

general character about to appear in *The Quarterly Journal of Mathematics*.—R. T. A. **Innes**: Upon the fourth order perturbations in the motions of Satellites III. and IV. of Jupiter. The author recomputes and practically confirms the values of certain long-period inequalities in the longitude of the third great satellite of Jupiter originally discovered by the late M. de Haerdtl. These inequalities are due to the near approach of commensurability of the mean motions of the III. and IV. satellites; seven times the mean motion of IV. being nearly equal to three times that of III, so that although these inequalities depend on the 4th powers of the eccentricities they exceed the limit of II. adopted in Prof. Sampson's "New Tables of the Great Satellites of Jupiter, 1910." The inequalities in the motion of IV. are now computed for the first time. In the sum these inequalities will at times amount to about 8" in the longitude of III. and 10" in that of IV.—C. L. **Biden**: The funeral ceremonies of the Hottentots. The Hottentots have their medical men who treat patients during illness. Like most South African tribes, witchcraft is practised by these medicine men, and the sick are told that their enemies, bad relatives, and bad neighbours are the cause of illness. In the event of death following, the medicine man attributes the disaster to the bad influence of certain parties, actually naming the persons he thinks concerned. Formerly these responsible persons were put to death; now it leads to much hatred and personal feeling among the Hottentots. Immediately after death they prepare for the funeral. A grave is dug by means of a gemsbok horn and a roughly made wooden shovel. The ceremonial is then described. After the funeral a dance is held, and festivities are indulged in all through the night. For a few weeks the male relatives of the deceased go to the grave every morning before sunrise, quite naked, and pray to the "taas" (ghost). After that time they suppose that the ghost has left the grave and has entered an animal called by them "thas" jackal. This animal they assert has never been caught, and it can only be killed by a silver bullet.—Prof. W. A. D. **Rudge**: The meteorites in the Bloemfontein Museum. The paper contains an account of the meteorites in the Bloemfontein Museum. There are two fragments of the Kroonstadt fall of 1877. These apparently consist of a tough fibrous mass of iron-nickel alloy, with an aggregation round it of fine particles of silica (asmanite?) troilite pyrites, and apparently feldspar. The larger meteorite which fell at Winburg, 1881, contains 94 per cent. of iron and 2 per cent. of nickel. The nickel is confined to a few veins which run through the mass of the meteorite. From these veins crystals of the alloy can be separated by dilute sulphuric acid in which the alloy is insoluble. These crystals seem to be skeleton forms built up of triangular plates, the interstices being filled up with amorphous carbon. The iron is very soft, but patches of hardness occur. The "Widmanstätten" lines are not so well developed as in most iron meteorites, probably due to the nickel being located in veins instead of disseminated throughout the whole mass. The weight of this meteorite was about 50 kilogrammes, and it is markedly magnetic, having a number of poles. The alloy of nickel and iron retains its susceptibility up to a dull red heat.—J. R. **Sutton**: Seismographic record of the South African earthquake of October, 1910. The extent of the movement of the horizontal pendulum during the quake was about one-half its average daily E.W. oscillation.—James **Moir**: (1) Colloidal gold and purple of Cassius. Description of behaviour of chloroauric acid dissolved in 200,000 parts of water towards a number of reducing agents. The coloration produced by pure stannous chloride  $\text{SnCl}_2$  is not purple of Cassius, but a brown of remarkable stability, which the author shows is not due to extreme fineness of division, and which may be colloidal aurous chloride. Purple of Cassius results when  $\text{SnCl}_2$  and an oxidant with loosely bound oxygen are employed. The tin in the purple is shown to be merely a vehicle for finely divided gold, the shade varying from pink to indigo according to the rapidity of formation, the first division being obtained by the slow reducing action of glycerol. (2) Some remarkable oxidation products of benzidine. An investigation of the beautiful blue products obtained from benzidine by certain processes of oxidation, such as the blood test. The products obtained by the action of chromic acid and of ferricyanide are shown

to be the chromate and ferricyanide respectively of diphenylquinone-diamine  $\text{NH}:\text{C}_6\text{H}_4:\text{C}_6\text{H}_4:\text{NH}$ , but the latter is an extremely reactive substance and polymerises easily to very insoluble substances of the aminoazo-dye class. Benzidine is the sole reduction-product of the blue substances as freshly prepared. The violet azo-dye appears to be  $\text{NH}_2\text{C}_6\text{H}_4\text{N}:\text{N}:\text{C}_6\text{H}_4\text{NH}_2$ .—H. W. **Tarbutt**: The Egyptian influence on Rhodesia ruin builders, or *vice versa*. The object of this note is to show that MacIver's statement that the Rhodesian ruins are of native origin does not seem too improbable, if the articles found in or about the Rhodesian ruins are compared with similar articles of Egyptian primitive art. The author contends that the very resemblance between them is not confined to one or two articles, but to almost everything that has been found, and illustrations comparing the Rhodesian and Egyptian objects are given to support the theory.

## DIARY OF SOCIETIES.

WEDNESDAY, APRIL 19.

ROYAL METEOROLOGICAL SOCIETY, at 7.30.—Variations in the English Climate during the 30 years, 1881-1910: W. Marriott.—(1) The Value of the Two-theodolite Method for determining Vertical Air-motion; (2) An Automatic Valve for Pilot Balloons: Captain C. H. Ley.

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