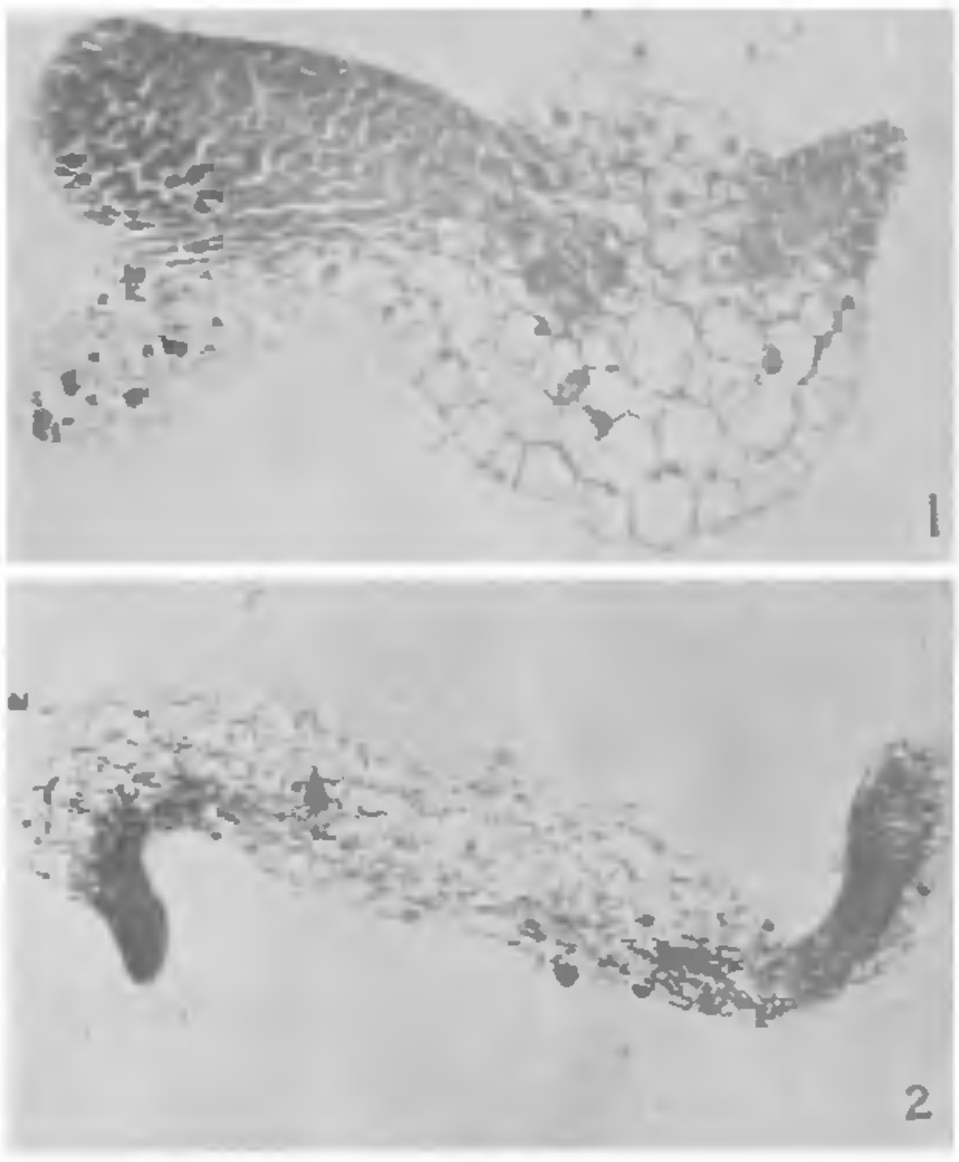
ANDROGENIC CHIMERAL PLANTLETS IN TOBACCO

THE first record of the existence of mature chimeral androgenic embryoids constituted of the derivatives of both the vegetative and the generative cells was published by the authors some time ago[1]. Extended studies have demonstrated that such embryoids are capable of further growth, resulting in young plantlets. The plantlets are exomorphically distinguishable from those derived either wholly from the vegetative cell or from the generative cell (details to be published elsewhere). However, it is of interest to note that the chimeral structure passes into the seedling in diverse sectorial patterns and these are clearly evident in the leaves. The phenomenon illustrated here concerns the third and fourth leaves from the shoot apex. In the third leaf (Fig. 1), one longitudinal half of the



FIGS. 1–2. Fig. 1. Oblique paradermal section of the third leaf of a chimeral seedling, × 350. Fig. 2. Transection of the fourth leaf of the same seedling, × 350.

lamina is engendered by the derivatives of the vegetative cell (lightly stained) and the other half by those of the generative cell (darkly stained). Figure 2 is taken from the fourth leaf in which the major part of the lamina is derived from the vegetative cell whereas the margins on either side are engendered by the generative cell. These histological features of the respective tissues as being exclusive to the derivatives of the two cells of the pollen grain have already been referred to in the earlier note cited above.

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ON A NEW SPECIES OF *MYLONCHULUS* (COBB, 1916) ALTHERR, 1956 (NEMATODA: MYLONCHULIDAE)

JAIRAJPURI[1] has described ten out of the 49 species known in the genus *Mylonchulus* (Cobb 1916) Altherr 1956 from India, five of which were new. So far, males are known only in seven, hence another specis, having male and hitherto undescribed, found from soil around roots of cauliflower, *Brassica oleracea* var. *botrytis*, is being described.

Mylonchulus brassicus sp. n. (Fig. 1, A–D)

Holotype (female) : L = 1·04 mm; $a = 26$; $b = 3·7$; $c = 26$; V = 54·8.

Paratype (females, $n = 9$) : L = 0·75–0·92 mm; $a = 20·7$–23; $b = 3·2$–4; $c = 22$–25·7; V = 54·2–57·5.

Paratype (male) : L = 0·9 mm; $a = 24·6$; $b = 3·4$; $c = 22·8$.

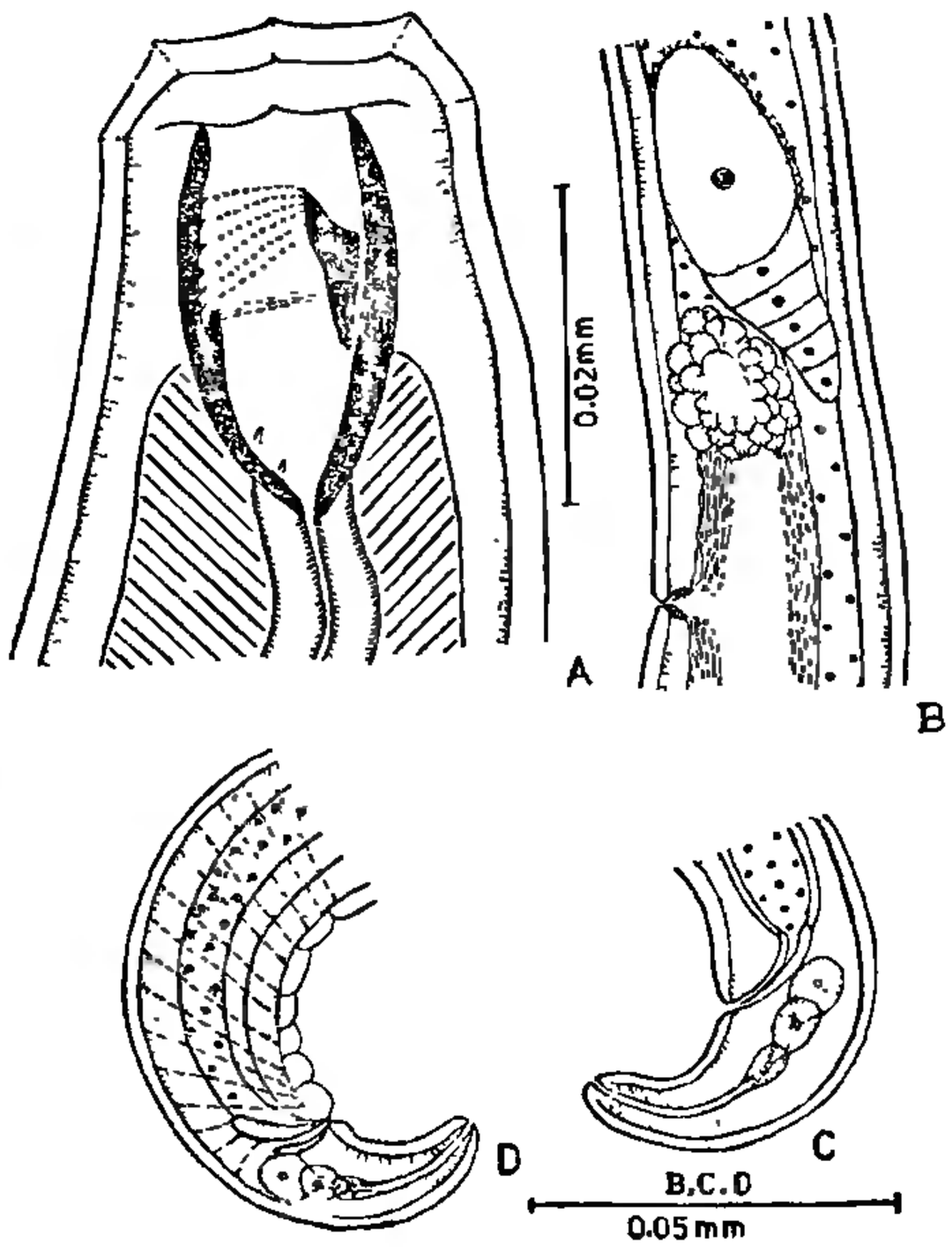

FIG. 1. *Mylonchulus brassicus* sp. n. Female: A. Anterior end; B. Vulvar region; C. Posterior end; Male : D. Posterior end.

Female.—Body stout, transparent, attenuated gradually at the anterior and the posterior region, the latter being more marked than the former. Cuticle

(outer and inner) smooth, 2–4 μ thick. Lateral chords one-third body width wide near middle. Lip region not off-set, 18–24 μ wide. Amphids small, obscure, near base of lateral lips. Buccal cavity 22–23 × 10–13 μ with strongly cuticularized walls. Dorsal tooth large, thorn-like, situated on anterior half of the dorsal sector, pointing forward, opposed by six transverse rows of minute denticles spreading round the subventral walls as rasp-like area. Apex of dorsal tooth 17–20 μ from the base of stoma. A pair of small blunt subventral teeth opposite the base of dorsal tooth. A pair of foramina on the subventral plates of stoma near the posterior end.

Oesophagus nearly cylindrical forming a collar around the base of stoma, 260–275 μ long. Nerve ring 124–132 μ from anterior end. Rectum 24–28 μ, less than one anal body-width long. Gonads amphidelphic and reflexed. Anterior and the posterior ovary 58 μ and 80 μ long, respectively, each having 5–6 oocytes arranged in a single file. Proximal part of oviduct glandular. A fairly developed sphincter is present at the oviduct uterus junction. Cuticularized piece at vagina-vulva junction. Vulva post-equatorial. Egg 95 × 35 μ. Tail arcuate-conoid, 38–40 μ long. Caudal glands tandem. Spinneret terminal.

Male.—Spicules 19 μ long, gubernaculum 13 μ and lateral accessory piece 8 μ. Supplements 6. Tail 35 μ long about twice the anal body-width long.

Type habitat and locality.—Soil around roots of cauli flower, *Brassica oleracea* var. *botrytis* from Jodhpur, Rajasthan.

Type specimens.—Collected by Mr. G. R. Soni on October 25, 1979. Holotype female on slide No. 113, paratype females on slide No. 114 and paratype male on slide No. 115, deposited in the Department of Zoology, University of Jodhpur, Jodhpur.

Differential diagnosis

On the basis of key provided by Jairajpuri[1], *Mylonchulus brassicus* sp. n. comes closest to *M. nainitalensis* Jairajpuri, 1970 in amphidelphic gonads, tandem arrangement of caudal glands, number of transverse rows of denticles and size of gubernaculum but differs in distribution of transverse row of denticles, terminal spinneret, size of spicules (19 *vs.* 35 μ) and number of supplements (6 *vs.* 12). It is distinguished from *M. mulveyi* Jairajpuri, 1970 where male has been described recently by Ahmed and Jairajpuri[2], by the didelphic gonads in female and smaller size of spicules and 6 instead of 8 supplements in male.

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Jodhpur 342 001, *January* 4, 1980.

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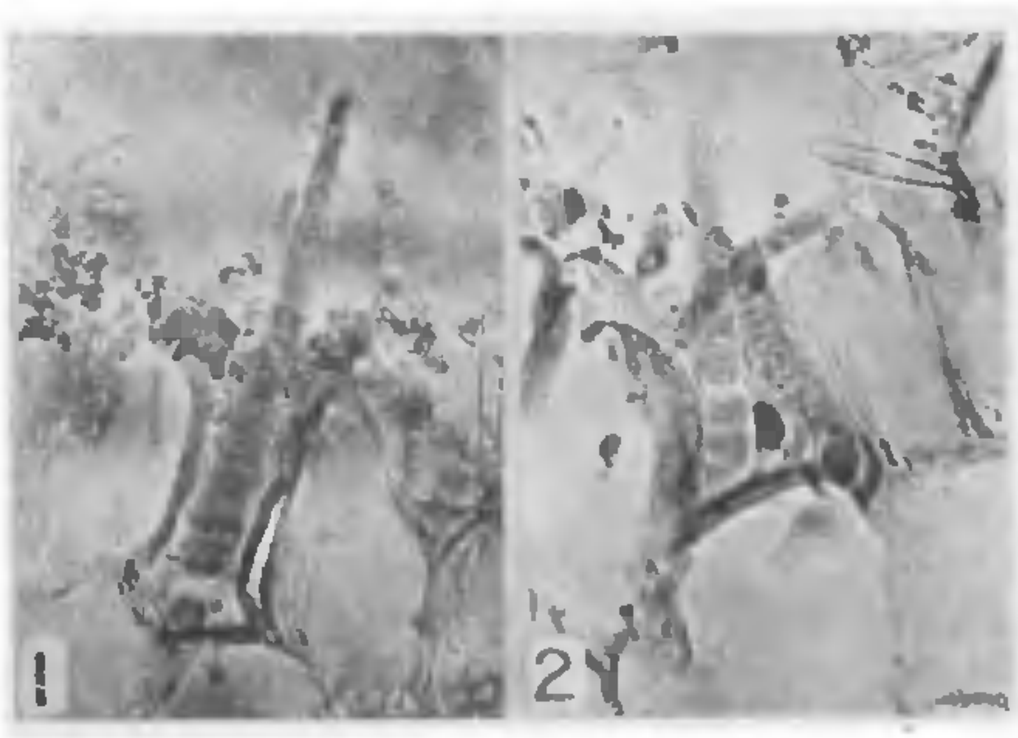
RIVULARIA AQUATICA DE WILDE AS A PARASITE ON *GRIFFITHELLA HOOKERIANA* WARM.

HETEROTROPHIC nutrition among the bluegreen algae is admittedly a rare phenomenon. The only recorded instances are certain species of *Anabaeniolum*, *Oscillospira* and *Simonsiella* which have been reported to be parasitic on man and in the intestines of animals[1]. During the course of an extensive study on the developmental anatomy and embryology of the Podostemaceae certain cells of the dorsal epidermis of the thallus of *Griffithella hookeriana* were seen to be infected by *Rivularia aquatica*. The latter taxon has been otherwise known to be an autotroph as other bluegreens. However, it does resort to other modes of nutrition is evidenced in the present case.

Microtome sections (8 μm) of the host plant revealed that the cells in which the alga occurred were depleted of their contents. The special circumstances that act incumbant on the organism to become parasitic appears to be the lowering of the water level of the habitat as a resu't of which the thallus is exposed to dry conditions. Under the changed influences, the heterocysts are seen to undergo divisions as a result of which many filaments partly grow out of the epidermis of the thallus (Figs. 1, 2). These features strongly suggests a parasitic mode of existence for *Rivularia aquatica*.



Figs. 1–2

Habitat: The host plant was collected from the Netravati River, about 5 km from Dharmasthala,