

# SOME NOTEWORTHY ADDITIONS TO THE LICHEN FLORA OF INDIA AND NEPAL

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During the course of investigations on the lichens from India and Nepal preserved in the herbarium of the author, a large number of species have been found which were not reported from these countries in any of the earlier publications. The majority of these species are crustose types growing in saxicolous or corticolous habitats, while a few are foliicolous. The species fall into three principal distribution types: (1) those that occur in the moist temperate-alpine regions of the eastern and central Himalayas and show affinity with the boreal lichen flora, (2) those from the arid temperate-alpine regions of the North-Western Himalayas exhibiting affinity with the lichen flora from arid Central China and the arid Rocky Mountains of North America, and (3) those from the subtropical parts of India, widely distributed in the other pantropical regions of the world. Unless otherwise stated the number following the name of the collector(s) refers to the number the specimen bears in the herbarium of the author.

## VERRUCARIACEAE

*Staurothele clopima* (Wahlenb.) Th. Fr. N. W. Himalayas, Kangra district, Spiti valley, alt. 12,000 ft., 1952, O. A. Hoeg 1586. In association with *Caloplaca* and *Acarospora* species on siliceous stones. Thallus in small groups of warty areoles, mostly fertile. Hymenium with characteristically paired ellipsoid algal cells. Spores two in the ascus, red-brown, many-celled, muriform, ovoid,  $32-48 \times 16-24 \mu$ .

## DIPLOSCHISTACEAE

*Diploschistes cinereocaesius* (Sw.) Vain. South India, Ootacamund-Mysore road, at 8-9 miles from Ootacamund, alt. 7,000 ft., 1959, Awasthi 4543. On hard soil by roadside. Thallus K-, Cl+ red. Hymenium 60-70  $\mu$  thick. Asci 8-spored; spores muriform with  $3-\frac{4}{4}$  transverse septa and 1-2 longitudinal septa, (16)  $18-24 \times 10-12 \mu$ .

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## ASTEROTHYRIACEAE

*Gyalectidium filicinum* Muell. Arg. South India, Madurai district, below Sacred Heart College, Shembaganur, along the stream, alt. 5,800 ft., 1959, *Awasthi 4381*. On upper side of the leaves of shrubs in shade. Thallus minute, ca. 3 mm. in diam., pale waxy, smooth and shining, with a plectenchymatous cortex of a single cell layer; algal cells 4–6  $\mu$ . Apothecia immersed, 0.1–0.3 mm. in diam., concave, pale; hymenium 45–55  $\mu$  thick, with groups of algal cells within. Asci single-spored; spores colorless, many-celled, muriform, ovoid, 32–40  $\times$  16–22  $\mu$ .

## COLLEMACEAE

*Collema polycarpon* Hoffm. S. W. India, Maharashtra, Pratapgarh Fort, 1959, *Awasthi 4048*. On moist shady side of the stone wall of the fort. Thallus ascendent, subdichotomously divided and narrowly laciniate lobate, abundantly fertile. Hymenium 80–90  $\mu$  thick; asci 8-spored; spores 2-celled, colorless, ellipsoid, 11–15  $\times$  3.5–4  $\mu$ .

*Collema subnigrescens* Degel. South India, Ootacamund, Botanical Garden, alt. 7,000 ft., 1959, *Awasthi 4444-A*; S. W. India; Maharashtra, Panchgani near Poona, 1959, *Awasthi 4054*. Thallus thin, ridged-pustulate, non-isidiate. Spores elongate, broader at one end, 40–60  $\mu$  long. It is likely that some of the specimens reported in earlier publications from India under the name of *Collema nigrescens* may actually belong to *C. subnigrescens*.

*Collema rysssoleum* (Tuck.) Schneid. South India, Madurai district, Shembaganur, Perumal Coffee plantation, alt. 5,300–5,700 ft., 1959, *Awasthi 4356*. Thallus pustulate-ridged. Asci 8-spored; spores ellipsoid-fusiform, 4–6-celled, broadest in the middle, 24–40  $\times$  6–8  $\mu$ .

*Dendriscoaulon umhausensis* (Auersw.) Degel. South India, Madurai district, Kodaikanal-Berijam road, alt. 7,500 ft., 1959, *G. Foreau and Awasthi 4209*. On tree trunk. Thallus fruticulose, caespitose; fronds terete cylindrical, dichotomously divided into short dendroid branchlets; pale grey below and bluish brown in apical regions. Sterile. Compares with the description of the var. *dendroides* (Nyl.)

## PANNARIACEAE

*Pannaria stylophora* Vain. South India, Ootacamund, Botanical Garden, alt. 7,000 ft., 1959, *Awasthi 4450*. On bark of tree. Thallus pale grey, laciniate with cylindrical, short, dark-brown isidia and densely branched rhizinate, blue-black hypothallus. Sterile.

*Coccocarpia cronia* (Tuck.) Vain. South India, Travancore, Quilon, 1953, *O. A. Hoeg 2595*; Madurai district, Kodaikanal, alt. 7,000 ft., 1959, *G. Foreau*

and *Awasthi* 4215. On bark of tree. Thallus bluish grey, isidiate, hypothallus blue-black, Sterile.

#### LECIDEACEAE

*Bacidia rosella* (Pers.) DeNot. N. W. Himalayas, Kangra district, Manali, alt. 6,500 ft., 1952, *O. A. Hoeg* 1507. On bark of deciduous tree. Thallus thin, chunky to subrimulose, greenish grey, K-. Apothecia numerous, pale flesh-colored, up to 1 mm. in diam., thinly pruinose. Hypothecium hyaline to pale. Spores colorless, 14-18-celled, acicular,  $55-75 \times 3-4 \mu$ .

*Bacidia personata* Malme. South India, Madurai district, Kodaikanal-Berijam road, near 9th mile from Kodaikanal, alt. 7,500 ft., 1959, *G. Foreau* and *Awasthi* 4190. On bark of tree. Apothecia externally like *Megalospora versicolor*, but smaller (1 mm. in diam.); margin thick, persistent. Hypothecium hyaline; hymenium 90-110  $\mu$  thick; epithecium K+ violet. Asci 8-spored; spores colorless, 16-22-celled, acicular,  $50-70 \times 3.5-4 \mu$ .

*Catillaria intermixta* (Nyl.) Arn. South India, Ootacamund-Mysore road, at 8-9 miles from Ootacamund, alt. 7,000 ft., 1959, *Awasthi* 4482. On bark of tree. The specimen shows variation in the negative K-reaction in the thallus and slightly larger ( $20-25 \times 7-9 \mu$ ) spores. The other characters, such as black apothecial margin, plane to convex disc, and red-brown hypothecium turning violet-purple by K, conform to the species.

*Catillaria semecarpi* Vain. South India, Madurai district, below Sacred Heart College, Shembaganur, along the stream, alt. 5,800 ft., 1959, *Awasthi* 4383. On upper side of the leaves of shrub in shade. Thallus in minute patches, thin, grey-white to brownish, non-sorediate. Apothecia 0.1-0.3 mm. in diam., constricted at base, pale orange to pale brown, smooth, epruinose. Spores colorless, 2-celled, ellipsoid,  $12-15 \times 4-5 \mu$ .

*Lecidea atrobrunnea* (Ram.) Schaer. N. W. Himalayas, Kangra district, Spiti and Chandra valleys, alt. 11,500-14,000 ft., 1952, *O. A. Hoeg* 1593, 1683, 1685 and 1720. On quartzite stones. Thallus variable in the size of the squamules and the lacunose tubercled condition on the surface in the different specimens and in the same specimen at centre and periphery. Thalli abundantly fertile. Medulla I+ blue. Spores colorless, single-celled,  $7-10 \times 4-5 \mu$ .

*Lecidea auriculata* Th. Fr. E. Nepal, Topkegola, Thagalabhanjyang, alt. 15,500 ft., 1953, *Awasthi* 2363. On quartzite stones. Thallus restricted in the cracks and crevices of the stone, somewhat depauperate, and eventually leading to evanescence. Apothecia up to 1.5 mm. in diam., plane to convex, black; exciple red-brown, K+ violet. Spores colorless, single-celled, ellipsoid,  $7-8 \times 4 \mu$ .

*Lecidea coarctata* (Turn.) Nyl. N. W. Himalayas, Almora district, Askote,

near Barakote, alt. 5,500 ft., 1954, *Awasthi 2697*. On siliceous stones. Thallus whitish grey, fissured-areolate; medulla K-, Cl+ orange-red, I-. Apothecia numerous, sunken to sessile, up to 0.4 mm. in diam., often covered with a fleck of thalline tissue; disc red-brown when moist, epruinose. Spores colorless, single-celled, ovoid-ellipsoid, 15-18 × 8-10 μ. The species has been treated as a *Lecanora* by various workers including Zahlbruckner. The author has followed Th. Fries, Vainio, and Hillmann and Grummann in treating it as a *Lecidea*. The above-named specimen resembles var. *elacista* (Ach.) Th. Fr.

*Lecidea elegantior* H. Magn. (syn. *Lecidea elegans* (Th. Fr.) Vain.) E. Nepal, Topkegola, Sajupokhari, alt. 15,500 ft., 1953, *Awasthi 2430 and 2431*. On stones. Thallus with a black hypothallus, thick, cracked areolate, with tubercled cephalodia. Cortex orange colored or glaucous grey, Cl+ reddish (the orange color seems to have developed secondarily during storage). Apothecia 2-4 mm. in diam., ± immersed, exciple and hypothecium carbonaceous black. Spores single celled, colorless, ovoid-ellipsoid, 20-24 × 10-12 μ.

*Lecidea macrocarpa* (DC.) Steud. E. Nepal, Rakshe-Ethung, near hilltop, alt. 9,000 ft., 1953, *Awasthi 2126*. On gneiss. Thallus cracked areolate, ashy grey to dark-bluish grey, K-, Cl-, I-. Apothecia up to 1.2 mm. in diam., eventually convex, black, smooth, epruinose. Epithecium bluish olive-brown; hypothecium demarcated into an upper (subhymenial) hyaline part and a lower, thicker, brown-black part. Spores colorless, single-celled, ovoid-ellipsoid, 16-18 × 8-10 μ.

*Lopadium leucoxanthoides* (Vain.) A. Zahlbr. South India, Madurai district, Kodaikanal-Berijam road, at 8 miles from Kodaikanal, alt. 7,500 ft., 1959, *G. Foreau and Awasthi 4189, 4193 and 4196*; Ootacamund-Mysore road, at 8-9 miles from Ootacamund, alt. 7,000 ft., 1959, *Awasthi 4470*. On bark of tree. Thallus crustose, ashy grey, K+ yellow. Apothecia 1.5 (2) mm. in diam., Epithecium pale brown, K+ violet; exciple red-brown, with dense, brown, irregular inclusions, K+ blue to violet-blue. Asci single-spored; spores colorless, muriform with 15-25 transverse septa and 4-8 longitudinal septa, ovoid, 60-90 × 20-40 μ.

*Lopadium subcoeruleascens* A. Zahlbr. South India, Madurai district, below Sacred Heart college, Shembaganur, along the stream, alt. 5,800 ft., 1959, *Awasthi 4384*. On upper side of leaves of shrubs in shade. Thallus scaly, crust-like, easily separable as papery sheet from the substratum, smooth, greyish white. Apothecia sessile, up to 0.4 mm. in diam.; disc plane, bluish black to black; margin thick, entire, inflexed in young stages. Epithecium partially bluish-aeruginose and partially hyaline, the aeruginose parts projecting into the hymenium; hypothecium 60-70 μ, aeruginose-brown; exciple thick, plectenchymatous; central part of apothecial base blue. Asci single-

spored; spores colorless, many-celled, muriform, ovoid-ellipsoid,  $40-90 \times 12-24 \mu$ . The above-mentioned specimen shows resemblance to *Lopadium puiggarii* Muell. Arg. in the thickness of the hypothecium and the bluish coloration at the base of the apothecium.

*Sporopodium xantholeucum* (Muell. Arg.) A. Zahlbr. South India, Madurai district, below Sacred Heart College, Shembaganur, along the stream, alt. 5,800 ft., 1959, *Awasthi* 4382. On upper side of leaves of shrubs in shade. Thallus thin, smooth to minutely verrucose; often thalli confluent. Apothecia numerous, up to 1 mm. in diam., plane to convex, dark red-brown, pruinose; pruina denser in young stages; margin in early stages verrucose pruinose, later somewhat thinner and  $\pm$  crenulate. Epithecium with sparsely distributed algal cells. Asci single-spored; spores colorless, many-celled, muriform, ovoid-ellipsoid,  $60-104 \times 12-16 \mu$ . The verrucose margin in mature stages appears somewhat crenulate and may thereby be confused with the crenulate margin of *S. argillaceum* (Muell. Arg.) A. Zahlbr., which however has epruinose apothecia and nonverrucose thallus.

*Toninia coeruleonigricans* (Lightf.) Th. Fr. N. W. Himalayas, Kashmir, Srinagar, Shankaracharya hill, near temple, alt. 6,000 ft., 1953, *Awasthi* 2640. On sloping ground among mosses. Thallus forming suborbicular patches with the variously lobed imbricated, olive-brown to bluish olive-brown lobules, thinly pruinose. Apothecia frequently present. Spores colorless, 2-celled, elongate-fusiform,  $14-18 \times 3-4 \mu$ . This is the first record of the genus from India.

*Acarospora bullata* Anzi. N. W. Himalayas, Kangra district, near Dankar Gompha and Pin river, alt. 12,000 ft., 1952, *O. A. Hoeg* 1459 and 1627. On calcareous conglomerate rocks. Thallus firmly affixed to the substratum, effigurate, shining olive-brown, K-, Cl+ reddish. Apothecia present, depressed. Asci many-spored; spores colorless, single-celled, ellipsoid,  $3-5 \times 1.6 \mu$ .

*Acarospora strigata* (Nyl.) Jatta. N. W. Himalayas, Kangra district, Spiti, Dankar Gompha and Po village, alt. 12,000 ft., 1952, *O. A. Hoeg* 1551 and 1562. On calcareous stones. Thallus subsquamulose areolate, bluish white, thickly pruinose, often reticularly deeply fissured, K-, Cl-, Pd-. Apothecia few,  $\pm$  immersed. Spores many in the ascus, colorless, single-celled,  $4-5 \times 3 \mu$ . This species is considered by Dr. W. A. Weber as merely an environmental modification of the cosmopolitan *A. smaragdula* (Wahlenb.) Th. Fr.

*Glypholecia scabra* (Pers.) Muell. Arg. N. W. Himalayas, Kangra district, Pin and Spiti river valleys, alt. 12,000 ft., 1952, *O. A. Hoeg* 1580 and 1583. On stones. The two specimens show marked variation in their habits. Specimen number 1583 is typically peltate, up to 4 cm. in diam.; lobes are thick, rimu-

lose, and fertile with mature apothecia. The thallus is much thicker in comparison to the specimens of this species from Rocky Mountains and Arizona. The other specimen (no. 1580) has its thallus somewhat effigurate, adnate to the substratum for the greater part on the underside. This difference may be due to habitat conditions only. The genus is here reported for the first time from India.

#### PERTUSARIACEAE

*Pertusaria bryontha* (Ach.) Nyl. E. Nepal, Topkegola-Thagalabhajyang, alt. 14,000-14,500 ft., 1953, *Awasthi 2357*. Over decaying mosses. Thallus granular verrucose, white, K-, Cl-. Apothecia up to 1.5 mm. in diam.; disc brown to dark brown. Asci single-spored; spores colorless, single-celled, oblong-ovoid,  $155-270 \times 40-70 \mu$ .

#### LECANORACEAE

*Haematomma ventosum* (L.) Mass. E. Nepal, Sajupokhari near Topkegola, alt. 15,000 ft., 1953, *Awasthi 2426*. On sheltered side of non-calcareous boulder. Thallus distinctively thick, wrinkled-warty-verrucose, greyish sulphur-colored. Apothecia crowded, semi-immersed; disc red to red-brown; epithecium K+ violet-purple.

*Lecanora alphoplaca* (Wahlenb.) Ach. N. W. Himalayas, Kangra district, Kulu, alt. 4,500 ft.; Chandra valley, alt. 11,000 ft., 1952, *O. A. Hoeg 1460 and 1740*; Kashmir, Srinagar, Shankaracharya hill, alt. 6,000 ft., 1953, *Awasthi 2637*. On stones, chiefly on micaschistose. Thallus rosette-like, effigurate lacinate, the peripheral laciniae subcylindrical, elongated and narrow, ashy grey to ochraceous red-brown, pruinose, K+ scarlet-red (with formation of stellate crystals). Apothecia initially aspicilioid. Spores colorless, single-celled,  $11-13 \times 6-8 \mu$ .

*Lecanora atra* (Huds.) Ach. South India, Madurai district, Kodaikanal-Berijam road, nearly 8 miles from Kodaikanal, alt. 7,500 ft., 1959, *G. Foreau and Awasthi 4198*. On bark of tree. Thallus ashy grey to pale grey, soft verrucose, not areolate, hypothallus whitish. Apothecia numerous, sessile, up to 1.5 mm. in diam., black, smooth and shining, epruinose; margin prominent, entire to sulcate. Epithecium violet-brown; hymenium reddish violet (pale-reddish in thin section), K+ violet; hypothecium violet-brown. Spores colorless, single-celled, ovoid-ellipsoid,  $10-14 \times 6-8 \mu$ . This specimen is identical with a specimen from Mexico collected by C. G. Pringle, no. 36 (in Herb. Univ. Colorado, no. S-19234).

*Lecanora caesiocinerea* Nyl. N. W. Himalayas, Kangra district, Chandra valley, Chatru, alt. 11,000 ft., 1952, *O. A. Hoeg 1741*. On rocks. Thallus ashy

grey to bluish ashy grey, lightly pruinose, areolate; areoles unequally thickened, 0.5–1 mm. thick; medulla K–, I–. Apothecia up to 0.7 mm. in diam., dark brown to black, epruinose. Spores colorless, single-celled, ovoid, 18–24 × 10–13  $\mu$ .

*Lecanora flavida* Hepp. N. W. Himalayas, Tehri Garhwal, near Purola, alt. 5,500 ft., 1951, Awasthi 881. On calcareous sandstone. Thallus rimulose-areolate, smooth, pale to pale grey. Apothecia numerous, initially sunken, later crumpled, up to 0.3 mm. in diam., epruinose; disc brown-black. Spores colorless, single celled, oval-ellipsoid, 10–13 × 5–6  $\mu$ . The specimen agrees well with Malme Lich. Suec. Exsic. no. 847. The spores in this Indian specimen are slightly smaller in comparison to the dimensions (12–18 × 7–11  $\mu$ ) given by Migula (1929, p. 252) for European specimens.

*Lecanora maculata* H. Magn. N. W. Himalayas, Kangra district, Muth, alt. 14,000 ft., 1952, O. A. Hoeg 1592. On stones. Thallus unequal tubercle-like, thick, convex areoles, dark brown to olive-brown. Apothecia singular in the areoles, thickly pruinose. Mature asci infrequent; when present 2–3-spored; spores colorless, single-celled, ovoid, 25–28 × 16–20  $\mu$ .

*Lecanora melanophthalma* (Ram.) Ram. N. W. Himalayas, Kangra district, Spiti and Chandra valleys, alt. 11,500–14,000 ft., 1952, O. A. Hoeg 1591, 1674 and 1709. On siliceous stones. Thallus initially monophyllous, later subpolyphyllous by lobing and convolutions of the lobes, pale to pale brown above and bluish brown underneath; the thickness variable, depending on the age and part of the thallus. Medulla Pd+ yellow. Apothecia greenish brown to brown-black, pruinose.

*Lecanora peltata* (Ram.) Steud. N. W. Himalayas, Kangra district, Chotai Sigrī, alt. 12,000 ft., 1952, O. A. Hoeg 1542. On stones. Thallus monophyllous, peltate, with a thick umbilicus, broadly lobed, up to 3.5 cm. in diam., often convoluted and folded and seemingly polyphyllous; thickness centripetally more, at periphery 0.5 mm.; greyish-pale above and blue-black underneath. Apothecia numerous, initially sunken, later erumpent, sessile, 0.5–1 (2.5) mm. in diam.; disc dark brown. Spores colorless, single-celled, subglobose to oval, 7–9 × 6–7(8)  $\mu$ . This specimen with broad lobes and subglobose spores compares favorably with the description of a Central Chinese species, *Lecanora regalis* H. Magn., which has been retained by Poelt (1958) within the variability of *L. peltata*.

#### CALOPLACACEAE

*Caloplaca cerina* var. *stillicidiorum* (Vahl) Th. Fr. Kashmir, Srinagar, Shankaracharya hill, alt. 6,000 ft., 1953, Awasthi 2640-A. Over decaying mosses, associated with *Toninia coeruleonigricans*. Thallus ashy white to grey, apothecia pale brown, epruinose, with persistent pruinose margin.

*Caloplaca murorum* (Hoffm.) Th. Fr. N. W. Himalayas, Kangra district, Spiti, Pin and Taktsi river valleys, alt. 12,000 ft., 1952, *O. A. Hoeg 1584, 1654, and 1675*. On stones and rocks, some calcareous; associated with *Acarospora* species. Closely related to *C. elegans* but distinguished by the much smaller thallus; centrally areolate verrucose; marginal laciniae minute, plane, smooth, subpruinose, and adnate to the substrate.

*Caloplaca trachyphylla* (Tuck.) A Zahlbr. N. W. Himalayas, Kangra district, Kaze, alt. 12,000 ft., 1952, *O. A. Hoeg 1650*. On calcareous stones. This species was originally described as a variety of *C. elegans* by Tuckerman and has so far been known from the Rocky Mountain area only. He distinguished it on the basis of intermediate characters between *C. elegans* and *C. murorum*. The Rocky Mountain specimens have a well-developed suborbicular thallus, closely adnate to the substrate. The upper side is tuberculate verrucose, and laciniae are radiating but compact and adglutinated. The specimen from N. W. Himalayas does not show a good development but agrees well in the tuberculate nature of the laciniae and adnation to the substrate. The spores of the Rocky Mountain specimens have rounded cell lumina and a thick middle septum, while the Himalayan specimen has oblong cell lumina. This variation, however does not seem of much taxonomic importance as in *Caloplaca* such variations are frequently observed in the same species or same specimen. In the light of the similarity of the lichen flora of Central China and Rocky Mountains, it may be worth while to remark here that the description of *Caloplaca hedinii* H. Magn. from Central China compares favorably with that of *C. trachyphylla*.

#### BUELLIACEAE

*Buellia aethalea* (Ach.) Th. Fr. N. W. Himalayas, Tehri Garhwal, Sirasu hill top, near Purola, alt. 7,000 ft., 1951, *Awasthi 924*; Simla, Jakhu hill top, alt. 7,500 ft., 1952, *Awasthi 1434*. On siliceous stones. Thallus grey to dark grey, cracked areolate; medulla K+ red (followed with the formation of stellate crystals), I+ blue, or - (in form a), Pd+ yellow. Apothecia sunken, 0.2-0.6 mm. in diam., brown black, epruinose. Spores brown, 2-celled, ovoid-ellipsoid, 16-18 × 7-9 μ. The medulla in specimen no. 1434 is I-, and thereby is comparable to f. *sororioides* (Erichs.) Grumann.

*Buellia geophila* (Sommerf.) Lyngb. E. Nepal, Topkegola, Thagalabhanjyang, alt. 14,000-15,500 ft., 1953, *Awasthi 2359 and 2375*. On mossy soil or decaying mosses and grass. Thallus granulose, K+ yellow, Cl-. Exciple brown; hypothecium brown. Spores brown, 4-celled, ellipsoid, 30-40 × 10-14 μ.

*Buellia papillata* (Sommerf.) Tuck. E. Nepal, Topkegola, Sajupokhari, alt. 15,500 ft., 1953, *Awasthi 2420*. On ground among mossy or humus soil over



stone. Thallus granular verrucose. Apothecia later tubercled. Spores brown, 2-celled,  $20-26 \times 8-11 \mu$ .

*Buellia pulchella* (Schröd.) Tuck. E. Nepal, Topkegola, Sajupokhari, alt. 15,500 ft., 1953, *Awasthi 2416*. On humus soil along with mosses. Thallus greenish pale, squamulose; squamules turgid, thick, crowded, and imbricated, K—, Cl—, Pd—; hypothallus thick, brown-black. Apothecia numerous, up to 3 mm. in diam., plane to convex, eventually lobed and tubercled, epruinose. Spores brown, 2-celled, ovoid-ellipsoid,  $12-16 \times 7-9 \mu$ .

*Rinodina kansuensis* H. Magn. N. W. Himalayas, Kangra district, Junction of Pin and Spiti valleys, alt. 12,000 ft., 1952, *O. A. Hoeg 1566*. On calcareous stone. Thallus of small fragments only, effigurate, ashy white, pruinose. Apothecia up to 1 mm. in diam., black, sparingly pruinose. Spores brown, 2-celled, ovoid-ellipsoid,  $18-20 \times 9-11 \mu$ , a raised triangular band-like thickening at the septum, which becomes distinct in K.

*Rinodina turfacea* (Wahlenb.) Koerb. E. Nepal, Topkegola, Thagalabhanjyang, alt. 14,500–15,000 ft., 1953, *Awasthi 2376*. On ground and on decaying parts of grasses and mosses. Thallus granulose, ashy white to grey, K—. Apothecia crowded, up to 0.7 mm. in diam.; disc concave to plane, dark red to brown-black; margin entire, persistent, without oxalate crystals within. Spores brown, 2-celled, ovoid,  $22-32 \times 12-16 \mu$ .

#### SUMMARY

This paper deals with 43 species of lichens from India and Nepal which have been discovered as new reports for the area. Three genera — *Staurothele*, *Toninia* and *Glypholecia* — are also reported for the first time from India.

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