February 23, 1895.—Prof. Hubrecht brought forward a new hypothesis to explain the origin of the amnion. Birds and reptiles have been looked upon as possessing the normal type of amniogenesis from which that of the Mammalia had to be further derived. The primitive Insectivores offer far better starting points. In the development of the hedgehog's amnion, another path is found along which it is easy to connect both the higher Mammalia and the Sauropsida. The hedgehog allows a comparison to be made between the trophoblast with the outer layer of the amphibian ectoderm. Thus it would be possible to trace the first origin of the amnion in the Anamnia.—A paper containing full particulars, and accompanied by several plates, was presented for publication in the Academy's *Verhandelingen*, under the title: "Ueber die Phylogenese des Amnions und die Bedeutung des Trophoblastes."—Mr. Suringar read a paper on "family relations in the vegetable kingdom," as set forth in a sketch in the form of a genealogical tree, designed by the author to illustrate his University lectures.—Mr. Franchimont presented, on behalf of Dr. P. van Romburgh, two papers. (*a*) On some nitro derivatives of dimethylaniline. By nitration of dimethylaniline in a great quantity of sulphuric acid, as well as by treating metanitrodimethylaniline with diluted nitric acid, two dinitro derivatives were obtained: a yellow one fusing at 176°, and a red one fusing at 112°. In the yellow one there is a nitro group that may easily be substituted. By further nitration it yields two trinitro derivatives: a yellow one melting at 154° and an orange-coloured one melting at 196°. The red dinitro derivative yields only the orange-coloured trinitro derivative. All of them are finally converted into the same tetranitrophenylmonomethylnitramine, viz.:

$$C_6H.(NO_2)_4\ (2, 3, 4, 6)\ (N.CH_3.NO_2)\ (1).$$

From their relations or properties the following structure is deduced:

Trinitro Dimethylaniline.

$$154° = C_6H_2N(CH_3)_2\ (1),\ (NO_2)_3\ (2, 3, 4).$$
$$196° = C_6H_2N(CH_3)_2\ (1),\ (NO_2)_3\ (3, 4, 6).$$

Dinitro Dimethylaniline.

$$176° = C_6H_3N(CH_3)_2\ (1),\ (NO_2)_2\ (3, 4).$$
$$112° = C_6H_3N(CH_3)_2\ (1),\ (NO_2)_2\ (3, 6).$$

(*b*) On addition products of symmetrical trinitrobenzol. Hepp has found that with aromatic amines S. trinitro-benzol yielded coloured addition products. With brucine, Dr. van Romburgh arrived at the same result: it formed brownish red needles fusing at 158°; strychnine did not do so under the same circumstances. With trinitro-benzol, indol yielded gold-coloured needles melting at 187°, skatol, orange-coloured ones melting at 183°, and pyrrol, gold-coloured ones melting at 95°; the last-mentioned gave off the pyrrol to the air in a few hours (at 25°). All these compounds consisted of one molecule to one molecule of trinitrobenzol. Pyridine and quinoline did not form such compounds; the former caused trinitrobenzol to crystallise in large crystals. Piperidine, nicotine and phenylhydrazine gave rise to red tints, but crystallised compounds could not be obtained. With other nitro compounds, too, as: $C_6H_3.NMe_2\ NH_2.NO_2$ (1 : 3 : 4), and $C_6H_3NMe_2.NHMe.NO_2$ (1 : 3 : 4), trinitrobenzol yielded crimson products, melting respectively at 130° and 144°, and being composed of a molecule of each of the constituents.

March 30.—Prof. Van de Sande Bakhuyzen in the chair.—Mr. Bakhuis Roozeboom has, in conjunction with Dr. Hoitsema, investigated the behaviour of hydrogen to palladium, from 0° to 190°, and from 0 to 6 atm. pressure. It results from the observations that, contrary to the opinion of Troost and Hautefeuille, there exists no such compound as Pd_2H, neither can the phenomena observed be explained by admitting the existence of two solid solutions. The absorption proceeds gradually, as if there exists but one solid solution. There is, however, at low temperatures a period in which the concentration rises much more rapidly with the pressure of hydrogen than before or afterwards. This behaviour presents an analogy to the conduct of gases near their critical temperature.

GÖTTINGEN.

Royal Society of Sciences.—In the *Nachrichten*, part 1, for 1895, appear the following contributions in the department of mathematics and physics:—

December 1894.—I. R. Schütz: Complete and general solution of a fundamental problem in the theory of the potential.—Robert Fricke: On the theory of ternary quadratic forms with integral complex coefficients.—J. Orth: On bacterial disorders of excretion in the renal medulla.

January 1895.—I. R. Schütz: Extension of Maxwell's law of the distribution of velocities, deduced from the principle of the minimum path.—E. Ehlers: On the viscera of *Lepidosiren*.—Ludwig Rhumbler: Sketch of a natural system of classification for the *Thalamophora*.—Hermann Wagner: The area of the land surfaces of the earth according to zones.—R. Dedekind: On the basis of the theory of ideals.—Heinrich Burkhardt: Contributions to researches on the foundations of geometry.—Franz Meyer: On the structure of the discriminants and resultants of binary forms.—Wilhelm Hallwachs: On an aperiodic amagnetic quadrant-electrometer, free from residual action.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

BOOKS.—Royal University of Ireland, Calendar 1895 (Dublin, Thom).—Société d'Encouragement pour l'Industrie Nationale, Annuaire 1895 (Paris).—Land-Birds and Game-Birds of New England; H. D. Minot (Boston, Houghton).—The Moon: T. G. Elger (Philip).—R. Bradshaw's Bathing Places and Climatic Health Resorts (K. Paul).—Soziale Evolution: B. Kidd, aus dem Englischen Übersekt von E. Pfleiderer (Jena, Fischer).—Motive Powers and their Practical Selection: R. Bolton (Longmans).

PAMPHLETS.—Indexes to the Literatures of Cerium and Lanthanum: Dr. W. H. Magee (Washington).—Reports of Observations and Experiments in the Practical Work of the Division of Entomology, U.S. Department of Agriculture (Washington).

SERIALS.—Journal of Anatomy and Physiology, April (Griffin).—Royal Natural History, Part 18 (Warne).—American Naturalist, April (Philadelphia).—Insect Life, Vol. vi. No. 5: Vol. vii Nos. 1-4 (Washington).—Ergebnisse der Meteorologischen Beobachtungen, Jahrg. xvi. (Hamburg).

CONTENTS