

Involucris lacinae 5, acutae, marginibus fimbriatis. Glandulae 4, inter lacinas, ovals; limbo orbiculari, longiore quam lato, apice minutim sinuato, pallide roseo, $\pm 0.3 \times 0.2$ cm. Flores masculini plures, nudi, bracteolati; antherarum cellulae subgloboae, dehiscetes longitudinaliter; bracteolae lineares. Flores femini exserti stipitibus longis insidentes in medio involucris, ovario glabro, tricarpellato syncarpo, uno ovulo pendulo in singulis cellulis, $\pm 0.3 \times 0.25$ mm; styli 3, singuli bifurcati in 2 stigmata. Bracteolae peripherales plures laciniatae. Capsula glabra, loculicide dehiscens, columella persistente relicta. Semina obtuse quadrangularia, levia.

Typus *Ellis 16774 A*, isotypi *16774 B-D* lecti die 6-7-1963 et paratypi *Ellis 23711 A-L* lecti 18-3-1965 ad Chelama, Nallamalais, in Dist. Kurnool, in regione Andhrica. Typus positus in CAL, caeteri in Herbario regionis australis Bot. Surv. Ind. ad Coimbatore.

***Euphorbia linearifolia* Roth var. *nallamalayana* Ellis**

Allied to var. *linearifolia*, but differs in having leaves broader and acute, and limbs of glands shorter.

Herbs decumbent with prominent root stocks, glabrous, very variable in length from 5 to 30 cm; nodes swollen and internodes long or short. Leaves rather thick, glabrous, areolata-reticulate, opposite, close towards ends of branches, linear-lanceolate to ovate-lanceolate, acute or obtuse, inconspicuously serrulate, apiculate, unequally shortly cordate at base, shortly petiolate, midribs prominent, upto 5×1.2 cm. Stipules interpetiolate, ovate, sometimes cleft in the middle, ciliate on margins. Involucres terminal, subterminal or axillary, subcorymbose towards ends of branches, or solitary, glabrous, pedi-

cellate; pedicels ± 0.5 cm long. Involucral lobes 5, acute, margins fringed. Glands 4, in between lobes, oval; limbs orbicular, rather longer than broad, tips minutely sinuate, pale pink, $\pm 0.3 \times 0.2$ cm. Male flowers numerous, naked, bracteolate; anther cells subglobose, dehisce longitudinally; bracteoles linear. Female flowers exserted on long stalks in the centres of involucre; ovaries glabrous, tricarpellary, syncarpous with single pendulous ovule in each cell, $\pm 0.3 \times 0.25$ mm; styles 3, each bifurcating into two stigmata. Peripheral bracteoles numerous, laciniate. Capsules glabrous, dehisce loculicidally, leaving a persistent columella. Seeds obtusely quadrangular, smooth.

Holotype *Ellis 16774 A*, Isotypes *Ellis 16774 B-D* were collected on 6-7-1963, and Paratypes *Ellis 23711 A-L* were collected on 18-3-1965 from Chelama, Nallamalais, Kurnool Dt., Andhra Pradesh, S. India. Holotype *Ellis 16774 A* is kept in the Central National Herbarium, Sibpore, Calcutta, and Isotypes and Paratypes are kept in the Herbarium of the Southern Circle, Botanical Survey of India, Coimbatore.

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SOME NEW RECORDS OF MOSSES FROM WESTERN HIMALAYAS

During 1962 and 1963 collections of mosses were made from Tehri, Mussoorie and Chakrata and from some places in Jammu and Kashmir. Out of these collections, three species namely *Barbula asperifolia* Mitt. (Pottiaceae), *Anomobryum auratum* (Mitt.) Jaeg. (Bryaceae) and *Aerobryidium filamentosum* (Hook.) Fleisch. (Meteoraceae) were found to be new records for Western Himalayas. *Barbula asperifolia* Mitt. was first described by Mitten (1859) from Sikkim, based on the material

collected by J. D. Hooker. *Anomobryum auratum* (Mitt.) Jaeg. was also described by the same author in 1859 based on Hooker's material from Nepal and Sikkim. Since then there has not been any further report of both these taxa from any part of the country until this note. *Aerobryidium filamentosum* (Hook.) Fleisch. reported from Nepal, Sikkim, Bhutan and Nilghiris (Bruhl 1931, Noguchi 1964) is also new for Western Himalayas.

In the present note these taxa are being described with illustrations.

Barbula asperifolia Mitt. in J. Linn. Soc. (Bot.) Suppl. 1: 34, 1859.

In compact low tufts, reddish brown above, dark brown below. Stem 3-4 cm tall, fastigiately branched. Leaves when dry erect, with involute margin, appressed to the stem; when moist spreading, closely set, recurved, $2.2.5 \times 0.7-0.9$ mm, from a widely oval base more or less lanceolate, gradually narrowing upwards into an acute or subacute apex, carinate; margin entire, recurved nearly to apex; nerve strong, reddish-brown, ceasing with the apex or a little below, rough at the back due to papillae; upper cells rounded-quadrate to irregular, distinct, $8-9\mu$, papillose, in $\pm$ distinct longitudinal rows, incrassate, more so at angles, walls brownish, downwards regularly quadrate to rectangular, more distinct, pellucid, rounded at corners, at base rectangular, $8-10 \times 25-40\mu$, somewhat brownish, walls

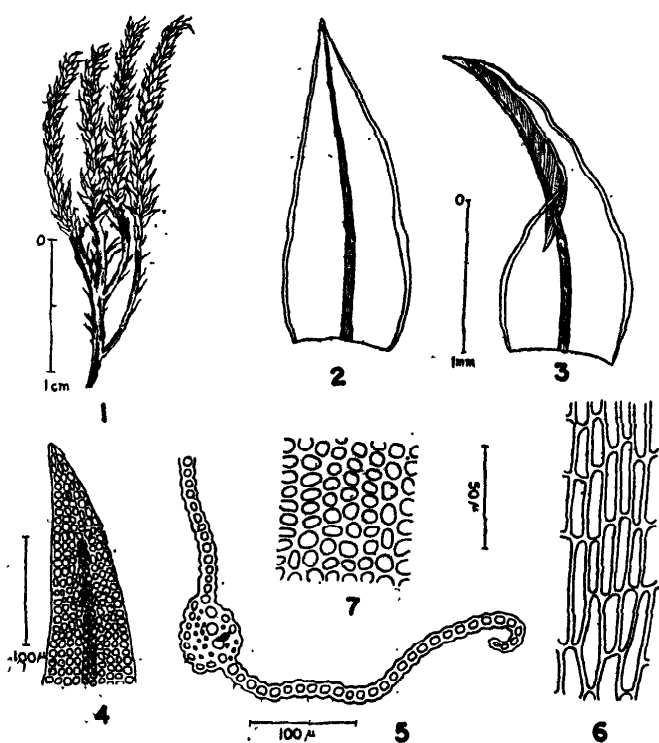


Plate I: *Barbula asperifolia* Mitt.

Figs. 1-7: 1. Plant. 2 & 3. Leaves. 4. Leaf apex. 5. T. S. leaf. 6. Basal cells. 7. Laminar cells.

thickened, more or less tortuous or pitted, sparsely papillose, 3-6 rows towards margin quadrate. Capsules not seen.

Close tufts or cushions of reddish brown colour on rock by the side of stream.

WESTERN HIMALAYAS: Seqj, Bhadrawa, Dt.,

Jammu State, 3000 m, Aug. 23, 1962, Vohra & Wadhwa 145 (CAL).

Anomobryum auratum (Mitt.) Jaeg. in Ber. naturw. ges. St Gallen 1873-74: 142, 1875. *Bryum auratum* Mitt. in J. Linn. Soc. (Bot.) Suppl. 1: 67, 1859.

Densely tufted, glossy yellowish brown or brownish green. Stem slender, julaceous, branched, 2-4 cm tall with 1 or 2 subfloral innovations, innovations 1-1.5 cm tall. Leaves when dry hardly changed, when moist erect, imbricate, $1 \times 0.6-0.7$ mm, concave, oval, apex rounded or obtusely

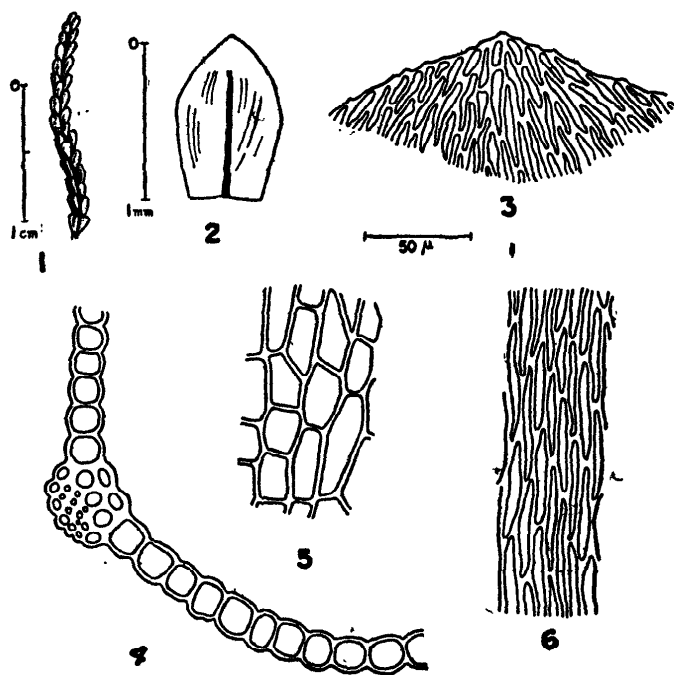


Plate II: *Anomobryum auratum* (Mitt.) Jaeg.

Figs. 1-6: 1. Plant. 2. Leaf. 3. Leaf apex. 4. T. S. leaf. 5. Basal cells. 6. Laminar cells.

pointed; margin erect, toothed in the upper half, entire below; nerve weak, narrow, yellowish, ceasing much below the apex, usually $\frac{1}{4}$ to $\frac{2}{3}$ the length of the leaf; cells in the upper half narrowly linear-vermicular or linear-rhomboidal, incrassate $5.8 \times 25-60\mu$, downwards widely rhomboidal, near the base wide, rectangular-rhomboidal to hexagonal, $15-25 \times 30-60\mu$, towards margin almost quadratis. Capsules not seen.

Large close tufts on moist rock under shade. Closely related to *Anomobryum kymbifolium* (Lindb.) Broth., in having rudimentary inner peristome but differs in tall size of the plant and broadly oval leaves.

WESTERN HIMALAYAS: Lal Tibba, Mussoorie, 2500 m, March 21, 1963, Vohra & Wadhwa 431 (CAL).

Aerobryidium filamentosum (Hook.) Fleisch. in Nat. Pfl. 1: 821, 1906. *Neckera filamentosa* Hook. Musci Exot. 2: 158, 1819.

In extensive carpets, bright golden green to

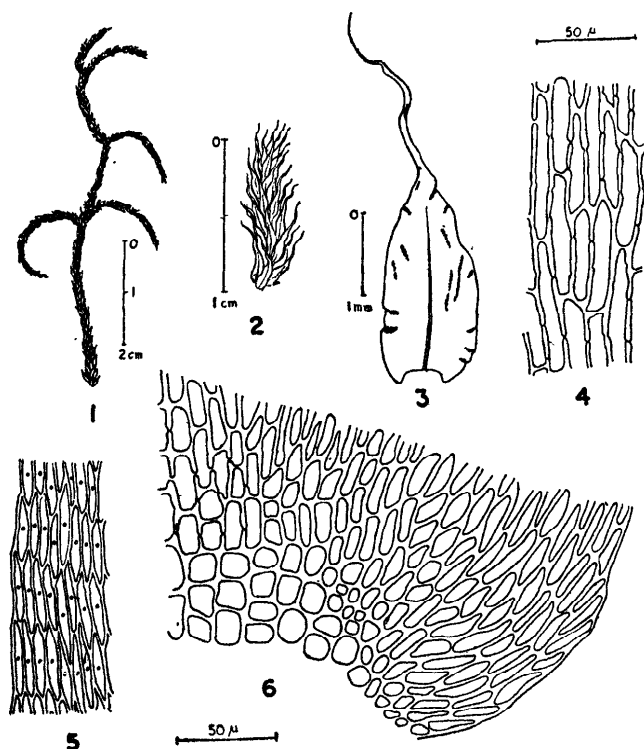


Plate III: *Aerobryidium filamentosum* (Hook.) Fleisch.

Figs. 1-6: 1. Plant. 2. Apical portion of plant. 3. Leaf. 4. Basal cells towards nerve. 5. Laminar cells. 6. Basal cells towards margin.

brownish green Primary stem prostrate, dark brown, about 20 cm long, secondary stems 10-15 cm long, thick and robust, irregularly pinnately branched. Leaves on drying little changed, when moist erecto-patent to spreading, imbricate auriculate, $3-4 \times 1$ mm, concave, ovate-oblong, suddenly contracted above into a long piliferous acumen almost equal in length to lamina, acumen strongly flexuose at base, undulate towards apex; margin entire, erect; nerve weak and narrow, concolorous, vanishing fairly below the acumen; cells narrowly linear with acute ends $5-6 \times 40-50 \mu$, with a single papilla over the lumen, at base towards nerve rectangular, $8-14 \times 40-100 \mu$, incrassate, pitted, gradually becoming short and narrowly linear towards margin, a patch of cells at insertion quadrate, but do not form well defined alar cells. Capsules not seen.

Widely spreading dense mats on the bark of *Quercus*.

WESTERN HIMALAYAS: Chakrata, Dehra Dun Dt., 2500 m, March 25, 1963, Vohra & Wadhwa 563 (CAL).

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A NEW GENUS OF ARACEAE FROM MADRAS STATE, INDIA

Paella Ramam. & Seb. gen. nov.

Pertinent ad *Araceas*, trib. *Areas*, subtrib. *Arinas* affinisque est *Therriophonio* Blume, a quo tamen differt foliis radicalibus, lineari-lanceolatis vel oblongo-lanceolatis; limbo spathae acuminato, haud contorto; spadice elongata exserta, eiusque appendice filiformi, ad apicem fastigata, ad basin non truncata sed gradatim in inflorescentiam mergente; floribus neutris inferioribus longis, subulatis, superioribus vero brevibus filiformibus; connectivo non rostrato. Affinis quoque est *Biaro*, a quo tamen differt ovulis 5-9 apicalibus et basalibus.

Herbae tuberosae. *Folia* petiolata, lineari-lanceolata vel oblongo-lanceolata, integra, ad basin vaginantia. *Spatha* tubo brevi praedita infra convoluta, constricto ad os, limbo aperto, late ovato, apice acuminato non contorto. *Spadix* gracilis, exserta, appendice filiformi, non truncata ad basin, sed gradatim mergente in inflorescentiam. *Flores masculini et foeminei* bene disjuncti floribus neutris.

Flores masculini aggregati in massam cylindricam angustam, perianthio nullo, staminibus 1-2 liberis, antheris sessilibus vel sub-sessilibus globosis dehiscentibus per porum terminalem, connectivo tenui non rostrato. *Flores foeminei* dispositi in unum verticillum ad basin spadice, liberi, vulgo 5-7, rarius plures, perianthio nullo, ovario uni-loculato, stigmatibus sessilibus, pulvinato, ovulis 5-9 basalibus et apicalibus orthotropis. *Fructus* baccatus, globoso-ellipsoideus, erectus et pendulus. *Semina* globoso-ellipsoidea, apiculata.

Species typica sequens.

Paella sivagangana Ramam. et Seb. spec. nov.

Herbae tuberosae; tubere subgloboso, 1-2 cm diam. *Folia* petiolata, radicalia, longitudinis variae, ad 50 cm longa, petiolo ± 18 cm longo ad basin vaginante; lamina lineari-lanceolata vel oblongo-lanceolata, ad basin attenuata, glabra; nervis haud conspiciis, lateralibus quidem e nervo medio emergen-