instruments in charge of Mr. George Hogben. (5) A contribution of £25 towards the preceding object. (6) The appointment of a committee to secure magnetic surveys at the extreme south of New Zealand. (7) Expressing the opinion that the publication of Victorian continuous magnetic records is desirable. (8) That the committee be re-appointed to continue the investigation of the mineral waters of Australasia. (9) That the New South Wales government be recommended to complete the borings at Funafuti while the bore apparatus remains on the island and the bore remains open. (10) A committee be appointed to draw up a list of works and papers relating to Australian flora.

The report from the Baron von Müller Memorial Committee, embodying a resolution, "That the Association places on record its sense of the deep loss sustained by it owing to the death of the late Baron von Müller, and its high appreciation both of his personal character and the distinguished services rendered by him to science," was adopted.

It was announced by Professor Liversidge that communications had been received from the Royal Society regarding the compilation of the Australian portion of an international catalogue of scientific literature, and at the instance of the Chairman an advisory committee, with power to add to its number, was appointed, consisting of representatives from all the colonies. This committee recommended that some recognized society in each colony should collect all necessary matter and forward it to the central bureau, London.

A committee consisting of Professor Lyle, Mr. W. H. Steele and Mr. E. F. J. Love (Secretary), appointed to investigate and report on 'Our Knowledge of the Thermodynamics of the Voltaic Cell,' presented their report.

The usual excursions, entertainments and public lectures were given during the week, and the proceedings closed with a conversatzione given by the Royal Society of New South Wales, at which about 750 guests were present.

Mr. R. L. J. Ellery, late Government Astronomer of Victoria, was elected President for the next meeting of the Association, to be held in Melbourne in the year 1900. Mr. C. R. Blackett, Government Analyst of Victoria, was elected Treasurer, and Professor Baldwin Spenser and Mr. E. F. J. Love, M. A., were elected joint Secretaries. An invitation to meet in Hobart, Tasmania, in 1902 was accepted.

A PLACENTAL MARSUPIAL.

The discovery by James P. Hill, of the University of Sydney, N. S. W., that the Marsupial genus *Perameles* has a true allantoic placenta, is one of the most important of the many recent advances in our knowledge of the Australian Monotreme and Marsupial fauna. In a recent number of the *Quarterly Journal of Microscopic Science* Mr. Hill contributes his first paper to the embryology of the Marsupials, and describes the relations of the fœtal membranes observed in *Perameles*, as represented in the accompanying figure.

The presence of this organ, which has hitherto been considered entirely distinctive of the Placentalia or Eutherian mammals, in a non-placental, is of great significance, and Dr. Hill concludes his paper by a brief inquiry as to the conclusions which may be legitimately drawn from it as follows: The main question is: has the allantoic placenta of *Perameles* been independently evolved within the limits of the Marsupial order, or is it directly or genetically related to that of the Placentals through the common ancestry of the Metatheria or Eutheria from an earlier Protoplacental stock?

It will be recalled that Huxley, in his

famous paper of 1880, upon the descent of the Mammals, derived the Marsupials from the Monotremes, and the Placentals from the Marsupials. Other writers have disputed this position. Gill had previously united the Marsupials and Placentals as Eutheria. In 1893 Osborn, upon paleontological and odontological grounds, considered the Marsupials as a parallel phylum with the in *Perameles* has led him to adopt the 'parallel' interpretation, deriving both the Placentals and Marsupials from a Protoplacental stock. According to this interpretation, the Marsupials are to be considered in placentation, as in dentition, in a condition of decadence. Thus he says: "In our view, it is unnecessary to trace the placental ancestry of Eutheria back into the mar-

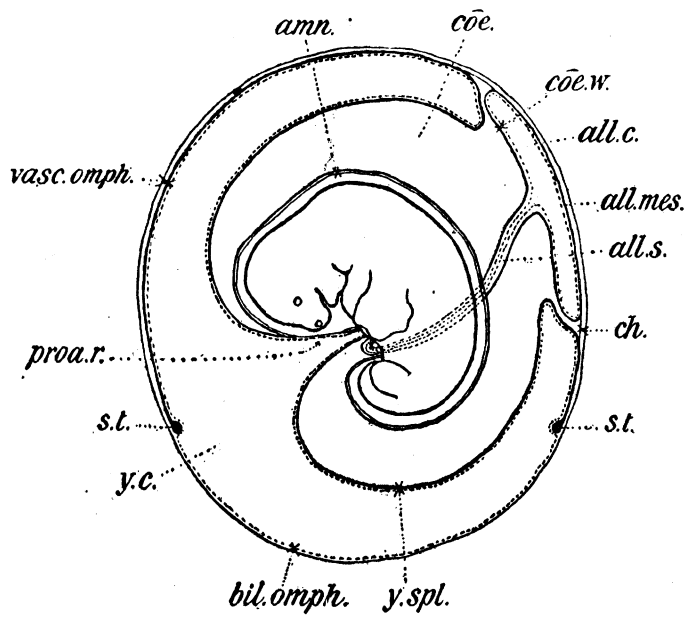

Diagram showing the arrangement of the fœtal membranes in Perameles: *amn.*, Amnion. *all. c.*, Allantoic cavity. *all. mess.*, Allanto-chorionic mesenchyme. *all. s.*, Allantoic stalk. *bil. omph.*, Bilaminar omphalopleure. *ch.*, Marginal zone of true chorion around the allanto-chorionic area. *cœ.*, Extra-embryonic splanchnocœle. *cœ. w.*, Inner or cœlomic wall of allantois. *proa. r.*, Persistent remnant of proamnion. *s. t.*, Sinus terminalis. *basc. omph.*, Vascular omphalopleure. *y. c.*, Cavity of yolk-sac. *y. spl.*, Invaginated yolk-sac splanchnopleure. The ectoderm is represented by a thin line; the entoderm by a dotted line, and the mesoderm by a thick line.

placentals arising from a common stock, and independently differentiated. In a discussion of the tooth development of *Perameles*, Dr. Hill and Professor Wilson, of Sydney, in 1897, advocated the same view. Semon, however, suggested, in 1896, that the Placentals were derived from Marsupials through a *Perameles* and a *Phascolarctus* type, thus supporting Huxley's original position.

Hill's study of the placental phenomena supial group. The occurrence there of a true allantoic placenta, and its absence in the majority of members of the order, do, no doubt, at first sight, suggest that in this group we must find the first beginnings of the organ. But we believe that the explanation is to be found in the fact that marsupials are, after all, a markedly specialized group, and that in it conditions have obtained producing placental disap-

pearance, just as conditions (probably identical in character) have determined the degeneration of other early nutritional arrangements, *i. e.*, the milk-teeth. We, therefore, fall back upon the view that the Metatheria and Eutheria are the divergent branches of a common ancestral stock, which was not only diphyodont but also placental."

H. F. O.

CURRENT NOTES ON ANTHROPOLOGY.

THE TSIMSHIAN INDIANS.

IN 1894 Count von der Schulenberg published in Germany a bulky quarto of nearly four hundred pages on the language of the Tsimshian Indians. Very few people, either in Germany or among ourselves, know where the tribe, of some 3,000 souls, dwells. Dr. G. A. Dorsey, therefore, did a good piece of work when he wrote for the *American Antiquarian* (October, 1897, and reprint) a few pages on their geographical location, and added a map to make it clear. He refers to their myths and names their villages, modern and ancient. He closes his useful article with the common and fateful forecast: "The fate of the Tsimshian, as with his brother elsewhere on this continent, is to disappear."

CAVE HUNTING IN YUCATAN.

UNDER this title Mr. Henry C. Mercer delivered a lecture before the Massachusetts Institute of Technology which has been reprinted from the *Technology Quarterly* of December, 1897. It is a brief description of the work he did in Yucatan as given at length in his volume, the 'Hill Caves of Yucatan.' The lecture is illustrated with half a dozen very well printed photographs, and sets forth clearly the results of his researches.

Mr. Mercer thinks it necessary, toward the close of his lecture, to defend the expedition from the charge of failure. No one could have advanced such a charge who was capable of understanding the value of the results he obtained. He is quite right in vindicating for them an important position in the ancient history of Mayan civilization; though it would probably be going too far to say that they exclude the possibility of finding the traces of 'fossil man' in Yucatan.

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NOTES ON INORGANIC CHEMISTRY.

OUR knowledge of the carbids has been decidedly increased by a new series of experiments by Moissan described in the *Comptes Rendus*. It has been known that it is impossible to obtain carbids of sodium, potassium or magnesium in the electric furnace. These are readily formed, however, by heating the metal in acetylene gas. Potassium, indeed, acts on acetylene at ordinary temperatures with the formation of C_2HK, a compound intermediate between potassium carbid and acetylene and which yields acetylene with water. The corresponding sodium compound C_2HNa when heated to nearly the softening point of Bohemian glass decomposes into acetylene, carbon and metallic sodium. Magnesium carbid, similarly formed, decomposes in the electric furnace into carbon and metallic magnesium. The explanation of the impossibility of forming these carbids in the electric furnace is that at so high a temperature the carbid is completely decomposed. Indeed, in the manufacture of calcium carbid, if the current is too strong (in one experiment 60 volts and 1,200 amperes), the calcium carbid formed is decomposed into graphite and metallic calcium, the latter distilling off. Thus the stability of the alkaline carbids is much less than that of the alkaline earthy carbids.

THE fifth edition of the little brochure 'Data concerning Platinum' has just been published by Baker & Co., of Newark, N. J.