

New Species of Ascomycetes and a New Genus of Sphaeropsidaceae from Transvaal*

by

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ABSTRACT

A new genus of Sphaeropsidaceae, *Oncostroma* Batista & Marasas, and its type species *O. toddaliae* Batista & Marasas, are described. Five new species of Ascomycetes, *Brasiliomyces entadae* Marasas & Rabie, *Thyriopsis sphaerospora* Marasas, *Microcyclus halleriae* Marasas & Rabie, *Phyllachora ehrhartae* Marasas and *Trichopeltum africanum* Batista & Marasas, are described. Two new combinations, *Trichopeltum carissae* (Doidge) Marasas and *Trichopeltum kentaniensis* (Doidge) Marasas, are made.

In the course of an investigation of the foliicolous Ascomycetes and Deuteromycetes occurring in the indigenous forests of the northern Transvaal, the fungi described below were found to be new species. With the exception of *Thyriopsis sphaerospora*, all these fungi were collected on indigenous host plants growing in an ecological habitat described as Inland Tropical Forest by Acocks (1953). *T. sphaerospora* was collected on a *Eucalyptus* tree planted in a garden.

The type collections of the new species described below are deposited in the Mycological Herbarium, Plant Protection Research Institute, Pretoria and in the herbarium of the Commonwealth Mycological Institute, Kew, England.

***Brasiliomyces entadae* Marasas & Rabie, sp. nov.**

Figs. 1, 5.

Colonies epiphyllous; mycelium superficial, white, very thinly effused over the leaf surface. Cleistothecia very numerous, gregarious, globose-depressed, attached to the mycelium at the base, at first hyaline, becoming orange, astomous, semitranslucent, without appendages, 47-74 μ in diameter, 32.5-42.5 μ high; wall composed of one layer of large, irregularly lobed cells. Asci four or five per ascocarp, ovate, thin-walled, briefly stipitate, five- to eight-spored, 45.0-52.5 \times 25.0-32.5 μ . Ascospores elliptical, hyaline, continuous, 15.0-17.5 \times 7.5-9.5 μ .

Conidiophores and conidia not seen.

On living leaves of *Entada spicata* (E. Mey.) Druce, Entabeni, Louis Trichardt, Transvaal, Apr. 1964, Marasas & Rabie in PRE 42626 (PRE, holotype); Mariepskop, Pilgrims Rest Dist., 1962, PRE 42627.

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The asci were measured after squashing the cleistothecia in lactophenol. The cleistothecia were measured in microtome sections. Their dimensions were smaller than the correct values because of a certain amount of shrinkage which occurred during preparation.*

Two genera of Erysiphaceae with one-celled ascospores and cleistothecia lacking appendages are known. Viegas (1944) described the genus *Brasiliomyces* to accommodate a single species, *B. malvastri*. Blumer & Müller (1964) made a new genus *Salmonia* for *Erysiphe malachrae* Seaver. The distinction between *Brasiliomyces* and *Salmonia* is not at all clear. The author's collection could be placed in either of these two genera according to the original generic descriptions. Prof. Emil Müller (personal communication) is at present trying to obtain the type material of *B. malvastri* to undertake a critical study.

Brasiliomyces malvastri, *Salmonia malachrae* and *B. entadae* are compared in Table 1.

TABLE 1.—Comparison of characters of *Brasiliomyces malvastri*, *Salmonia malachrae* and *Brasiliomyces entadae*

	B. malvastri	S. malachrae	B. entadae
Host.....	<i>Malvastrum coromandelianum</i> (Malvaceae)	<i>Malachra capitata</i> and <i>Gossypium hirsutum</i> (Malvaceae)	<i>Entada spicata</i> (Mimosaceae)
Habit.....	Amphigenous	Epiphyllous	Epiphyllous
Conidial Stage..	Present and well developed	? Poorly developed	Absent
Cleistothecia.....	Hyaline, later slightly coloured. 50–60 μ in diameter	White, later pale brown. 45–80 μ in diameter	Hyaline later orange. 47–74 μ in diameter
Asci.....	? 4-spored	3 per cleistothecium 5-spored	4–5 per cleistothecium 5–8-spored
Ascospores.....	36–40 \times 28–30 μ 22–24 \times 15–17 μ	40 \times 30 μ 20 \times 14 μ	45–52.5 \times 25–32.5 μ 15–17.5 \times 7.5–9 μ

From this comparison it is evident that three closely related yet distinct species are involved. The fungus on *Entada* is tentatively proposed as a new species of *Brasiliomyces* until the matter is settled by Prof. Müller's researches.

Brasiliomyces entadae Marasas & Rabie, sp. nov.

Plagulae epiphyllae; mycelium superficarium, albidum, sparse effusum; conidiphora et conidia non visa. Cleistothecia numerosa, gregaria, globose-depressa, prima hyalina, deinde aurea, non ostiolata sine appendicibus, 47–74 μ diam., 32.5–42.5 μ alt.;

* The microtome sections were prepared according to the following technique suggested by van Warmelo (personal communication):

A small piece of leaf bearing cleistothecia was embedded in 2 per cent water agar. A small block of agar with the material embedded in it was then fixed in formal-acetic-alcohol (Johansen, 1940) for 24 hours and dehydrated for at least two hours in each of four changes of Cellosolve (2-ethoxy-ethanol) (Gurr, 1956). The dehydrated material was placed in xylene for two hours and embedded in molten wax (B.D.H. Paraffin Wax with Ceresin, congealing point 55°C). Sections of 8 μ and 12 μ were cut on a Jung rotary microtome and mounted on slides with Haupt's adhesive (Johansen, 1940). The wax was removed by placing the slides in xylene for two hours. The sections were then dehydrated in a mixture of equal parts of absolute alcohol and xylene and stained in Pianeze IIIB (Conn & Darrow, 1946) for 45 minutes. The sections were then washed with 70 per cent ethyl alcohol, briefly differentiated in acid alcohol, washed in 70 per cent alcohol, dehydrated in a mixture of equal parts of alcohol and xylene, cleared in xylene and mounted in Canada Balsam

parietis ordinis unius cellularum magnarum irregulariter lobatum consistus. Asci in quoque cleistothecio 5–8, ovati, breviter pedicellati, 5–8-spori, $45.0\text{--}52.5 \times 25.0\text{--}32.5\mu$. Ascosporae ellipsoideae, hyalinae, continuae, $15.0\text{--}17.5 \times 7.5\text{--}9.5\mu$.

Hab. in foliis vivis *Entadae spicatae* (E. Mey) Druce, Entabeni, Louis Trichardt, Transvaal, Apr. 1964, *Marasas & Rabie* in PRE 42626 (PRE, holotypus).

***Thyriopsis sphaerospora* Marasas, sp. nov.**

Figs. 9, 10, 11, 12.

Ascstromata scutellate to conical, suborbicular, irregularly tuberculate, amphigenous, subcuticular, black, $280\text{--}884\mu$ in diameter, $65\text{--}120\mu$ high, producing coralloid, hyaline haustoria in the epidermal cells, guard cells, cells surrounding the stomatal cavity and the first layer of mesophyll cells; unilocular or multilocular, opening by irregular apical fissures exposing the ascospores; upper wall stromatic, composed of several layers of dark brown flattened, very thick-walled cells; basal wall well developed, composed of two layers of cells, the outer layer composed of light brown, relatively thin-walled cells, $5\text{--}7.5\mu$ high, which extend laterally for some distance beyond the base of the upper wall as an intracuticular, unicellular layer of radially elongated, hyaline cells, and an inner layer, $5\text{--}10\mu$ high, of dark, thick-walled, stromatic cells. Asci parallel on the basal wall between hyaline, deliquescent pseudoparaphyses, broadly clavate, wall thickened, especially at the apex, bitunicate, deliquescing before spore maturation, $28\text{--}42.5 \times 15\text{--}23\mu$. Ascospores hyaline when immature, becoming dark brown, thick-walled, subglobose to globose, finely verrucose, uni-septate, $10\text{--}15 \times 10\text{--}12.5\mu$; mature spores collecting in the ascoclocular cavity.

On leaves of *Eucalyptus camaldulensis* Dehn., Nylstroom, Transvaal, Aug. 1963, *Marasas* in PRE 42659 (PRE, holotype); Nylstroom, Apr. 1964, PRE 42660.

This fungus agrees with the genus *Phaeothyriolum* (= *Micromycothelia* sensu Müller & v. Arx, 1962) of the Stigmataceae as defined by Hansford (1946) in respect of the subcuticular stromata and the coralloid haustoria. However, the structure of the upper walls of its stromata is not radial and the stromata open by irregular fissures and not by definite ostioles as in *Phaeothyriolum*.

With the key presented by Müller & v. Arx (1962) this fungus can be placed in the Order Dothiorales because of the bitunicate asci and the presence of ascostromata opening by fissures to expose the spores. Within that order it can be placed in the family Leptopeltaceae because of the shield-shaped, subcuticular stromata. Although most members of this family are saprophytes on ferns and conifer needles, some occur on phanerogams (*Leptopeltella*) and some penetrate the epidermis to form cell complexes or hyphae (Müller & v. Arx, 1962). Within the Leptopeltaceae it fits best into the genus *Thyriopsis*, which is however assumed to be limited to conifer needles by Müller & v. Arx (1962).

The fungus on *Eucalyptus* agrees with the genus *Thyriopsis* in the subcuticular, scutellate ascostromata opening by irregular fissures; the basal layer of parallel, broadly clavate, bitunicate asci developing between pseudoparaphyses and the uni-septate ascospores which are dark brown at maturity. The edge cells of the stromata of *Thyriopsis halepensis* (Cooke) Theiss. & Syd., the only known species of the genus, are radially elongated. The basal wall of the stromata of *T. sphaerospora* is extended radially as an intracuticular, unicellular layer of radially elongated cells. Numerous haustoria are produced by these radial extensions of the stromata. This can possibly be interpreted as a more highly developed adaptation to the parasitic habit than that found in *T. halepensis*.

T. sphaerospora differs from the type species of *Thyriopsis* by having the upper walls of the stromata composed of several layers of stromatic cells and the basal walls well developed and composed of two layers of cells. Furthermore it differs from *T. halepensis* in that it occurs on a phanerogam (*Eucalyptus*) and not on conifer needles, in the presence of well developed haustoria and in the characteristically subglobose to globose instead of oblong ascospores.

The author does not consider these differences to be of generic rank and this species on *Eucalyptus* is thus described as the second species of the genus *Thyriopsis*

Thyriopsis sphaerospora Marasas, sp. nov.

Ascstromata scutata, orbicularia, irregulariter tuberculata amphigena, subcuticularia, atra, 280–884 μ diam, 65–120 μ alta, haustoriis hyalinis, coralloidibus; unilocularia vel multilocularia, rimis irregularibus dehiscentia, strato tegente ordinum plurum cellularum complanatarum parietibus crassis composito; membrana basali duorum ordinum cellularum composita. Asci paralleli in membrana basali inter pseudo-paraphyses hyalinos deliquescentos; lata clavati, bitunicati, octospori, deliquescenti, 28.0–42.5 \times 15–23 μ . Ascosporae primum hyalinae, deinde atro-brunneae, subglobosae vel globosae, parietibus crassis, minute verrucosae, uniseptatae, 10–15 \times 10–12.5 μ .

Hab. in foliis *Eucalypti camaldulensis* Dehn., Nylstroom distr., Transvaal, Marasas in PRE 42659 (PRE, holotypus).

Microcyclus halleriae Marasas & Rabie, sp. nov.

Figs. 3, 15, 16.

Stromata hypophyllous, surrounded by reddish-brown haloes on yellowish discoloured areas of leaf tissue, erumpent, gregarious, irregularly tuberculate, 65–150 μ in diameter, 64–78 μ high; stroma not very well developed, causing a yellowish discolouration of the epidermal cells and the subepidermal layers of mesophyll cells; outer stromatic wall composed of several layers of dark-brown, thick-walled cells, 9–13 \times 4–7 μ ; attached to the hypostroma over its entire width or becoming narrower to form an indistinct foot, 38–80 μ wide; locules one to six in each stroma, subglobose to ellipsoidal, 32–80 μ wide, 42–58 μ high, opening by an apical, flat, rounded ostiole; filled with hyaline, thin-walled cells which are replaced by the asci. Asci few, ovate or obclavate, ventricose, stipitate, apical wall prominently thickened, paraphysate, 8-spored, 30–38 \times 12.5–17.5 μ . Ascospores polystichous, oblong-elliptical, hyaline, immature spores uniseptate in the middle, mature spores three-septate, slightly constricted, rounded at both ends, 16–19 \times 4–5 μ .

On leaves of *Halleria lucida* L., Entabeni, Louis Trichard, Transvaal, Oct. 1963, Marasas & Rabie in PRE 42687 (PRE, holotype); Entabeni, Louis Trichard, Apr. 1964, PRE 42688.

This fungus is not a typical representative of the genus *Microcyclus* and differs from the species of this genus described by Doidge (1948), Müller & Sanwal (1954) Vital (1956), Tilak (1959) and Müller & v. Arx (1962) in a number of characters.

The stroma is not connected with the hypostroma by a definite foot; the asci are ventricose and not clavate to cylindrical as in most of the other species; the spores become three-septate when mature.

It resembles other species of *Microcyclus* in the presence of erumpent, tuberculate, uni- or multi-locular stromata, the absence of paraphysoids, the immature one-septate spores of which each cell is later divided by a septum so that the mature spores are four-celled (see Fig. 3). This process appears to be similar to the division of contents

(Inhaltsteilung) described by Sydow (1939) as taking place in the ascospores of *Gilletiella chusqueae*. *Gilletiella* was however considered a didymosporous genus of the Pleosporaceae by Müller & v. Arx (1962) although some spores may have more than one septum.

This fungus is somewhat intermediate between *Mycosphaerella* and *Microcyclus* but because definite loculate stromata are present, it is placed in the latter genus rather than in *Mycosphaerella*. As this species differs in all respects from those described previously, it is proposed as a new species of *Microcyclus*:

Microcyclus halleriae Marasas & Rabie, sp. nov.

Ascstromata hypophylla, sine maculis, decoloratione flavo textus folii et corona rufo-brunneola circumdata, gregaria, irregulariter tuberculata, 65–150 μ diam., 64–78 μ alta; paries exterioris ordinum plurum cellularum brunnearum parietibus crassis, 9–13 \times 4–7 μ consistus; basi tota ad hypostromata fixa vel in pedem 38–80 μ latum attenuata. Loculi immersi, usque 6 in quoque stromate, subglobosi vel ellipsoidei, 32–80 μ lati, 42–58 μ alti; ostiolo complanato rotundo. Asci ovati vel obclavati, ventricosi, stipitati, aparaphysati, octospori, 30–38 \times 12.5–17.5 μ . Ascosporae polystichae, oblongae, hyalinae, immaturae medio uniseptatae, maturae triseptatae, vix constrictae, 16–19 \times 4.5 μ .

Hab. in foliis vivis *Halleriae lucidae* L., Entabeni, Louis Trichardt, Transvaal, Marasas & Rabie in PRE 42687 (PRE, holotypus).

Phyllachora ehrhartae Marasas, sp. nov.

Figs. 2, 13, 14.

Ascstromata amphigenous in straw-coloured discoloured areas, the whole leaf dying later and becoming straw-coloured, shiny-black, scattered, well-defined, convex, lengthened, oblong to ellipsoidal or irregular in outline, developing parallel to the veins, 0.5–2.5 \times 0.2–0.5 mm. Clypeus well developed on both sides of the leaf but extending through more cells of the abaxial epidermis, completely filling the infected epidermal cells, very dense, opaque, black, 6.5–19 μ thick; stroma in the mesophyll rather poorly developed. Perithecia one to nine in each stroma, ellipsoid, occupying the entire thickness of the leaf, 109–330 μ in diameter, 109–182 μ high; ostiole, completely immersed in the clypeus, periphysate; perithecial wall well defined, merging above and below with the clypeus, brown, concentric fibrose, 6.5–12.5 μ thick. Asci cylindrical, rounded at the apex, attenuated below to a short, straight or geniculate pedicel, paraphysate, eight-spored, 64–80 \times 9.5 μ ; paraphyses numerous, filiform, branched, hyaline, 1–2 μ in diameter. Ascospores obliquely monostichous, subglobose to broadly oval, hyaline, continuous, 6.5–13 \times 5.0–6.5 μ .

On living leaves of *Ehrharta erecta* Lam., Mariepskop, Pilgrims Rest distr., Dec. 1963, Marasas in PRE 42628 (PRE, holotype); Entabeni, Louis Trichardt, Apr. 1964, PRE 42629.

According to Dr. D. G. Parberry (personal communication), *Phyllachora* species are usually confined to hosts in one or a few closely related tribes of grasses. At present the genera *Ehrharta*, *Tetrarhena*, *Microlaena* and *Petriella* are generally included in the tribe Ehrharteae (Tateoka, 1963). Only one record of a *Phyllachora* sp. on any one of these genera could be traced. Doidge (1950) cited: “*?Phyllachora* sp. (Syn. *Sphaeria graminis* Pers. var. *ehrhartae* Berk.) on *Ehrharta* sp., Uitenhage Drège 83”. This fungus was actually described by Berkeley (1843) from Zeyher 83 and not Drège 83 as cited by Doidge (1950). The asci were described as clavate, swollen in the middle, apiculate and with a double row of oblong-ovate spores. No material of this fungus is available in the Mycological Herbarium, Pretoria and it was not included in the

Sylloge Fungorum or in the treatise by Theissen & Sydow (1915). According to Berkeley's description, it also differs from the present collection in the characters of the asci and ascospores. As no other species of *Phyllachora* are known on the tribe Ehrharteae, it was considered necessary to propose a new species:

Phyllachora ehrhartae Marasas, sp. nov.

Ascstromata amphigena, sine maculis definitis decoloratione flavobrunnea cincta, atra, nitida, sparsa, convexa, oblonga vel ellipsoidea aut irregularia, venis parallela evoluta, $0.5-2.5 \times 0.2-0.5$ mm; clypeo amphigeno bene evoluto sed in epidermide hypophyllo per plus cellulas extento, $6.5-19.0\mu$ crasso. Perithecia in quoque stromate 1-9, ellipsoidea, $10-330\mu$ diam., $109-182\mu$ alta; ostiolo plano, papilliformi, in clypeo omnino immerso; pariete perithecii $6.5-12.5\mu$ crasso, brunneo, concentrice fibroso. Asci cylindraceuti, superne rotundati, inferne pedicello breve recto vel geniculato, octospori, $64-80 \times 9.5\mu$; paraphyses numerosae, filiformes, ramosae, hyalinae, $1-2\mu$ crassae. Ascospores oblique monostichae, subglobosae vel late ovatae, hyalinae, continuae, $6.5-13 \times 5.0-6.5\mu$.

Hab. in foliis vivis *Ehrhartae erectae*, Mariepskop, Pilgrims Rest distr., Transvaal, Marasas in PRE 42628 (PRE, holotypus).

Trichopeltum africanum Batista & Marasas, sp. nov.

Figs. 4, 6.

Free mycelium forming an epiphyllous, thalloid mycelial membrane; membrane radiate, prosenchymatous, linear, branched, brown-black, single or coalescing, $75-310\mu$ broad, composed of narrow rectangular cells, $5.5-11.0 \times 3.0-3.5\mu$. Ascstromata formed under the mycelial membrane by pycnosis, applanately hemispherical, dimidiate, darker than the membrane, $115-192\mu$ in diameter; upper wall composed of two layers of cells, $9-11\mu$ thick; basal wall inconspicuous. Asci ellipsoid to subclavate, broadly rounded at the apex, apical wall thickened, briefly stipitate, eight-spored, paraphysate, $28-33 \times 10-16.5\mu$. Ascospores polystichous, oblong-clavate, straight, hyaline, one- to four-septate, slightly constricted, $10-15 \times 4\mu$.

On leaves of *Clivia* sp., Mariepskop, Pilgrims Rest distr., Transvaal, 1962, Marasas & Rabie in PRE 42707 (PRE, holotype).

Also present: *Vitalia ekmanii* (Petr. & Cif.) Bat. & Cif. (PRE 42708).

Batista, Costa & Ciferri (1957) proposed the new genus *Trichopeltum* as a substitute for *Trichopeltis* Speg., which is a synonym of *Trichothyrium* according to Hughes (1953). The genus *Trichopeltum* accommodates fungi belonging to the Trichopeltinaceae sensu Batista, Costa & Ciferri and having a linear mycelial membrane, hyalophragmospores and lacking paraphysoids. In the genus *Trichopeltum* the ascstromata develop beneath the mycelial membrane by pycnosis and in this character it differs from *Trichothyrium* which has superficial ascstromata.

Two species of *Trichopeltula* were described by Doidge (1922). The genus *Trichopeltula* Theissen was considered to be a synonym of *Trichopeltis* by Clements & Shear (1931). *Trichopeltis* is however a synonym of *Trichothyrium* (Hughes, 1953). The type of the genus *Trichopeltula* (*T. hedyaryae* Theiss.) will have to be examined to determine whether it belongs in *Trichothyrium* or in the Trichopeltinaceae. *Trichopeltula* Theissen (Zentr. Bakteriolog. 39: 636, 1914), is not a valid name because it is a later homonym of *Trichopeltulum* Speg. (Fung. Puigg. No. 342, 1889). If *Trichopeltula hedyaryae* is found to belong in the Trichopeltinaceae it may probably be placed in the genus *Trichopeltum*.

The types of *Trichopeltula carissae* Doidge and *T. kentaniensis* Doidge in the Mycological Herbarium, Pretoria were examined. The ascostromata of both these species develop underneath the mycelial membrane. Accordingly the following new combinations are proposed for these two species: ***Trichopeltum carissae*** (Doidge) *Marasas*, comb. nov. (*Trichopeltula carissae* Doidge in *Bothalia* 1: 78. 1922) and ***Trichopeltum kentaniensis*** (Doidge) *Marasas*, comb. nov. (*Trichopeltula kentaniensis* Doidge in *Bothalia* 1: 79. 1922).

The fungus on *Clivia* is closely related to both these species and appears to be somewhat intermediate between them. These two species and PRE 42707 differ from the type of the genus (*Trichopeltum hawaiiensis* Bat. & Costa) in that their mycelial membranes are branched, the ascostromata are ostiolate and the spores are four-septate. Because the author's collection cannot be satisfactorily placed in any one of these species and was also collected on a hitherto unreported host, it is described as a new species:

Trichopeltum africanum Batista & Marasas, sp. nov.

Thallus epiphyllus, ramosus, vittaeformis; vittae brunneo-atra, radiato-prosenchymaticae, 75–310 μ latae, cellulis anguste rectangularibus, 5.5–11 \times 3–3.5 μ . Ascostromata sub thallo formata, applanato-hemisphaerica, thallo ateriora, 115–192 μ diametro; ostiolo rotundato, 7.5–11 μ diametro; paries superus ordinum duorum cellularum consistus. Asci ellipsoidei vel subclavati, aparaphysati, supra late rotundati, breviter pedicellati, octospori, 28–33 \times 10–16.5 μ . Ascosporae polystichae, oblongo-clavatae, rectae, hyalinae, 1–4-septatae, leviter constrictae, 10–15 \times 4 μ .

Hab. in foliis *Cliviae* sp., Mariepskop, Pilgrims Rest distr., Transvaal, 1962, *Marasas & Rabie* in PRE 42707 (PRE, holotypus).

***Oncostroma* Batista & Marasas, gen. nov.**

Mycelium superficial, brown, with hyphae radiating from the pycnostromata to form a loose mycelial network. Pycnostromata superficial, developing underneath the mycelial network, brown-blackish, membranous, uni- or bi-loculate, ostiole not defined. Conidiophores subulate, hyaline, simple or branched, at first continuous later becoming septate. Pycnidiospores ellipsoid to fusoid, continuous, smooth, hyaline.

Type: *Oncostroma toddaliae* Batista & Marasas.

Etym.: Gr. ὄγκος = bulk, mass and stroma.

Oncostroma Batista & Marasas, Sphaeropsidaecearum.

Mycelium superficiale, brunneum, hyphis ab pycnostromatibus radiatis; pycnostromata superficialia, sub reticulo hypharum evoluta, atro-brunnea, membranosa, uni- vel biloculata, sine ostiolo definiti; conidiophorae subulatae, hyalinae, simplices vel ramosae, primum continuae deinde septatae; pycnidiosporae ellipsoideae vel fusioideae, continuae, hyalinae, leves.

Typus: *Oncostroma toddaliae* Batista & Marasas.

***Oncostroma toddaliae* Batista & Marasas, sp. nov.**

Fig. 7, 8.

Mycelium hypophyllous, superficial, composed of sparingly branched, few septate, brown hyphae, 2.5–4 μ wide, radiating from the pycnostromata to form a loose mycelial network; haustoria coralloid, hyaline to olivaceous, developing in the leaf glands only. Pycnostromata formed underneath the mycelial network, brown-blackish, uni- or bi-loculate, without a defined ostiole, 144–384 μ in diameter; walls stromatic, pseudo-parenchymatic, soft, composed of subglobose cells, 2–4.5 μ in diameter. Conidiophores

subulate, hyaline, simple or branched, at first continuous but becoming septate, $4.0-7.5 \times 1.5-3.0 \mu$. Pycnidiospores abundant, ellipsoid or fusoid, continuous, smooth, hyaline, $7.5-12.5 \times 2.0-2.5 \mu$.

On living leaves of *Toddalia asiatica* (L.) Lam., Mariepskop, Pilgrim's Rest Dist., Transvaal, 1962, *Marasas & Rabie* in PRE 42662 (PRE, holotype); F. C. Erasmus Reserve, Bosbokrand, Jan. 1963, PRE 42663.

The stromata develop over the leaf glands and coralloid haustoria are present in the cells of these glands. For these reasons it is assumed that *Oncostroma toddaliae* is parasitic on leaf glands.

The new genus *Oncostroma* does not appear to be closely related to any other genus of stromatic Sphaeropsidaceae. The closest genera according to the key presented by Clements & Shear (1931) are *Phellostroma* and *Ascochytopsis*. The pycnostromata of *Phellostroma* are however, suberose and the conidia are falcate. According to the key presented by Barnett (1960), the new genus approximates *Creothyriella*, but the pycnostromata of the latter genus contain several well defined, globose loculi and catenate conidia.

The genus *Oncostroma* is characterised by the one- or two-loculate pycnostromata developing beneath the mycelial network, the haustoria in the leaf glands, the subulate conidiophores and the one-celled, hyaline, ellipsoid or fusoid pycnidiospores.

Oncostroma toddaliae Batista & Marasas, sp. nov.

Mycelium hypophyllum, superficiale, hyphis ab pycnostromatibus radiatis, paulo ramosis, paulo septatis, brunneis, $2.5-4.0 \mu$ latis, haustoriis in glandis foliorum, coralloidibus, hyalinis vel olivaceis. Pycnostromata superficialia, sub reticulo hypharum, brunneo-atra, uni- vel biloculata, sine ostiolo definito, pseudoparenchymatica, mollia, $144-384 \mu$ diam., ex cellulis subglobosis, $2-4.5 \mu$ diam. composita. Conidiophorae subulatae, hyaline, simplices vel ramosae, primum continuae deinde septatae, $4-7.5 \times 1.5-3 \mu$. Pycnidiosporae copiosae, ellipsoideae vel fusoideae, continuae, hyalinae, leves, $7.5-12.5 \times 2.0-2.5 \mu$.

Hab. in foliis vivis *Toddaliae asiaticae* (L.) Lam., Mariepskop, Pilgrim's Rest distr., Transvaal, *Marasas & Rabie* in PRE 42662 (PRE, holotypus).

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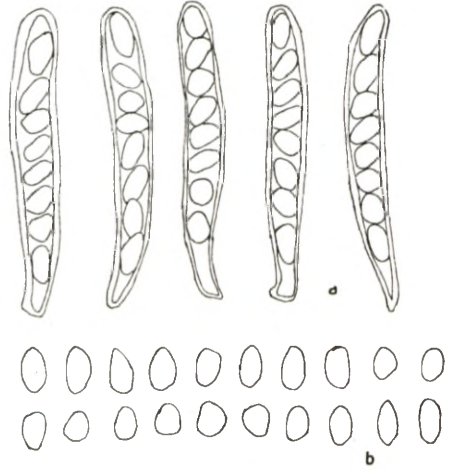
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EXPLANATION OF FIGURES

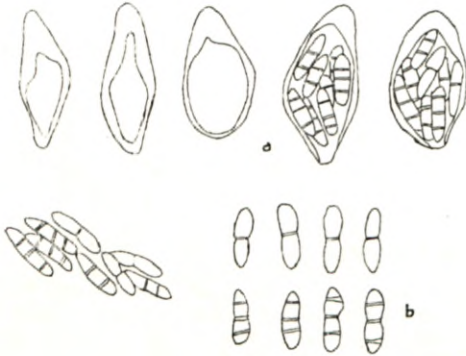
- FIG. 1-4.—Fig. 1. *Brasiliomyces entadae*, (a) ascocarp; (b) ascus; (c) ascospores; (d) five asci being released from a squashed ascocarp. Fig. 2. *Phyllachora ehrhartae*, (a) asci; (b) ascospores. Fig. 3. *Microcyclus halleriae*, (a) asci; (b) immature and mature spores. Fig. 4. *Trichopeltum africanum*, (a) part of mycelial membrane showing a portion of an ascostroma; (b) ascospores; (c) asci.
- FIG. 5-8.—Fig. 5. *Brasiliomyces entadae*, cleistothecia, $\times 500$. Fig. 6. *Trichopeltum africanum*, mycelial membrane with ascostroma, $\times 125$. Fig. 7, 8. *Oncostroma toddaliae*. Fig. 7. Pycnidia under hyphal network, $\times 125$. Fig. 8. Pycnidiospores, $\times 500$.
- FIG. 9-12.—*Thyriopsis sphaerospora*. Fig. 9. Cross section of biloculate ascostroma, $\times 156$. Fig. 10. Cross section of stroma showing covering and basal membranes and ascospores in deliquescent asci, $\times 625$. Fig. 11. Ascostromata on leaf surface, $\times 20$. Fig. 12. Ascospores, $\times 1250$.
- FIG. 13-16.—Fig. 13, 14. *Phyllachora ehrhartae*. Fig. 13. Longitudinal section of stroma showing five perithecia, $\times 156$. Fig. 14. Cross section of stroma, $\times 400$. Fig. 15, 16. *Microcyclus halleriae*. Fig. 15. Cross section of uniloculate stroma, $\times 500$. Fig. 16. Cross section of stroma showing three loculi, $\times 625$.



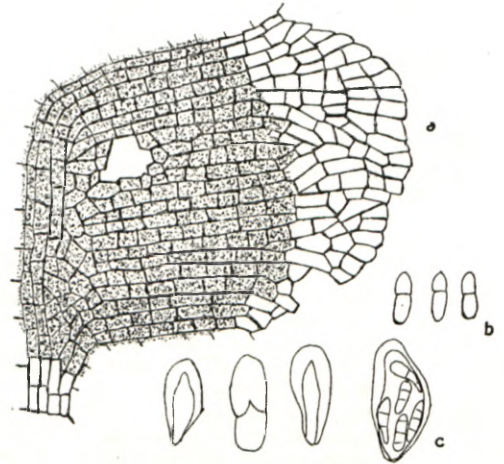
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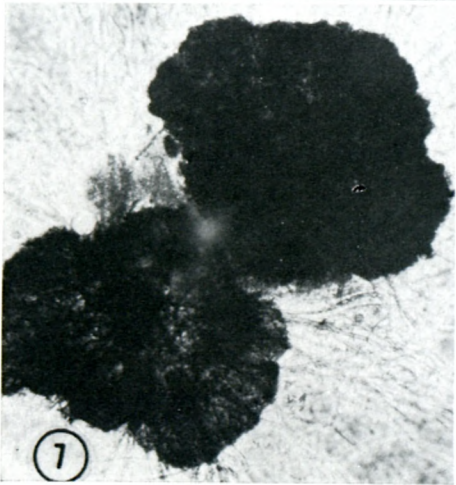
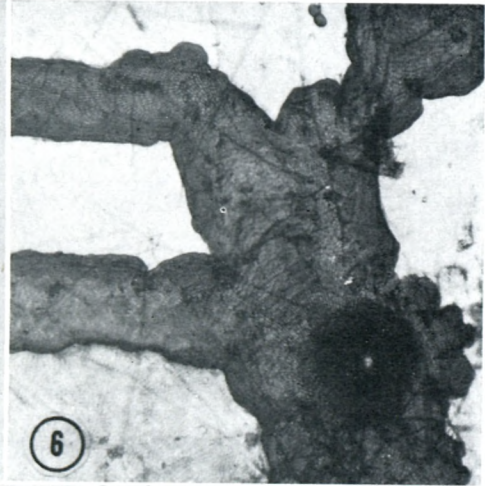
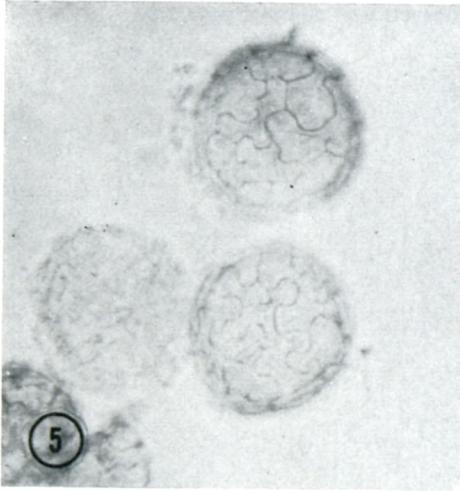
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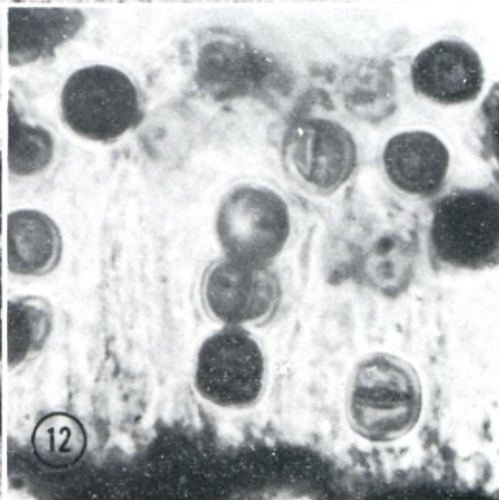
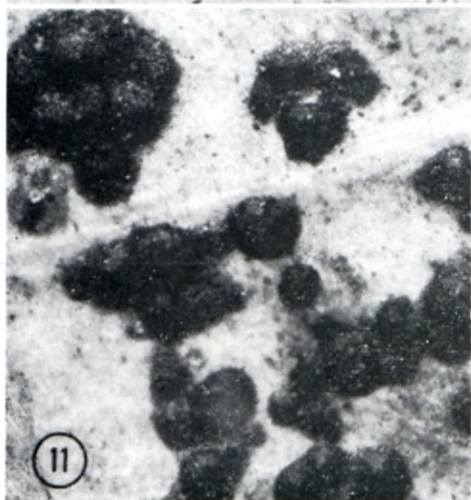
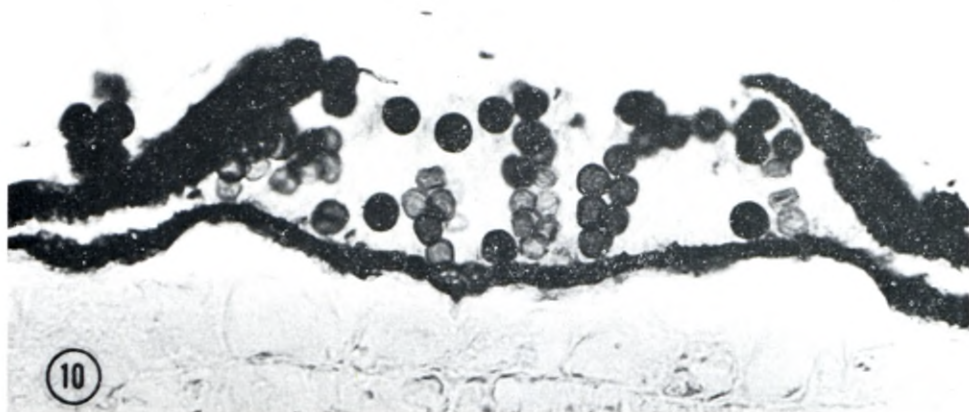
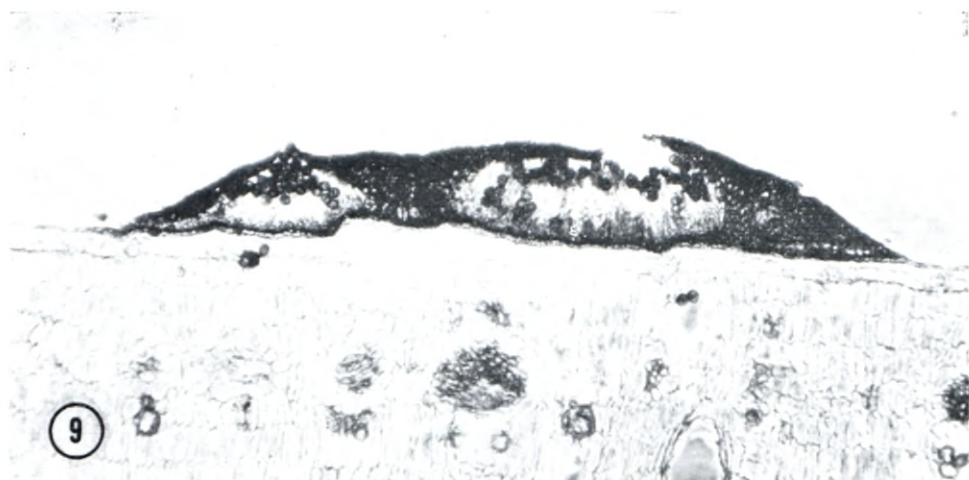


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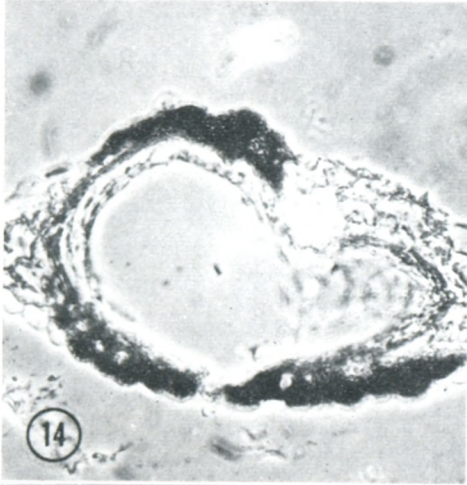
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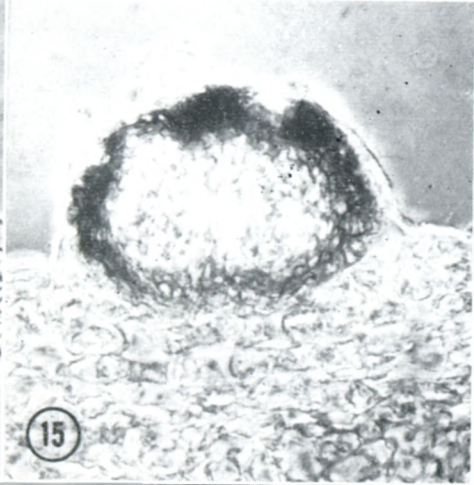




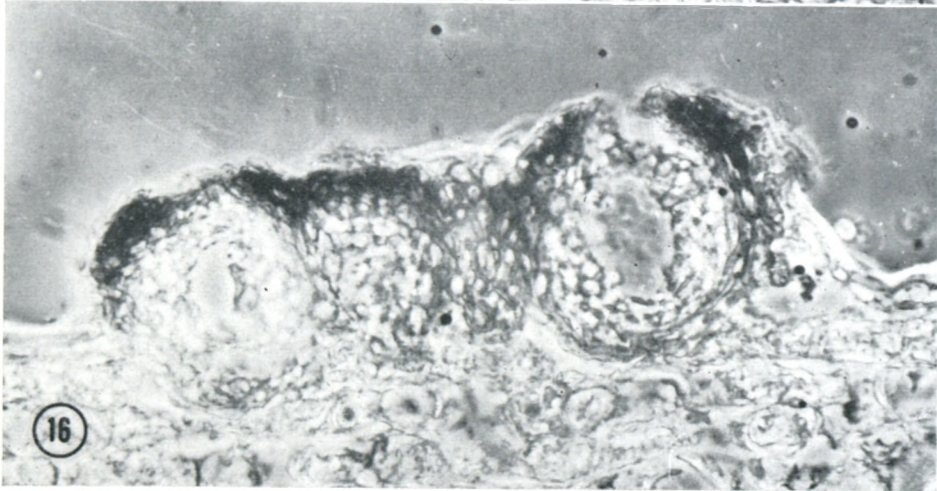
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