BULL. BOT. SURV. INDIA
Vol. 15, Nos. 1 & 2 : pp. 8-12, 1973

CONTRIBUTIONS TO THE XYLARIACEAE OF WESTERN INDIA—V

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ABSTRACT

This paper, fifth in the series, describes 13 species or sub-species of *Hypoxylon*, collected from forest areas of Western India, which include 3 species and one variety new to science.

Hypoxylon coorgiana Pande sp. nov. (Fig. 1)

Stromata semiglobose, sessile, constricted at base, surface ash grey to black, carbonaceous, white within, 0.5 to 1 mm in diam. 0.5-1 mm high. Perithecia few, globose, ostiolate, 480-640 × 640 μ. Ostiole papillate, black. Asci cylindric, long pedicellate in wall layers, paraphysate, 120-160 × 8-10 μ. Ascospores 8, monostichous, inequilateral to hat shaped, germ slit on plane side, smooth, oil globules absent, brown, 16 × 8-10 μ.

Habit: On dicot wood from Coorg collected by B. A. Ullasa (Sept. 1969), *A.M.H. No. 1529 (Holotype).

Stromata semiglobosa sessilia, constricto ad basis, superficia cinerea vel nigra, carbonacea, entostromata alba, 0.5-1 mm in diam., 0.5-1 mm alta. Perithecia pauca, globosa, ostiolata, 480-640 × 640 μ. Ostiola papillata, nigra. Asci cylindrici, stipite longe, paraphysetibus, 120-160 × 8-10 μ Ascosporae uniseriatae, inaequilateraliter vel pileiformae, brunneae 16 × 8-10 μ.

Remarks: Although the species somewhat resembles *H. quadratum* (Schw.) Ell. & Ev. it has hat shaped ascospores which character distinguishes it from *H. quadratum*. Besides, the ascospores are much smaller in size (16 × 8-10 μ) in the present species and 21-26 × 12-15 μ in *H. quadratum*).

H. microspora Pande sp. nov. (Fig. 2)

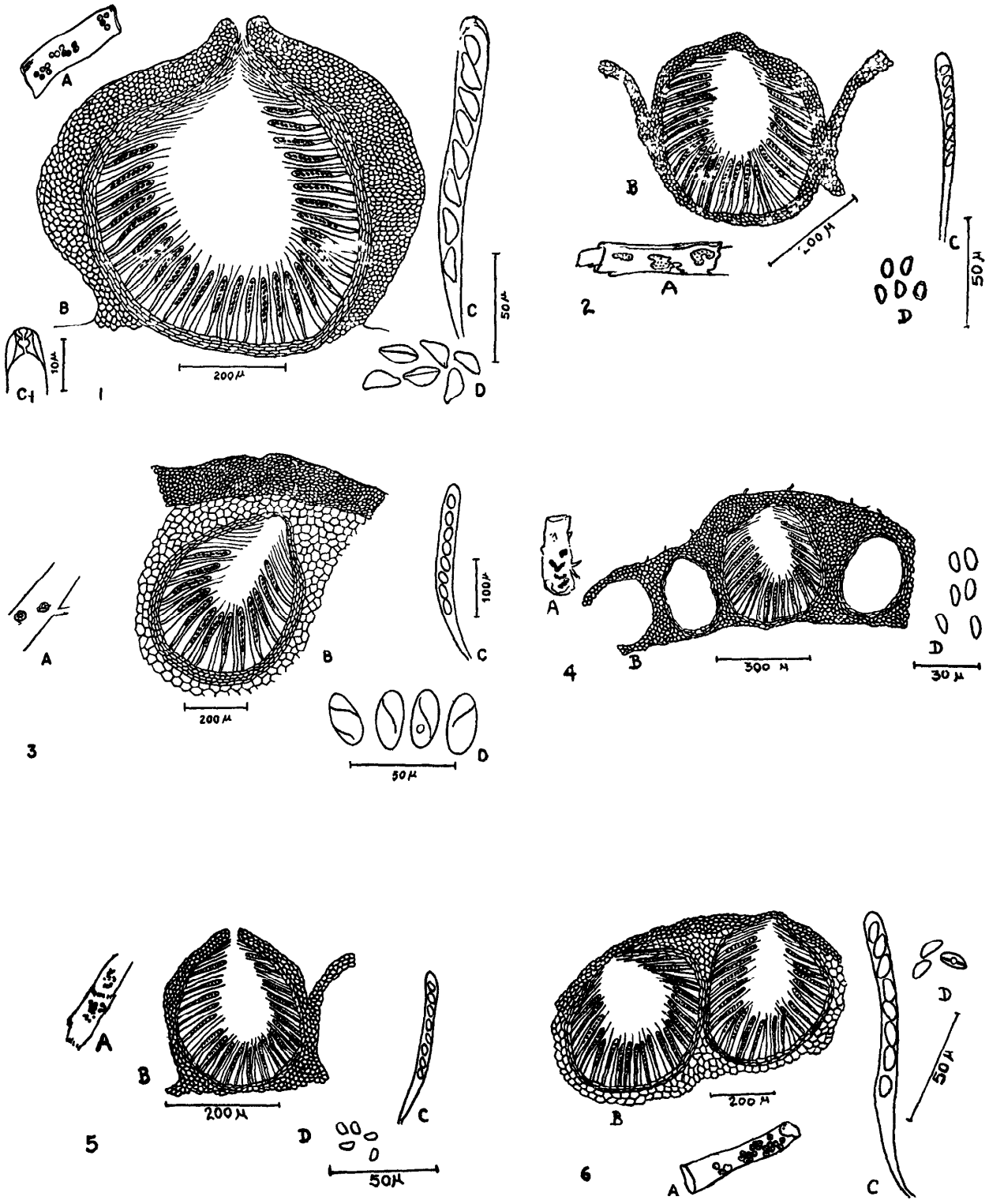
Stromata effuse, plane, very much irregular in outline, 1-8 × 0.5-1.5 cm and 1 mm thick. Ectostroma dark red to brown, turning black, entostroma brown, leathery. Perithecial elevations prominent. Perithecia globose, ostiolate, 280-380 × 280-350 μ. Ostioles umbilicate. Asci many, in wall layers, cylindric, pedicellate, thin walled, paraphysate, 96-108 × 4-5 μ. Ascospores 8, monostichous to diagonally arranged, light brown, oval, with prominent hyaline sheath, 6-8 × 4 μ.

Collected on (1) *Eugenia* sp. by D. N. Mhaskar on 11-3-1971 from Purandhar. A.M.H. No. 1530 (Holotype), (2) on dicot twigs collected by G. T. Joshi from Castle Rock, A.M.H. No. 1796.

Stromata effusa, plana, irregularia, 1-8 × 0.5-1.5 cm et 1 mm crassa. Ectostroma primum obscure rubra vel brunnea, deinde atra ; entostromata brunnea, coriacea, tumulis perithecialibus et ostiolis papillatis asperata. Perithecia globosa, ostiolata, 280-380 × 280-350 μ. Ostiolis umbilicatis. Asci numerosae, cylindrici, in paries strato, stipitati, tenuiter tunicatis, apparato apicalis, paraphysitibus, 96-108 × 4-5 μ. Ascosporae 8, uniseriatae vel oblique uniseriatae, brunneae, ellipticae, apicibus rotundatis, plerumque tunica hyalina conspicua circumdatae, 6-8 × 4 μ.

Remarks: This is described as a new species although allied in general to *H. rubro-*

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Contribution No. 433 from Mycology & Plant Pathology Dept.



1. *Hypoxylon coorgiana*. 2. *H. microspora*. 3. *H. spiralis*. 4. *H. diatrypeoides* var. *poonensis*. 5. *H. oodes*. 6. *H. notatum*. A. Habit. B. Section of the stroma showing perithecia, C. Asci, C_1. Ascus tip. D. Ascospores.

stromaticum Miller (Miller, 1961). It is based on the ascospore size, which are significantly smaller (6-8 × 4μ) than those of *H. rubro-stromaticum* (15-22.8 × 7-14μ).

H. spiralis Pande sp. nov. (Fig. 3)

Stromata erumpent, superficial, 2-4 mm in diam., 1-1.5 mm high, gregarious, subglobose, often constricted below, perithecial elevations not much prominent, black, from beginning. Perithecia many per stroma, globose, 880-960 × 880μ. Asci in wall layers, pedicellate, 200-240 × 8-12μ. Ascospores 8, ellipsoid, brown, monostichous, with spiral, hyaline, germ slit, 28-32 × 12-16μ.

Collected on wood of *Eugenia* sp. from Mahabaleshwar, collected by Mrs. Pande, Feb. 1972, A.M.H. 1797 (Holotype).

Stromata erumpentia, superficialia, 2-4 mm in diametro, 1-1.5 mm alta, gregaria, subglobosa, atra, constricto ad basis, tumulis perithecialibus et ostiolis papillatis asperata. Perithecia, plura, globosa, 880-960 × 880μ. Asci in paries strato, stipitati, apparato apicalis, 200-240 × 8-12μ. Ascosporae 8, ellipsoidae, brunneae, uniseritae, germ rima spiralibus 28-32 × 12-16μ.

Remarks: This fungus somewhat resembles temperate species *H. coherens* Pers. ex Fr. in morphology but differs in stromal features and is a tropical form. The ascospores in this species are characterised by possession of a spiral germ slit on their surface and hence the specific epithet 'Spiralis'.

H. diatrypeoides var. **poonensis** Pande var. nov. (Fig. 4)

Stromata erumpent, irregularly orbicular, isolated to gregarious, slightly pulvinate, sessile, 2-10 mm long, 1-3 mm wide, 0.5-1 mm thick, surface dark brown, rough or slightly tomentose, soft, entostroma brown to dark, perithecial elevations none. Perithecia globose, 320-380 × 280-400μ, ostilate. Asci cylindrical, pedicellate, thin-walled. Ascospores 8, brown, opaque at maturity, inequilateral, with rounded ends, oil globule absent, germ slit straight, 12-15 × 6-8μ.

Collected on stems of *Flacourtia* sp. by Mrs. Pande from Begadewadi, Poona, 20-6-1971, A.M.H. No. 1795.

Remarks: This fungus is distinct from *H. diatrypeoides* Rehm in having significantly smaller ascospores (12-15 × 6-8μ) as against those of the latter (15-24 × 8-10μ) and hence is described as a new variety.

H. oodes Berk. & Br. in J. Linn. Soc. 14: 122. 1873. (Fig. 5)

Stromata consisting of masses of perithecia almost free but united by a very thin stroma, 1-2 cm, with individual stromal groups, 1-5 mm in diam. Perithecia black, semiglobose, carbonous, 288-320 × 256-320μ, ostiole black. Asci cylindrical, pedicellate, paraphysate, 72-100 × 4-6μ. Ascospores monostichous, inequilateral, elliptic to elongate, dark brown, uniguttulate, with hyaline prominent sheath at both ends, germ slit hyaline, straight, 8-12 × 4-5μ.

Collected by (1) G. T. Joshi on *Bambusa* sp. from Coorg (Mysore State), October 1970, A.M.H. No. 1798, (2) by A. K. Pande on *Dendrocalamus* sp. from Castle Rock (Mysore) October 1970, A.M.H. 1799, (3) by D. N. Mhaskar on dicot wood, from Anmod, Castle Rock (Mysore), October, 1970, A.M.H. No. 1800.

Remarks: This species constitutes a new report to India.

H. notatum Berk. & Curt. in Grevillea 4: 50. 1875. (Fig. 6)

Stromata semiglobose, constricted below, isolated to gregarious, 3-5 perithecia per stroma, 0.5-1 mm, in diam. 0.5 mm high, pale grey at first, then turning dark brown with small punctate ostiole. Perithecia globose to semiglobose, 320-580 × 480-500μ. Asci cylindric pedicellate, paraphysate. Ascospores monostichous or obliquely monostichous, dark-brown, navicular to inequilateral, germ slit present, 12-15 × 6μ.

Collected by D. N. Mhaskar on (1) *Lantana camara* from Purandhar (Maharashtra), 11-3-1971, A.M.H. No. 1532, (2) *Dendrocalamus*

sp. from Mahabaleshwar (Maharashtra), collected by Mrs. Pande, A.M.H. No. 1533.

Remarks: It is an addition to the Fungi of India.

H. stygium (Lev.) Sacc. in Syll. Fung. 1: 379. 1882.

Stromata erumpent, superficial, irregular, applanate, indefinitely effused, black and carbonaceous, 0.5-5 × 0.5-1.5 cm or more, 0.5-1 mm thick. Perithecia small, globose, ostioles each in the centre of annulated disc, disc 0.3-0.4 mm in diam. Asci cylindrical, pedicellate, 80-100 × 4-6 μ. Ascospores 8, light brown, inequilateral, uniseriate, uniguttulate, 8-10 × 4-6 μ, with hyaline sheath.

Collected by B. A. Ullasa on dicot wood from Coorg, in October-November 1971, A.M.H. No. 1801.

Remarks: Agnihotrudu (1964) reported this species from Assam on wood of *Gliricidia sepium*. Previously, it was reported from Pusa (Bihar) by Butler & Sydow (1911). This species is reported for the first time from Western India.

H. mullerii Miller in Mycologia 25: 324. 1933.

Stromata convex, puvinate, 1-5 cm long and 1-3 cm wide, 0.5-1 cm high, brown, carbonaceous, perithecia peripheral, ovate to elongate, perithecial elevations small, ostioles minute, umbilicate. Asci disintegrated, ascospores lying free. Ascospores brown, inequilaterally elliptic, 10-12 × 4-6 μ.

Collected on decorticated wood, from Castle Rock in October 1970 by A. K. Pande, A.M.H. No. 1534.

Remarks: This species is an addition to the fungi of India.

H. rubiginosum Pers. ex. Fr. Summa veg. Scand. 384. 1849.

Stromata variable in shape and size depending on the substrate, indefinitely effuse, plane, 1-8 × 0.5-5 cm and 0.5-1 mm or more in thickness, erumpent, superficial, perithecial elevations pronounced, sometimes with almost free perithecia. Ectostroma rusty red brown changing to black at maturity. Entostroma brown. Perithecia globose or oblong, ostiolate, ostioles umbilicate, 288-400 × 288-320 μ. Asci cylindrical, pedicellate, paraphysate, 64-72 × 4 μ. Ascospores 8, brown, inequilaterally ellipsoid, obliquely monostichous, 10-12 × 4-6 μ.

Collected on (1) *Todalia asciatica* from Khandala by D. N. Mhaskar, 16-1-1971, A.M.H. No. 1802, (2) on Dicot wood from Jog Falls by V. G. Rao, 1-11-1971, A.M.H. No. 1803.

H. rubiginosum var. **tropica** Miller, Monograph, Hypoxylon, 1961.

This is the tropical form and is of common occurrence on woods of various plants. It differs from the species only in ascospore measurements which are 12-14 × 4-6 μ.

Collected on (1) wood from Castle Rock by A. K. Pande, Oct. 1970, A.M.H. No. 1804, (2) on *Carissa carandas* from Khandala by D. N. Mhaskar, 16-1-1971, A.M.H. No. 1535.

H. bovei Speg. in Bolet. Acad. Nac. Cienc. Cardoba 11: 201. 1887.

Stromata erumpent, superficial, globose or semiglobose, consisting of 7-15 perithecia, carbonaceous, dark brown to black, with ostiolar disc 0.9-1 mm or 5-18 mm when coalescent. Perithecia globose to ovate, 400-640 × 480-540 μ, ostiolar disc dialated with annulated margin 0.7-0.9 mm in diam. Ostioles finely papillate. Asci cylindrical, pedicellate, in wall layers, paraphysate, 80-120 × 4-6 μ. Ascospores 8, dark brown, inequilateral or slightly lunate, with hyaline germ slit, diagonally monostichous, or monostichous, 10-12 × 6 μ. Paraphyes abundant, filiform.

Collected on dead wood by B. A. Ullasa from Castle Rock (Mysore), October 1969, A.M.H. No. 1527.

H. bovei Speg. var. **microspora** Miller, l.c. 1961.

This is distinct from *H. bovei* Speg. in

having smaller ascospores which measure 6-8 × 4 μ as against *H. bovei* with 10-12 × 6 μ.

Collected on dicot wood from Coorg Forests (Mysore State) by B. A. Ullasa, A.M.H. No. 1528.

Remarks: Agnihotrudu (1964) reported *H. bovei* on *Albizia* sp. from Assam, which according to him may be actually belonging to *H. bovei* var. *microspora*. Recently Kar & Maity (1971) reported this variety from West Bengal.

H. nummularium var. **merrillii** (Bres.) Miller, l.c. 1961.

Stromata erumpent from the Bark or sometimes on decorticated wood, convex to flat, 3-12 × 4-6 mm. Ostioles finely papillate and punctate with age. Perithecia globose to oblong, 250-480 × 250-320 μ, embedded in stroma. Perithecial elevations none. Asci in wall layers, cylindric, pedicellate, paraphysate, 80-100 × 6-8 μ. Ascospores 8, dark brown, elliptic fusoid to elliptic, with obtuse ends, 8-12 × 4 μ.

Collected on dicot stems by D. N. Mhaskar at Castle Rock (Mysore), October 1970, A.M.H. No. 1794.

Remarks: This fungus, although reported from North East India, (Agnihotrudu, 1964), is an addition to fungi of Western India.

ACKNOWLEDGEMENTS

The author is thankful to Prof. M. N. Kamat for his keen interest and guidance and to the Curator, H.C.I.O., for supplying the herbarium material for comparative studies. Thanks are extended to the C.S.I.R. for financial assistance.

REFERENCES

AGNIHOTRUDU, V. Notes on Fungi from North-East India, XXII. Some species of *Hypoxylon* from Assam. *Mycopath Mycol. appl.* 23 : 111-115. 1964.

KAR, A. K. AND M. K. MAITY. Pyrenomycetes of West Bengal III. *Trans. Brit. Mycol. Soc.* 56(2) : 189-193. 1971.

MILLER, J. H. *A monograph of the World Species of Hypoxylon*. Univ. Georgia Press, 1961.