

Points from Foregoing Letters

FROM the rate of sedimentation (in an ultracentrifuge) of the serum proteins of various vertebrate animals, Prof. The Svedberg and K. Andersson infer that the serum proteins of mammals, reptiles, birds, amphibians and fishes are very much alike, as regards molecular weight, but differ from those present in the serum of Cyclostomata (lampreys).

A new dye, dunnione, found as a deposit on leaves and flowers of *Streptocarpus Dunnii*, is described by J. R. Price and Prof. R. Robinson. It crystallizes in orange-red needles, has the molecular formula $C_{15}H_{14}O_8$, and belongs to the naphthalene group.

The copper found in human blood occurs in the form of a copper-protein compound, according to Dr. T. Mann and Prof. D. Keilin, who announce that they have isolated from the red blood corpuscles of the ox a pure crystalline compound (hæmocuprein) containing 1.12 per cent sulphur and 0.34 per cent copper.

A new 'hybrid' hæmoglobin (choleglobin) formed by special treatment of hæmoglobin-ascorbic acid solution is described by Dr. R. Lemberg, J. W. Legge and W. H. Lockwood. The new compound, like hæmoglobin, combines reversibly with oxygen and carbon monoxide, but the non-protein part of its molecule is a bile pigment, closely related to verdohæmatin.

H. S. Corran and Dr. D. E. Green describe the isolation from cow's milk of a flavin-protein compound which catalyses the oxidation of reduced coenzyme I by carriers. The mechanism of the catalysis does not seem to involve alternate reduction and oxidation of the flavin moiety.

A new enzyme which hydrolyses naringin, the bitter glycosidic principle of grape-fruit, may be readily obtained from celery, according to Dr. D. H. Hall. It also occurs in the grape-fruit itself between the flavedo and albedo, where it probably helps to reduce the bitterness of the fruit on ripening.

Dr. H. G. K. Westenbrink and Dr. J. Goudsmit have determined, by a modified thiochrome method, the relative amounts of the two forms of vitamin B₁ (aneurin and cocarboxylase) in various organs of the rat and find that the aneurin content is small compared with carboxylase.

Dr. J. H. Welsh states that the acetylcholine found in the nervous tissue of the crab has upon the heart of that animal an effect opposite to that upon the human heart, namely, it increases the rate of beat.

T. L. Snyder and R. H. Broh-Kahn find that cysteine can replace hæmin as the X-factor enabling *H. influenzae* to grow, and consider that its function is to provide the organism with a mechanism for protection against the hydrogen peroxide formed in the presence of air.

Diagrams showing the average density of population and the composition of the insect fauna at heights of 277 ft., 177 ft. and 10 ft. above an area of agricultural land in Lincolnshire is submitted by J. A. Freeman. The greatest numbers and variety occurred during the months of June and September, and the most favourable conditions were high temperature, low humidity and wind velocity. A list of the more common pest species taken up to 277 ft. is given and the economic importance of their presence is discussed with reference to ground quarantines.

Dr. R. W. G. Dennis observes that the potato virus Y induces brown circular local lesions in the leaves of *Lycium barbarum* seedlings, and suggests that this reaction may prove of value as a new test for the Y-virus.

For several years, Dr. T. Burrow and his associates of the Lifwynn Foundation have been experimenting with differences in physiological reaction according (1) as behaviour is motivated naturally by the organism as a whole, or (2) as it is prompted by secondary part-components giving rise to neurotic phantasies and related behaviour-disorders.

Diagrams of chromosomes from the root-tip cells of the saffron during mitosis are submitted by Prof. R. R. Gates and G. N. Pathak, in which the double structure of the chromosomes is rendered evident by the presence of 'satellites'. The authors state that by means of a new method which stains the chromatin red and the nucleolar material green, the origin of the nucleolus from the split chromosomes can readily be followed.

Curt Stern states that he has shown by means of transplantations of testes between two species of *Drosophila* that the distinguishing characteristics in testicular shape are induced by a difference in the male ducts.

The non-ionizing penetrating radiation producing cosmic ray secondaries and showers is considered by N. Arley and Dr. W. Heitler to be a neutral body corresponding to the heavy electron. The authors suggest for a new entity, which has a mass intermediate between the neutron and the neutrino, the name neutretto, and discuss its likely properties in the light of present theories.

Prof. H. R. Robinson points out that when the most recent values of the coefficient of viscosity of air are used, Millikan's oil-drop value of the electronic charge comes into almost exact agreement with the X-ray value, namely, 4.803×10^{-10} e.s.u.

Starting with the solution for the 'electron velocity ripple' in terms of the transit half-angle, W. E. Benham points out that the ripple satisfies a five-dimensional wave equation.

Dr. U. R. Evans describes a treatment which renders iron relatively inert to ordinary waters, the time taken to produce rustiness being sometimes 100 times that needed by untreated iron in the same water. The protective film is invisible, and the engraving of a scratch-line after treatment does not necessarily lead to rusting, probably because it presses down the film into the groove.

Solutions of the copper salt of cetyl-phenyl-ether sulphonic acid and other salts of the newer paraffin-chain series, show elastic behaviour similar to that of ammonium oleate solution, when they are set in motion. According to Dr. G. S. Hartley this is the opposite of thixotropic behaviour, and has been explained by Hatschek as due to the formation of amicroscopic structure by the process of shear.

H. A. and Dr. R. C. Shah have formulated polyhydroxy phenols by a modified Gattermann reaction. The 3-substitution is explicable on the assumption of the stabilization of the double bonds in the nucleus by the chelation between the hydroxyl and the acetyl groups.