*Bothalia* 9, 1: 217–227.

# New and Interesting Records of South African Fungi, Part IV*

*by*

W. F. O. Marasas† and C. J. Rabie‡

During 1962, 1963 and 1964 a large number of foliicolous fungi were collected at the following forestry stations in the Transvaal Province of the Republic of South Africa: De Hoek Forestry Station, Tzaneen, Letaba Distr.; Entabeni Forestry Station, Louis Trichardt, Soutpansberg Distr.; Mariepskop Forestry Station, Pilgrims Rest Distr.

The fungi described here were found to be new records for the Republic of South Africa. All the host plants on which these fungi were collected also represent new host records for the various fungi.

The specimens are deposited in the Mycological Herbarium, Plant Protection Research Institute, Department of Agricultural Technical Services, Pretoria.

1. **Parapeltella maitlandii** (*Hansf.*) *Batista*, in Inst. Mic. Univ. Recife Publ. 56: 292(1959).

*Micropeltella maitlandii* Hansford, Proc. Lin. Soc. London 153: 49(1941).

**Fig.** 1.

Free mycelium absent. Ascostromata hypophyllous, superficial, olivaceous black with a hyaline margin, glabrous, composed of reticulate hyphae, 280–400$\mu$ in diameter, opening with an irregular pore. Asci bitunicate, wall more or less uniformly thickened, obclavate, sessile or briefly stipitate, six to eight-spored, 60–85 × 17–24$\mu$. Ascospores at first obliquely monostichous, becoming polystichous, clavate, hyaline, two- to six-septate, constricted at the septa, cells not equal in size, 29–44 × 5–7$\mu$.

*Specimen examined*: PRE 42621, on leaves of *Rawsonia lucida* Harv. & Sond., De Hoek, Tzaneen, Letaba Distr., Transvaal, Oct. 1963.

*Rawsonia lucida* is a new host record for *P. maitlandii* which had been collected previously on Apocynaceae and Rubiaceae in Uganda (Batista, loc. cit.).

This is the first record of the occurrence of this fungus in South Africa.

2. **Micropeltidium obscurum** *Batista & Bezerra*, in Inst. Mic. Univ. Recife Publ. 391: 18(1963.)

---

* Part of a thesis submitted by the senior author in partial fulfilment of the requirements for the M.Sc. (Agric.) degree, University of Pretoria, Pretoria, 1965.

† Plant Protection Research Institute, Department of Agricultural Technical Services, Pretoria.

‡ Department of Plant Pathology, University of Pretoria, Pretoria.

**Fig.** 2.

Free mycelium absent. Ascostromata hypophyllous, superficial, olivaceous black with hyaline to subhyaline margins, glabrous, rounded, composed of reticulate hyphae, opening with an irregular, stellate fissure, 372–390$\mu$ in diameter. Asci bitunicate, wall more or less uniformly thickened, clavate, attenuated towards the base or briefly stipitate, two- to eight-spored, 54–83 × 12–22$\mu$; paraphysoids present, filiform, branched, 2·5$\mu$ in diameter. Ascospores polystichous, clavate, hyaline, with two to twelve transverse septa, constricted at the septa, cells not equal in size, becoming separated, 27–42$\mu$ long, the basal cell 2·5–5·0$\mu$ and the apical cell 4·5–7·5$\mu$ wide.

*Specimen examined*: PRE 42620, on leaves of *Ilex mitis* (L.) Radl., De Hoek, Tzaneen, Letaba Distr., Transvaal, Jan. 1963.

This is the first record of the occurrence of this fungus in South Africa.

3. **Scolecopeltidium racemosae** *Batista* & *Lima* apud *Batista*, in Inst. Mic. Univ. Recife Publ. 56: 222 (1959).

**Fig.** 3.

Free mycelium absent. Ascostromata hypophyllous, superficial, scattered, rounded, olivaceous black with a hyaline margin, upper membrane meandriform, 490–500$\mu$ in diameter, ostiole central, round, 65–75$\mu$ in diameter. Asci bitunicate, cylindrical to obclavate, briefly stipitate, two- to six-spored, 81–110 × 17–23$\mu$; paraphysoids filiform, branched, hyaline, up to 2$\mu$ wide. Ascospores distichous to polystichous, clavate, hyaline, with five to twelve transverse septa, constricted at the septa, 37–104 × 5–8$\mu$, cells becoming separated.

*Specimen examined*: PRE 42622, on leaves of *Syzygium gerrardii* (Harv.) Hochst., De Hoek, Tzaneen, Letaba Distr., Transvaal, Oct. 1963.

The asci mostly contained immature spores or no spores at all and only a few mature phragmospores were seen.

*Syzygium gerrardii* is a new host record for *S. racemosae* which is known on *Paullinia* from Brazil (Batista, loc. cit.).

This is the first record of the occurrence of this fungus in South Africa.

4. **Chaetothyrina musarum** (*Speg.*) *Theissen*, in Ann. Mycol. 11: 495 (1913); Batista, Inst. Mic. Univ. Recife Publ. 56: 448 (1959); Müller & v. Arx, Beitr. Krypt. Fl. Schweiz 11 (2): 548 (1962).

**Fig.** 8.

Colonies hypophyllous, black, confluent; mycelium superficial, pelliculose; hyphae septate, branched, reticulate, olive-brown, 2·5–6·0$\mu$ in diameter; mycelial setae scattered, rigid, septate, simple, attenuated, obtuse, straight or curved, dark brown, 165–213$\mu$ long, 5$\mu$ wide at the base and 2·5$\mu$ at the apex. Ascostromata gregarious, globose-depressed, ostiolate, olive-brown, 126–165$\mu$ in diameter, composed of meandriform hyphae, setose; setae like the mycelial setae. Asci bitunicate, obclavate, briefly stipitate, eight-spored, 42–49 × 12–14$\mu$; paraphysoids present, clavate, septate, hyaline, up to 2·5$\mu$ wide at the apex. Ascospores oblong-clavate, septate, hyaline, 12–15 × 3–5$\mu$.

*Specimen examined*: PRE 42619, on leaves of *Euclea crispa* (Thunb.) Guerk. var. *crispa*, Mariepskop, Pilgrims Rest Distr., Transvaal, Dec. 1963.

*Euclea crispa* var. *crispa* is a new host record for *C. musarum* which is known to occur on *Musa*, *Smilax*, and various other unrelated host plants in tropical America, Africa and Asia (Müller & v. Arx, loc. cit.).

This is the first record of the occurrence of this fungus in South Africa.

5. **Ainsworthia xanthoxylii** *Batista & Costa* apud *Batista & Ciferri*, in Inst. Micol. Univ. Recife Publ. 158: 7 (1962).

**Fig. 4.**

Mycelium epiphyllous, superficial, pelliculose, not setose, composed of hyaline, septate hyphae with cylindrical cells. Ascostromata globose-depressed, membranous, brown, semitranslucent, 164–190$\mu$ in diameter. Asci numerous, subglobose to clavate, sessile or briefly stipitate, 37–44 × 17–22$\mu$; paraphysoids present, filiform, coiled at the apex, hyaline, 1$\mu$ thick. Ascospores polystichous, cylindraceous, straight to slightly curved, hyaline but becoming subhyaline when mature, seven to eight transverse and two to four longitudinal septa, constricted at the septa, 29–42 × 5·5–10$\mu$.

*Specimen examined*: PRE 42614, on living leaves of *Ilex mitis* (L.) Radlk., De Hoek Forestry Station, Tzaneen, Letaba District, Transvaal, Jan. 1963.

This is a new host record for *A. xanthoxylii* which had been collected previously on *Ilex glabra* and various other unrelated host plants in the United States and South America. (Batista & Ciferri, loc. cit.).

This is the first record of the occurrence of this fungus in South Africa.

6. **Ainsworthia roraimensis** *Batista & Cavacanti*, in Inst. Micol. Univ. Recife Publ. 431 (1964).

**Fig. 5.**

Mycelium hypophyllous, superficial, pelliculose, composed of hyaline, reticulate, septate hyphae with cylindrical cells, 5·0–7·5$\mu$ wide. Ascostromata single, scattered, globose-flattened, not setose, brown, semitranslucent, 152–210$\mu$ in diameter. Asci subglobose to broadly clavate, sessile, eight-spored, aparaphysate, 54 × 34$\mu$. Ascospores conglobate, polystichous, cylindraceous to clavate, straight or curved, hyaline, with seven to fifteen transverse and none to two longitudinal or oblique septa, slightly constricted at the septa, 39–69 × 7–10$\mu$.

*Specimen examined*: PRE 42613, on living leaves of *Rawsonia lucida* Harv. & Sond., De Hoek Forestry Station, Tzaneen, Letaba District, Transvaal, Oct. 1963.

This is the first record of the occurrence of this fungus in South Africa.

7. **Deslandesia javanica** (*Zimm.*) *Batista & Ciferri* var. **harana** (*Trotter*) *Batista & Ciferri*, in Inst. Micol. Univ. Recife Publ. 158: 44 (1962).

**Fig. 6.**

Mycelium epiphyllous, superficial, pelliculose, not setose; hyphae brownish, branched, septate, constricted, composed of cylindrical cells, 12·5–20 × 4–5$\mu$. Ascostromata single, scattered, globose-depressed, membranous, glabrous, brown, semitranslucent, pseudo-ostiolate, 154–260$\mu$ in diameter. Asci ovoid to ellipsoid, rarely clavate, sessile or briefly stipitate, wall prominently thickened apically when immature

but becoming uniformly thickened when mature, six- to eight-spored, 50–73 × 23–33$\mu$. Ascospores polystichous, cylindraceous to clavate, straight or slightly curved, hyaline to subhyaline, six to nine transverse septa, apical cells becoming muriform, constricted at the septa, 35–68 × 6·5–10$\mu$.

*Specimen examined*: PRE 42616, on living leaves of *Syzygium guineense* (Willd.) D.C., Entabeni, Louis Trichardt, Soutpansberg District, Transvaal, Oct. 1963.

This is a new host record for *D. javanica* var. *harana* which is known to occur on *Citrus* sp. in Japan and on *Mangifera indica* on the island of St. Thomas (Batista & Ciferri, loc. cit.).

This is the first record of the occurrence of this fungus in South Africa.

8. **Vitalia ekmanii** (*Petrak & Ciferri*) *Batista & Ciferri*, in Inst. Micol. Univ. Recife Publ. 158: 111 (1962).

**Figs.** 7, 10, 11.

Mycelium epiphyllous, superficial, pelliculose, blackish-brown; hyphae septate, slightly constricted, branched, dull-brown, setose; mycelial setae arising from a multicellular base, scattered, numerous, simple, erect, straight, acute, continuous, blackish-brown, 80–120$\mu$ long, 9–10$\mu$ wide at the base and 2·5$\mu$ at the apex, covered by mycelial hyphae. Ascostromata globose-depressed, scattered, membranous, setose, 144–175$\mu$ in diameter; setae numerous, erect, continuous, simple, straight or slightly curved, dark brown but becoming lighter brown towards the apex, 75–700$\mu$ long, 7·5$\mu$ wide at the rounded base, tapering to the acute apex, 1·5–2·5$\mu$ wide. Asci ellipsoid to sub-clavate, very briefly stipitate, apical wall thickened, six- to eight-spored, aparaphysate, 45–58 × 10–15$\mu$. Ascospores mono- or di-stichous, fusiform-elliptical, hyaline, continuous when immature, becoming three-septate when mature, not constricted, 12–15 × 5$\mu$.

*Specimen examined*: PRE 42708, on living leaves of *Clivia* sp., Mariepskop Forestry Station, Pilgrims Rest District, Transvaal, 1962.

This is a new host record for *C. ekmanii* which had previously been collected on various unrelated host plants in South Africa (Batista & Ciferri, loc. cit.).

This is the first record of the occurrence of this fungus in South Africa.

9. **Johansonia amadelpha** (*Syd.*) *v. Arx* apud *Müller & v. Arx*, in Beitr. Krypt. Fl. Schweiz 11 (2): 212 (1962).

*Microcallis amadelpha* Syd., Ann. Mycol. 24: 342 (1926).

*Chaetothyrina amadelpha* (Syd.) Syd., Ann. Mycol. 32: 10 (1934).

**Fig.** 9.

Mycelium hypophyllous, hyaline, not hyphopodiate, setose. Setae brown, septate, straight or slightly curved, obtuse, concentrated round the ascostromata, 122–160 × 5–7·5$\mu$. Ascostromata superficial, gregarious, globose-depressed, brown, membranous, glabrous, 135–400$\mu$ in diameter; superior wall epithecioid. Asci bitunicate, clavate, sessile or briefly stipitate, eight-spored, 36–42 × 12–15$\mu$; paraphysoids dichotomously branched, anastomosed, hyaline, filiform, 1$\mu$ in diameter. Ascospores oblong-clavate, hyaline, one-septate, not constricted at the septum, 7–12 × 3–5$\mu$.

*Specimen examined*: PRE 42617, on leaves of *Syzygium cordatum* Hochst., Mariepskop, Pilgrims Rest Distr., Transvaal, 1962.

The ascostromata occur in groups of two definite sizes: small, ca. 135–185$\mu$ in diameter and large, ca. 335–400$\mu$ in diameter. Sydow (Ann. Mycol. 24: 342, 1926) described *Microcallis amadelpha* (= *Johansonia amadelpha* (Syd.) v. Arx) and *M. consociata* (= *J. consociata* (Syd.) v. Arx) as occurring together on *Roupala veraguensis* and on *Phoebe tonduzii* in Central America. The only difference noted between these two species were that *M. amadelpha* had larger ascostromata and longer setae than *M. consociata*. Accordingly he doubted whether these two fungi were in fact distinct species or only forms of the same species. In the authors' collection the smaller stromata contain no differentiated asci and are considered to be immature stromata of *J. amadelpha* and not a separate species.

*Syzygium cordatum* is a new host record for *J. amadelpha* which is known to occur on *Phoebe* (Lauraceae) and *Roupala* (Proteaceae) in Central America (Müller & v. Arx, loc. cit.).

This is the first record of the occurrence of this fungus in South Africa.

10. **Asterina bukobensis** *Hansford*, in Proc. Linn. Soc. London 157: 201 (1945).

**Fig.** 12.

Colonies amphigenous, black. Mycelium reticulate, composed of radiating, septate, branching, brown hyphae, 3–6$\mu$ in diameter. Hyphopodia at first terminal on the hyphae, later becoming lateral by growth of the cell immediately behind them, solitary, darker brown than the hyphae, composed of two cells of very variable shape, from sublobate to irregular, 16·0–22·5$\mu$ long, basal cell 6·5–11$\mu$ long and 10–13$\mu$ broad, terminal cell 8–11$\mu$ long and 6·5–10$\mu$ broad. Ascostromata numerous, scattered, rounded, covered by dark mycelial hyphae, up to 550$\mu$ in diameter; basal membrane subhyaline, indistinct; covering membrane convex, subopaque, dark brown, composed of radiating hyphae; margin fimbriate, fringing hyphae olive-brown, tortuous; dehiscing by means of radiating fissures. Asci basal, cylindraceous-clavate, nodose-stipitate, rounded at the apex, eight-spored, 70·5–105 × 25–30$\mu$; paraphysoids very numerous, hyaline, clavate, septate, up to 2·5$\mu$ in diameter. Ascospores obliquely monostichous, ovate to ellipsoid, dark brown, smooth, one-septate, constricted, 32–38 × 15–19$\mu$, basal cell narrower than the upper cell and attenuated towards the base.

*Specimen examined*: PRE 24678, on leaves of *Eugenia natalitia* Sond., Mariepskop, Pilgrims Rest Distr., Transvaal, Jan. 1963. Also present: *Asteridiella atra* (Doidge) Hansf. (PRE 42679), parasitised by *Helminthosporium dorycarpum* Mont. (PRE 42680).

The ascostromata are mostly immature and only a few asci and ascospores were seen.

*A. bukobensis* is characterised by the typical solitary, two-celled hyphopodia which are at first terminal on the hyphae and later become lateral (Fig. 12). *Eugenia natalitia* is a new host record for this species of *Asterina* which was dscribed on *E. bukobensis* from Uganda by Hansford (loc. cit.).

This is the first record of the occurrence of this fungus in South Africa.

11. **Dimerina mindanaense** (*P. Henn.*) *Hansford*, in Mycol. Papers, Commonwealth Mycol. Inst. 15: 56 (1946).

**Fig.** 13.

Mycelium densely reticulate between the hyphae of the *Meliola*-host, branched, very indistinctly septate, subhyaline, not hypopodiate, 3–3·5$\mu$ wide. Ascocarps superficial, ostiolate, dark-brown, smooth, 75–112$\mu$ in diameter; wall composed of dark-brown, polygonal cells. Asci very numerous, cylindrical to clavate, nodose-stipitate,

wall somewhat thickened at the apex, eight-spored, 32–48 × 6–8$\mu$. Paraphysoids filiform, very indistinct, deliquescing before the asci mature. Ascospores obliquely monostichous or distichous, oblong-fusoid or subclavate, straight or slightly curved, rounded at both ends, smooth, hyaline, one-septate but becoming three-septate when mature, 9·5–11 × 3·5$\mu$.

*Specimen examined*: PRE 42632, parasitic on *Meliola carissae* Doidge on *Carissa bispinosa* (L.) Des. f. ex Bren. var. *acuminata* (L.) L. E. Codd, Tzaneen, Letaba District, Transvaal, Oct. 1963.

Under a dissecting microscope the mature spores may be seen oozing out of the ostioles and forming white droplets on the ascocarps. These spores are three-septate (Fig. 13).

Hansford (loc. cit.) tentatively placed *Dimerina eutricha* (Sacc. & Berl.) Theiss. (= *Dimerosporium eutrichim* Sacc. & Berl.) in synonymy with *D. mindanaense*. He expressed the opinion that *Dimerina eutricha* would be the correct name for this species if the suggested synonymy could be established by comparison of specimens. In their original description of *Dimerosporium eutrichum*, Saccardo and Berlese (Rev. Mycol. 7: 156. 1885) stated that three-septate ascospores had been seen. The author's collection fits very well into this description. The fact that three-septate ascospores were slso observed, further substantiates Hansford's suggestion that *Dimerosporium eutrichum* and *Dimerina mindanaense* are identical.

This is the first record of the occurrence of this fungus in South Africa.

12. **Diplodia longipedicellata** *T. S. & K. Ramakrishnan*, in Proc. Indian Acad. Sci., B, 32: 78 (1950).

**Figs.** 14, 15.

Pycnidia amphigenous, not on definite leaf spots but causing purplish-brown protuberances of the leaf surrounded by a yellowish discolouration, gregarious, black, completely immersed in the leaf, 112–385$\mu$ in diameter, 85–225$\mu$ high; ostiole distinct, protruding, rounded; contents exuding in long black tendrils which spread over the leaf surface to form black conidial mats; cavity globose to ellipsoid or irregular in form, sometimes occupying the entire thickness of the leaf, convoluted, uniloculate but occasionally two to four pycnidia coalesce; wall poorly developed so that the delimitation of the pycnidium is indistinct, pseudoparenchymatous, hyaline to brownish, composed of a few layers of thin-walled cells, becoming thicker and more stromatic round the ostiole, 6–22$\mu$ in diameter. Conidiophores arising from the cells of the pycnidial wall, erect, cylindrical, hyaline. Pycnidiospores acrogenous, single, elliptic to broadly obpyriform, smooth-walled, dark olive-brown, 12·5–16·0$\mu$ long, one-septate below the middle; basal cell much shorter and narrower than the upper cell, base truncate or sometimes rounded, often with the conidiophore attached, 4·5–6·5$\mu$ long and 4·5–6·5$\mu$ wide at the septum; upper cell broadly elliptical with a broadly rounded apex, brown but with a lighter coloured area directly above the septum, 8·0–9·5$\mu$ long and 6·5–12·5$\mu$ in the widest part.

*Specimen examined*: PRE 42714, on living leaves of *Syzygium guineense* (Willd) D.C., Entabeni, Louis Trichardt, Soutpansberg District, Transvaal, Apr. 1964.

As noted by Ramakrishnan and Ramakrishnan (loc. cit.), the majority of the spores have cells of unequal size. These are not typical *Diplodia* spores. This fungus is very similar to *Mycohypallage congesta* (Berk. ; Br.) Sutton, another fungus occurring on *Syzygium*, in a number of respects: the structure of the pycnidium; the exudation of the spores in long black tendrils which spread over the leaf surface

and the two-celled, brown spores. The only character that excludes *D. longipedicellata* from the genus *Mycohypallage* Sutton, is the absence of apical setae on the pycnidiospores of the former. As the suthor is unable to suggest a more suitable genus, he follows Ramakrishnan and Ramakrishnan (loc. cit.) in placing this fungus in *Diplodia.*

*Syzygium guineense* is a new host record for *D. longipedicellata* which was described on *S. montanum* from India by Ramakrishnan and Ramakrishnan (loc. cit.).

This is the first record of the occurrence of this fungus in South Africa.

ACKNOWLEDGEMENTS

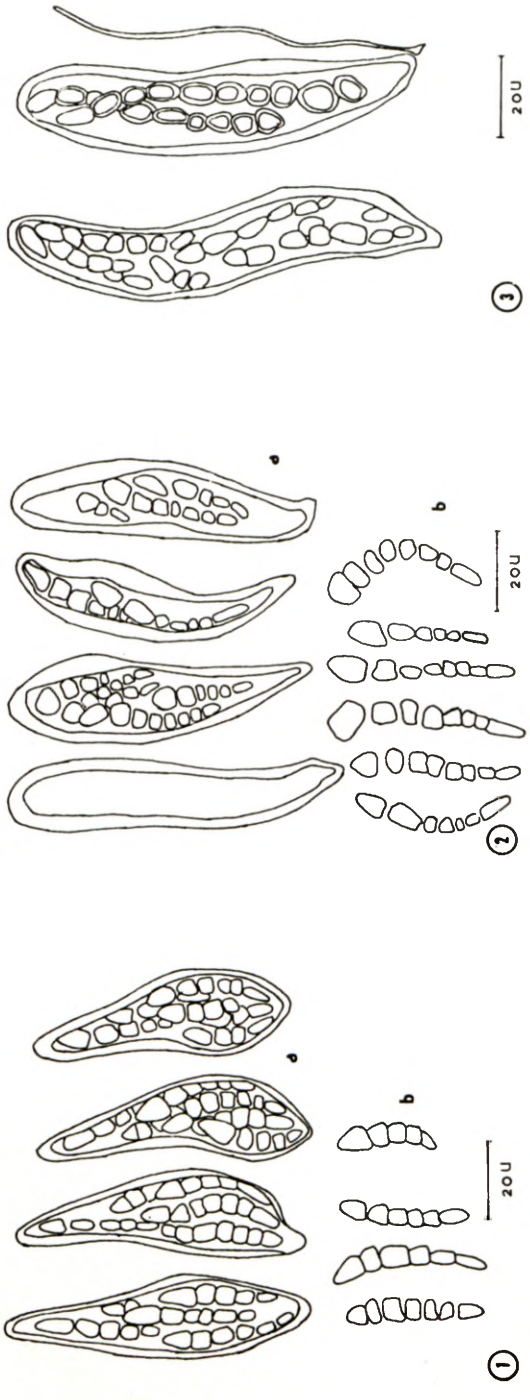
The authors wish to express their sincere thanks and appreciation to: Prof. Dr. A. Chaves Batista of the Instituto de Micologia, Universidade do Recife, Brazil for the identification of certain specimens, kind advice and criticism of certain descriptions. The staff of the Commonwealth Mycological Institute, Kew, England for identifying certain collections. Mr. K. T. van Warmelo and Mr. G. C. A. van der Westhuizen of the Plant Protection Research Institute, Pretoria, for invaluable advice and assistance with the microtechnique and photomicrography. The staff of the Botanical Research Institute, Pretoria for the identifications of the host plants.

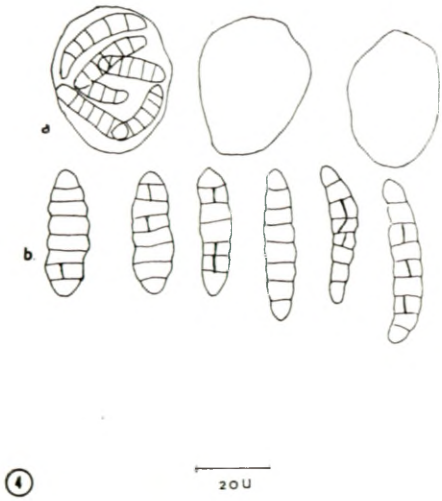
## EXPLANATION OF FIGURES

FIG. 1–3.—Fig. 1. *Parapeltella maitlandii* (*a*) asci; (*b*) ascospores. Fig. 2. *Scolecopeltidium racemosae*, (*a*) asci; (*b*) ascospores. Fig. 3. *Micropeltidium obscurum*, asci with ascospores and a paraphysoid.

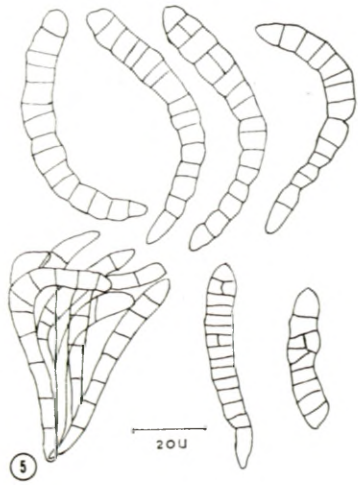
FIG. 4–9.—Fig. 4. *Ainsworthia xanthoxylii*, (*a*) asci; (*b*) ascospores. Fig. 5. *Ainsworthia roraimensis* ascospores. Fig. 6. *Deslandesia javanica* var. *harana*, (*a*) asci; (*b*) ascospores. Fig. 7. *Vitalia ekmanii*, (*a*) mycelial seta; (*b*) ascostromatal seta; (*c*) asci: (*d*) ascospores. Fig. 8. *Chaetothyrina musarum*, (*a*) asci; (*b*) ascospores; (*c*) ascostromatal seta; (*d*) base of mycelial seta. Fig. 9. *Johansonia amadelpha*, (*a*) asci; (*b*) ascospores; (*c*) part of mycelial seta.

FIG. 10–15.—Fig. 10–11. *Vitalia ekmanii.* Fig. 10. Mycelial setae showing multicellular base, × 400. Fig. 11. Ascostromatal setae, × 400. Fig. 12. *Asterina bukobensis*, hyphopodia, × 500. Fig. 13. *Dimerina mindanaense*, ascospores, × 1250. Fig. 14–15. *Diplodia longipedicellata.* Fig. 14. Cross section of pycnidium, × 200. Fig. 15. Pycnidiospore, × 1250

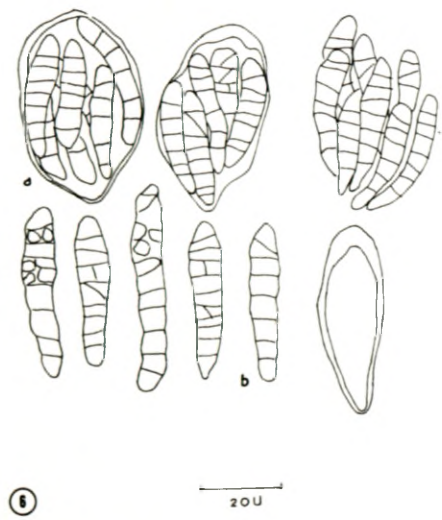

a
b
20U
1
a
b
20U
2
20U
3



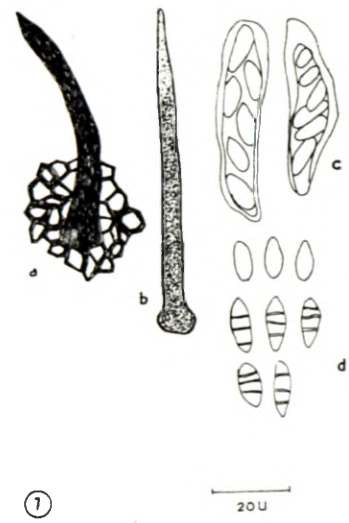

4



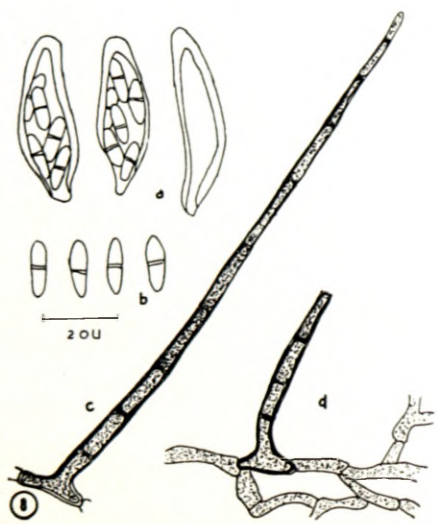

5



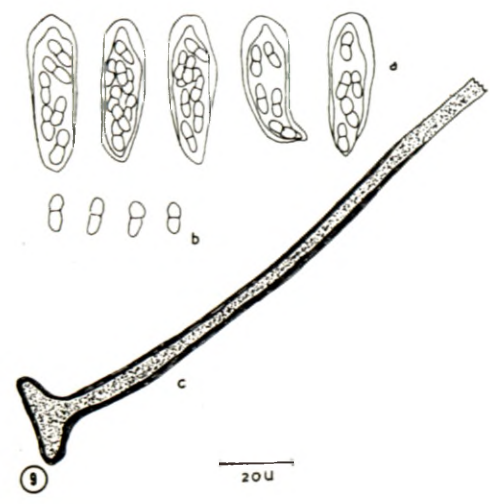

6



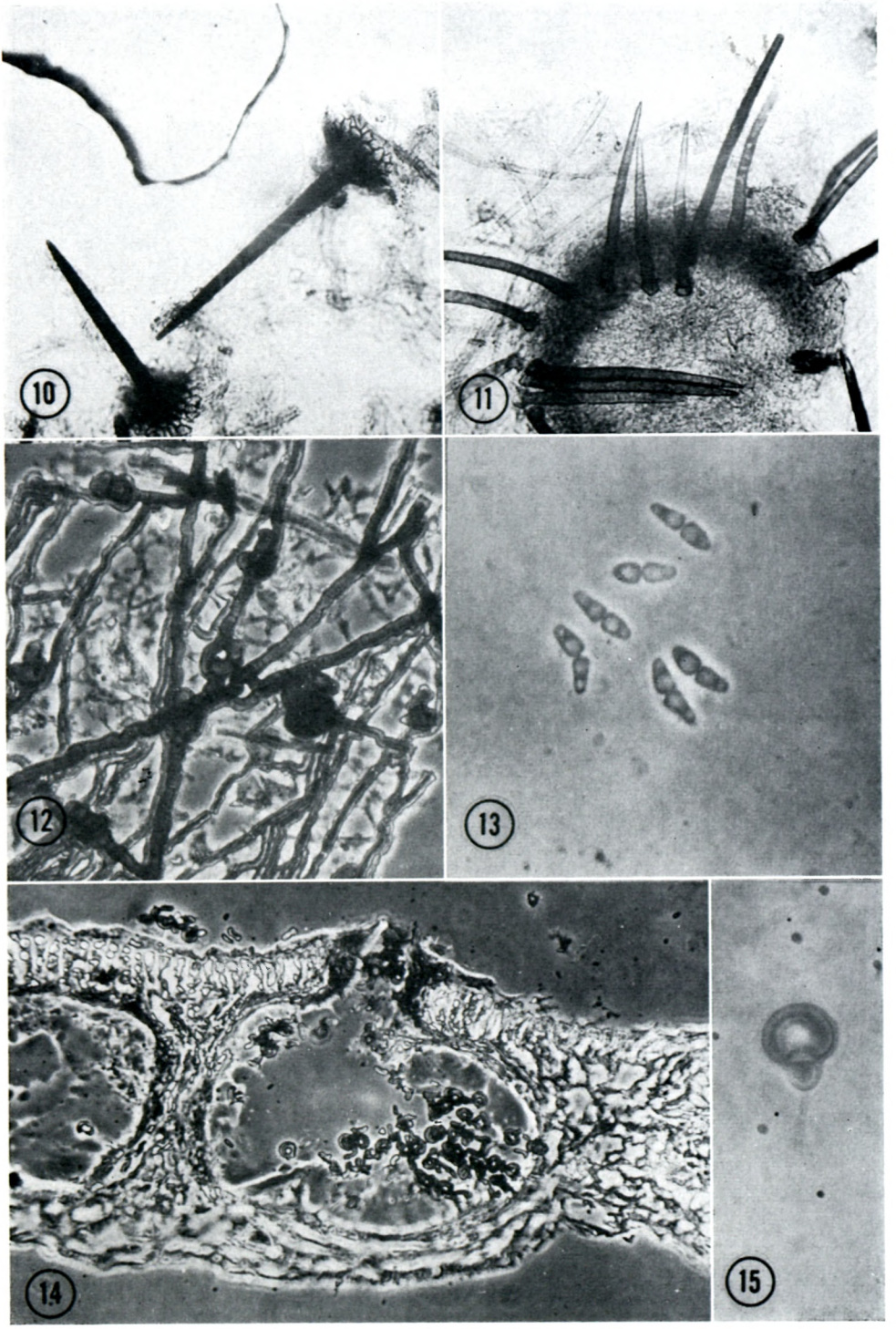

7




8




9




7230691