

Atlantic. Special floats were thrown into the sea in three different places, and their progress was traced from place to place. As a preliminary trial 160 floats were thrown into the sea between the Azores and the Canary Islands. Some of these arrived at the Bermudas eighteen months later. In all 1700 floats were despatched, and the result was that the great ocean currents of the North Atlantic were now fairly well known. The Prince's new yacht is provided with an electric search-light of 10,000 candle-power for illuminating the surface of the sea when investigations are being carried on at night. Soundings can be made to a depth of 8000 metres without much difficulty.—M. le Baron Jules de Guerne, President of the Zoological Society of France, read a paper on the zoological results of the voyages of the *Hivonelle* (the Prince of Monaco's former yacht). He described the work of exploration among the Oceanic Islands, and alluded specially to the new species which had been found.—Mr. J. Y. Buchanan described a cartographic device which is of great use in the treatment of some geographical and telluric problems.—Mr. W. E. Hoyle described a deep-sea tow-net, which, by means of an electrical device, can be opened and closed at definite (arbitrary) instants.—Dr. H. R. Mill exhibited an improved form of his self-locking water-bottle.

July 20.—The Hon. Lord McLaren in the chair.—Some additional observations, by Prof. McIntosh, on the development and life-histories of the marine food-fishes and the distribution of their ova, were communicated. By means of various kinds of tow-nets, an endeavour has been made to ascertain the distribution of the eggs of the food-fishes on our shores. They are found at all depths, at the surface, and at the bottom. The floating eggs of the pilchard and mackerel are chiefly found on the south and south-west shores. On the east coast of Scotland the ova of the cod, whiting, and haddock are abundant. On the west coast, those of the sole, &c., abound.—The Astronomer-Royal for Scotland read a paper on the bright streaks on the moon. When the moon is half full its brilliancy is not nearly one-half so great as its brilliancy when it is quite full. Now at full moon the surface is observed to be covered by bright streaks which originate at the craters. The author believes that the great brightness of the full moon is due to these streaks. He considers them to be convex or concave, and so to be largely invisible under cross light, while they are brilliantly illuminated when the sun shines full upon them. The paper was illustrated by a model in plaster of Paris, with glass beads attached to its surface.—A paper, by Prof. C. G. Knott, on the effect of longitudinal magnetization on the interior volume of iron and nickel tubes, was communicated.—Dr. H. R. Mill read an obituary notice of Prof. C. I. Burton.

PARIS.

Academy of Sciences, August 3.—M. Duchartre in the chair.—Experimental researches on the probable rôle of gases at high temperatures and pressures, and in rapid movement, in various geological phenomena, by M. Daubrée. The experiments show how gases at high pressure, and contained in a closed reservoir, may, by a sort of latent action, violently push out rocks into conical or bell-shaped formations without any noise or escape of gas occurring to indicate their gaseous nature.—Heats of combustion and formation of nitrobenzenes, by MM. Berthelot and Matignon. The heats of combustion of ortho-, meta-, and para-dinitrobenzenes are found to be respectively 704.6, 698.1, and 696.5 calories; and the heats of formation 0.5, 6.8, and 8.4 calories. The heats of combustion of the two isomeric trinitrobenzenes examined are 665.9 and 680.6 calories; and the heats of formation +5.5 and -9.2 calories.—On the oldest European Dicotyledons observed in strata at Cercal, Portugal, by M. G. de Saporta.—On some improvements carried out in the manufacture of artificial Seltzer water: the siphon arrangement, by M. de Pietra Santa.—On a new and improved construction of the thermo-cautery of 1876, by M. Paquelin.—Periodic variations of the latitudes of solar prominences, by M. A. Riccò. The author's observations demonstrate that solar prominences, like spots, approach the equator up to the minimum period of activity, and afterwards begin again to appear more numerous in high latitudes.—On induction inclination needles, by M. Ernest Schéring. This is a brief description of a new magnetic inclination needle constructed by the author, and with which it is said to be possible to determine inclination with a probable error of 4".2.—On the expansion of phosphorus, and its change of volume at the melting-point, by M. A. Leduc. The

coefficient of expansion for solid phosphorus between 0° and 44°.1 is found to be 0.000372, whilst for liquid phosphorus between 26° and 50° the coefficient is 0.000560. The expansion is regular up to the melting-point, but an abrupt change of volume then occurs. The relation between the volume of phosphorus in the liquid and solid state is 1.0345.—Study of the chemical neutralization of acids and bases, by means of their electric conductivities, by M. Daniel Berthelot. From the investigation it appears that, when potash is acted on by hydrochloric acid, acetic acid, and phenic acid, compounds are formed having approximately equal electric conductivities. Ammonia, with the first two acids, gives similar stable salts, but with the last acid an unstable compound having a less electric conductivity is produced. Aniline forms with hydrochloric acid a stable compound having good electrical conductivity; and with acetic acid, an unstable body whose conductivity is said to be mediocre.—Action of phenylhydrazine on phenols, by M. Alphonse Seyewetz.—On the development of sponges (*Spongilla fluviatilis*), by M. Yves Delage.—On *Isaria densa*, Link, a parasite of the white worm, by M. Alfred Giard.—The parasite of the cockchafer, by M. Le Moutl.—Action of poisons on the germination of the seeds of the plants which furnish them, by M. Ch. Cornevin.—On the resistance of the rabic virus to the action of prolonged cold, by M. Jobert.—Chromoscopic analysis of white light, by M. A. Charpentier.

Erratum.—On line 36, p. 336, instead of 0.1050 and 4.9720, read 1.1050 and 0.9720.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

Elementary Science Lessons, Standard III.: W. Hewitt (Longmans).—Elementary Geometry of Conics, 7th edition: Dr. G. Taylor (Bell).—Instructions Météorologiques, 3me édition: A. Angot (Paris, Gauthier-Villars).—Bush Friends in Tasmania: L. A. Meredith (Macmillan).—Illustrations of the C.G.S. System of Units: J. D. Everett (Macmillan).—Elements of the Differential and Integral Calculus: A. Harnack; translation (Williams and Norgate).—Denmark: its Medical Organization, Hygiene, and Demography (Churchill).—Statistical Investigations concerning the Imbeciles in Denmark, 1888-1889 (Churchill).

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