was not a single crane in Robert Stephenson's shops in 1837; and the only steam-engine, in that which was the most important locomotive shop in the world of that day, was a vibrating pillar-engine, with a single 16-inch cylinder and 3-feet stroke. About the only machine-tool, properly so called, in the works was a planing-machine, which probably weighed about 3 tons. At the present time there were lathes 75 feet long, weighing 100 tons, giving a yield of steel-turnings at the rate of 10 and 20 tons a day, and planing-machines weighing 90 tons and operating over surfaces of 20 feet by 15 feet. Having spoken of the changes in the position of the workmen, the President referred to the progress of railways, the development of the iron and steel industries, and sanitary engineering. Reference was made to the electric telegraph, which had developed from the 5-needle instrument of Cooke and Wheatstone, employing six wires and working at about the rate of four words a minute, to the system of multiplex and automatic telegraphy, by means of which six messages could be sent at once on one wire with a speed of, say, 600 words per minute. Touching successively on the telephone, electric light, and the application of electricity as a motive power, the President hazarded the opinion that when some way should have been discovered of storing up in a more efficient and financially successful manner the unemployed forces of Nature, such as the winds and tides, then would electricity become a factor in the world's life compared with which it was at present as nothing.

Anthropological Institute, November 22.—Prof. Flower, C.B., Vice-President, in the chair.—Canon Isaac Taylor read a paper on "The Primitive Seat of the Aryans," in which he urged the view that the Finns are the nearest representatives of the ancient Aryan stock, and that the race took its origin in North Germany.

EDINBURGH.

Royal Physical Society, November 16.—Prof. Duns delivered the introductory addressfor the session 1887–88. At the outset obituary notices of several deceased Fellows were given, notably of Mr. Robert Gray, the late Secretary of the Society. After some remarks upon the history and progress of the Society, he passed on to consider the claims of Scotland upon Government aid for scientific purposes, and advocated the union of the various scientific corporations of Edinburgh to form an Academy of Science for dealing with general questions of this nature.

PARIS.

Academy of Sciences, November 21.—M. Janssen in the chair.—On the nervous system of the Gasteropods (Aplysia type, *A. depilans* and *A. fasciata*), by M. H. de Lacaze-Duthiers. The Aplysia, a large mollusk, abounding especially in the Mediterranean seaports, is here studied for the purpose of determining the type of its nervous system in order to compare it with those of Gadinia, Testacella, and other Gasteropods already described by the author.—Remarks in connection with M. Colladon's recent note on waterspouts and tornadoes, by M. H. Faye. It is again shown that M. Colladon's illustration, as published in the *Comptes rendus*, has only a very remote connection with true waterspouts and whirlwinds. Reference is also made to the statement, in W. Ferrel's new work on meteorology, that much sea-water is carried up by the ascending current of waterspouts, the fish and other animals in small ponds being even in this way borne aloft and wafted to great distances. On the contrary, M. Faye insists with Lieutenant Finley, of the United States Signal Service, that no appreciable quantity of water is pumped up in this way, although much is driven horizontally to the right and left by the gyratory velocity of the air, which has always a descending, and never an ascending motion.—On the crystalline form of cinchonamine, by M. C. Friedel. Some crystals of the alkaloid discovered by Arnaud in certain varieties of quinquinas are described as hexagonal prisms terminating in a rhombohedron and of the true orthorhombic type.—On a meteorite which fell on August 18/30, 1887, at Taborg, in the Government of Perm, Russia, by M. Daubrée. This meteorite, which has but slight cohesion, with density 3·620, appears to closely resemble those which fell on April 1, 1857, at Heredia (Costa Rica); on May 14, 1861, at Canellas, Province of Barcelona (Spain); on January 19, 1867, at Khethree, Rajputana (India); and on August 17, 1875, at Feid Shair (Algeria).—On a simple relation between the wave-lengths of spectra, by M. A. E. Nordenskjöld. The researches here described tend to confirm the author's previous view that, at least in the spectra of certain simple bodies, the differences between the logarithms of the wave-lengths of each element are simple multiples of the same number. The universality of this law, as applicable to the spectra of all bodies, is still far from being established. But further investigation will probably show, either that the spectra of all simple bodies conform absolutely to this law, or else that they are disposed in more or less independent groups, to which the law may still be applicable.—On the volcanoes of Hawaii, by Mr. James Dana. Reserving for the *American Journal of Science* a detailed account of a recent visit to these volcanoes, the author here remarks chiefly on the remarkable fluidity of the lavas, and on the fact that the eruptions show no sign of being in any way associated with the surrounding marine waters. The salts deposited in the hottest recesses, and those of solfataras, do not appear to have hitherto yielded any chloride, while the sulphate of soda is very common.—Researches on meteorites: general conclusions, by Mr. J. Norman Lockyer.—Observations of Olbers' comet (1815 I.), at its return in 1887, made with the 0.38 m. equatorial of the Bordeaux Observatory, by MM. G. Rayet and F. Courty. The observations cover the period from September 8 to September 25.—On sidereal evolution, by M. Stanislas Meunier.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

Die Welt in Ihren Spiegelungen unter dem Wandel des Völkergedankens. Prolegomena zu Einer Gedankenstatistik; Ethnologisches Bilderbuch mit Erklärendem Text: A. Bastian (Mittler, Berlin).—Sound, Light, and Heat: M. R. Wright (Longmans).—A Primary Geometry: S. E. Warren (Trübner).—Quantitative Chemical Analysis: Classen and Herrick (Trübner).—Myth, Ritual, and Religion: A. Lang (Longmans).—Translations of Foreign Biological Memoirs, I. Memoirs on the Physiology of Nerve, of Muscle, and of the Electrical Organ, edited by J. Burdon-Sanderson (Clarendon Press).—Earth Knowledge: Harrison and Wakefield (Blackie).—Colour: Prof. A. H. Church (Cassell).—Elementary Microscopical Manipulation: T. C. White (Roper and Drowley).—Quarterly Journal of Microscopical Science, November (Churchill).—Annales de la Faculté des Sciences de Toulouse, tome i., 1887, 4 parts (Gauthier-Villars, Paris).

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