

cell. The glycogen granules (GG), which have been displaced from the chromidium, lie above the shell plates<sup>1</sup> (SP), which, as the heaviest component of the cell, occupy the extreme centrifugal position.

It is interesting to note (particularly in this case where a chromidium is present) that no homologue of the Golgi apparatus appears to exist in *N. collaris* and that the contractile vacuoles do not blacken with osmic acid even after prolonged periods.

Singh<sup>2</sup>, working on *Amœba proteus* Y, found no homologue of the Golgi apparatus and also that the contractile vacuole did not blacken even after prolonged treatment with osmic acid.

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<sup>1</sup> MacKinlay, Rose B., *J. Roy. Micro. Soc.*, **56**, 307-325 (1936).

<sup>2</sup> Singh, B. N., *NATURE*, **139**, 675 (1937).

### Eocene Beds in Waziristan

I SEE that Dr. Heron<sup>1</sup> now accepts the fact that Ranikot beds exist in Waziristan. The evidence for this is, indeed, overwhelming, as I have pointed out elsewhere<sup>2</sup>. He says, however, that Dr. Coulson could not state whether the Khirthar overlaps on the Ranikot to the north of Kotkai, so perhaps I may be allowed to quote my own observations.

Middle Khirthar (Lutetian) beds to the north, in Waziristan, unquestionably overlap on the Ranikot (Paleocene); all intermediate elements, including the Lower Khirthar, being locally absent.

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<sup>1</sup> *Records Geol. Surv. Ind.*, **73**, 83 (March 1938).

<sup>2</sup> *C.R.S.S. Soc. Géol. France*, fasc. 2, 22-23 (Jan. 1938).

### Points from Foregoing Letters

DR. C. V. DRYSDALE outlines some novel views on the nature of electrical fields of force in connexion with the flux-cutting equations, which he advocates in order to facilitate the teaching of Maxwellian theory. He considers that an uncharged body is surrounded by two equal and opposite electric fields, and that a linear current must be surrounded by two opposed electric fields moving translationally past each other, and being thus equivalent to a magnetic field. This picture is further elaborated to account for Drude's dispersion theory, Fresnel's drag coefficient and the electromagnetic wave propagation.

From observations made in the South Island of New Zealand on radio fadeouts, auroras and magnetic storms which occurred on January 20-22 and 24-26, Prof. F. W. G. White, H. F. Skey and M. Geddes conclude that in higher latitudes a radio fadeout may be due to ultra-violet radiation emitted during an eruption, or may be due to ionization by the particle radiation causing the auroras. They estimate the time interval from the solar eruption to the commencement of the aurora to be about 33 hours.

By means of an arrangement which allows the formation and the destruction of a thin liquid film of helium II upon a surface of known area, and allows the measurement of the amount of helium taking place in this process, A. K. Kikoin and B. G. Lasarev find the density of the helium film to be 2 to 3 × 10<sup>-6</sup> cm. The viscosity of the film is much higher than that determined by Kapitza for liquid helium II in bulk. The heat transfer in the film is high, but may depend upon surface evaporation.

Dr. C. Møller suggests that the part of the nuclear forces which cannot be accounted for by the idea of the heavy electron can be derived from the supplementary assumption of a heavy neutral particle with properties very similar to those of the photon.

A. G. Gaydon and Dr. R. W. B. Pearse give the approximate positions of the heads of the strongest bands in the spectrum of RbH, obtained by means of an electric discharge through a mixture of rubidium vapour and hydrogen, and they calculate the approximate values of its molecular constants.

A table showing the change with time in the extent of surface films of the protein gliadin is given by G. I. Jenkins and T. W. J. Taylor. The authors calculate the average density during the first 70 minutes to be 1.22 × 10<sup>-7</sup> per gm./sq.cm. This value decreases with time owing to contamination of the film with surface-active impurities. The experiments do not confirm Mitchell's sharp transition point in the region of 1 to 2 dynes/cm. per cm.

Tables giving the duration of the oestrogenic effects of several oestradiol and triphenyl ethylene compounds, administered orally or by subcutaneous injections, are submitted by Dr. J. M. Robson, A. Schönberg and H. Ahmad Fahim. Triphenyl chloroethylene given subcutaneously has a more prolonged action than oestradiol benzoate.

Peeled potatoes and cabbages cooked in water containing 1 per cent of common salt appear to retain their ascorbic acid (vitamin C) better than vegetables cooked without salt, according to experiments by A. Høygaard and H. Waage Rasmussen. Sodium chloride is known to inhibit the oxidation of ascorbic acid.

Treatment of root cuttings of sea-kale for twenty hours with a solution of α-naphthalene-acetic acid leads to the formation of roots both apically and basally, while the removal of about 1 mm. of tissue from base and apex every five days for eight weeks produces buds at both ends. This, Prof. R. H. Stoughton and W. Plant point out, indicates that the initial differentiation of meristematic tissue is determined at least in part by the local concentration of growth substances.

Differences from the normal values in the nucleic acid content of the salivary gland chromosomes in races of *Drosophila melanogaster* exhibiting variegation have been demonstrated by Prof. T. Caspersson and Dr. J. Schultz by optical methods. Taken together with other data on viruses and chromosomes, the present results suggest the possibility that nucleic acid synthesis is characteristic of self-reproducing molecules.

Lieut.-Colonel L. M. Davies states that Middle Khirthar (Lutetian) beds unconformably succeed Ranikot (Paleocene) ones in northern Waziristan.