in raising those amounts in London, either by the generosity of its rich men or by grants from public funds, if only those interested in the making of a University would combine their efforts towards a common end. The task was rendered easier by the fact that in the building of the University they could utilise for University purposes in London many of the buildings and endowments already existing, and it was in the hope of inaugurating a common movement in that direction that University College had declared itself ready to be incorporated in the University.

SCIENTIFIC SERIALS.

Transactions of the American Mathematical Society, vol. iii. No 2, April.—E. W. Brown, on the small divisors in the lunar theory.—J. W. Young, on the holomorphisms of a group. This deals with non-abelian groups such that there is a one-one correspondence between the elements of the group and their ath powers.—F. R. Moulton, a simple non-desarguesian plane geometry. A simpler system than that given by Hilbert in his "Grundlagen der Geometrie," with a proof that his axioms I. 1–2, II., III., IV. 1–5, V. are fulfilled, while Desargues' theorem is not true.—M. Bôcher, on the real solutions of systems of two homogeneous linear differential equations of the first order. Propositions relating to $y' = Py - Qz$, $z' = Ry - Sz$ analogous to those given by Sturm for $y'' + py' + qy = 0$.—Charlotte A. Scott, on a recent method of dealing with the intersections of plane curves. The method in question is that of F. S. Macaulay (*Proc.* L.M.S. vols. xxxi., xxxii.).—E. V. Huntington, a complete set of postulates for the theory of absolute continuous magnitude. Six postulates are laid down, and shown to be consistent and independent of each other. A short paper by the same author follows, on the postulates for the theories of positive integral and positive rational numbers.

Bulletin of the American Mathematical Society, second series, vol. viii. No. 8, May.—C. J. Keyser, concerning the angles and the angular determination of planes in 4-space.—D. R. Curtiss, note on the sufficient conditions for an analytic function.—Reviews:—Scheffer's "Theory of Surfaces," by J. M. Page; "Some Recent Books on Mechanics," by E. B. Wilson; "The Galois Theory in Burnside and Panton's Theory of Equations"; and shorter notices.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, March 20.—"On a Peculiarity of the Cerebral Commissures in certain Marsupialia, not hitherto recognised as a Distinctive Feature of the Diprotodontia," by Prof. G. Elliot Smith, M.D., Ch.M. Communicated by Prof. G. B. Howes, F.R.S.

It has been known for a considerable time that some of the fibres of the ventral commissure of the cerebrum in certain marsupials, instead of passing bodily into the *external* capsule, form an aberrant bundle, which associates itself with the *internal* capsule so as to reach the dorsal area of the neopallium by a shorter and slightly less circuitous course.

This peculiarity has been recorded by the late W. H. Flower, by Johnson Symington and by Theodor Ziehen in Macropus, Phascolomys, Aepyprymnus, Phascolarctus and the Derbian Wallaby, and in Phalangista by myself.

In 1894 I showed that while in the monotreme and Perameles the common mammalian relationship of the ventral commissure to the external capsule was found to obtain, in Trichosurus and Macropus some fibres of the ventral commissure were found to pursue the aberrant course indicated above. It was perhaps not unnatural to suppose that the increased size of the neopallium in these two genera was wholly responsible for the presence of this aberrant bundle; for it seemed that since the commissural fibres of the neopallium had become too abundant to be wholly accommodated by the path provided by the external capsule, they, so to speak, had overflowed into the internal capsular route.

Upon examining later a much larger series of marsupials, I soon became convinced that the explanation of the causation of this peculiarity which I then suggested could not be regarded as alone sufficient. I found the aberrant bundle in all members of the genera Macropus, Halmaturus, Hypsiprymnus, Dendrolagus, Trichosurus, Petaurus, Phascolarctus and Phascolomys, quite irrespective of the size of the brain and extent of the neopallium; but I sought it in vain in Perameles, Sarcophilus, Dasyurus, Sminthopsis, Didelphys, Myrmecobius, and Notoryctes, even though many of these genera possess larger brains than some Diprotodonts.

These facts seemed to suggest that the aberrant bundle was a distinctive feature of the Diprotodont marsupials, and it appeared that the crucial test of this hypothesis would be afforded by the brain of Thylacinus, which, although that of a Polyprotodont, is almost, if not quite, as large as the brain of the largest Macropod. I accordingly submitted the cerebrum of Thylacinus to the test, and found no trace of the aberrant bundle, wherefore it is clear that the presence of this aberrant fasciculus of the ventral commissure is distinctive of the Diprocdontia.

The most pronounced growth tendency in the earliest mammals must have been an enormous increase in extent of the neopallium, for while at the beginning of the Eocene period this was almost as insignificant as it is in the Reptilia, in most recent mammals it attains a bulk which far exceeds that of the whole of the rest of the nervous system. This sudden expanse of the neopallium would lead to the development of an enormous mass of fibres which must find some outlet from the pallium; and there are only three possible routes for commissural fibres of the neopallium to the mesial plane. There is first the external capsule, which chiefly consists in all mammals of such fibres passing to the ventral commissure; we find the second route in the path mapped out by the internal capsule from the dorsolateral neopallial area to it; and the third route can only involve the invasion of the alveus of the hippocampus.

All the neopallial commissural fibres in the Polyprotodontia and *some only* of these in the Diprotodontia and Eutheria follow the first route. The commissural fibres, which spring from the dorso-lateral region of the neopallium in the Diprotodontia, crowded out of the first route pursue the second. In the Eutheria the neopallial commissural fibres from the dorso-lateral region of the hemisphere forsake both the first and second routes and invade the alveus, so as to form a new dorsally situated neopallial commissure, which is the corpus callosum.

This hypothesis of the origin of the corpus callosum I have previously stated and discussed; and I refer to the matter now merely to point out that the same determining cause which in the Eutheria calls the "corpus callosum" into being is probably functional in bringing into existence the "aberrant bundle" in the Diprotodontia.

The development of any such commissural mass as the corpus callosum of the more highly organised Mammalia in the position occupied by its homologous fibres in the monotremes and marsupials would cause the most profound disruptions of the corpus striatum, optic thalamus, and the basal region of the brain, and the complete disorganisation of its whole; and hence the new course taken by its fibres in the Eutheria.

May 15.—"Cyanogenesis in Plants. Part II.—The Great Millet, *Sorghum vulgare*," by Wyndham R. Dunstan, M.A., F.R.S., Director of the Scientific Department of the Imperial Institute, and T. A. Henry, D.Sc. Lond.

May 29.—"On the Structure of the Gills of the Lamellibranchia," by Dr. W. G. Ridewood. Communicated by E. Ray Lankester, M.A., F.R.S.

This paper records the results of an investigation undertaken at the instance of Prof. E. Ray Lankester, F.R.S., and carried on under his supervision. 215 species of Lamellibranchia, belonging to 118 genera, were examined. The results demonstrate that although the minute structure of the gill, like the grosser structure, cannot be taken as a criterion of genetic affinity, three main types of structure can be recognised, representing apparently three grades of complexity.

The first type is distinguished by the mutual freedom of the gill leaflets into which the embryonic gill papillæ expand. In the other two types the embryonic papillæ elongate into filaments, which are held in juxtaposition by interlocking cilia, or by horizontal bars of cellular tissue.

Evidence is produced to show that Pelseneer's order Pseudolamellibranchia is based largely on a misconception of the relative value of the flatness or plication of the gill lamellæ, and the presence or absence of principal filaments.

In the family Solenidæ particularly it is shown that different species and subgenera of the same genus may have their gill