help to elucidate a detailed mechanism for these reactions.

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Nerve Connexions of Taste-Buds

THE very interesting nerve connexions of the taste-buds in the pig do not appear to have attracted attention. In this animal the taste-buds are almost entirely concentrated in the circumvallate papillæ, of which there is but one on each side. This is quite a large structure, about 0·5 cm. across, and contains about five hundred buds. In its base is a large ganglion containing nerve cells of two different types and obviously connected with the buds and the nearby glands of von Ebner which irrigate the vallum of the papilla. The nerve from this ganglion contains about three hundred and fifty fibres and constitutes rather more than half the total number of fibres making up the glossopharyngeal as it crosses the hyoid. The degenerative changes resulting when the nerve is cut at this level show that the fibres are the axons of the ganglion cells.

This finding—so interesting in the general morphology of the nerves of special sense—has caused us to re-examine the nerve supply of the circumvallate papillæ in other animals, and we find, particularly in the calf and dog, a similar but much more diffuse arrangement. It is hoped to publish details of our findings elsewhere.

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A Peritrophic Membrane in *Simulium*

Simulium damnosum Theobald is a common biting fly in many parts of Africa and an important vector of human onchocerciasis. After the female has bitten a man, the blood in the hinder part of the insect's mid-intestine forms an approximately spherical mass, which, as Blacklock[1] observed, retains its form when removed from the gut. During recent dissections, it was noticed that the blood was completely enclosed in a membrane which could not be detected in unfed flies. It was evidently produced by the wall of the mid-intestine during the blood-meal, and appeared to be a peritrophic membrane rather unlike those found in various other insects[2]. One of the membranes, removed from the insect, was sent to Dr. V. B. Wigglesworth, who examined it and found that it gave a positive chitosan test for chitin and confirmed that it was a peritrophic membrane. He also directed my attention to the presence of a peritrophic membrane in two other Nematocera, *Anopheles maculipennis*[3] and *Phlebotomus papatasii*[4]. I have found one in *Simulium griseicolle* Becker.

When *S. damnosum* is dissected after biting a man and taking up many microfilariæ, most of the worms can usually be seen imprisoned by the peritrophic membrane in the mid-intestine and eventually die there. Comparatively few appear in the thoracic muscles of one of these flies and continue development. Frequently, therefore, the membrane protects the fly itself from heavy infection without preventing it from transmitting the parasite.

Details of these observations will be published elsewhere.

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Development of the Embryo Sac, Embryo and Endosperm in *Helixanthera ligustrina* (Wall.) Dans.

MEMBERS of the family Loranthaceæ are characterized by many abnormal features in the development and organisation of the embryo sac, endosperm and embryo[1,2,3]. In June 1949, one of us (P. M.) collected some material of *Helixanthera lingustrina* from Katmandu, Nepal, during a visit to that place as a member of a scientific and cultural mission sponsored by the Government of India.

Although further work is in progress and it is intended to obtain more material from Nepal during the present year, the results already obtained are sufficiently interesting to merit a brief report. A review of the existing literature on the embryology of this family and a discussion of the bearings of our observations on the inter-relationships of the Loranthoideæ and Viscoideæ will be taken up at a later date.

The rusty brown tetramerous (sometimes trimerous) flower buds are arranged in racemes, each flower being subtended by a small bract. The calyculus extends slightly above the ovary and is followed by four perianth lobes fused along their margins as the result of an interlocking of their epidermal cells. When the buds open, the upper halves of the perianth lobes separate from one another and become reflexed. Opposite to each lobe is a stamen with an adnate filament. The anther has only two pollen sacs, each divided into several compartments by transverse septa.

The ovary is globose and inferior, without any placenta or ovules in the usual sense. It has a thick wall enclosing a group of parenchymatous cells in the centre and a pad of collenchyma in the lower part (Fig. 1). The yellowish style, 4–6 mm. long, has a bilobed stigma with a highly papillate and cuticularized epidermis.

The archesporium differentiates from the parenchymatous cells present in the central part of the