

Academy of Natural Sciences of Philadelphia, February 27.—“On an Extinct Whale from California,” by Prof. E. D. Cope. George Davidson, of the United States Coast Survey, recently presented the Museum of the Academy of Natural Sciences, the proximal portion of the left ramus of the mandible of a whalebone whale. The specimen was found in digging a well at San Diego, on the coast, in the southern part of the State, at a depth of seventy-four feet below the surface, July 27, 1871. The angle and condyle are broken from the specimen, and the distal extremity was not preserved. It possessed a coronoid process, the apex of which has been lost. The inner face is plane, somewhat convex above, behind the basis of the coronoid process. Anteriorly it becomes more convex, the surface turning inwards to the superior and inferior margins. The exterior face is convex, so that at the posterior foramen its diameter above the middle is greater than that below the middle. The inferior outline, from below the coronoid process to below the last external foramen, is straight, not decurved. It is obtuse most of this distance, but becomes narrowed at the anterior point. The superior margin is obtuse anteriorly, narrowed acute for ten inches anterior to the coronoid process; it is not truncate anteriorly. The internal foramina are large, and form a series below the upper margin, without distinct groove. The external foramina series terminates much anterior to the interior, that is, the last external is opposite the sixth from behind of the inner row. There is no internal Meckelian groove. The Meckelian cavity of the ramus is large behind the coronoid, but small and in the upper part of the ramus at the last exterior foramen. The dental foramen is large, and above the base of the Meckelian cavity, so that its inner wall descends to the floor of the latter. Below the base of the coronoid the inferior part of the ramus is rounded, but narrower than at the dental foramen. The presence of coronoid process indicates that the present species was a finner, and allied to *Balenoptera*. Though there are no vertebrae or other elements to determine its reference to this genus or its ally *Eschrichtius*, it may be proper to refer it provisionally to the latter genus, since so many of its allies on the Atlantic coast formations have been found to be referable to it. This course is still more appropriate from the fact that the strata of tertiary age near San Diego are reported to be of miocene age, the same in which the eastern *Eschrichtii* have been found. As to its specific characters, these differ entirely from those of the latter. The ramus lacks the decurvature of most of them. In size, it approaches nearest the *E. polyporus*, Cope, and *E. priscus*, Leidy. It is much less convex externally than the latter. The exterior series of pores does not extend so far posteriorly as in *E. polyporus*, and the dental foramen has a superior position besides other differences. Size that of *E. priscus*. This whale, when living, probably attained a length of about forty feet.

## PARIS

Academy of Sciences, September 23.—M. Faye, president.—The following gentlemen, members of the International Metric Commission, were present at the meeting, to which they were presented by the president:—Baron de Wrede, Sweden; M. Broch, Norway; M. de Jolly, Bavaria; MM. Stas and Maus, Belgium; General Ricci and M. Govi, Italy; Father Secchi, Pontifical States; M. Hirsch, Switzerland; M. Struve, Russia; Mr. Hilgard, U.S. America. General Fligelly, of the Austro-Hungarian Empire, member of the International Geodesical Committee, was also presented.—M. P. Favre read a note on the origin of the heat developed when the motion of a metallic disc is retarded by the influence of an electro-magnet. The author had stated in a paper read on the 11th September, 1871, that this heat is due to the “work furnished by the operator,” and that the magnet expends no energy in producing it, the same effects being produced by permanent magnets which do not expend anything. He has repeated his experiments with apparatus of very great power, and finds all his statements confirmed.—M. Yvon Villarceau then presented the elements and ephemerides of the planet 103, Hera, by M. Leveau, which was followed by the “Results of a search into the characteristics of the elementary and quartic systems,” by M. H. G. Zeuthen, presented by M. Chasles. The President then presented a note of M. A. Lallemand, on the “Polarisation and Fluorescence of the Atmosphere.” The author attributes the blue colour of the atmosphere to “hypochromatic fluorescence,” which he explains as fluorescence accompanied by change of refrangibility due to the partial absorption of the ultra-violet rays. The next paper was by M. E. DuVillier on “A new method of preparing Chromic Acid.” The author mixes into a cream

100 parts of baric chromate, and 100 parts of water, then adds 140 parts of nitric acid of 40° Reaumur, boils for 10 minutes, filters, and allows the baric nitrate to crystallise out, after which the liquid is concentrated to about the bulk of the acid employed, which removes the last traces of baric nitrate, and the chromic acid crystallises after the expulsion of the excess of nitric acid by repeated evaporations.—MM. P. Champion and H. Pellet moved with a paper of great interest, on “The Vibratory Movements produced by Explosive Compounds.” The authors, starting from an observation by Mr. Abel, that whilst a small quantity of fulminating mercury exploded in gun-cotton caused its instant violent explosion, the much more violent explosive iodide of nitrogen produced no effect, proceeded to investigate these two bodies with a chromatic scale of sensitive flames, arranged as recommended by Messrs. Tyndall and Schaffgotsch, when they found that the fulminate produced effects corresponding to the notes, la, do, mi, fa, sol. The iodide of nitrogen, however, produced no effect. When the explosives were brought as close as 3.50 metres to the flames, the iodide of nitrogen affected the upper notes, while the same weight of fulminate acted on the whole gamut. The weights used were in each case .03 grm., and it was not till the iodide of nitrogen had been increased to .2 grm. that it produced effects equal to the fulminate.—M. Duchartre then presented a note by M. J. Duval-Jouve, “On the diaphragms and fibro-vascular nets of the leaves and stalks of certain Monocotyledons;” which was followed by a continuation of M. Stan. Meunier’s paper, “Observations on the Vein Action in Meteorites;” after which M. F. Garrigou read a paper on “The alluvial gravels of the plains of the Garonne at the village of Portet, near Toulouse.”—A note of M. Bonvier, presented by M. Bouley, came next, claiming priority of discovery for M. G. B. Pelletan of the “Method of removal of liquids from the closed cavities of the body by means of aspiration,” described by M. J. Guérin.—M. Hartsen sent a note relative to an alkaloid extracted from Isopyrum.—M. Dumas presented an analysis of the documents sent to the Phylloxera Commission by two of its delegates, MM. Duclaux and Maxime Cornu; and a note from M. J. Capello, of Lisbon, on the aspect of the sun about the 9th of August closed the meeting.

## BOOKS RECEIVED.

ENGLISH.—Elementary Geology: J. C. Ward (Trübner and Co.).—An Elementary Treatise on Geometrical Optics: W. S. Aldis (Deighton and Bell).—Elementary Treatise on Natural Philosophy: Deschanel. Part 4 (Blackie and Sons).  
AMERICAN.—Papers relating to the Transit of Venus in 1874, prepared under the direction of the Commission authorised by Congress. Part I.  
FOREIGN.—Eerste Vervolg Catalogus der Bibliotheek en Catalogus der Maleische, Javaansche en Kawi handschriften van het Bataviaasch Genootschap van Kunsten en Wetenschappen (Bruining, Batavia).—Tidschrift voor Indische Taal- Land- en Volkenkunde: Stortenbecken en Michielsen, Deel xviii., 2de Serie, Deel i., Aflevering 3 en 4; Deel xx., 2de Serie, Deel i., Aflevering 3.—(Through Williams and Norgate.)—Der Wirbelstürme, Tornados u. Wettersäulen in der Atmosphäre: Dr. T. Reye.—Pathologische Histologie der Luftwege u. der Lunge: Dr. A. Thierfelder.

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