CZECH MYCOLOGY
Publication of the Czech Scientific Society for Mycology

Volume 48 December 1995 Number 3

The genus Rosellinia (Sphaeriales) from Peninsular India

ALAKA PANDE and V. G. RAO

Mycology & Plant Pathology Group, Division of Plant Sciences, Agharkar Research Institute,
G. G. Agharkar Road, Pune 411 004, India

Pande A. and Rao V. G. (1995): The genus Rosellinia (Sphaeriales) from Peninsular India – Czech Mycol. 48: 177–182

The paper describes four new species and three new records of Rosellinia (Sphaeriales, Xylariaceae) from Peninsular India.

Key words: Rosellinia acaciae, R. aquiloidea, R. lakshadweepensis, R. petriniae, Peninsular India.

Pande A. a Rao V.G. (1995): Rod Rosellinia (Sphaeriales) z indického poloostrova – Czech Mycol. 48: 177–182

Jsou popsány čtyři nové druhy a tři nové nálezy rodu Rosellinia (Sphaeriales, Xylariaceae) z indického poloostrova.

The genus *Rosellinia* de Not. is characterised in having mainly superficial, uniperitheciate stromata seated on a subiculum. The subiculum may be persistent or evanescent. Asci possess well developed amyloid plugs. Ascospores are surrounded by mucilaginous sheath or are provided with slimy caps on the spore ends. These characters separate *Rosellinia* from the allied genus *Hypoxylon* where stromata are usually multiperitheciate, embedded at base in the host tissue/substratum and without mucilaginous sheath or slimy caps on ascospores. In India the genus *Rosellinia* is represented by 35 species. During our studies on the "Ascomycetes of Peninsular India", we collected and examined several fresh collections as well as herbarium specimens of *Rosellinia*, of which four were found to be undescribed species while three were collected for the first time from India, thus constituting new reports for the country (Bilgrami et al. 1979, 1981, 1991; Mukerji and Bhasin 1986). These are described and illustrated here along with Latin diagnoses.

1. ***Rosellinia acaciae*** sp. nov. (Fig. 1a, 1b, 1c)

Subiculum heavy, brown, woolly. Stromata are with lower halves embedded in the subiculum, rounded, brown with dark conic ostiole, measure 1.0-1.2 mm in diam. Perithecia one per stroma, rounded. Ascal plugs prominent, amyloid, 4.2-7.0 μm in height with lower width 2.8-4.2 μm and upper width 4.2 μm. Ascospores brown, ellipsoid to lenticular with one end rounded other pinched, guttulate, mucilaginous sheath present, germ slit absent; measure 18.2-22.4 × 5.6-8.4 μm.

Collected on *Acacia arabica* Willd. at Ahmedpur (Maharashtra) AMH 2021 (Holotype); 9.IX.1971.

Subiculum densum, laneum, constructum e fibrillis ramosissimis brunneis. Stromata rotundata, brunnea, ex parte immersa in subiculum, ostiolo atro, conico; stromata magnit. 1.0-1.2 mm in diametro. Perithecia singularia per stroma, globosa; Apparatu apicali prominenti, amyloideo, magnit. ad basim 4.2-7.0 μm crasso et ad apicem 4.2 μm crasso. Ascosporae brunneae, ellipsoidae vel lenticulares, uniguttulatae, uno apice rotundato, altero apiculato, magnit. 18.2-22.4 × 5.6-8.4 μm; rima germinativa absens.

Collecta in *Acaciam arabicam* Willd. AMH 2021 (Holotypus); ad locum Ahmedpur (Maharashtra); 9.IX. 1971

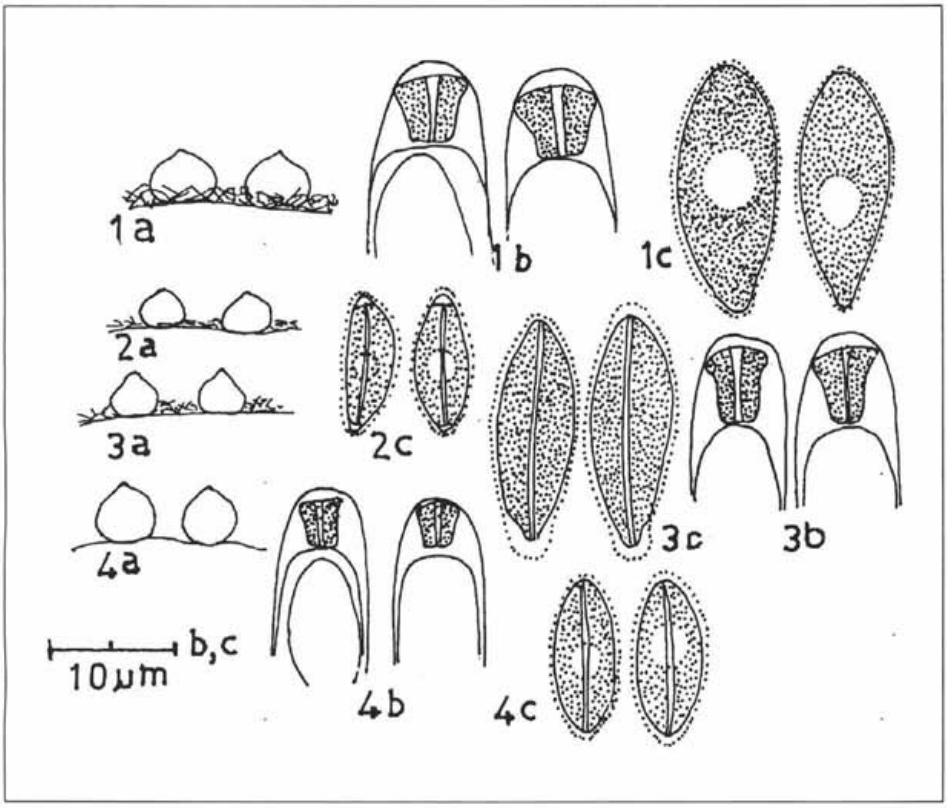
The present collection comes near to *R. glandiformis* Ell. et Ev. in general morphology but differs mainly in the dimensions of ascospores, in absence of germ slits, in possessing ascospores with one end rounded and the other pinched. Therefore the present collection is described here as a new taxon and the species is named as 'acaciae' denoting its host.

2. ***Rosellinia aquiloidea*** sp. nov. (Fig. 2a, 2c)

Subiculum persistent, dark brown. Stromata seated on a subiculum, globose, minutely papillate, surface smooth, reddish brown to black, uniperitheciate, separate or aggregated in groups of 2-3; measure 0.5 – 0.8 mm in diam. and 0.5 – 1.0 mm in height. Perithecia globose, ostiolate, 480-600 μm in diam. Ascospores inequilateral with slightly pinched ends, brown, with a straight germ slit of nearly spore length, with small cellular appendages at both ends, with one guttule, mucilaginous sheath present, spores adhering, 7.0-11.2 × 3.5-7.0 μm.

Collected on dead wood, at Molem (M.S.), 24.I.1982. AMH 5616 (Holotype).

Subiculum atro-brunneum, persistens. Stromata ex parte immersa in subiculum, globosa, minute papillata, laevia, rubigineo-brunnea vel fusca, uniperitheciata, segregata vel gregaria, magnit. 0.5-0.8 mm in diam. et 0.5-1.0 mm alta. Perithecia globosa, ostiolata, magnit. 480-600 μm in diam. Ascosporae inaequilaterales, brunneae, uniguttulatae, saepissime utroque apice appendiculo minuto hyalino ornatae, inter se adhaerentes, in muco involutae, magnit. 7.0-11.2 × 3.5-7.0 μm, rima germinativa recta.



Figs. 1 – 4.
Rosellinia acaciae sp. nov. (1), *R. aquiloidea* sp. nov. (2), *R. lakshadweepensis* sp. nov. (3), *R. petriniae* sp. nov. (4)
a) stroma (diagrammatic representation), b) ascal plug, c) ascospores

Collecta ad culmos emortuos, ad Molem (M.S.), 24.I.1982. AMH 5616 (Holotypus).

The present collection compares with *R. aquila* (Fr.:Fr.) de Not., the type species, in having subiculate stromata, minutely apiculate ascospores with straight germ slits running the entire spore length. The stromata are rounded at the top and ascospores measure 7-11.2 × 3.5-7.0 µm . The apiculi are also very small in the present collection. These characters do not match with a typical 'aquila' where stromata are characterised by flattened top, much bigger apiculi on spore ends; [pencil-like, drawn out apiculi were described by Dargan (Dargan 1979)]; and ascospores measure 25-33 × 6.3-9.0 µm. These differences warrant our collection to be accommodted under a distinct taxon but showing resemblance to 'aquila' and thus a new name 'aquiloidea' is proposed to accomodate this collection.

3. ***Rosellinia lakshadweepensis*** sp. nov. (Fig. 3a, 3b, 3c)

Subiculum absent. Stromata almost globose or rounded, superficial, uniperitheciate, smooth, top rounded, ostiole broadly conic; 0.5-0.9 mm in diam. Perithecia globose, 400-500 μm in diam. Asci many, unitunicate, paraphysate, with rounded top and amyloid ascal plugs. Ascal plugs 2.8-3.8 μm in height and 2.8 μm wide along the entire length. Ascopsores brown, ellipsoid, uniguttulate, with rounded spore ends, cellular appendages absent, mucilaginous sheath present, germ slit of nearly spore length; 10.5-17.5 × 5.3-7.0 μm.

Collected on pericarp of *Cocos nucifera* L. at Kavaratti Island, Lakshadweep; 2.I.1988; Leg. V.D. Ranade; AMH 7601 (Holotype).

Subiculum nullum. Stromata globosa, superficialia, laevia, uniperitheciata, ad apicem rotundata, ostiolo late-conico; magnit. 0.5-0.9 mm in diam. Perithecia globosa, 400-500 μm in diam. Asci numerosi, unitunicati, paraphysibus circumdati, ad apicem rotundati, apparatu apicali amyloideo, magnit. 2.8-3.8 μm alto et 2.8 μm lato. Ascosporae brunneae, ellipsoideae, utroque apice rotundatae, uniguttulatae, in muco involutae, magnit. 10.5-17.5 × 5.3-7.0 μm, rima germinativa recta.

Collecta ad pericapia *Cocos nuciferae* L. ad locum Kavaratti Island, Lakshadweep; AMH 7601 (Holotypus); dt. 2.I.1988;

Rosellinia sancta-cruciana, described as growing on petioles of *Cocos nucifera* L. from West Indies, differs from the present collection in arrangement of ascospores in asci, sub-navicular shape of ascospores, presence of hyaline appendage on spore ends, multiguttulate nature and larger dimensions (16.0-20.0 × 6.0-7.5 μm). Therefore the present collection merits the status of a new taxon and is described as 'lakshadweepensis' named after the locality of its origin.

4. ***Rosellinia petriniae*** sp. nov. (Fig. 4a, 4b, 4c)

Subiculum brown, woolly, made-up of septate, brown, 1.5-2.25 μm broad hyphae of mycelium. Stromata black, carbonaceous, uni-peritheciate, globose, top rounded, ostiole papillate, upto 0.5 to 0.8 mm in diam. Perithecia globose, 340-500 μm in diam. Ascal plugs amyloid, prominent, 4.5-7.5 μm in height, 3.0-4.5 μm in width at base and 4.5-6.0 μm in width at top. Ascospores ellipsoidal with one end pinched, brown, mucilaginous sheath and slimy caps present, germ slit of entire spore length present, spores of adhering type, measure 15.0-21.0 × 6.0-10.5 μm.

Collected on *Lantana camara* L.; 1.VII.1972, Maharashtra, AMH 2022 (Holotype).

Subiculum densum, laneum, constructum e fibrilis brunneis, ramosissimis, septatis, 1.5-2.25 μm crassis; stromata atra, (carbonacea), uniperitheciata, globosa, ad apicem rotundata, ostiolo papillato; stromata magnit. 0.5-0.8 mm in diam. Perithecia globosa, 340-500 μm in diam. Asci apparatu apicali amyloideo, prominenti, magnit. 4.5-7.5 μm alto, ad basim 3.0-4.5 μm et ad apicem 4.5-6.0 μm

lato. Ascosporae ellipsoidae, uno apice rotundato altero apiculato, in muco involutae, inter se adhaerentes, magnit. 15.0-21.0 x 6.0-10.5 μm, rima germinativa recta.

Ad culmos emortuos *Lantanae camarae* L.; 1.VII.1972. ad locum Maharashtra, AMH 2022 (Holotypus).

The present collection comes close to *R. bonarensis* Speg. which is a temperate species. Present collection, besides being collected in a dry deciduous forest of tropical zone (Marathwada, M.S., India), differs in absence of cellular appendages on spores and the dimensions of various structures. The species is named after Dr. L. E. Petrini, Switzerland, for her notable contributions to the genus *Rosellinia*.

5. ***Rosellinia congesta*** Hino et Katum.

(Bull. Fac. Agric. Yamaguchti Univ. 8: 656, 1957.)

Subiculum present, dark brown, woolly. Stromata 0.5-1.0 mm in diam.; 0.5-0.6 mm in height, globose with flat base, rounded top, papillate ostioles, surface smooth, 250-720 μm in diam and 300-400 μm in height, collared at base due to broken remnants of ectostromata. Asci with rounded apices, ascal plugs amyloid, 2.8-4.9 μm in height; 2.0-2.1 μm in width at base; 2.8-4.2 μm in width at top. Ascospores inequilateral to ellipsoid, ends rounded, brown, with a straight germ slit of nearly spore length, cellular appendages absent, mucilaginous sheath present. Spores adhering type; 10.5-17.5 $\times$ 3.5-7.0 μm.

Collected on bamboo sticks at (1) Anmod (Castle Rock, Karnataka) 20.1.1982; AMH 6294 (2) Chikhaldara (M.S.) 21.XII.1982; AMH 6499.

This species was recorded by Kar and Maity (1971) on bamboo from W. Bengal and later by Kumar and Sharma (1981) from Dehra Dun (U.P.) on *Eulaliopsis binata* (Retz.) C. E. Hubb. (fam. Graminae); however, their collection from Dehra Dun possessed slightly smaller ascospores. Here the species is reported for the first time from Peninsular India.

6. ***Rosellinia dimidiata*** Starb.

(Saccardo, P.A. Syll. Fung. XVI: 437, 1902)

Subiculum absent. Stromata dimidiate, base flattened, embedded in host tissue, up to 0.5-0.8 mm in diam. Perithecia 320-600 μm, dimidiate. Ascal plugs small, amyloid, 3.5-4.2 μm in height and 2.8 um wide. Ascospores ellipsoid, ends rounded, rarely one end pinched, guttulate, dark brown, mucilaginous sheath present, slimy caps absent, spores adhering type, germ slit absent; 14.0-16.8 $\times$ 5.6-7.0 μm.

Collected on roots of *Tectona grandis* L. (M.S.); XII., 1970, AMH 2099.

The present collection is an addition to the *Rosellinia* spp. from India.

7. ***Rosellinia sancta-cruciana*** Ferd. et Winge

(Saccardo, P. A. Syll. Fung. XXII: 108, 1913)

Subiculum absent. Stromata globose, black, top rounded, ostiole conicpapillate; stromata upto 0.5 mm in diam., ectostromata breaking with remnants of globose perithecia at base. Ascal plugs prominent, amyloid, 4.2-7.0 μm in height and 2.1-2.8 μm in width at base, 2.8-3.5 μm in width at top; Ascospores ellipsoid with broadly rounded ends, mucilaginous sheath present, slimy caps absent, spores not adhering type, guttulate, germ slit present, of nearly spore length; 16.8-21.0 × 5.6-8.4 μm.

Collected on *Zizyphus* sp. 1971. AMH 2101 (M.S.).

The present collection matches with the original description of the species. This is the first report from India.

Acknowledgements

Thanks are offered to Dr. P.G. Patwardhan, Head, Mycology Group, and to Dr. A.D. Agate, The Director, Agharkar Research Institute, Pune-4, for facilities.

REFERENCES

BILGRAMI, K.S., JAMALUDDIN and M.A. RIZWI (1979, 1981 & 1991): Fungi of India. Part I, II & revised edn. – Today & Tomorrow's Printers and Publ. Dehra Dun. pp. 467, 268 & 798.

DARGAN, K.S. and K.S. THIND (1979): Xylariaceae of India VII. The genus Rosellinia in the North-West Himalayas. – Mycologia 71: 1010-1023.

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

KUMAR, S. and R.M. SHARMA (1981): Eulaliopsis binata – a new host record for Rosellinia congesta. – Indian J. For. 4(1): 72.

MUKERJI, K.G. and JAYANTI BHASIN (1986): Plant Diseases of India: a source book. – Tata McGraw Hill Publ. Co., New Delhi pp. 468.