

Table 1. PRESENCE OR ABSENCE OF ALGAE IN VARIOUS DILUTIONS OF BRISTOL'S SOLUTION

	Dilution						
	1/10	1/100	1/1,000	1/10,000	1/100,000	1/1,000,000	1/10,000,000
Rhizosphere soil	+	+	+	+	+	+	+
Control soil	+	+	+	+	+	-	-

control and rhizosphere soil samples were used for preparing a series of ten dilutions in Bristol's solution⁴, the initial dilution being 1/10, and each higher dilution made by taking 10 ml. of the lower dilution and adding it to 90 ml. of sterile Bristol's solution. Three replications of each dilution were made and growth was estimated after three months by the presence or absence of algae in the flasks (Table 1). Previous observations on the soil algae of our sub-tropical soils showed that this period was sufficient for growth to occur and also that Bristol's solution was the most suitable of several media tried.

There is at present no reliable method of estimating numbers of soil algae in a mixture of unicellular, colonial and filamentous forms and the presence or absence of visible growth remains the only satisfactory method for this type of study.

These results give evidence of an effect of the rhizosphere on soil algae in the case of tea roots. The experiments have been repeated with other crop plants, both monocotyledons and dicotyledons, and have confirmed the presence of this effect. The results will be published in greater detail elsewhere.

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The Field-Slug *Agriolimax reticulatus* as a Vector of the Lungworm *Cystocaulus ocreatus*

GERICHTER¹ demonstrated that the land snail *Monacha syriaca* can act as a vector for the sheep lungworm *Cystocaulus ocreatus*. Development of the lungworm larvae can take place in other species of land molluscs and also in some freshwater species^{1,2}. The importance of most of these molluscs as vectors under field conditions does not, however, appear to have been investigated.

C. ocreatus was recorded only recently in British sheep³. Afterwards a study of the transmission of infection under natural conditions was commenced at Weybridge. Lungworm-free lambs were grazed with infected ewes and, at frequent intervals, faecal samples from the lambs were examined for first-stage lungworm larvae. After several weeks, larvae were recovered from the faeces, and on autopsy of one lamb, adult worms were found in the lungs. Samples of the land molluscs inhabiting the pasture grazed by the sheep were collected and examined for lungworm larvae. The only species infected was the field-slug *Agriolimax reticulatus*, so that it appeared that infection of the lambs had resulted from the ingestion of field-slugs. To verify that this was so, the feet from artificially infected slugs were fed to two stalled lambs reared free of lungworms. After several weeks, first-stage larvae of *C. ocreatus* were recovered from both lambs.

A. reticulatus was by far the most numerous of the mollusc species collected from the Weybridge pasture, specimens being found throughout the year. According to Ellis⁴, the field-slug is the commonest and most ubiquitous of the land molluscs found in Britain, inhabiting every possible situation. As *A. reticulatus* is almost certain to be found wherever sheep can graze, it is most likely that it is of considerable importance as a vector of *C. ocreatus* in Britain.

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The Pituitary of *Myxine glutinosa*

THE Myxinoids are possibly the most primitive living vertebrates, and the pituitary of *Myxine glutinosa* has hitherto¹⁻³ been described as having a separate infundibulum and adenohypophysis, a condition which has been regarded as primitive or degenerate. Furthermore, the adenohypophysis which lies embedded as groups of cells in connective tissue, has been described as being composed solely of chromophobes, and having no cytological or histological differentiation. Recent observations, however, have shown that the connective tissue septum does not separate completely the two parts of the pituitary but that the posterior end of the infundibulum comes into intimate contact with the adenohypophysis (Fig. 1). Also, the adenohypophysis is cytologically differentiated.

An examination of the infundibulum using Bodian's stain indicated that nerve fibres lie between and beneath the ependymal cells and posteriorly are closely apposed to adenohypophysial cells. Using several methods to demonstrate neurosecretory material this was shown to be present in the infundibular canal particularly where it narrows posteriorly.

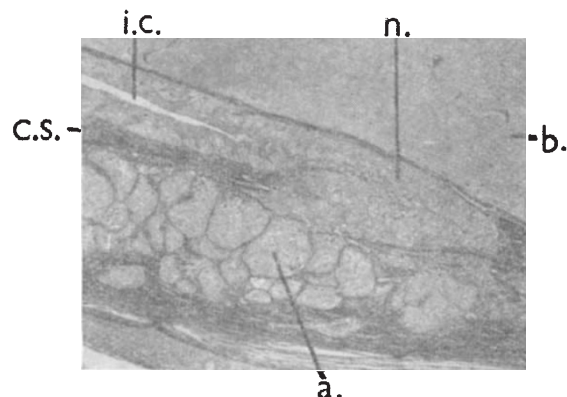


Fig. 1. Longitudinal section of the caudal end of the pituitary of *Myxine glutinosa* showing apposition of neurohypophysis and adenohypophysis. a, Adenohypophysis; b, brain; c.s., connective tissue septum; i.c., infundibular canal; n, neurohypophysis