

October 24.—Prof. L. Gegenbaur, of Krems, communicated a memoir entitled "Integral Expressions for the Functions Y_n^m ." Dr. Peyritsch presented a memoir on Peloric formations, in which he described the types of pelorism in the Labiate, Verbenaceæ, Scrophulariaceæ, and Ranunculaceæ, and endeavoured to show the probability that in the Labiatae we have to do with a quaternary and not with a quinary type.

PHILADELPHIA

Academy of Natural Sciences, May 28.—Professor Cope exhibited some vertebræ of a Plesiosauroid reptile and also those of a smaller species, probably a *Clidastes* which were found in close proximity near Sheridan, Kansas, by Mr. Joseph Savage, of Leavenworth. According to this gentleman, the vertebral column of the *Clidastes* was found immediately below that of the Plesiosauroid and in a reversed position, as though it had been swallowed by the latter or larger reptile. The largest vertebræ of the *Clidastes* were about three-quarters the length and one-fourth the diameter of those of the Plesiosauroid, and the animal must have furnished a large, or at least a long, mouthful for its captor. The bones of the *Clidastes* were not in good condition, but resembled those of *C. cineriarum* Cope, though smaller. The Plesiosauroid was new to science, being the third species discovered in the Cretaceous of the Niobrara group. Specifically it was nearest to the *Elasmosaurus platyrurus* Cope, but was readily distinguished by the relatively shorter cervical vertebræ, and the regular acute ridges on the exterior surfaces near the margin of the articular faces, as well as the less contracted form of all the vertebral centra. Associated with these remains were those of a turtle of the size of some of the large *Cheloniidæ* of recent seas. The only portions were the scapulo-procoracoid, the coracoid, and the mandible nearly complete. The general characters of this form were thought to agree with *Cynocercus* Cope, though the individual was larger than that on which the *C. incisus* was established.

June 4.—Mr. Thomas Meehan presented some specimens of the common asparagus, and remarked that in consequence of observing last year so many plants that had evidently flowered producing no seeds, he had this year examined them in a flowering condition and found them perfectly dioecious. Imperfect stamens existed in the female flowers, but they were never polleniferous. An occasional gynoecium in the male flower would make a weak attempt to produce a pistil, but no polleniferous flower ever produces a fruit. There was a great difference in the form of the male and female flowers. The former were double the length of the latter, and nearly cylindrical, while the female flower was rather campanulate. Other observers had nearly made the discovery of division in this plant. The old "English Botany" of Smith gave it the character of being occasionally imperfect, and the authors of "Deutschland's Flora" considered it as occasionally polygamous. But Mr. Meehan was satisfied from a half day's investigation among many plants that in this region at least the asparagus is never perfect, but truly dioecious. He had observed another matter, small, but which might be of importance to systematic botanists, as well as to those engaged in evolutionary studies. One flower had a quadrifid stigma, and a four-celled ovary. The trinate type, or its multiple, is so closely associated with the endogenous structure, that he considered this circumstance particularly worthy of note. The male flowers seem very attractive to insects, various kinds of which seem to feed on the pollen. The honey bee was a frequent visitor. None seemed to be attracted to the female flowers. In the division into separate sexes the plant had gained nothing in the way of aid by insect fertilisation. Fertilisation seemed wholly accomplished by the wind. The male flowers are produced in much greater abundance than the female ones. Mr. Meehan added that this discovery had a more than usual practical importance. Many attempts had been made to improve the asparagus, as garden vegetables and the farm cereals had been improved; but it had often been questioned whether these improved forms would reproduce themselves from seed as other garden varieties do. The tendency of thought the few past years had been in the direction of the belief that permanent varieties could be raised, and several improved kinds had been sent out by seedsmen, and were popular to a considerable extent. He said he had himself inclined to this opinion; but this discovery of complete dioecism in asparagus, whereby two distinct individual forms were required to produce seed, rendered a true reproduction of one original parent impossible, as the progeny must necessarily partake of both forms.

"On the Fishes of the Ambyiacu River," by Edward D. Cope. The collection on which the present examination is based was made by our correspondent at Pebas, John Hauxwell. It embraces fishes of the small streams tributary to the Ambyiacu, as well as those of the river itself. The Ambyiacu is an inconsiderable river, which empties into the Amazon near to Pebas, in Eastern Equador, some distance east of the Napo. The results of the examination will be mentioned at the close of the list. As was to have been supposed, it consists almost exclusively of representatives of the three great families which abound in the neotropical region; the *Chromididæ*, representing Physoclostous fishes, and the *Characindæ* and *Siluridæ*, representing the Physostomi. The number of new species, 45 in a total of 74, constitutes a considerable addition to ichthyology, especially as the number of new generic forms is also rather large. The author adds a list of the species obtained by Robert Perkins, of Wilmington, Delaware, on a trip between the mouth of the Rio Negro and the Peruvian Amazon or Ucayale River. There are several interesting novelties in this collection, but their special localities are, unfortunately, not preserved. The specimens generally were large, and in fine condition.

BOOKS RECEIVED

ENGLISH.—A Budget of Paradoxes: A. De Morgan (Longmans).—Physics and Politics: W. Bagehot (H. S. King and Co.).—Grotesque Animals: E. W. Cooke (Longmans).—Owens College Junior Course of Practical Chemistry: Roscoe and Jones (Macmillan).—The Hygiene of Air and Water: W. Procter (Hardwicke).

PAMPHLETS RECEIVED

ENGLISH.—The General Glaciation of Jar-Connaught and its Neighbourhood: Kinahan and Close.—Proceedings of the Geologists' Association, Vol. ii., No. 7.—Razi: W. Soleman.—Ninth Report of the Belfast Naturalists' Field Club.—The Curability of Cancer, 2nd edition.—Introductory Lecture on Geology: E. Wilson.—The Examination Questions in Geology, with answers.—Transactions of the Institute of Engineers.—Annual Report of Vigilance Association.—A Catalogue of a Collection of Models of Ruled Surfaces, constructed by M. F. de Lagrange.—Journal of Anatomy and Physiology, No. 2.—Weather Report of the Meteorological Office, January-March, 1872.—Transactions of the Clifton College Scientific Society, Part 3.—Journal of the Society of Telegraphic Engineers, No. 1.—Report of the Lower Mosely Street School Natural History Society.—Ocean Highways, Parts 1, 2.—A Table of the relative value of different Articles of Food: C. Ekin.—The Advantages of Gas for cooking and heating: M. Ohren.—Twelve Months' Experience with the A. B. C. Process of Purifying Sewage: W. Crookes.—Provident Knowledge Papers, Nos. 1-12.

AMERICAN AND COLONIAL.—Canadian Naturalist, vol. iv., Nos. 9-10.—New Remedies: H. J. Wood, vol. ii., No. 2.—The Birds of Florida: C. J. Maynard, No. 1.—Proceedings of the American Philosophical Society, January-June, 1871.—Deductive and Inductive Training: B. Silliman.—The Australian Mechanic, Nos. 8 and 9.—Indiana Journal of Medicine for September.—Lippincott's Magazine for November.—Proceedings of the Asiatic Society of Bengal for August.

FOREIGN.—Sitzungsber. der geologischen Reichsanstalt zu Wien, No. 13.—Zeitschrift für Meteorologie, Nos. 20-23.—Zeitschrift für Ethnologie, No. 21.—Le Physiometre: P. Harting.—Oversigt af kongl. Vetenskaps Akad. Forhandlingar.—Bulletin de l'Académie Royale de Belgique, Nos. 9 and 10. Sitzungsber. der k. k. Akad. der Wiss. zu Wien, Nos. 24, 25.—Bulletin de la Société de Géographie de Paris, September.

CONTENTS

PAGE

THE PROGRESS OF NATURAL SCIENCE DURING THE LAST TWENTY-FIVE YEARS, I.	137
EXPLORATION OF THE SOUTH POLAR REGIONS, III.	138
FAYRER'S THANATOPHIDIA OF INDIA	140
OUR BOOK SHELF	141
LETTERS TO THE EDITOR:—	
The Meteorology of the Future.—J. J. Murphy, F.G.S.	142
Popular Science in 1872	142
Upon the Direction in which the North Magnetic Pole has moved during the last two Centuries.	142
Height of Thunderclouds.—E. H. PRINGLE	143
PERIODICITY OF RAINFALL. By G. J. SYMONS	143
MAX MULLER ON DARWIN'S PHILOSOPHY OF LANGUAGE	145
CURIOS FIREBALL (With Illustration)	146
RECENT DISCOVERIES IN THE GREAT PYRAMID OF EGYPT.—ANCIENT EGYPTIAN WEIGHT (With Illustrations)	146
THE DIATHERMANCY OF FLAME. By Capt. J. ERICSSON	149
NOTES	150
THE DIOSMOTIC PROPERTIES OF COLLOIDS	152
SCIENTIFIC SERIALS	153
SOCIETIES AND ACADEMIES	154
BOOKS AND PAMPHLETS RECEIVED	156

ERRATA.—No. 159, p. 28, col. 1, line 8 from bottom, for "microscope" read "spectroscope;" col. 2, lines 16-19 from bottom, for "an absolute" read "one, absolute," and for "impossible" read "improbable."