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NOTES ON THE MELIOLALES

K. B. BOEDIJN
The Hague

(With 24 Text-figures)

A brief review of the Meliolales is given, mainly based on Indonesian material. It is concluded that the order should be retained in the Loculoascomycetes, where it is closely related to the Microthyriales. The genus *Neoballadyna* (Englerulaceae) and the species *Balladyna pavettae* are described as new, *Neoballadyna butleri* is proposed as a new combination.

In the old classifications *Meliola* and allied genera were always placed in the order Perisporiales. Subsequent investigations have shown that *Perisporium* does not belong in this order as it was often delimited. So the name had to be changed and was replaced by the designation Erysiphales. The Erysiphaceae now incorporated in this order, however, have nothing in common with the old members of the Perisporiales. So once more renaming was necessary and Martin (26) has chosen the name Meliolales. He placed in this order two families viz. Meliolaceae and Englerulaceae.

Up till now this order was considered to belong to the subclass Loculoascomycetes. Recently von Arx (2), after a study of the genus *Armatella*, a member of the Meliolaceae, came to the conclusion that we are dealing here with a true representative of the subclass Euascomycetes. The family Meliolaceae was transferred by him to the order Sphaeriales. He came to this conclusion because *Armatella* as well as *Meliola* have thin-walled, seemingly unitunicate asci, whereas in the first mentioned genus he saw what he assumed to be true paraphyses. The other genera of the order, mostly belonging to the Englerulaceae, were tentatively placed by him in the Dothiorales.

Now thin-walled asci may also be present in true Loculoascomycetes. It may even be possible that such asci are in reality bitunicate, but that with the ordinary methods employed this is not detectable. The question of the asci becomes further complicated by the discovery of Doguet (4, 5) that bitunicate asci can be found in a species belonging to the Ascohymeniales.

In regard of the paraphyses of *Armatella*, these structures are not true paraphyses, but an interascicular tissue, which is dissolved in due course.

In my opinion we can still maintain the order Meliolales with the two families mentioned in the Loculoascomycetes. In this paper I shall discuss them with special

reference to some examples from Indonesia. Further, their relations with the Microthyriales will be elucidated.

Whereas the family Meliolaceae is neatly defined, in the family Englerulaceae a number of genera need further investigation before they can be definitely inserted.

MELIOLALES

Mycelium richly developed, either wholly superficial or partly penetrating the host. The superficial part dark coloured, with or without 1–2-celled hyphopodia, with or without setae. The hyphopodia producing haustoria within the host. Ascocarpia more or less globose, originating laterally on the hyphae, sessile or stipitate, with or without an opening at the top, with or without setae. In some cases deliquescent. Asci one to many; 2–8-spored. Spores brown, with 1–4 cross-walls. In a few instances conidia present, formed either directly on the mycelium or in pycnidia.

Leaf parasites, sometimes also on the leafstalks and young twigs.

MELIOLACEAE

Dark coloured mycelium wholly superficial, with 2-celled capitate and often also mucronate, opposite, alternate, or irregularly placed hyphopodia. From the capitate hyphopodia haustoria are produced within the epidermal cells of the host. With or without simple or branched setae. Ascocarps more or less globose, with distinct opening at the top, smooth, with setae or sometimes vermiform appendages. Asci 2–4-spored, thin-walled. Spores brown, with 4 cross-walls, only in one genus with 1 cross-wall. No conidia present.

Leaf parasites.

In this family the following genera are placed.

MELIOLA Fr.

Meliola Fr., Syst. Orb. veg. 111. 1825.

Mycelium with numerous dark, simple or branched setae. Ascocarps smooth.

IRENOPSIS Stevens

Irenopsis Stevens *in* Ann. mycol., Berl. **25**: 411. 1927.

Mycelium without, but ascocarps provided with setae.

APPENDICULELLA Höhn.

Appendiculella Höhn. *in* S.B. Akad. Wiss. Wien (Math.-nat. Kl., Abt. I) **128**: 556. 1919.

Mycelium without setae. Ascocarps with typical vermiform appendages.

ASTERIDIELLA McAlpine

Asteridiella McAlpine *in* Proc. Linn. Soc. New S. Wales **1**: 38. 1897.
Irene Theiss. & Syd. *in* Ann. mycol., Berl. **15**: 194. 1917.
Irenina Stevens *in* Ann. mycol., Berl. **25**: 411. 1927.

Mycelium and ascocarps without setae or appendages.

AMAZONIA Theiss.

Amazonia Theiss. *in* Ann. mycol., Berl. **11**: 499. 1913.
Actinodothis H. & P. Syd. *in* Philipp. J. Sci. **9**: 174. 1914.

Mycelium and ascocarps without setae, but the latter flat and shield-like as in the ascocarps of the Microthyriales.

ARMATELLA Theiss. & Syd.

Armatella Theiss. & Syd. *in* Ann. mycol., Berl. **13**: 235. 1915.

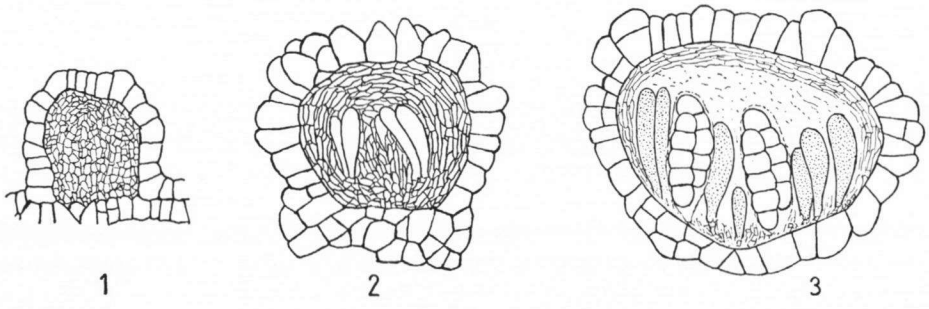
Mycelium and ascocarps without setae. Ascocarps globose, containing asci with 2-celled ascospores.

ARMATELLA LITSEAE (P. Henn.) Theiss. & Syd.

Armatella litseae (P. Henn.) Theiss. & Syd. *in* Ann. mycol., Berl. **13**: 235. 1915.

JAVA, Hortus Bogoriensis, June 1950, *Boedijn*, on *Litsea* spec. (herb. Boedijn).

In all these genera the young ascocarp is wholly filled with a more or less pseudoparenchymatic tissue (Fig. 1). In this tissue the asci originate (Fig. 2, 3). When spore formation takes place this tissue gradually begins to disintegrate and in fully mature ascocarps it has disappeared entirely. The number of spores in the asci is two to four; sometimes two- and four-spored asci may be found in the same ascocarp. In the old literature it is sometimes stated that the asci dissolve at maturity and that the spores are set free by disintegration of the ascocarps. In point of fact, however, the spores are forcibly shot away through the ostium. This can be easily demonstrated by placing a cover-glass or slide over a colony of the fungi. After some time numerous spores may be seen adhering to the glass. Or one may place leaves with the colonies uppermost in a petri-dish. Subsequently the inside of the lid becomes covered with hundreds of spores, which in consequence must have been shot upwards in the air for a distance of about two centimeters. Spore germination soon takes place. Spores caught on glass usually germinate from the poles by a short



Figs. 1–3. *Meliola rizalensis* H. & P. Syd., ascocarps of different ages in cross section: 1—very young ascocarp; 2—formation of asci; 3—formation of ascospores.

thread ending in a hyphopodium, but when spores germinate on leaves it often happens that all cells of the spore form germ tubes.

In all forms studied, it can be observed that the young ascocarps are formed laterally on the hyphae. They are firmly pressed on the leaf surface and therefore become flat, with the cells distinctly radially arranged (Fig. 4). In this stage they show a striking resemblance to the young ascocarps of the Microthyriales (Fig. 5). During further development it is seen that in most forms a globose structure, the ascocarp proper, arises from the centre of the bottom plate. Von Höhnel (19, 20) studied these structures and pointed out that *Meliola* must be nearly related to the Microthyriaceae. This is certainly true, and the theory is much strengthened by the presence of shield-shaped ascocarps in the genus *Amazonia*. The same observations were also made by Ryan (32) who published a comparative study of the young ascocarps in the Microthyriaceae and the genus *Meliola*. They are indeed much alike, the only difference being that in the Microthyriaceae the ascocarps

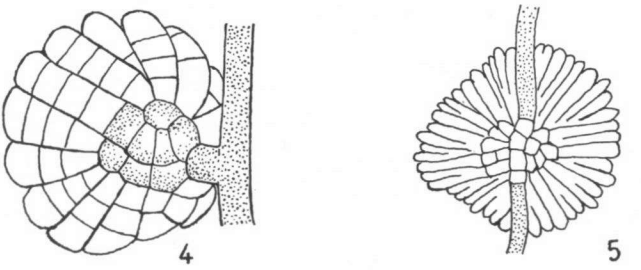


Fig. 4. *Meliola pterocarpiae* Yates, primordial ascocarp.
Fig. 5. *Asterina lawsoniae* Henn. & Nym., primordial ascocarp.

are mostly formed on the underside of a hypha (Fig. 5), whereas in *Meliola* and allied forms they start laterally on a thread.

The genus *Armatella*, which certainly belongs in the Meliolaceae, is distinguished from all other genera by the presence of two-celled ascospores. The mycelium shows only capitate hyphopodia, with the head-cell distinctly lobed and darker than the stalk-cell. The young ascocarps also produce at first a radially built bottom disc before they grow out into a globose fructification. They are filled with a tissue much the same as in *Meliola* and which also disappears at maturity. The asci at first contain four one-celled, hyaline, more or less dumbbell-shaped spores but these slowly turn pale brown. Most probably they are shot away in this phase of development and become two-celled and darker in colour outside the ascus. When fully mature the cell-wall is distinctly granulated. On germinating the top-cell produces directly a lobed hyphopodium with a cross-wall near its base, so that a slightly lobed stalk-cell is formed. The basal spore cell is nearly always paler than the top-cell and is often collapsed. By the presence of two-celled ascospores this genus connects the Meliolaceae with the Englerulaceae.

ENGLERULACEAE

Mycelium superficial with 1-celled hyphopodia which form haustoria in the host, or without hyphopodia and in that case partly penetrating the host. Mycelium with or without setae. Ascocarps globose, thin-walled, sessile or stipitate, glabrous or with setae, with or without an opening at the top, in some genera deliquescent. Asci 1 to many, 8-spored. Spores brown, 2-celled. In a few forms conidia are formed, either directly on the mycelium or in pycnidia.
Leaf parasites.

For the time being, the following genera are incorporated in this family.

ENGLERULA P. Henn.

Englerula P. Henn. *in* Bot. Jb. **34**: 49. 1905.
Hyalotheles Speg. *in* Rev. Mus. La Plata **15**: 12. 1908.
Anatexis H. Syd. *in* Ann. mycol., Berl. **26**: 90. 1928.

Superficial dark coloured mycelium without hyphopodia, but penetrating the host through the stomata. Ascocarps globose, astomous, at first parenchymatic, afterwards glebose, diffluent, containing a small number of asci. Asci 8-spored. Spores conglobate, brown, 2-celled, constricted at the cross-wall. Conidia subglobose to elongated, dark coloured, 1-celled, in pycnidia of the *Capnodiastrum* type.

ENGLERULA MACARANGAE P. Henn.

Englerula macarangae P. Henn. *in* Bot. Jb. **34**: 49. 1905.

This species occurs also in Indonesia, but our material consists chiefly of the conidial form.

CAPNODIASTRUM Speg.

Capnodiastrum Speg. *in* An. Soc. cient. argent. **1**: 145. 1883.

Pycnidia superficial, subglobose, dark, astomous, mucose-diffluent. Conidiophores on the inside of the pycnidial wall, very short. Conidia large, 1-celled, subglobose to elongated, very dark blackish brown, nearly opaque.

CAPNODIASTRUM MACARANGAE (Petr.) Petr.

Oothecium macarangae Petr. *in* Ann. mycol., Berl. **26**: 390. 1928. — *Capnodiastrum macarangae* (Petr.) Petr. *in* Sydowia **6**: 342. 1952.

SUMATRA, Deleng Singkut near Brastagi, May 1927, *Boedijn*, on leaves of *Macaranga* spec.; JAVA, Gunung Perbakti, Sept. 1922, *Bakhuizen van den Brink*, on leaves of *Macaranga* spec.; Puntjak pass, Aug. and Oct. 1941, *Boedijn*, on leaves of *Macaranga rhizinoides* (all in herb. Boedijn).

ENGLERULELLA Hansford

Englerulella Hansford *in* Arq. Inst. Biol. São Paulo **12**: 238. 1941.

Superficial mycelium with hyphopodia, without setae. Ascocarps subglobose, mucose diffluent. Asci few, 8-spored. Spores brown, 2-celled. Conidia in pycnidia of the *Capnodiastrum* type.

BALLADYNA Rac.

Balladyna Rac., Par. Alg. u. Pilze Java's **2**: 3. 1900.

Superficial mycelium with 1-celled hyphopodia and numerous unbranched setae. Ascocarps subglobose, stipitate, smooth, not diffluent, opening at the top and containing 1–3, mostly 1–2 asci. Asci 8-spored. Spores conglobate, brown, 2-celled, constricted at the septum. No conidial fructification known.

BALLADYNA VELUTINA (Berk. & Curt.) Höhn.

Asterina velutina Berk. & Curt. *in* Proc. Amer. Acad. Arts Sci. 129. 1862. — *Balladyna velutina* (Berk. & Curt.) Höhn. *in* S.B. Akad. Wiss. Wien (Math.-nat. Kl., Abt. I) **119**: 411. 1910.
Balladyna gardeniae Rac., Par. Alg. u. Pilze Java's **2**: 6. 1900.
Dimerosporium gardeniicola P. Henn. *in* Bot. Jb. **31**: 739. 1902.

Colonies black, amphigenous, roundish, 0.5–8 mm, mostly 1–3 mm, in diam. but when crowded confluent and then covering nearly the whole leaf surface. Mycelium radiating, dark, branched, septate and anastomosing; the separate threads 3–5 μ broad. Hyphopodia alternating, 1-celled, lobed, 8–10 × 5–8 μ. Setae on the mycelium numerous, dark brown, septate, acuminate obtuse, 70–120 μ long, 5–7 μ broad at the base, 2.5–3 μ near the top. Ascocarps brown, subglobose to egg-shaped, stipitate, 42–55 μ high, 36–48 μ broad, opening at the apex. Wall consisting of angular parenchymatic cells 4–7 μ long. Stalk 1-celled, bent, 8–20 × 5–8 μ, mostly broadened near the base of the ascocarp. Asci 1–2, subglobose to oval, with thickened top; 8-spored, 36–42 × 25–29 μ; wall 2–3 μ broad at the top. Spores conglobate, oblong, brown, 2-celled, constricted at the cross-wall and rounded at the poles, 17–22 × 8–10 μ.

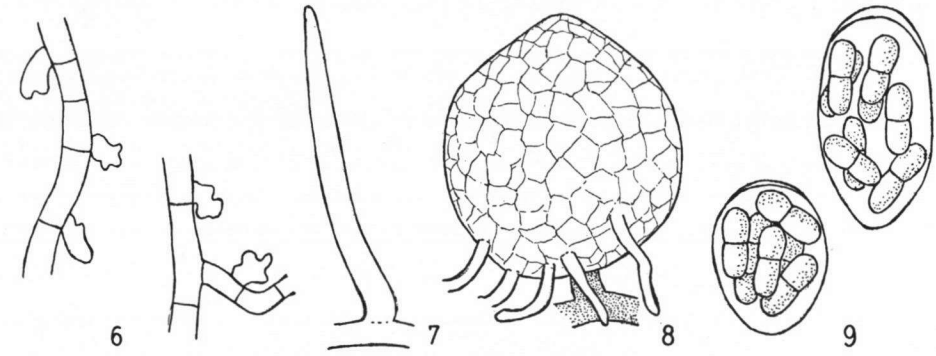
JAVA, Bogor, *Raciborski 88*, on leaves of *Gardenia lucida*; Hortus Bogoriensis, Nov. 1949, April, May, July, Oct. 1950, April 1952, June 1953, May, July 1954, January 1955, *Boedijn*, on leaves of *Gardenia augusta*, *G. latifolia*, and *G.* spec. (all in herb. Boedijn).

Balladyna pavettae Boedijn, *nov. spec.*

Plagulae amphigenae, plerumque epiphyllae, usque ad 1–4 mm diam. vel confluentes. Mycelium ex hyphis brunneis 5–6 μ crassis, ramosis, septatis compositum. Hyphopodia alterna, lobata, continua, 7–11 × 5–7 μ. Setae myceliales numerosae, erectae, simplices, 70–100 × 7–8 μ. Ascocarpia subglobosa, brunnea, stipitata, 49–65 × 46–62 μ, setis simplicibus 7–40 × 3–4 μ ornata. Asci 1–2, 8-spori, 33–47 × 19–25 μ. Sporae conglobatae, oblongae, 1-septatae, constrictae, leves, 16–24 × 6–7 μ.

Typus: Java, Hortus Bogoriensis, Nov. 1949, *Boedijn*, in foliis *Pavettae* sp. (herb. Boedijn).

Colonies on both sides of the leaves, but mostly epiphyllous, 1–4 mm in diameter, sometimes confluent, in old colonies centre often flaking away. Mycelium radiating, branched, septate and anastomosing, dark brown, the separate threads 5–6 μ broad. Hyphopodia 1-celled, alternating, weakly lobed, 7–11 × 5–7 μ. Setae on mycelium numerous, simple, dark brown, septate, gradually attenuated near the apex, 70–100 μ long, 7–8 μ broad near the base, 2–3 μ at the top. Ascocarps subglobose, stipitate, opening at the top, 49–65 μ high, 46–62 μ broad, provided near the base with a varying number of brown, downwards bent, unbranched hairs. These hairs mostly non-septate, often wavy, 7–40 × 3–4 μ. Wall of ascocarp consisting of angular parenchymatic cells 5–9 μ long. Stalk very short, 6–11 × 5–7 μ. Asci 1–2.



Figs. 6–9. *Balladyna pavettae* Boedijn: 6—mycelium with hyphopodia; 7—hair; 8—ascocarp; 9—asci.

8-spored, oval to more or less elongated, 33–47 × 19–25 μ. Wall at top 2–4 μ broad. Spores conglobate, oblong, brown, 2-celled, weakly constricted at the septum, with rounded poles. Basal spore-cell usually somewhat narrower than the top-cell; 16–24 × 6–7 μ.

JAVA, Hortus Bogoriensis, Nov. 1949, *Boedijn*, on leaves of *Pavetta* sp. (type); Aug. 1953, *Boedijn*, on leaves of *Pavetta gardeniaefolia* (herb. Boedijn).

The chief characters by which this new species is distinguished from the previous one are the different host plant, the presence of hairs on the ascocarp, and the slightly narrower spores.

Neoballadyna Boedijn, *nov. gen.*

Mycelium ex hyphis atrobrunneis, flexuosis vel tortuosis, exhyphopodiatis, septatis, ramosis compositum. Haustoria in cellulas epidermidis penetrantia. Setae myceliales, simplices, numerosae, erectae, brunneae. Ascocarpia stipitata, globosa vel ovata, glabra, parenchymatica, ostiolata. Asci 1–2, 8-spori. Sporae conglobatae, brunneae, oblongae, 1-septatae, constrictae episporio tenuiter granuloso.

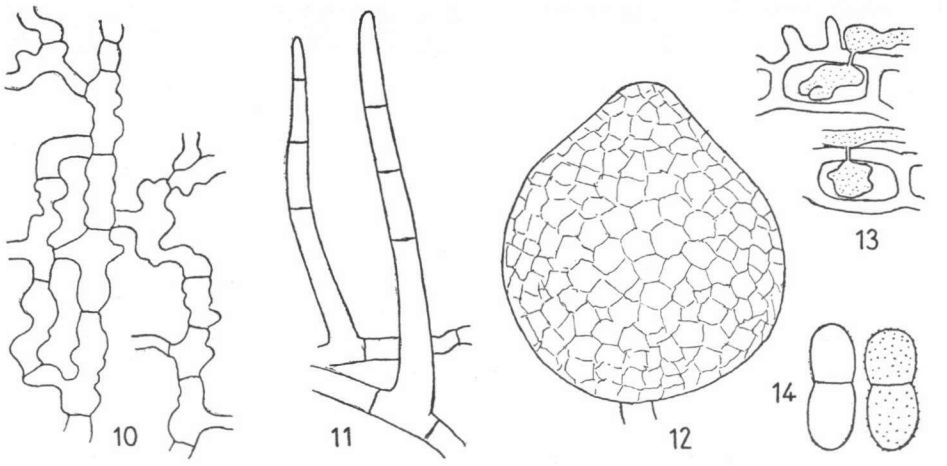
Typus generis: *Balladyna butleri* H. & P. Syd.

Mycelium brown, septate, branched and anastomosing, the threads typically tortuous and crooked with many constrictions. No hyphopodia present, but mycelium penetrating the epidermis of the host by small haustoria. Setae numerous, unbranched, dark brown. Ascocarps globose, shortly stalked, glabrous, pale brown, opening at the top and containing 1–2, mostly 2 asci. Asci oval, 8-spored, thickened at the apex. Spores conglobate, oblong, 2-celled, constricted at the cross-wall, with rounded poles, pale brown, when fully mature cell-wall delicately granulated.

Neoballadyna butleri (H. & P. Syd.) Boedijn, *nov. comb.*

Balladyna butleri H. & P. Syd. *in* Ann. mycol., Berl. **9**: 388. 1911 (basionym).

Colonies on both sides of the leaves, black, typically elongated, 1–5 mm long, by confluence often much longer. Mycelial threads running especially in the direction of the long axis of the leaf, brown, septate, branched, anastomosing,



Figs. 10–14. *Neoballadyna butleri* (H. & P. Syd.) Boedijn: 10—mycelium; 11—hairs; 12—ascocarp; 13—haustoria; 14—spores.

tortuous and crooked with many constrictions, 4–8 μ broad. No hyphopodia present, but mycelium penetrating the epidermis of the host by weakly lobed, pale brown haustoria, 6–10 μ in diam. Setae abundant, unbranched, septate, brown, 56–126 μ long, 5–6 μ broad at the base, 3–4 μ at the top. Ascocarps shortly stalked, subglobose, pale brown, 48–68 μ high, 52–61 μ broad, opening at the top. Wall consisting of angular parenchymatic cells 5–9 μ long. Stalk 1-celled, 8–16 × 5–7 μ. Mostly 2 asci present. Asci 8-spored, oval, thickened at the apex, 26–39 × 21–26 μ. Spores conglobate, oblong, pale brown, 2-celled, constricted at the septum and rounded at the poles; 23–29 × 10 – 12 μ. Fully ripe spores, outside the ascus, showing a delicately granulated cell-wall.

JAVA, Tjilodong, May 1922, *Van Overeem*; Nov. 1931, *Boedijn*, both on leaves of *Gigantochloa apus*; Hortus Bogoriensies, July, Aug. 1953, *Boedijn*, on leaves of *Bambusa* spec. (all in herb. Boedijn).

Sydow, who considered this species to belong to the genus *Balladyna*, remarks, however, that hyphopodia are scarce. Most probably he mistook young ascocarpia for hyphopodia, as the last named structures are wholly lacking in this species.

BALLADYNOPSIS Theiss. & Syd.

Balladynopsis Theiss. & Syd. *in* Ann. mycol., Berl. **15**: 475. 1917.
Wageria Stevens & Dalbey *in* Mycologia **11**: 7. 1919.
Balladynastrum Hansford *in* Proc. Linn. Soc., Lond. **153**: 15. 1941.

Mycelium with hyphopodia, but without setae. Ascocarps stalked, glabrous or with hairs. Asci 1 to a few, 8-spored. Spores brown, 2-celled.

BALLADYNELLA Theiss. & Syd.

Balladynella Theiss. & Syd. *in* Ann. mycol., Berl. **15**: 478. 1917.

Mycelium without hyphopodia and setae, penetrating the host through the stomata. Ascocarps glabrous, containing a single ascus. Ascus 8-spored. Spores brown, 2-celled.

ALINA Rac.

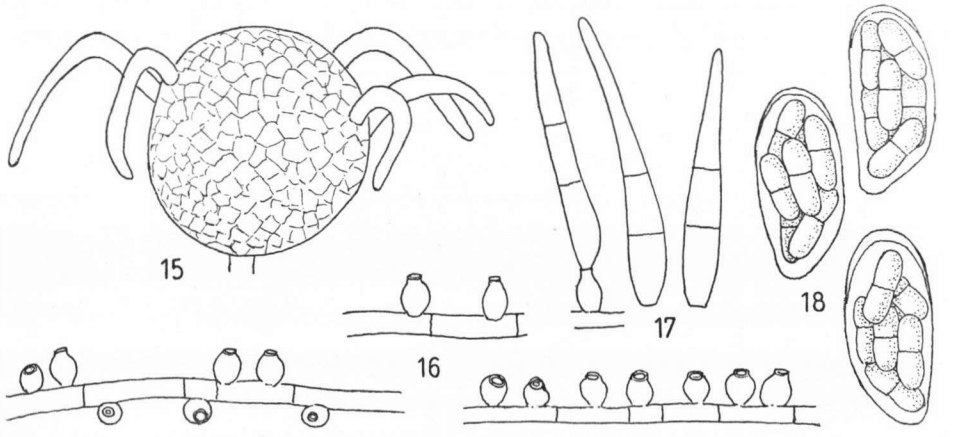
Alina Rac. *in* Bull. intern. Acad. Sci. Cracovie No. 3: 374. 1909.

Mycelium dark coloured, radiating, sparingly branched, without hyphopodia and setae, but penetrating the host with colourless hyphae. Ascocarps globose, shortly stalked, provided with a small number of bent hairs, astomous, containing several asci. Asci 8-spored. Spores coloured, 2-celled. Conidia brown, obclavate, mostly with 2 cross-walls, on short phialides directly on the mycelium.

ALINA JASMINI Rac.

Alina jasmini Rac. *in* Bull. intern. Acad. Sci. Cracovie No. 3: 375. 1909.

Colonies on both sides of the leaf, round, black, 1–3 mm in diam., by confluence often larger. Mycelium in centre of colony very dense, forming a mat from which the hyphae radiate and colourless threads penetrate the epidermis and mesophyll. Superficial threads dull brown, 3–5 μ broad, septate, rather sparingly branched, sometimes adhering in bands. Directly on the hyphae are found ellipsoid, brown phialides 7–12 μ long, 5–6 μ broad in the middle, 2–3 μ at the top, and bent upwards and alternating or arranged in rows. On these phialides originate the more or less obclavate, brown conidia with 2–4, mostly 2, cross-walls, 49–63 μ long, 6–14 μ broad near the base and 2.5–4 μ near the top. Ascocarps in the centre of the colony shortly stalked, globose to subglobose, astomous, dark brown, about 40 μ in diam. or 36–60 × 33–55 μ, provided near the apex with a small number of bent, brown, non-septate hairs, 16–53 × 3–5 μ, attenuated near the top to 2–2.5 μ. Wall of ascocarp consisting of brown, parenchymatous cells 4–6 μ long. Stalk very short, 2.5–5 × 5–7 μ. Several asci present. Asci broadly ellipsoid, 8-spored, 28–37 ×



Figs. 15–18. *Alina jasmini* Rac.: 15—ascocarp; 16—hyphae with phialides; 17—conidia; 18—asci.

12–15 μ, apex 1.5–2.5 μ broad. Spores conglobate, oblong, olivaceous, 2-celled, faintly constricted at the septum, with rounded poles, the lower cell a trifle longer than the top-cell; 12–15 × 5–6 μ.

JAVA, Depok, Oct. 1932, *Boedijn*, on leaves of *Captosapelta tomentosa* (herb. Boedijn).

Some colonies show only conidia, others only ascocarps, whereas many have both types of fructification.

Our material fully agrees with the description as given by Raciborski and hence can be considered conspecific. However, the host plant is entirely different as Raciborski stated that he collected his material on the leaves of a species of *Jasminum*. It always remains possible that the mention of *Jasminum* is due to an error.

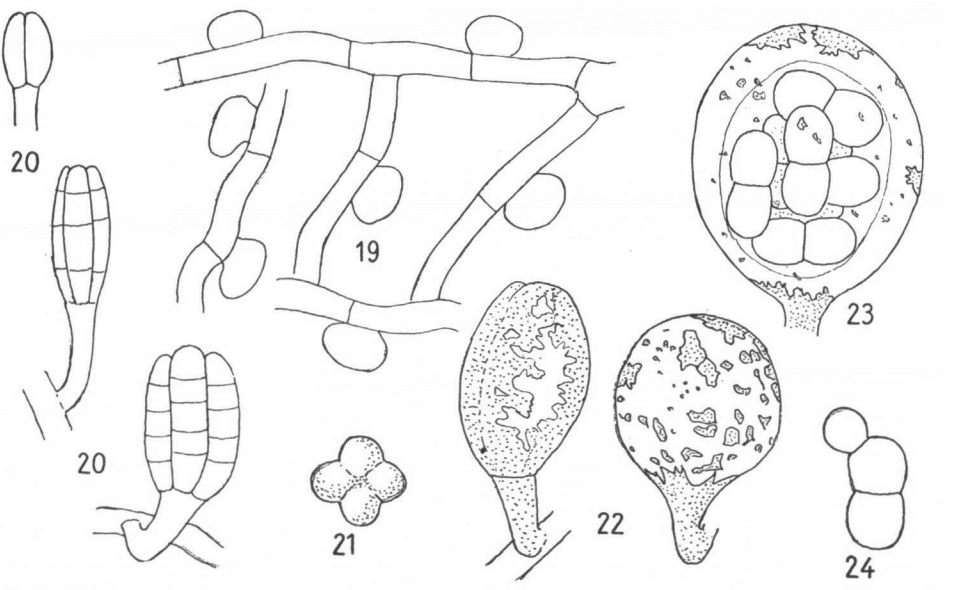
THRAUSTE Theiss.

Thrauste Theiss. *in* Verh. zool.-bot. Ges. Wien **66**: 337. 1916.

Mycelium with 1-celled hyphopodia, but without setae. Ascocarps stipitate, mucose diffluent, containing a single ascus. Ascus 8-spored. Spores 2-celled, pale coloured.

THRAUSTE MEDINILLAE (Rac.) Theiss.

Balladyna medinillae Rac. *in* Bull. intern. Acad. Sci. Cracovie No. 3: 373. 1909. — *Englerula medinillae* (Rac.) Höhn. *in* S.B. Akad. Wiss. Wien (Math.-nat. Kl., Abt. I) **118**: 1469. 1909. — *Thrauste medinillae* (Rac.) Theiss. *in* Verh. zool.-bot. Ges. Wien **66**: 337. 1916.



Figs. 19–24. *Thrauste medinillae* (Rac.) Theiss.: 19—mycelium with hyphopodia; 20—young ascocarps; 21—young ascocarp in cross section; 22—ascocarps in two stages of swelling; 23—mature ascocarp with ascus; 24—germinating ascospore.

Colonies black, on both sides of the leaves, 1–5 mm in diam., often much larger by confluence. Mycelium dark brown, branched, septate, more or less undulating and forming a network by anastomosing, the separate threads 4–8 μ broad, provided with 1-celled, globose hyphopodia either in a single row, alternating or irregularly placed, 9–14 μ broad, 8–10 μ high. Ascocarps at first a raised club-shaped cell; later a cross-wall cuts off the stalk from the head-cell and the head is then divided by longitudinal walls into 4 cells which in turn are divided by cross-walls into 4 parallel rows of 3 to 5 nearly isodiametric cells about 6 μ long. In this stage the ascocarp is 25–34 × 16–21 μ. Stalk 16–32 μ long, 4–7 μ broad in the middle, 6–10 μ near the top. Gelatinization and swelling of the cells in the head of the ascocarp transforms this into a subglobose or oval body 43–60 × 37–52 μ with remnants of the outer cell-walls as scattered dark irregular scales on the surface of the subhyaline jelly. In the centre of the ascocarp a single, subglobose, 8-spored ascus is formed, 41–45 × 33–36 μ. Ascospores conglobate, oblong, 2-celled, constricted at the cross-wall, with strongly rounded poles, long remaining hyaline, but at length becoming pale brown, 24–29 × 12–16 μ.

JAVA, Tjibodas, April 1932, *Boedijn* on leaves of *Medinilla speciosa*; Tjibeureum, July 1941, *Boedijn*, on *Medinilla* spec.; Puntjak pass, Sept., Oct. 1941, *Boedijn*, on *Medinilla intermedia*; Gunung Bunder, April 1931, *Boedijn*, on *Melastoma polyanthum* (all in herb. Boedijn).

Melastoma polyanthum is a new host for the present species. As this material agrees in every respect with the collections on *Medinilla* I consider it conspecific.

In the Englerulaceae the young ascocarps are also formed laterally on the hyphae, but they grow upwards instead of downwards as in the Meliolaceae. So they, of course, do not show the radially built basal plate. In this family a rather large number of genera are incorporated, but I have mentioned only a few, as many have to be re-examined before they can be placed satisfactorily. Other genera do not belong here, as for instance *Schiffnerula* Höhn., in which I found that the ascocarp starts as a radially built plate, as in the Microthyriales. Moreover it forms phragmosporous conidia, which are also found in the nearly related genus *Clypeolella* Höhn., a true member of the Microthyriales.

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