Microscopic Observation of the Absorption of Insulin and Protamine-Insulinate

IN a recent paper[1] Hagedorn, Norman-Jensen and their co-workers have described new insulin compounds with protamines, which are more or less insoluble in water at a pH about 7 and show a prolonged action of the insulin when injected subcutaneously, although the solubility is definitely increased by the blood constituents. Several such compounds with different protamines showing somewhat different solubilities were studied and tested in the treatment of severe diabetes.

Being engaged in a study of vascular reactions in the Sandison-Clark chamber inserted in rabbits' ears, it struck us that it might be possible to observe directly the absorption of precipitates introduced into such chambers. We have tested both unstained precipitates and such that were stained by a dye, and have found 0·1 per cent methylene blue to be suitable. When ordinary insulin is precipitated alone, or with methylene blue, at its isoelectric point, and an infinitesimal quantity injected into a chamber, the particles of precipitate can be seen in the tissue spaces and in lymphatics of 1–2 μ in diameter. They move into slightly larger lymphatics, and all but traces disappear in forty-five minutes.

The protamine-insulinate takes about five hours to disappear. After forty-five minutes, the excess dye injected is completely decolourised, and the particles have to a large extent been aligned in lymphatics of 1 to a few microns. After two hours, the quantity present in the lymphatics is more prominent compared with that in the tissue spaces. After three hours there is definitely fewer particles to be seen. They do not seem to be carried away into larger lymphatics, but to dissolve *in situ*. After five hours, only slight traces remain in tissues and lymphatics.

It would seem that this method of observation might be useful also in other cases where the absorption of precipitates is involved.

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[1] *J. Amer. Med. Ass.*, **106**, 177–180 (1936).

A New Genus of Ants in Britain

WHILE making some observations on the ants that occur in south-east Dorset (as a preliminary to a detailed survey of the ant fauna of South Haven Peninsula), I came across workers of a small reddish species which on closer examination proved to be quite distinct from any known British species. The most obvious characters that differentiate this from other Myrmicines are the shape of the mandibles and the very square head, of which the hind margin is markedly emarginate. The mandibles, instead of broadening to a toothed distal end, narrow to a single point like a pair of curved tusks which when closed just cross at the tip. When the specimens were shown to Mr. O. W. Richards, he immediately referred them to the Continental genus *Strongylognathus*, Mayr, which is well known to be an inquiline or slave-maker associating with *Tetramorium*. A full description of the species will be published elsewhere.

Workers were taken from two loci more than a mile apart, and in both cases were associated with *Tetramorium caespitum*, Linn. On May 5, 1935, when a nest of *Tetramorium* on a sandy heather-covered bank was accidentally disturbed, several were seen to be moving about among the *Tetramorium*. On June 15, 1935, I was watching *Tetramorium* moving about on the surface of a slight sandy slope on which was an open turf of low plants. Several *Strongylognathus* were seen moving on the surface among the *Tetramorium*, not far from the entrance to the latter's nest. One or two of the former were each surrounded by several *Tetramorium* which appeared to be pulling them about. The object of this action was not apparent.

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Ontogeny of the Angiospermic Carpel

IN a recent letter[1], Dr. I. V. Newman has indicated that he has found, from his study of *Acacia* flowers, evidence favourable to the classical foliar interpretation of carpels. The letter is supplementary to an article previously issued[2] in which it is shown by photomicrographs from *A. suaveolens* and *A. longifolia* that, when carpel formation begins, there is still a small residual cone to the floral axis.

The letter states that neither Grégoire, Saunders, Thomas nor I has provided cellular details of carpel primordia supporting our varied interpretations of the legume. The article referred to states it to be significant that no figures in support of our diverse theories are given in our papers showing the cell details of the primordial tissues of the floral axis.

On this point it may suffice to state in reply that the cellular details observed by Grégoire are still unpublished, and that neither Saunders nor Thomas has professed to deal with carpel primordia. In so far as Saunders is concerned, the absence of figures can scarcely be considered significant, and, in addition, cannot of itself vitiate her views, for she has definitely supported the foliar interpretation of carpels to which Dr. Newman adheres. As to Thomas, his cupular view has been based primarily on the study of fossils.

It would, therefore, seem that I alone remain negligent in supporting my view of acarpous angiospermy by illustration of the cellular details from species of *Acacia*. Dr. Newman quotes me in his letter as having stated that the whole of the residual apex gives rise to the legume as, for example, in *A. spadicigera*. In the article referred to, he affirms that I describe the legume as terminal. In reality I have stated that the single sessile legume of *A. spadicigera* is free and terminal in the *mature* flower, that in its ontogeny there is a residual apical cone which comes to be involved in the base of the mature legume, and that the same condition is maintained in ten other species of *Acacia*, for which the full floral ontogeny has been studied, and in each of which the mature legume is terminal, with the arrested floral cone involved in its base.

Thus, no new fact has emerged by the illustration of the residual cone in the young flowers of *A suaveolens* and *A. longifolia*. In addition, I have often observed the residual cone in species of *Inga*, *Calliandra*, *Albizzia*, *Elephantorrhiza*, *Dichrostachys*, *Pentaclethra*, *Desmanthus* and *Mimosa*, to mention but a few, in all of which the floral cone is merged during development in the base of the single legume.

Still further, I have figured leguminous flowers