platinum black was found most suitable for this purpose. The absorbing medium employed consisted of a thin layer of water in a quartz cell. The energy radiated from the heated foil passed through a diaphragm of known aperture, whose temperature was the same as that of the bolometer. The errors in determining the unit of light amounted to one per cent., due chiefly to the air currents on the surface of the foil. The unit can now be established at any time in the Imperial Physico-technical Institute (Berlin); but in order to facilitate its accurate establishment at any other place, experiments are being made to determine the temperature of the glowing foil from ratio of the radiation over the range of the visible spectrum.

June 28.—Prof. von Bezold, President, in the chair.—Dr. Raps exhibited and described some new electric meters constructed by Siemens and Halske, which by the use of constant magnets provide an accurate measure for technical purposes, and are uninfluenced by ordinary variations of temperature. Dr. du Bois described experiments made by Dr. E. T. Jones on magnetic lifting-power. He had already showed that Maxwell's formula holds good for a field whose strength is up to 500 C.G.S., and now passed on to fields of greater strength. In the last set of experiments electro-magnets were employed with a sectional surface of an iron bar passed through the armatures. A magnetic lifting power of 52 kilogrammes per square centimetre of surface was thus for the first time obtained, and Maxwell's formula was found to hold good up to this maximal value; the error was at most five per cent., due as yet to insufficient introduction of corrections. Stephan's formula did not in any way correspond with the results of the above experiments. It further appeared that a lifting power of 150 kilogrammes per square centimetre should be obtainable.

AMSTERDAM.

Royal Academy of Sciences, June 29.—Prof. Van der Waals in the chair.—Prof. Martin presented a work, written by him, and entitled "Die Fossilien von Java." Basing his arguments on the presence of these fossils, the author showed that in Java there are found Upper Miocene, Pliocene and Quaternary sediments. When the distribution of these formations is considered, it appears that in general the newer strata have been formed on the outer side of the older ones, and there can be no doubt that since the time of the Upper Miocene formation a continuous and very slow elevation of the coast ("negativ strandverschiebung") took place, in consequence of which the Upper Miocene, Pliocene and Quaternary sediments of the coast were laid dry. That this shifting of the coast was very considerable, is proved by the Njaliendoeng fossils, found 910 m. above the level of the sea, and this fact further tallies with what is known about Sumatra, where in the "Padangsche Bovenlanden" Neogene sediments have been found up to a height of 1088 m. Not long ago the author showed that during the Quaternary period a considerable movement took place in the eastern part of the archipelago, and numerous facts show that the whole of the Indian archipelago was subjected to this. The author further remarked that he had received interesting fossils from Western Borneo. Among them are: *Perisphinctes* (Waag.), *Protocardia*, and *Corbula*. All these fossils have been found in strata that were formerly known as "ancient schists," which, however, on account of the above-mentioned fossils, can only be reckoned to belong to the Mesozoic period; more particularly they ought to be classed either with the Jurassic or with the Cretaceous formation. In accordance with the present state of our knowledge it is highly probable that the fossils in question have been taken from Jurassic formations. It appears, then, that Mesozoic strata have a very wide distribution in the Indian archipelago.—Prof. Beyerinck read a paper on *Cynips calycis*. The *Cynips calycis* gall-nut, very common in Austria-Hungary on *Quercus pedunculata*, is appreciated in commerce as a first-rate tanning material. In the Netherlands two or three small localities are known where this gall is to be found.—The dehydration, rehydration and re-dehydration of colloidal silicic acid, by Prof. van Bemmelen.—Prof. Stokvis presented some pamphlets by himself and some of his pupils, and, with reference to Dr. Langemeyer's dissertation, discussed the influence of the use of sugar upon muscular labour. From experiments, made with the ergograph, it is deduced that it has not yet in any way been proved that sugar has a favourable influence upon muscular labour.—At the request of Dr. C. A. Lobry de Bruyn, Prof. Franchimont communicated that free hydrazine had been prepared by the former in two ways: 1° from N_2H_4HCl with sodium methylate in a methyl alcoholic solution, and 2° by heating the hydrate to 100° with barium oxide. Free hydrazine is a somewhat thick fluid with the smell of the hydrate. It boils without decomposition at 113°·5 and a pressure of 761 m.m., and at 56° if the pressure is 71 m.m. When cooled, it becomes solid, and then melts again at 2°; its density at 23° is 1·0075 and does not, therefore, differ much from that of the hydrate (boiling at 119°). In ordinary air it forms strong vapours and is easily oxidised by oxygen with the formation of nitrogen. In the air it will burn, but not explode, like hydroxylamine, and consequently it is much more stable.—Prof. Kamerlingh Onnes communicated measurements on the capillarity of liquid gases, made by Dr. Verschaffelt in the Leyden laboratory. Carbonic acid and nitrous oxide obey the law of corresponding states; their capillary equation has an exponent approaching the theoretical value given by Van der Waals, and they are not associated fluids.—Prof. Van der Waals presented a paper intended for the report of the meeting, and entitled: "On the critical circumstances of a mixture," being a sequel to what was communicated in the meeting of the section held in May.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

BOOKS.—Bouches a Feu: E. Hennebert (Paris, Gauthier-Villars).—Balistique Extérieure: E. Vallier (Paris, Gauthier-Villars).—Geological Survey of Canada, Annual Report, new series, Vol. 6 (Ottawa).—Science Readers, Book iv.: V. T. Murché (Macmillan).—A Text-book of the Principles of Physics: Dr. A. Daniell, 3rd edition (Macmillan).—Pan-Gnosticism: N. Winter (Transatlantic Publishing Company).—A Handbook to the Flora of Ceylon: Dr. H. Trimen, Part 3 and plates (Dulau).

PAMPHLETS.—Geogenetische Beiträge: Dr. O. Kuntze (Leipzig, Gressner).—Sobre Peces de Agua Dulce: C. Berg (Buenos Aires, Alsina).—The Grimsby Trawl Fishery, &c.: E. W. L. Holt (Plymouth).

SERIALS.—Journal of the Institution of Electrical Engineers, July (Spon).—Quarterly Journal of the Geological Society, August (Longmans).—Fortnightly Review, August (Chapman).—Macmillan's Magazine, August (Macmillan).—Scribner's Magazine, August (Low).—Verhandlungen des Naturhistorischen Vereins, &c., Einundfünfzigster Jahrg., Sechste Folge, 1 Jahrg., Zweite Hälfte (Bonn).—Bulletins de la Société D'Anthropologie de Paris, tome vi. 4e serie (Paris, Masson).—Geological Magazine, August (Dulau).—Geographical Magazine, August (Stanford).—Transactions and Proceedings of the New Zealand Institute, 1894, Vol. xxvii. (Wellington, Costall).—Science Progress, August (Scientific Press, Ltd.).

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