

proved to be unialgal. At first the sporelings grew very slowly and developed during the summer to small, procumbent and zigzag-bent filaments. In the autumn upright shoots sprouted from these filaments. They grew very rapidly, forming tufts 5–10 cm high during the following winter and, early in March, they became fertile, carrying large sessile unilocular as well as plurilocular reproductive organs. The structure of the vegetative thallus and of the reproductive organs accorded with the description of *Scaphospora speciosa* (Fig. 1).

The unilocular reproductive organs of the *Scaphospora* stage contained one large non-motile cell which, after release, settled on the bottom of the dish. From the plurilocular organs a great number of zooids were liberated and a great many of them were observed congregating around the non-motile cells, an indication that they were attracted by the latter.

These observations corroborate Reinke's view that the *Scaphospora* stage represents the gametophyte in the life cycle of *Haplospora globosa* and that the non-motile cells are eggs and the zooids spermatozooids.

OVE SUNDENE

Institute for Marine Biology, B,
University of Oslo.

- ¹ Reinke, J., *Bot. Z.*, **47**, 100 (1889).
² Kylin, H., *Ber. Dtsch. Bot. Ges.*, **35**, 298 (1917).
³ Kylin, H., *Acta Univ. Lund. N.F.*, **58**, 1 (1947).
⁴ Oltmanns, F., *Morphologie und Biologie der Algen*, **2** (G. Fischer, Jena, 1922).
⁵ Smith, G. M., *Cryptogamic Botany*, **1**, *Algae and Fungi* (McGraw-Hill Book Co., Inc., London, 1955).
⁶ Sauvageau, C., *J. Bot., Paris*, **13**, 107 (1899).
⁷ Christensen, T., *Botanik*, **2**, 1 (1962).
⁸ Nienburg, W., *Ber. Dtsch. Bot. Ges.*, **41**, 211 (1923).
⁹ Dammann, H., *Wiss. Meeresuntersuch. N.F. Abt. Helgoland*, **18**, 1 (1930).
¹⁰ Sundene, O., *Skr. norske Vidensk. Akad. I. Mat.-Nat. Kl.* 1953, **2**, 1 (1953).

Powdery Mildew Fungus on Cucurbits in the Transvaal Province of South Africa

IN her work on South African *Erysiphaceae*, Doidge¹ has provisionally identified the powdery mildew fungus that causes a troublesome disease on Cucurbitaceae throughout the country as *Erysiphe cichoracearum* DC. After two different mildew fungi were found to attack cucurbits in Europe², Doidge³ realized that this identification should be regarded as tentative, but because the perithecial stage of the fungus had not been found in South Africa, more precise identification was considered impossible. Since then, a number of publications have appeared which have pointed out that it is possible to distinguish between the two fungi in question, namely *Erysiphe cichoracearum* DC. ex Merat emend. Salmon and *Sphaerotheca fuliginea* (Schlecht. ex Fries) Poll., on the basis of their conidial characteristics^{4–7}. The conidia of the *Sphaerotheca* species contain conspicuous discoid or rod-shaped fibrosin bodies which were first observed and described by Bouwens⁸. They can be clearly seen if the spores are microscopically observed in a 3 per cent aqueous potassium hydroxide solution as recommended by Kable and Ballantyne⁷. In the conidia of *E. cichoracearum*, however, these bodies are lacking. Though both species produce conidia in long chains, the way in which the conidia germinate also differs. The germ tubes of *E. cichoracearum* are all simple and straight, but among those of *S. fuliginea* a number occur that are forked.

Samples of powdery mildew from cucurbits, collected during the past growing season in various parts of the Transvaal Province, all showed long chains of conidia with well-developed fibrosin bodies present in every specimen. Wherever germination of the conidia was found possible, forked germ tubes, like those illustrated by Boerema and Van Kesteren⁵, were also observed. The variation of conidial dimensions, 25.2–37.8 × 14.7–23.1 μ, in spores of the cucurbit mildew from the Transvaal falls

within the range of dimensions given for *S. fuliginea* by Clare⁶ (25.0–46.5 × 14.0–25.0 μ).

It is therefore concluded that powdery mildew on cucurbits in Transvaal is caused by the fungus *Sphaerotheca fuliginea* (Schlecht. ex Fries) Poll. The disease was observed on cultivars of the following Cucurbitaceae: *Cucumis melo* L., *C. sativus* L., *Cucurbita pepo* L., *C. maxima* Duch. and *C. moschata* Duch. The mildew generally caused a more severe disease on species of *Cucurbita* than on those of *Cucumis*. Considering that even in tobacco-growing areas where *E. cichoracearum* was prevalent, cucurbit mildew samples only showed the presence of *S. fuliginea*, the indications are that in South Africa, like in Australia^{4,6}, *S. fuliginea* is the only or most prevalent cucurbit powdery mildew.

G. J. M. A. GORTER

Horticultural Research Institute,
Pretoria.

- ¹ Doidge, Ethel M., *Trans. Roy. Soc. S. Afr.*, **5**, 237 (1915).
² Blumer, S., *Beitr. Kryptog. Flora Schweiz.*, **7**, 412 (1933).
³ Doidge, Ethel M., *Bothalia*, **5**, 117 (1950).
⁴ Ballantyne, Barbara, *Austral. J. Sci.*, **25**, 360 (1963).
⁵ Boerema, G. H., and Van Kesteren, H. A., *Neth. J. Plant Path.*, **70**, 33 (1964).
⁶ Clare, B. G., *Austral. J. Sci.*, **20**, 273 (1958).
⁷ Kable, P. F., and Ballantyne, Barbara J., *Pl. Dis. Repr.*, **47**, 482 (1963).
⁸ Bouwens, Henriette, *Meded. Phytopath. Lab. Willie Commelin Scholten*, **8**, 3 (1924).

The Dugong

WHEREAS the manatee of the tropical Atlantic has been the subject of widespread interest in recent years, the related dugong of the Indo-Pacific region has received scant attention. An increasing scarcity over most of the range of the animal has been assumed on the evidence available; for example, few remain in the Red Sea, around Ceylon or Malaysia.

We have recently completed a preliminary survey of the dugongs on the coast of Queensland, in Torres Strait, and elsewhere in the Australasian region. Personal travel and the questioning of innumerable individuals with local knowledge, together with much and continuing correspondence with coastal missions and native reserves, lead on integration to certain encouraging conclusions. Additional correspondence with those having local and personal knowledge will be welcome.

Our conclusion is that in parts of the Australian north-east the dugong is not to be regarded as a rare animal. In places its numbers may even be increasing now, following excessive hunting in the nineteenth century and in the early decades of this century. The world's stock of dugongs is certainly much greater than that of manatees.

On the Australian coasts the hunting of dugongs nowadays is wisely confined to native peoples, whose traditional diet includes these animals. Because of the dugong's acute hearing the process of hunting is not easy: the use of engines in their vicinity is fatal to success, in a way which does not apply in turtle-hunting which is the usual alternative. Because of its difficulty, and because of the progressive movement of the native peoples concerned on to a wage basis and the use of purchased food-stuffs, the hunting pressure on the dugongs would seem to be diminishing in many places.

We believe that under present pressures the dugong stocks on the Australian coasts are secure, although there may be a few places of local excessive killing as certain native groups increase in population. Apart from native hunting, a small number of dugongs are killed inadvertently in fish traps, in official shark-netting programmes for the benefit of bathers, and a few by 'sportsmen'.

We have been able to accumulate, besides extensive personal testimonies, a collection of fresh skeletal and other material, older skulls from kitchen middens and, in