

spermatozoa were found between the nuclei of the mucosal cells, which is to be expected from previous work¹⁻³, though the displacement of some of these spermatozoa during sectioning⁶ is possible. Three autoradiographs in the animal killed 24 hr. after mating were associated with sperm heads that appeared swollen and possibly disintegrating. Several thousand nuclei in the mucosa and sub-mucosa were examined, and none was found to give a definite autoradiograph.

Our evidence indicates that spermatozoa do not form nuclei in the mucosa or contribute detectable amounts of deoxyribonucleic acid to mucosal cell nuclei in the Fallopian tubes. Though the chance of detecting nuclear autoradiographs depends on the percentage of spermatozoa that are labelled, the intensity of labelling⁴, etc., sufficient numbers of nuclei were examined to exclude the possibility of large-scale participation of male chromatin in them. Our results do not preclude the possibility of the entry of some components of spermatozoa into nuclei, for the intensity of labelling is more favourable to the detection of whole spermatozoon heads than to parts of them. While not ruling out the possibility of xenia, telegony or other effects of the excess spermatozoa in the female tract (see refs. 1, 7), our present results support previous findings⁸, which gave no evidence to support theories of these phenomena based on the incorporation of spermatozoa into tubal or uterine cells.

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Electron Microscope Observations on the Neurohypophysis of the Ferret

WE have observed, while studying the neurohypophysis of the ferret using the electron microscope, that the mitochondria in the neurosecretory fibres are of unusual form and that this form can be modified by experiment.

The features we have observed are evident in specimens fixed either by buffered osmium tetroxide or by buffered potassium permanganate, though they are more obvious after the latter fixative.

The mitochondria are irregular in form, and in many instances one or more deep invaginations are present (Fig. 1). In permanganate-fixed preparations the area contained within an invagination is strikingly less electron-dense than the rest of the cytoplasm, and we believe that this may indicate a concentration of some specific substance produced by, or involved in, the activity of the mitochondrion.

The pituitary stalks of some animals were severed and the neurohypophysis was examined at various intervals after the operation. Up to four days after stalk section the only apparent effects of the operation were changes in the form of the mitochondria. These continued to be irregular; but the invaginations were

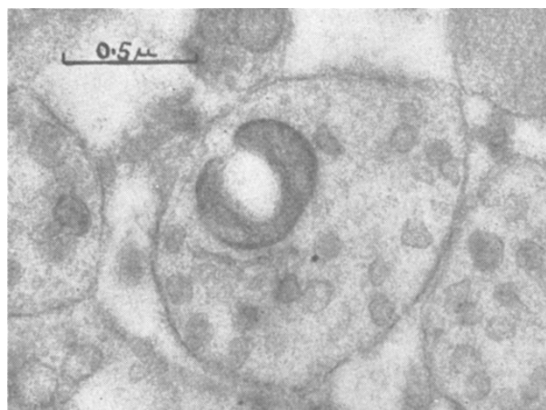


Fig. 1. A nerve fibre in the neurohypophysis of a ferret. It contains neurosecretory vesicles and a single invaginated mitochondrion. The area of the invagination is less electron-dense than the surrounding cytoplasm. The tissue was fixed in buffered potassium permanganate.

less marked and were very rarely associated with any area of electron density different from the rest of the cytoplasm. We interpret this as evidence of some alteration in the activity of the mitochondria following section of the stalk.

A parallel series of histochemical studies was carried out, using the performic-acid-Alcian blue technique¹ which stains selectively cystine-containing material. Some shrinkage of the neurohypophysis followed section of the stalk, but large amounts of Alcian-blue-positive material persisted for at least four days following the operation. It is interesting to note that the electron microscope showed that neurosecretory vesicles were also present during the post-operative period.

It is widely held that^{2,3} the neurosecretory material in the neurohypophysis is elaborated in the hypothalamus and that it then passes down axons in the pituitary stalk. It is interesting to find that such material is still present in the distal part of the neurohypophysis four days after section of the axons.

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The Nematodes *Ostertagia lyrata* Sjöberg, 1926, and *Trichostrongylus longispicularis* Gordon, 1933, in British Cattle

A LIST of the gastro-intestinal nematodes of British cattle, published by Morgan and Soulsby¹, included two species of *Ostertagia* (*O. ostertagi* and *O. circumcincta*) and three species of *Trichostrongylus* (*T. axei*, *T. vitrinus* and *T. colubriformis*). Observations at Weybridge indicate that an additional species of each of these two genera, namely, *O. lyrata* and *T. longispicularis*, should be added to this list.

These two species were present in material collected during the routine post-mortem examination of bovines which were suffering from parasitic gastro-enteritis, and which had been sent to the Laboratory from farms in the south-east of England. *O. lyrata* together with *O. ostertagi* was recovered from the abomasum, and *T. longispicularis* together with