

tube. These came from the layings during the first few days of incubation, and many more live immature eggs at all stages of development were seen. Snails (*Australorbis glabratus* and *Oncomelania hupensis*) were exposed for 2 hr. to approximately 10 freshly hatched miracidia per snail and penetration was seen to take place. They were checked for the production of cercariae between 4 and 11 weeks after infection and, when all were found to be negative, were squashed and examined. No sign of infection could be found. Although the method has been successful in maturing the eggs of these two species of schistosome *in vitro*, the miracidia, the behaviour of which appeared normal in every way, were unable to develop after penetrating the snail hosts.

S. mansoni flukes have been cultivated *in vitro* from 7 days old to near maturity⁹⁻¹⁰. Now that egg-laying by adults and maturation of the eggs have been achieved, only two stages of the mammalian cycle *in vitro* remain, that from cercaria to 7 day larva and from sexually immature to mature adult.

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Multiple Medullae in Wool Fibres

In the course of investigations on the fleece of Blackface sheep¹, we encountered several of the multi-medullated fibres described by Jones². We made no permanent record of these fibres, but they certainly occurred in samples from more than one sheep. Since this time we have been examining samples from different strains of the same breed in a different locality and again have found similar fibres. Out of 50 sheep in one experiment, multi-medullated fibres were found in samples from five individuals. In each case the fibres occurred in samples taken in two separate years. We estimate that between 1 and 5 per cent of fibres in these samples showed this characteristic at some stage in their growth. A few fragments were found in which the medulla could be seen to change from single to double.

Multiple medullae are most commonly found among the fine wool fibres, derived from secondary follicles, of which about 70 per cent in this breed are medullated. The type of medullation in the fine fibres varies from the uninterrupted to the fragmental grades described by Wildman³. Whereas the multiple medulla have been commonly found in fine wool fibres of between 36 and 48 μ diameter we have recently found some to occur in the coarse hair fibres associated with the primary follicles. Invariably these were in the finest of the coarse fibres, ranging from 60-74 μ , and almost always occurred in a region in which the normal lattice type medulla was absent.

We have previously regarded such fibres as developmental aberrations of unknown origin although it seems that they are more or less permanent features of their parent follicles.

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Occurrence of *Schoenus nigricans* L. in the Blanket Bogs of Western Ireland and North-West Scotland

THE anomalous position of the fen plant *Schoenus nigricans* in the blanket bogs of western Ireland^{1,2} and north-west Scotland³ can be explained to some degree by the extreme sensitivity of this species to aluminium ions.

Growth chamber experiments have shown that concentrations of aluminium ions as low as 1 p.p.m. will severely inhibit root elongation in *Schoenus*.

The experiments described here were carried out in water culture, at 21° C., 16 hr. day-length and 90 per cent relative humidity. The culture solutions were replaced three times in a week. The seed was collected from Lough Carra, Co. Mayo. The seedlings were germinated on filter paper in distilled water and used when one month old.

The effect of aluminium ions on the root elongation of *Schoenus* is shown in Fig. 1.

The results of an experiment showing root elongation of *Schoenus* in natural blanket bog water collected

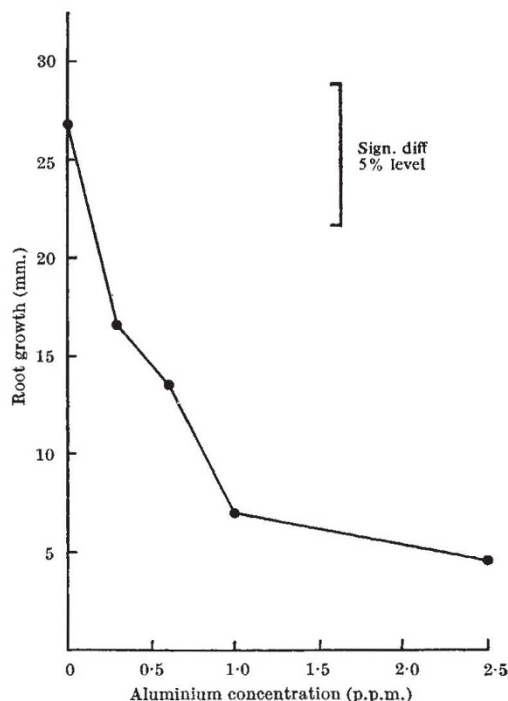


Fig. 1. Root elongation of *Schoenus* seedlings at various aluminium concentrations. The ionic concentrations of other cations in solution were: calcium, 15 p.p.m.; magnesium, 9 p.p.m.; sodium, 12 p.p.m.; potassium, 3 p.p.m.; iron, 1 p.p.m., pH 4.5. Duration of experiment, 42 days