PLAGIOTHECIUM DEHRADUNENSE VOHRA—A NEW SPECIES OF MOSS FROM DEHRA DUN (U.P.), INDIA

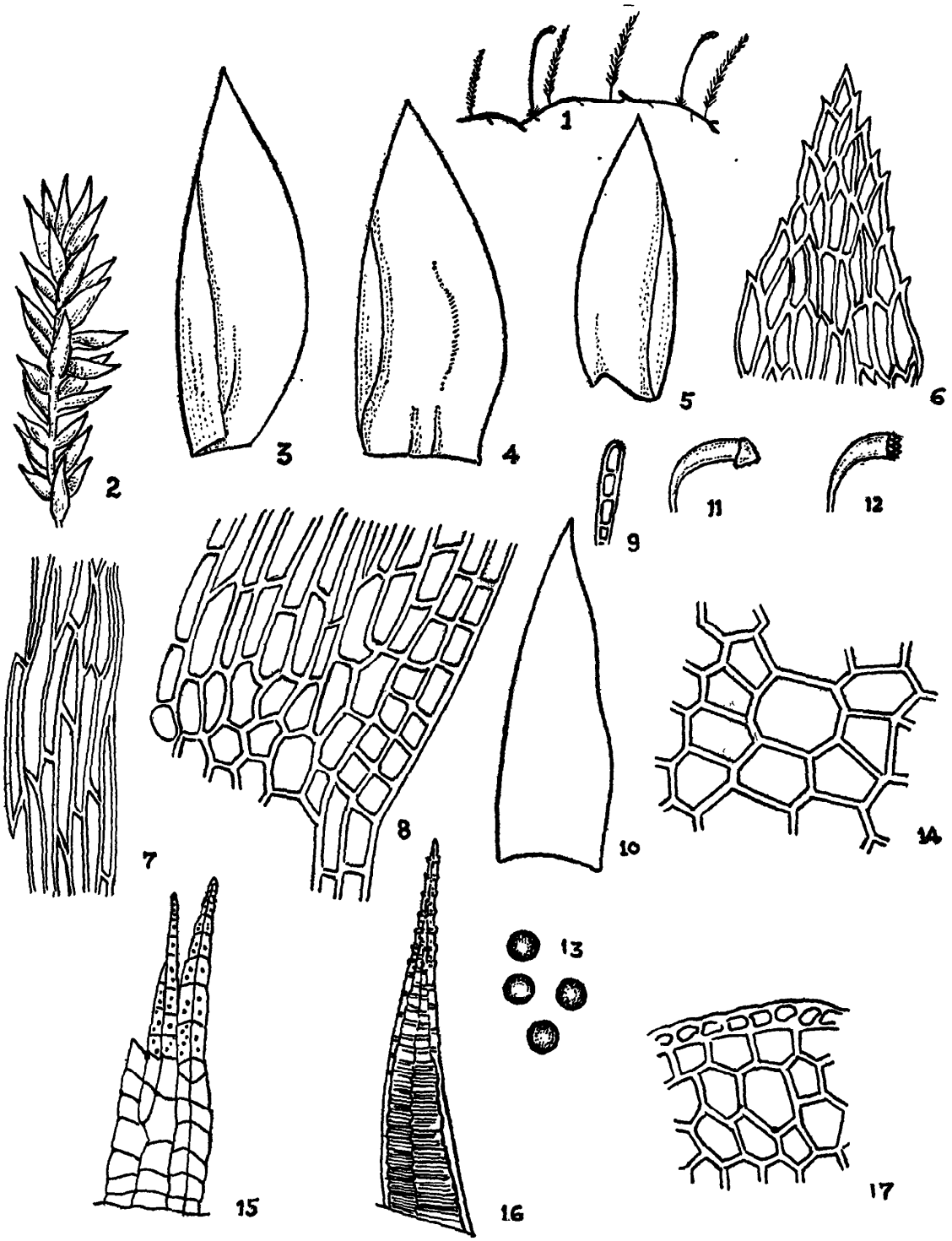
During a general survey on the moss flora of the North Western Himalaya, two or three collections of *Malhotra* attracted special attention. A detailed study of these with reference to authentic materials at the Calcutta Herbarium revealed that these belong to a hitherto undescribed species. Accordingly it is described here with suitable illustrations.

Plagiothecium dehradunense Vohra, sp. nov. *Plantae* graciles, delicatae, autoicae, in tegitibus nitidis, pallide viridibus ad atrovirentibus. *Caules* repentes, ± curvati, nudi vel sparsim radicellosi, circa 1 cm longi, irregulariter ramosi; rami numerosi, ± erecti aut arcuati, circa 0.5 cm alti. Caules et rami complanatim foliati. *Folia* siccitate erecto-patentia ad erecta, prope apicem secunda, humiditate patentia, fasciculi gemmarum prolatarum saepe praesentes in earum axillis, 0.8-1 × 0.4-0.5 mm, ovato-oblonga, acuta vel breviter acuminata, concava, ad marginem plana, integra vel dentata prope apicem; nervi breves et duplices ad nulli; cellulae lineari-rhombiformes, flexuosae, tenuibus parietibus praeditae, chlorophyllosae, 5-7 × 70-90 μ, basin versus latiores brevioresque. Cellulae alares numerosae, ± pellucidae, decurrentes. *Bracteae* interiores perichaetiales erectae, vaginantes et convolutae, apicibus ± reflexis, ca 1 mm longis. *Seta* brunnea, flexuosa, gracilis, 10-13 mm elata. *Capsula* brunnea, ovoideo-cylindrica, parum curvata, horizontalis, contracta infra orificium cum sicca, theca 1 × 0.5 mm; cellulae exothecii tenuibus parietibus praeditae, quadrato-hexagonales, 28-35 μ latae. *Peristomatis* dentes flavido-brunnei, 350 × 60 μ, superne grosse papillosi; inferne dense horizontaliter striati, interius peristomium pallidum, segmentis dentes aequantibus in longitudine, carinatum, papillosum, ciliis in paribus. *Operculum* conicum, breviter rostratum. *Sporae* 9-11 μ, laeves.

Autoicous; slender, delicate, in pale to dark green glossy mats. *Stems* creeping, somewhat curved, naked or sparsely radiculose, *ca* 1 cm long, irregularly branched; branches numerous; erect or slightly arcuate, about 0.5 cm tall. Stems and branches complanately foliate. *Leaves* on drying erecto-patent to erect, secund near the tips, when moist spreading; clusters of elongate gemmae often occurring in their axils, 0.8-1 × 0.4-0.5 mm, ovate-oblong, acute or shortly acuminate, concave; margin plane, entire or toothed near apex; nerve short and double or lacking; cells linear-rhomboidal, flexuose, thin-walled, chlorophyllose, 5-7 × 70-90 μ, wider and shorter towards the base; alar cells numerous, somewhat pellucid, decurrent. Inner perichaetial bracts erect, sheathing and convolute with slightly reflexed apices, *ca* 1 mm long. *Seta* brown, flexuose, slender, 10-13 mm long. *Capsules* brown, ovoid-cylindric, somewhat curved, horizontal, contracted below the mouth on drying; theca 1 × 0.5 mm; cells of exothecium thin-walled, quadrate-hexagonal, 28-35 μ wide. *Peristome teeth* yellowish-brown, 350 × 60 μ, coarsely papillose above, densely horizontally striate below; inner peristome pale; segments equal to teeth in length, keeled, papillose; cilia in pairs. *Lid* conical, shortly beaked. *Spores* 9-11 μ smooth. (Figures 1-17).

Along road-sides, on stones and soil.

DEHRA DÚN: Rajpur, 900 m Oct. 24, 1968, *C. L. Malhotra* 558 (Holotype—Cal; Isotype—BSD); Golekundi, 500 m Nov. 19, 1968, *C. L. Malhotra* 634 (BSD); Mohand forest 600 m March 21, 1969, *C. L. Malhotra* 665 (BSD); Siwalik Range, Mohand Pass, 500 m Oct. 14, 1900, *Gollan* (under



Plagiothecium dehradunense Vohra, sp. nov.

Figs. 1-17 : 1. Plant (Natural size). 2. Stem×*c*. 6.6. 3 & 4. Stem, leaves ×*c*. 46.6. 5. Branch leaf ×*c*. 46.6 6. Leaf apex ×320. 7. Leaf cells×320. 8. Cells at the basal margin×320. 9. Propagule ×320. 10. Inner perichaetial bract×*c*. 46.6. 11 & 12. Capsules×*c*. 6.6. 13. Spores×320. 14. Cells of exothecium×320. 15. Inner peristome×*c*. 133.3. 16. Peristome teeth×*c*. 133.3. 17. T. S. Stem×320. (*C. L. Malhotra* 558).

Plagiothecium mussuriense Broth. mss. in Herb. CAL).

Resembles *P. curvifolium* Schlieph. of Europe and North America but differs in the plants being more slender, leaves not curved downwards, and less strongly decurrent.

ACKNOWLEDGEMENTS

I express my thanks to Dr. A. S. Rao, Deputy Director, Northern Circle, Botanical Survey of India, Dehra Dun, for carefully going through the manuscript and making valuable suggestions. I am also indebted to Mr. A. H. Norkett, British Museum (Nat. Hist.) London, for scrutiny and opinion on the specimen (*C. L. Malhotra* 558), and to Dr. N. C. Majumdar, Systematic Botanist, Central National Herbarium, for the latin translation.

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GENUS *MELANOCENCHRIS* NEES—A CRITICAL REVIEW

The genus *Melanocenchris* Nees (Proc. Linn. Soc. 1: 94. 1841) of the tribe Chlorideae comprises about five species of which three [*Melanocenchris abyssinica* (R. Br.) Hochst., *M. jacquemontii* Jaub. et Spach and *M. monoica* (Rottl.) C. E. C. Fisch.] are represented in India. Since they show apparent resemblance in their vegetative and floral characters, these taxa could not be readily distinguished based on their habit and size of the spikelets.

The peculiar nature of this taxon is the clustering of sterile and fertile spikelets into clusters of spikelets on the rachis and this character readily distinguishes this genus from all other genera coming under the tribe Chlorideae of the subfamily Pooideae. Each of these inflorescence units comprises 3-5 spikelets, 1 or 2 with fully fertile florets and the others rudimentary and variously transformed. Typically a fertile spikelet of the genus comprises two involucral glumes almost equal in size, pubescent along the margins and awned and two florets, the lower one of which is fertile and the upper male or sterile and rudimentary.

The characters given by Bor (Grass. Bur. Ceyl. Ind. & Pak. 473. 1960), Hooker f. (F. B. I. 7: 284. 1897), Batter and McCann (Bombay Grasses, 248. 1935) and Fischer (Flora of Madras 3: 1267. 1928) to separate the three species of this genus are not helpful as the above mentioned authors gave more importance to the habit and vegetative characters of the plants which are variable. And probably due to this reason Hooker f. (l.c.) considers *Melanocenchris abyssinica* (R. Br.) Hochst. as only a variety of *Gracilea royleana* Hook. f. (= *M. jacquemontii* Jaub. et Spach) *i.e. Gracilea royleana* Hook. f. var. *plumosa* Hook. f. Bor (l.c.) while giving the key to the characters of the three species distinguished *M. monoica* (Rottl.) C. E. C. Fisch. as perennial and *M. jacquemontii* Jaub. et Spach and *M. abyssinica* (R. Br.) Hochst. as annuals; the latter two differing only in the size of the cluster of spikelets (8 mm and 10 mm respectively). Hooker f. (l.c.) also based his new variety *i.e. Gracilea royleana* Hook. f. var. *plumosa* Hook. f. only on the larger size of the cluster of spikelets. Examination of the authenticated specimen quoted by Bor (l.c.) namely *Mokin* 1368 and other authenticated sheets at CAL showed the following characters for their vegetative and floral parts which are of taxonomic importance. They are summarised below with illustrations.