ogical processes but also can in no sense be considered new-born, or a twin of the fœtus. Medawar suggests that the mammalian fœtus is usually protected from the consequences of homotransplantation as it has its strictly independent circulation. However, the human syncytiotrophoblast has a relationship with the maternal circulation that could not be closer. Algire *et al.*[15] can grow homografts indefinitely by inserting such into containers that prevent vascularization by the host and entry of cells. May the syncytium be Nature's analogue to Algire's millipore filter ?

It appears thus that the normal syncytium and the chorionepithelioma are difficult to sex but that the hydatidiform mole is female. It is considered that this supports my earlier suggestion that the syncytium is derived from granulosa cells, and its function is to protect the fœtus from the immunological processes of the mother.

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## Influence of Filming and of Surface Texture on the Settlement of Marine Organisms

WHEN a well-cleaned surface is allowed to stand in sea water it becomes coated with a film in a few hours. The film increases in thickness for at least the first few days after it has formed. Several reports are to be found in the literature of a filmed surface being more favourable to settlement than a freshly cleaned one[1–4]. It has been widely assumed that this is true for all marine larvæ, since a permanent surface suitable for settlement is bound to collect a film in the sea. The extreme view has indeed been expressed that filming may be a necessary pre-requisite to the attachment of marine larvæ, although larvæ of some sedentary organisms have been observed to attach themselves to newly submerged surfaces before any visible film has formed[2].

A second assumption frequently made is that marine larvæ will attach themselves to a roughened surface more readily than to a smooth one.

Both these assumptions are being currently tested on a variety of invertebrate larvæ. Small rectangular pieces of chemically inert material are used, the upper surfaces of which are prepared in a series of grades of roughness from a shiny glossy finish to a coarsely ground surface. The surfaces are filmed for periods of 24 hr. or more and arranged in a factorial experiment around the periphery of a cylindrical dish containing larvæ, and slowly rotated in order to equalize such external influences as uneven illumination, to which the larvæ might be susceptible.

Table 1. NUMBER OF LARVÆ OF *Spirorbis borealis* AND OF *Bugula flabellata* SETTLING ON EQUAL AREAS OF PREPARED CHEMICALLY INERT SURFACES

| Type of surface texture | *Spirorbis borealis* | | | *Bugula flabellata* | | |
|---|---|---|---|---|---|---|
| | Filmed | Clean | Total | Filmed | Clean | Total |
| Glossy | 826 | 23 | 849 | 175 | 967 | 1,142 |
| Smooth but dull | 273 | 239 | 512 | 93 | 1,327 | 1,420 |
| Rough | 1 | 0 | 1 | 88 | 960 | 1,048 |
| Very rough | 11 | 0 | 11 | 54 | 596 | 650 |
| Totals | 1,111 | 262 | 1,373 | 410 | 3,850 | 4,260 |

Our experiments, which will be fully reported elsewhere, have already shown that neither of the above generalizations is valid. The larvæ of many organisms settle preferentially on smooth rather than on rough surfaces, while others are indifferent to surface texture. Furthermore, although the majority of larvæ appear to choose a filmed surface, those of one species at least, *Bugula flabellata*, settle more readily on a clean unfilmed surface than on a filmed one. Moreover, we have verified that the film eschewed by *Bugula flabellata* was not a film of an accidentally unfavourable character, since it simultaneously attracted the larvæ of another animal, *Spirorbis borealis*, known for some time to prefer filmed surfaces[3]. The two kinds of larvæ in roughly similar numbers were placed together in a dish containing a series of surfaces, both filmed and unfilmed. As can be seen from the results in Table 1, larvæ of *Spirorbis* were attracted but those of *Bugula* were repelled by the film. Furthermore, *Spirorbis* larvæ clearly avoided the rougher surfaces, while *Bugula* larvæ were almost indifferent to surface texture.

It seems clear that a considerable diversity of behaviour towards films exists even in these simple ciliated larvæ ; they seem able to respond both to the form of the surface and also to the presence or absence of a film overlying it. Further work may well show that many of them can distinguish qualitatively between films, as the larvæ of *Ophelia bicornis* appear to do[4]. No simple generalizations therefore seem applicable to the reactions of settling larvæ on filmed surfaces.

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## *Elminius modestus* Darwin on the Isle of Cumbrae (Firth of Clyde)

THE distribution and rate of spread of the immigrant intertidal barnacle *Elminius modestus* Darwin in the British Isles and in the rest of north-west Europe have been summarized recently[1]. The most northerly published record is that of Connell[2], who found a single specimen of *Elminius* on Farland Point, Isle of Cumbrae, on March 7, 1955 ; the nearest published