KARSCHIA LIGNYOTA (FR.) SACC., A NEW RECORD FOR INDIA

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DURING fungal forays of 1979 in the Eastern Himalayas an interesting fungus was collected, which was identified as *Karschia lignyota*—a bitunicate loculoascomycete. It is being recorded here for the first time from India.

Dried material was rehydrated in water for an hour and sections were stained in 1 drop each of 2% w/v aqueous KOH and 1% w/v aqueous phloxine and mounted in slightly acidified 50% v/v aqueous glycerol.

Previously, only a single species *K. prinsepiae* Chona, Muntjal and Kapoor was known from Simla, recorded by Chona *et al.*[1], and by Bilgrami *et al.*[2]. The collection has been deposited in PAN (Herbarium, Botany Department, Panjab University, Chandigarh (India) and CUP-IN 585 (Department of Plant Pathology, Cornell University, U.S.A.). The abbreviations of the herbaria used are according to Holmgren and Keuken[3].

Karschia Körber, Parerga lichenologica : 459 (1865).
Key to the Indian Karschia species.
Apothecia on living twigs and stem of *Prinsepia utilis* Royle ... *K. prinsepiae*
Apothecia on dead angiospermic stem ... *K. lignyota*

Observations

Apothecia 1·5 mm diam. brownish-black, sessile Asci 93–108 × 6–7 (–7·5) μm, J⁻, 8-spored. Ascospores (10–) 11–14 × 4–5 μm, ellipsoid, brown. 2-celled. Paraphyses filiform, embedded in yellowish mucilage, tips impregnated by dark brown amorphous matter.

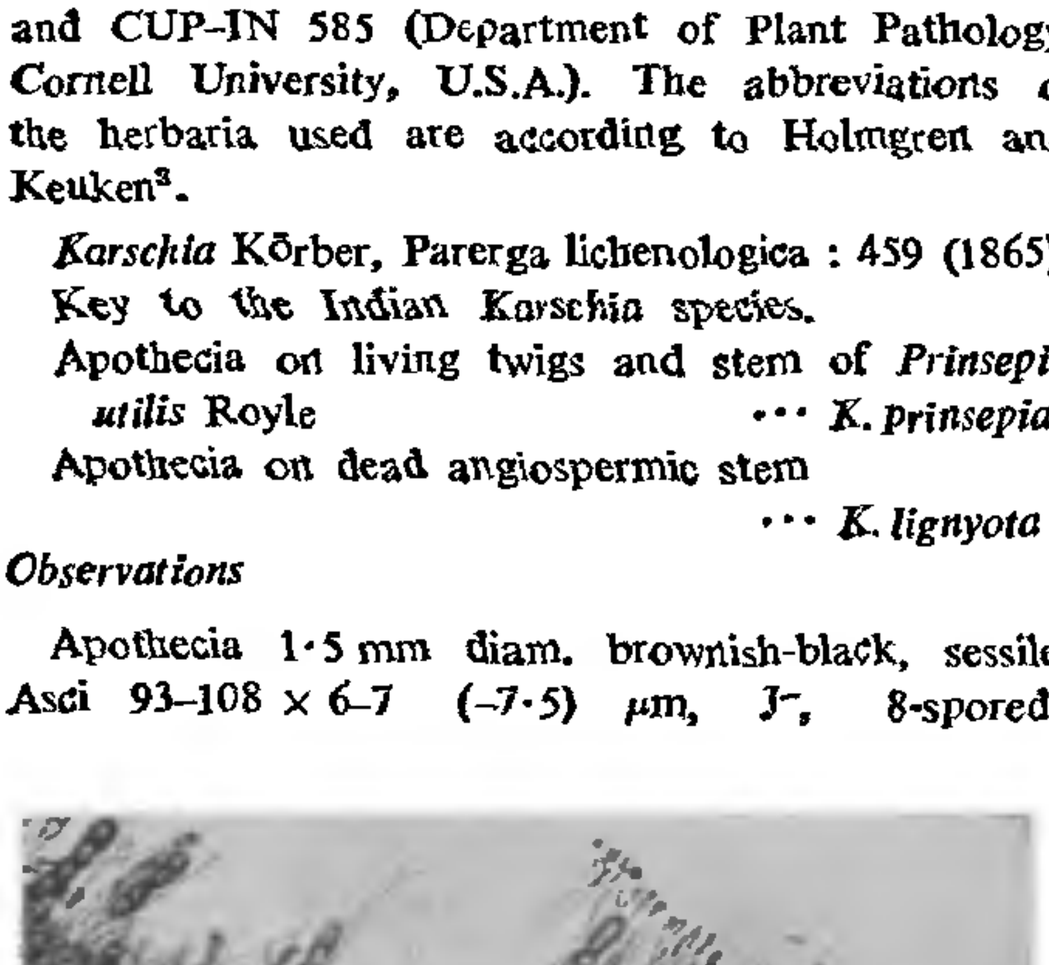

FIG. 1. Vertical section of the apothecium showing excipulum and hymenium. × 560.

Collection examined : PAN 17290, on dead angiospermic stem under mixed forest, Elephant Falls (alt. 1,500 m.), Shillong (Meghalaya), September 18, 1979. Leg R. Sharma.

This collection differs from the description of *K. lignyota* given by Dennis[4] in having larger asci.

Thanks are due to Prof. R. P. Korf, Cornell University, Ithaca, U.S.A., for the help in identification and to Prof. K. S. Thind for guidance and encouragement.

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DEVELOPMENT OF FEMALE GAMETOPHYTE IN *IPOMOEA HISPIDA* PARODI.

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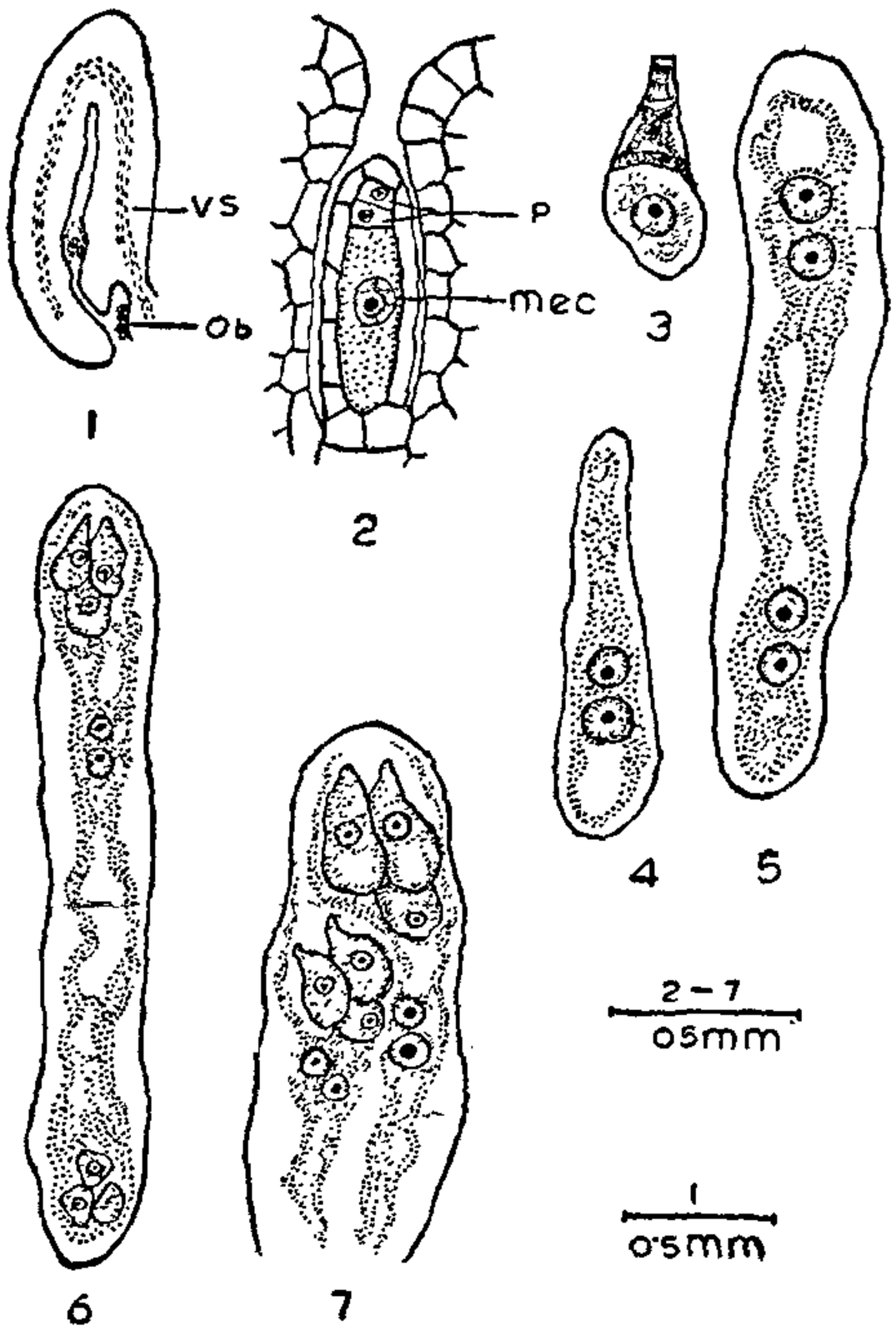
Ipomoea hispida of the tribe Ipomoeae, family Convolvulaceae has not been investigated embryologically. The present paper describes the development of female gametophyte in this taxon.

Ovule is anatropous, unitegmic and crassinucellate (Fig. 1), and the long narrow micropyle faces the locular base. The single vascular strand of the ovule extends as a loop and ends near the micropyle on the antiraphe side. A single female archesporial cell differentiates in the hypodermal layer near the nucellar apex and divides periclinally to form a parietal cell and a megaspore mother cell (Fig. 2). The megaspore mother cell undergoes meiosis and the resultant four megaspores are placed linearly. The megaspore at the chalazal end develops further while the remaining three degenerate (Fig. 3). Three mitotic divisions unaccompanied by wall formation lead to the formation of 2, 4- and finally 8-nucleate female gametophyte



FIGS. 1–7. Female gametophyte in *Ipomoea hispida*. Fig. 1. L.S. part of ovule showing placental obturator and vascular supply. Fig. 2. Same showing megaspore mother cell and division in parietal cell. Fig. 3. Megaspore tetrad showing functional megaspore and degenerating megaspores. Figs. 4–5. 2, 4-nucleate embryo sac. Fig. 6. Organized female gametophyte. Fig. 7. Twin embryo sacs. ob, obturator; vs, vascular supply; P, parietal cell; Mec, megaspore mother cell.

(Figs. 4–6). Tha organization of cells in the female gametophyte is normal in majority of the cases (Fig. 6). However, in a few cases reversed polarity in the organization of the female gametophyte is observed. Reversed polarity in Convolvulaceae has not been reported in any taxon so far, though this condition is reported in a few other families[1]. Other deviation occasionally observed is the presence of two embryo sacs in an ovule (Fig. 7). Jos[2] also reported twin embryo sacs in an ovule in *Ipomoea pestigridis*.

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INHERITANCE OF RESISTANCE TO BACTERIAL BLIGHT OF RICE

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INVESTIGATIONS on the inheritance of resistance to bacterial blight of rice, incited by *Xanthomonas oryzae* (Uyeda *et al.*, Ishiyama) Dowson, gave a picture of wide variability and most of the work was carried out with one or two isolates making R × S combination only. The present investigation was carried out with three isolates making three cross combinations (R × R, R × S and S × R), to find out the mode of inheritance.

Materials and Methods

AC 5169 and *AC* 1225 were screened against three isolates; *D*, *C* and *A* of *X. oryzae*. They were crossed and the F_1, F_2 and F_3 populations were used to study the mode of inheritance pattern. Three sets were made for the three isolates. Plants were fertilized at the recommended doses, N 120 kg, P 60 kg and K 60 kg/ha.

Isolates of *X. oryzae* were grown separately on pot to semi-synthetic agar medium[1]. Bacterial suspension was made in sterile distilled water and the optical density was adjusted to 1·5 in spectronic-20 at 620 nm for each isolate.

The plants were inoculated at the maximum tillering stage by using clip-inoculation method[3] and observations were recorded on lesion development, after 15 days of inoculation. The plants showing 2 cm lesion length were considered as resistant and more than 2 cm as susceptible[3]. Observations were also recorded for short and long glumes and bacterial blight.

Results and Discussion

AC 5169 was resistant to isolates *D* and *A*, and susceptible to isolate *C*, whereas *AC* 1225 was resistant to isolates *D* and *C*, and susceptible to *A* (Table 1). *AC* 5169 was tall having short glume while *AC* 1225 was tall having long glume. The F_1 plants were tall,