dispersed by shaking and rotating the plate before the agar solidifies. Hyphæ are then located, ringed and numbered on the reverse of the plate. Plates are incubated at room temperature and examined daily under a microscope (× 120) for fungal growth.

Most hyphæ show growth by the second or third day ; some, however, show no definite growth until 7–9 days after preparation of the isolation plate. All clean hyphæ showing growth are cut out in an agar block and transferred to fresh medium ; sometimes hyphal tips only are removed. In many cases, particularly where humus particles are attached to a hypha, care is needed to be certain that the growth arises from the hypha and not from a humus particle. In these cases it is advantageous to remove the hypha in an agar block and examine it on a sterile slide at a higher magnification. If the origin of growth remains uncertain the block is discarded. It is also necessary to cut out any fungi developing from spores or humus particles on the isolation plates, to prevent them overgrowing ungerminated or slow-growing hyphæ.

Several media have been investigated, the most useful of those tested being Dox + yeast agar (*p*H 5·6–5·8) diluted to one-sixth of its normal strength[2]. Prerequisites for a good isolation medium are that it be transparent and that it prevents excessive growth of bacteria and Actinomycetes, particularly those that occur along the walls of the fungal hyphæ. The addition of ammonium salts, of peptone, of soil extract, of hydrolysed casein, and of higher concentrations of yeast extract has stimulated the growth of some hyphæ isolated from soil, but has encouraged increased growth of contaminating bacteria or Actinomycetes. The medium was not highly acidified, since it was noted that some hyphæ were sensitive to low *p*H. Some hyphæ isolated from soil, however, grew no further than 50–100μ on the weak Dox + yeast agar or on any other medium tested.

This direct hyphal isolation method has proved useful in the isolation of the root pathogen *Rhizoctonia solani* from soil without the use of a host plant. This fungus has been isolated from many soils where its presence has been known from plant disease, and also from other soils where its presence was not suspected. The method, together with the dilution plate method, is also being used in a study of the ecology of the soil fungi occurring in a wheatfield at the Waite Institute, Adelaide. In this study some eighty species of fungi have been isolated by the direct hyphal method ; by far the majority of them, even when shown to be abundant in soil as mycelium, were absent from dilution plates prepared from the same soil samples. The fungi isolated from hyphæ fall into two broad groups : (*a*) fungi such as *Pythium*, *Rhizopus*, *Mortierella*, *Alternaria* and *Fusarium*, which are also frequent on dilution plates ; (*b*) a large group of non-sporing fungi which are rare or absent from dilution plates. Several Basidiomycetes are included in this second group. These results indicate that the direct hyphal method isolates a large group of fungi that have hitherto been neglected in soil fungal studies. This work is continuing and will be published in detail elsewhere.

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Elminius modestus Darwin, a Northward Extension of Range

Since the discovery of the Australasian barnacle *Elminius modestus* Darwin in the south of England in 1945[1] (with further evidence of a previous settlement in 1943[2]), its rate of spread has been well documented[3]. It is therefore of interest to record the discovery of a single living specimen at Farland Point, Isle of Cumbrae, Scotland, on March 7, 1955. The nearest record to the present one, 55 miles south at Stranraer, Wigtownshire, was in 1950[4].

The particular boulder to which it had attached, just above the level of low water of neap tides, has fortunately been under observation for two years. It was completely bare of barnacles before the settlement of *Balanus balanoides* began in May 1954. The *Elminius* must therefore have become attached during the summer or autumn of 1954 ; its small size (3·5 mm. carino-rostral length) confirms this. A careful search of the immediate area and several other localities on the island has failed to produce another specimen.

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A Chiton, *Callochiton fulvus* (Wood), in the River Fal

There is much recent evidence for the spread of marine organisms as fouling on ships' bottoms. *Crepidula fornicata* has been found in the River Fal, Cornwall, since 1947[1], usually in the vicinity of moored ships. An extensive oyster fishery exists in this estuary, and the dredgermen and bailiff have been alive to the danger of the spread of *Crepidula*. This has resulted in a general interest in organisms other than oysters found during dredging. Recently, a large chiton was sent to me by Mr. P. P. Guy, the oyster bailiff. This proved to be *Callochiton fulvus* (Wood), the known distribution of which is Portugal, Spain and South America. This specimen was alive and attached to an oyster shell when caught ; it had a length of 5·5 cm. It was taken in a dredge on the edge of the deep-water channel (3–4 fathoms) in Tolverne Reach, a stretch used for many years for mooring oil tankers while temporarily laid up.

It is known that other marine species from the Iberian coast live and grow in British waters. For example, Portuguese oysters (*Gryphaea angulata*) are imported and laid commercially in British estuaries, but water temperatures are rarely sufficiently high to promote spawning. Probably other southern forms have been and will be introduced, and may live in British waters for a while without becoming established.

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