1873 to 1882 by M. J. Reiset.—Observations of Wolf's periodic comet, made at Paris Observatory (West Tower equatorial), by M. G. Bigourdan. Two observations for position were made on June 12. It is remarked that the comet is a round nebulosity about 20' in diameter, and having a magnitude 13.3.—Observations of the new asteroid (310) made at Paris Observatory with the East Tower equatorial, by Mdlle. D. Klumpke. An observation for position was made on June 12.—Eclipse of the sun of June 6; observations made at Lyons Observatory, by MM. Gonnèsiat and Le Cadet. Measures were made of times of contact.—Observations of Wolf's periodic comet (1884, III.), made at Algiers Observatory with the Foucault telescope of 0.50 metres aperture, by MM. Rambaud and Sy. Eight observations for position were made between May 15 and June 8.—Eclipse of the sun of June 6, observed at the Observatory of the Flammarion Scientific Society at Marseilles, by M. Jacques Léoïard.—On the two forms in which the co-ordinates of the surface of the fourth degree, described by the summits of cones of the second order which pass through six given points, are expressed by means of  $\theta$  functions of two arguments, by M. F. Caspary.—On an electric indicator for the detection of small variations of pressure in currents of gas, by MM. G. and L. Richard.—Researches on the application of the measure of rotatory power to the determination of compounds formed by aqueous solutions of mannite, with acid molybdates of soda and ammonium,

by M. D. Gernez. By measuring the proportions of salts in solution which give the maximum rotatory effect on polarized light, the author arrives at the molecular formula of the compounds formed.—On quinethyline, a homologous base of quinine, by MM. E. Grimaux and A. Arnaud.—On ureides derived from normal acids, by M. C. Matignon.—Mode of formation of methyl-campho-carbonates of methyl and ethyl, by M. J. Minguin.—On nitro-cyanacetic ethers, by M. P. Th. Muller.—Bleaching of cotton by oxygenated water, by M. Prud'homme. The addition of calcined magnesia to oxygenated water improves the bleaching properties of the latter. According to the author, the superiority of the results obtained is due to the formation of a peroxide of magnesium.—*Rôle* of the nucleus in the formation of the fundamental muscular reticulum of the larva of Phrygane, by M. G. Bataillon.—On a special disposition of the eyes in *Pulmonara basommatophora*, M. Victor Willem.—Experimental contribution to the study of growth, by M. Henry de Varigny.—On a cryptogamic disease of the *Acridium peregrinum*, by M. L. Trabut.—On the existence of a little Miocene vertebrate fauna in the rocks of the Saône valley at Gray, and at Mont d'Or Lyonnais, by M. Charles Depéret.—Contribution to the geological study of the environs of Digne, by M. Bachelard.—Fauna in a deposit of Quaternary strata at the environs of Pouillyenay, by Don Jehl.

## BOOKS, PAMPHLETS, and SERIALS RECEIVED.

The Oyster: W. K. Brooks (Wesley).—De l'Exercice chez les Adultes: Dr. F. Legrange (Paris, Alcan).—Bulletin of the United States Fish Commission, vol. viii. (Washington).—Education and Heredity: J. M. Guyau; translated by W. J. Greenstreet (Scott).—An Introduction to the Mathematical Theory of Electricity and Magnetism: W. T. A. Emtage (Clarendon Press).—Le Pêche et les Poissons des Eaux Douces: A. Locard (Paris, Bailière).—La Plume des Oiseaux: Lacroix-Danliard (Paris, Bailière).—Les Plantes d'Appartement et les Plantes de Fenêtres: D. Bois (Paris, Bailière).—Dictionnaire d'Électricité et de Magnétisme: J. Lefèvre (Paris, Bailière).—Bibliography of the Chemical Influence of Light: Dr. A. Tuckerman (Washington).—Constance Naden and Hylo-Idealism: E. B. Brewer (Bickers).—A Summary of the Darwinian Theory of the Origin of Species: F. P. Pascoe (Taylor and Francis).—L'Anthropologie, 1891, tome ii. No. 3 (Paris, G. Masson).—Journal of the Royal Microscopical Society, June (Williams and Norgate).

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