SCIENTIFIC SERIALS

Journal of the Franklin Institute, September. This number opens with numerous editorial notes, principally abstracts from other scientific journals; there is also the commencement of a description of the Stevens Institute of Technology in Hoboken. Amongst the notes we notice an account of Grubb's automatic spectroscope, and a description of the properties of Nitroglycerine as found by M. Champion. It is stated that when pure it may be heated up to 200° without explosion, but at 257° it deflagrates violently; and although it explodes with terrific force by a blow, the electric spark does not affect it. A number of original communications follow. Under the head of Civil and Mechanical Engineering, we find a paper containing some useful "formulæ, rules, and examples for cases of earth-work under warped and plain surfaces," and another "On Descriptions of Wood-working Machinery." Under mechanics, physics, and chemistry, there is a paper "On Apparatus Illustrating Mechanical Principles;" the various pieces of apparatus are intended to show experimentally the truth of problems, such as the parallelogram of forces, the parallelopipedon of forces, and so on; a machine is also described to illustrate the action of the forces of gravity and projection in giving a projectile its parabolic trajectory. They are designed by J. Pemberton, and seem to be well adapted to the various purposes which have hitherto been neglected. The continuation of a lecture on the sun by Dr. Gould follows; he deals shortly with the prismatic analysis of light and with the solar spectrum, explaining the curves of thermal, luminous, and chemical intensity. Prof. Leeds contributes a valuable paper for the use of students "On the Measurement of the Angles of Crystals," and Mr. Coleman Sellers reviews Mr. Crookes's Experimental Investigation of a New Force; he boldly states that he believes Mr. Crookes has been deceived, giving several reasons why he is of this opinion. An editorial note is attached to this paper, stating that Mr. Sellers is very accomplished in the field of legerdemain, which would lend peculiar value to his view.

Journal of the Franklin Institute, October. The editorial notes contain several valuable abstracts, amongst which may be noticed one on Fluorescence, originally published by E. Lommel in the "Repert. der Physik." From his observations Lommel shows that Stokes's law "that the refrangibility of the exciting rays is always the upper limit of the refrangibility of the excited rays" does not always hold good, and also that the very common opinion that Fluorescence is an action by which refrangible rays are converted into less refrangible rays is not altogether true.—Prof. Thurston communicates a report "On a Steam Boiler Explosion," to which is added a clear statement of many of the causes of such explosions. Prof. Heines contributes the first of a series of papers on binocular vision; he deals shortly with the human eye and monocular vision, and then proceeds to some phenomena of binocular vision. The last paper was read before the American Association for the advancement of Science by Prof. Owen, "On Physiographic and Dynamical Geology involving the discussion of Terrestrial Magnetism," in which it is thought probable that the sun is the source of the modifications on the earth, giving the form and dimensions to the land, and that magnetism, either directly or by conversion into chemical force, has been the most powerful agent in causing various natural phenomena, such as the geysers, volcanoes, ocean currents, &c.

SOCIETIES AND ACADEMIES

LONDON

Royal Society, December 7.—"On the Fossil Mammals of Australia. Part VI. Genus *Phascolomys*, Geoffr."—By Prof. Owen, F.R.S. In this paper the author premises a reference to former ones on the Osteology of existing *Marsupialia*, in the "Transactions of the Zoological Society," and to his "Catalogue of the Osteological Series in the Museum of the Royal College of Surgeons," in which are defined cranial characters serving to distinguish existing species of the genus *Phascolomys*, Geoffr.; and after showing, in subsequently received materials, the kind and extent of variety of such characters in the same species, he proceeds to apply the knowledge so gained to the determination of some fossil remains of species of Wombat, similar in size to the known existing kinds. The extinct *Phascolomys Mitchelli*, indicated by remains brought to England in 1835 by Sir Thomas Mitchell, C.B., the discoverer of the bone-caves of Wellington Valley, Australia, is determined by specimens subsequently obtained by Prof. Alex. M. Thomson and Mr. Gerard Krefft, from the same caves. A second species, distinguished by characters of the nasal bones, is called after its discoverer *Phascolomys Krefftii*. Modifications of the lachrymal, maxillary, and palatal bones in the existing kinds of Wombat are also applied to the determination of the fossils: specimens from the fresh water deposits of Queensland are thus shown to belong to the species *Phascolomys Mitchelli*, originally founded on fossils from the breccia-caves of New South Wales. The author next proceeds to point out the characters of the mandible in existing Wombats, available in the determination of extinct species of *Phascolomys*. On this basis he defines specimens which he provisionally refers to his *Phascolomys Krefftii*. He then points out the mandibular characters of *Phascolomys Mitchelli*, and shows that the existing *Phascolomys latifrons* was represented by mandibular fossils from the breccia-caves of Wellington Valley. Proceeding next to the description of fossil mandibular remains of the genus *Phascolomys* from the fresh water deposits of Queensland, the author defines *Phascolomys Thomsoni*, *Phasc. platyrhinus*, and *Phasc. parvus*. The latter, seemingly extinct, species is markedly inferior in size to any of the known existing species. An account of the extinct kinds of Wombat, exceeding in size the existing species, will be the subject of a succeeding communication. The present is illustrated by subjects occupying seven plates and eight woodcuts, all the figures being from nature, and of the natural size.

"On Fluoride of Silver. Part III." By G. Gore, F.R.S.

"On the Solvent Power of Liquid Cyanogen." By G. Gore, F.R.S.

Zoological Society, December 5.—John Gould, F.R.S., V.P., in the chair.—The Secretary read a report on the additions that had been made to the Society's Menagerie during the months of October and November 1871, and called particular attention to a young female specimen of the Cape Fur-Seal (*Otaria pusilla*), presented by Sir Henry Barkly, Governor of the Cape Colony, being the first example of this interesting animal received alive in Europe.—A letter was read from Dr. Burmeister, of Buenos Ayres, containing remarks on Messrs. Sclater and Salvin's "Synopsis of the Cracidæ," published in the Society's "Proceedings" for 1870.—Dr. E. Hamilton exhibited and made some remarks on an adult skull of the newly-discovered Chinese Deer (*Hydropotes inermis*), and compared it with an immature skull of the same species exhibited by Mr. R. Swinhoe at a meeting of the Society, February 10, 1870. Dr. Hamilton also drew attention to the statement made by his correspondent respecting the wonderful fecundity of this animal, which tended to corroborate the facts stated by Mr. Swinhoe on that occasion.—Mr. Sclater exhibited and remarked on a skin of the Water Opossum (*Chironectes variegatus*), which had been sent to him by Mr. Robert B. White, from Medillin, United States of Columbia.—Prof. Newton exhibited and made remarks on the humerus of a Pelican (believed to be *Pelecanus crispus*), which had been found in the English fens.—A communication was read from Surgeon Francis Day, Inspector-General of Fisheries of British India, containing remarks on the fresh-water Siluroids of India and Burmah, with observations on the range of the species, their classification, and general geographical distribution.—Mr. A. G. Butler read a paper on a small collection of Butterflies made at Loanda, the capital of the Portuguese Settlements of Angola. A second paper by Mr. Butler gave the description of a new genus of Lepidoptera, allied to *Apatura*, which was proposed to be called *Eulaceïra*.—A paper by Mr. E. A. Smith was read, containing a list of species of Shells from the Slave Coast, West Africa, collected by the late Commander Knocker, R.N., the majority of which had been dredged at Whydah, on the Dahomey shore.—Prof. Newton communicated some notes by Herr Robert Collett, of Christiana, on the singular asymmetry of the skull in Tengmalm's Owl (*Strix tengmalmi*).—Mr. Sclater read the third and final portion of a series of notes on rare or little-known animals now or lately living in the Society's Gardens. Mr. Sclater gave an account of a collection of Birds from Oyapok, on the river of the same name which divides Cayenne from the northern frontier of Brazil, amongst which were two species believed to be undescribed, and proposed to be called *Ochthoëca murina* and *Heteropelma igniceps*. A third communication from Mr. Sclater contained remarks on the species of the genera *Myiozetetes* and *Conopias*, belonging to the family Tyrannidæ.—Mr. E. W. H. Holdsworth read some notes on the Red-spotted Cat (*Felis rubiginosa*) of