each case, the grade 0.050-0.001 mm. was selected and examined under the microscope, the particles being counted and measured; the surface exposed by samples weighing one gram was thus determined for a number of common minerals.

The conditions of comminution seem, however, not quite comparable with those in natural soil-material, where it may be doubted if quartz and garnet, for example, present so large a surface in comparison with other minerals as appears from the table on p. 9. Limonite, again, is probably distributed in soils in a much finer form than is suggested by the artificially crushed material. Where a mineral grain, again, goes to pieces mainly under chemical action, as in the case of olivine set free from basalt, it may yield surviving cores that are of considerable coarseness. The table referred to, however, has obviously very great interest in connexion with the work of Hendrick and Newlands on the mineral constitution of various grades in a fine earth.

The American absorption-tests have been made with a dye (malachite green), water vapour, and ammonia, according to methods that are carefully stated. Four typical samples from the U.S. soil-series were then treated, and it was found that the absorption by the "non-colloidal minerals" (I should prefer to write "non-colloidal mineral particles") is less than 2 per cent. of the total absorption by the fine earths used. It is pointed out that this result is affected to some extent by the wide range of absorptive power shown by the tests on separate minerals. Reference is made to W. O. Robinson's work on "The inorganic composition of some important American soils" (U.S. Depart. Agric. Bulletin 122, 1914), in which the average constitution of the "silt" group in 26 soils was determined as quartz 51, potash feldspars 7, muscovite 7, and other minerals 35 per cent. The dye-absorption is practically nothing for quartz and orthoclase; but the authors of Bulletin 1122 state that in a soil rich in muscovite the absorption by non-colloidal particles may be as high as 7 to 20 per cent. of the total absorption of the fine earth.

The conclusion is that the particles styled colloidal possess absorptive characters that are dependent on their composition and not merely on their fineness of comminution. The authors confirmed this opinion by grinding six selected minerals dry in a steel ball mill to a fineness of 1 micron and less, so as to reduce them to the "colloidal" grade. The coarser particles were then (p. 14) removed by sedimentation extending over several days. The average value for absorption of ammonia by these finely powdered minerals is only 22 per cent. of that given by the "ultra clays" from a number of different soils. The fine quartz and microcline showed practically no absorption for malachite green; but chlorite and muscovite gave results equal to the lowest of those obtained from the colloidal particles in the 33 soils tested. It is pointed out that some alteration may have taken place in the powdered minerals by hydrolysis during the process of separation. Their absorptive power may have been thus increased, and may be in part due to the formation of gels upon the particles. Experiments were then made with synthetic gels, and it now seems highly probable that by far the greater part of absorption in the fine earth of soils is due to gels in the material finer than 1 micron in diameter. The term "colloidal" thus comes to have a more definite significance when applied to the constituents of a soil.

GRENVILLE A. J. COLE.

Geological Survey of Ireland,
Dublin, July 12.

NO. 2806, VOL. 112]

Discovery of Ascodipteron in Ceylon.

HITHERTO the species of this peculiar genus of Streblidae have been known only from the Malayan sub-region. Thanks to the interest taken on my behalf by Mr. W. W. A. Phillips of St. George Estate, Matugama, well known locally as an authority on the Chiroptera, I have to announce the discovery of an encysted female of the genus in the small leaf-nosed bat of Ceylon, *Hipposideros atratus*. The specimen was attached to the skin in the vicinity of the tail, whereas previously discovered specimens have been found either in the wing membrane (Adensamer) or at the base of the ear (Muir). The host, also, is of a species in which these parasites have not been hitherto recorded, and Mr. Phillips informs me that it is usually very free from all such, a character which it shares with the rest of its family.

The identity of the specimen has been confirmed by Mrs. Q. Cattell Kessell, working with Dr. Scott at Cambridge.

RONALD SENIOR-WHITE.

The Kepitigalla Rubber Estates, Ltd.,
Suduganga Estate, Matale,
Ceylon, June 1.

ASCODIPTERON is one of the most remarkable examples of specialisation to a parasitic existence known among insects. It was described by Adensamer in 1896 from a single example found imbedded in the dorsal wing-membrane of a bat (*Phyllorhina* sp.) from the Dutch East Indies. Subsequently Mr. Frederick Muir found a number of examples of another species, imbedded in the skin at the base of the ear, on seventeen specimens of *Miniopterus schreibersi* taken at Amboina; from these he obtained puparia and bred both sexes of the fly, publishing an account of the life-history (1912) and referring the insect to the family Streblidæ.

The newly emerged males and females have fully developed wings and legs. At a later stage the female bores its way into the skin of the bat by the aid of a series of remarkable cutting blades on its proboscis, loses its wings and legs almost entirely (only the stumps being present in the fully imbedded individual), and becomes almost completely encysted under the skin of the host, only the posterior extremity of the abdomen remaining external. The front part of the abdomen becomes enlarged and completely engulfs the head and thorax, which come to lie, as though invaginated, at the bottom of a pit. The imbedded female gives birth to a full-fed larva, which falls to the ground and immediately pupates, as is normal in "pupiparous" Diptera.

The discovery of specimens, which may possibly represent a new species of the genus, in Ceylon is highly interesting.

HUGH SCOTT.

University Museum of Zoology,
Cambridge, July 11.

Antarctic Geophysics.

HAVING been responsible for the final values of g derived from the pendulum observations made in the Antarctic in 1902-3 by Commander Bernacchi and his associate Engineer-Commander Skelton, I wish to direct attention to a point which has apparently escaped your reviewer when making the following statements (NATURE, vol. 111, p. 898): "The mean value of g from the three pendulums used in