reveal any direct connexion between many of these organs and the nervous system, for the superficial nerve layer (*n.l.*) so readily demonstrable immediately beneath them in older forms by a similar technique is apparently incomplete and missing from considerable areas of the interambulacra (Fig. 3) which bear these structures. It is highly significant that the absence of special nerves to the organs, in older individuals of *D. setosum*, has been mentioned by authors who regarded them as eyes[4].

For the present, therefore, I find no good reason for regarding these structures in *D. antillarum* as eyes, and in view of the obvious close relationship between *D. antillarum* and *D. setosum*, the matter clearly requires re-investigation in the latter form.

It is suggested that the organs in *D. antillarum* are iridophores, and reflect light on to the neighbouring areas which are more sensitive to changes in light intensity. This function would be especially useful in the deep recesses between the spine bases, and it is here that large masses of them are found. The iridophores would be effective only when the melanin in the chromatophores (which always accompany the iridophores (*ch.*, Fig. 2)) is largely concentrated; for when fully dispersed, the iridophores are covered. This would perhaps, in part, account for the fact that the animal becomes more sensitive to shading as the light fades, for it is then that the melanin becomes concentrated[10]. If the spine reflex is regarded as part of the general defensive reaction set off by the shadow of a potential enemy falling on the light-sensitive surface, the significance of increased sensitivity in fading light becomes obvious.

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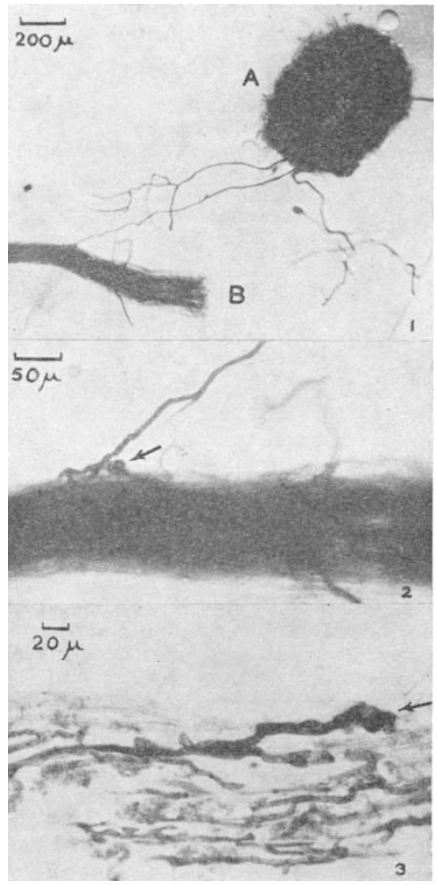
Fructifications associated with Mycorrhizal Strawberry Roots

Root infections by vesicular-arbuscular mycorrhizal fungi have been reported in many plants for more than half a century. With the exception of one unconfirmed report, reproductive stages of these fungi have not been described[1]. Numerous attempts to isolate the fungus from infected tissue have been unsuccessful, and mycelial transplants unattached to a piece of infected plant tissue have never survived[2]. Butler[3] pointed out the close relationship of the vesicular-arbuscular mycorrhizal fungi to the Endogonaceæ, and concurred with Peyronel's view that they are probably members of this family.

In 1951, fructifications of the Endogone type were found attached to mycorrhizal strawberry roots grown in pots. The presence of hyphal connexions between these fructifications and the mycorrhizal fungus inside the strawberry roots has been clearly established (Figs. 1–3). The fructifications appear



(1) Hyphal connexion between fructification (*A*) and strawberry root (*B*).
(2) Enlargement of connecting hypha at point of entry into root.
(3) Longitudinal section of the same root showing connecting hypha at point of entry, and its continuity with the mycorrhizal fungus inside the root. Arrows in (2) and (3) mark identical parts of the fungus

as light-brown spherical bodies, up to 1 mm. in diameter. They consist of a loose weft of hyphæ containing usually two to six, but sometimes up to thirty-two small spores, 92–197 μ in diameter. The spores are distributed at random inside the weft. Mature spores are yellow to brown, with a thick endospore and a thin exospore wall. This, according to Kanouse[4], is a characteristic of the Endogonaceæ.

Inoculation experiments are in progress to synthesize mycorrhiza under controlled conditions, using the fruit bodies and sterilized spores excised from these to provide the fungus constituent. In these experiments some typical mycorrhizal infections have been obtained in strawberry seedlings grown in test-tubes in soil sterilized by autoclaving and with propylene dioxide. Attempts are also being made to germinate the excised spores on artificial media. The results of these experiments will be reported elsewhere.

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