

the species *C. patulus* Muell.-Arg. but also in *C. collinus* (Roxb.) Benth. ex Hook. f.

It is interesting to note that both *C. collinus* (Roxb.) Benth. ex Hook. f. and *C. patulus* Muell.-Arg. with trilocular and tetralocular fruits occurring on the same branch were collected so far only from the same belt of mountains in Andhra Pradesh.

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### THREE NOTEWORTHY LICHENS FROM DARJEELING DISTRICT

Two species of *Phaeographina* and one of *Phaeographis* belonging to Graphidaceae described in this paper were collected by the author from Lloyd's Botanic Garden, Darjeeling and Sukhna Reserve forest, Darjeeling. It contains one new record for India, and the other two are previously reported from Manipur and Ceylon. The collections mentioned here have been deposited in the Herbarium of Cryptogamic unit of the Botanical Survey of India, Calcutta and Cryptogamic division, Smithsonian Institute, U.S. National Museum, Washington.

#### GRAPHIDACEAE

***Phaeographina caesiopruinosa*** (Fée) Muell.-Arg. in Mém. Soc. Phys. Hist. Nat. Genève. 29: 19. 1887; Zahlbr. Cat. Lich. Univ. 2: 434. 1924. *Arthonia caesiopruinosa* Fée. Suppl. Essai Crypt. Ecoro. Officin. 36. pl-40, f-4. 1837.

Thallus thin, smooth, greenish-grey to pale-olive-green. Apothecia long and wide, partly immersed, straight to curved. Disk open. Hypothecium hyaline, spores 8 in each ascus, oblong-ellipsoid, 9-12-septate transversely and 2-3-septate longitudinally,  $50-60 \times 14-20 \mu$ .

*Matrix*: On the bark of trees. *Specimen*

*examined*: West Bengal: Darjeeling, Lloyd's Botanic Garden, Dec. 1966, Roy Chowdhury 259.

Previously reported from Manipur.

***Phaeographina exertissima*** (Vain.) Zahlbr. Cat. Lich. Univ. 2: 438. 1924. *Graphis exertissima* Vain. in Annal. Acad. Scient. Fennic (Ser A) 15: 197. 1921.

Thallus smooth, greenish to olive green. Apothecia moderately long and wide,  $1-3 \times 0.2-0.5$  mm, raised, straight to slightly curved and flexuous, very rarely branched, disk open, flat  $\pm$  greyish pruinose. Hypothecium hyaline. Spores  $50-60 \times 15-17 \mu$ , oblong to spindle-shaped, muriform, 16-septate transversely and 1-3-septate longitudinally.

*Specimen examined*: West Bengal: Darjeeling, Sukhna reserve forest, Dec. 1966, Roy Chowdhury 562.

First time reported from India; previously reported only from Philippines.

***Phaeographis dendritica*** (Ach.) Muell.-Arg. in Flora 65: 382. 1882; Zahlbr. Cat. Lich. Univ. 2: 366. 1924. *Opegrapha dendritica* Ach. Method. Lich. 31, pl. 1, f. 10. 1803.

Thallus thin, pale-greenish-grey, slightly rough and wrinkled. Apothecia long and wide,  $1.5 \times 0.2-0.4$  mm, flexuous, usually

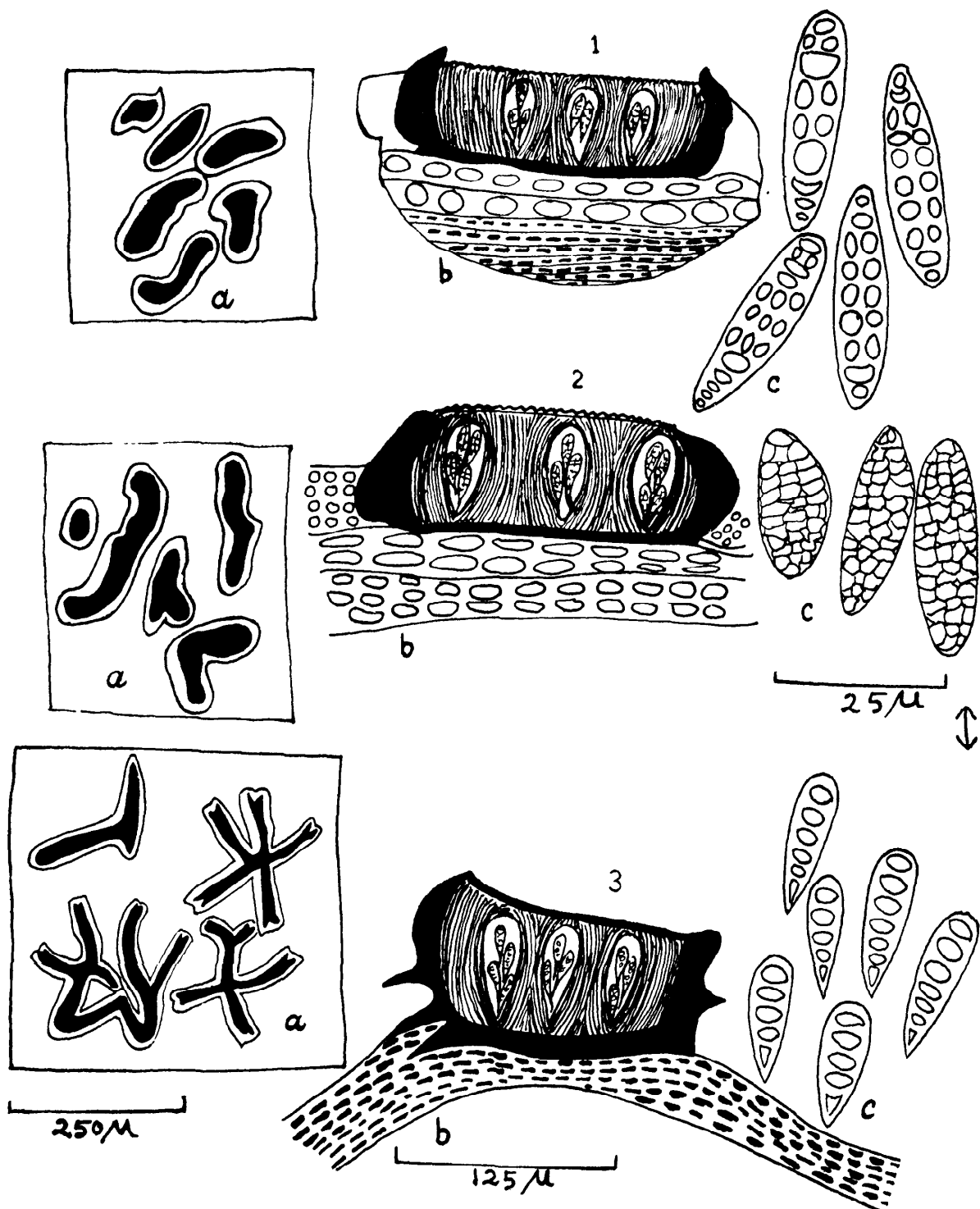


Fig. 1. *Phaeographina caesiopruinosa*. a. Apothecia (enlarged). b. Vertical section of ascocarp. c. Ascospores.

Fig. 2. *Phaeographina exertissima*. a. Apothecia (enlarged). b. Vertical section of ascocarp. c. Ascospores.

Fig. 3. *Phaeographis dendritica*. a. Apothecia (enlarged). b. Vertical section of ascocarp. c. Ascospores.

branched. Disk open and dull black, often ish black. Spores 8 in each ascus, ovate 4-plainly pruinose. Hypothecium thin, brown- 6-septate,  $18-25 \times 6-8 \mu$ .

*Specimens examined:* West Bengal: Darjeeling, Lloyd's Botanic Garden and Sukhna Reserve forest, Dec. 1966, Roy Chowdhury 264, 274, 558 and 545.

Previously reported only from Ceylon.

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### HABENARIA DENTATA (SW.) SCHLTR., A NEW RECORD FOR INDIA FROM WESTERN HIMALAYA

*Habenaria dentata* (Sw.) Schltr., a terrestrial orchid is being recorded for the first time from India. It was collected from Kumaon Himalaya at Bageshwar and Thal, District Almorah, U.P., at an altitude of about 1150 m. The orchid was found growing in a few small patches on the half decomposed humus in gullies and on grassy slopes under the partial shade of *Pinus roxburghii* Sarg.

***Habenaria dentata*** (Sw.) Schltr. in Fedde, Repert. Beih. IV. 125. 1919; Seidenfaden et (Tem) Smitinand in Orchids Thailand 1: 39. t. 28, 29. 1959. *Orchis dentata* Swartz in Act. Holm. 207. 1800. *Platanthera dentata* Lindl. Gen. et. Sp. Orch. 296. 1836.

Terrestrial orchid, erect, 30-40 cm high, unbranched; root tuberous. Stem minutely grooved, glabrous. Leaves with sheathing petiole, elliptic lanceolate, many nerved, glabrous. Flowers terminal, milk-white, bracteate, 2-4 flowers on each plant, odourless; sepals subequal; petals much smaller than sepals, triangular. Lip with a long spur swollen at base, three lobed; side lobes rounded, margin dentate 'with open dichotomous venation; midlobe linear, slightly shorter than

the side lobes, free nearly to the base. Anther adnate to the column. Pollinia pyriform. (Figs. 1-5).

A unique feature noticed in this species is the venation of the lip where it is dichotomously branched and free at tips in the side lobes. A similar condition is also noticed in the sepals.

This species is said to be highly variable and according to Dr. G. Seidenfaden (personal communication) this name is used for quite a variable group of plants, and some day a specialist may be able to single out several different units. Our plant differs in some respects from the more usual forms viz., its spur does not seem to be geniculate, and the upper part of the stem usually has a part with leaves reduced to sheaths. It has also been noticed by Dr. Summerhayes (according to Dr. M. P. Nayar, Keeper, Central National Herbarium, Calcutta) that a number of specimens in Kew Herbarium are abnormal.

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