PARASITIC ASCOMYCETES AND DEUTEROMYCETES FROM THE TRANSVAAL

by

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INTRODUCTION

All the fungi known to occur in the Republic of South Africa up to 1950 were listed by DOIDGE (1950). Since then only a few new records and new species of South African Ascomycetes and Deuteromycetes have been reported (BOSE, 1961; GREATHEAD, 1961; PUTTERILL, 1954; ROUTIEN, 1957; SWART, 1959a, 1959b; TALBOT, 1951, 1956, 1958; VAN DER WESTHUIZEN, 1956; VON ARX, 1955).

During the course of a project to identify a collection of fungi made in the Mariepskop area of the Transvaal Province, difficulty was experienced in the identification of numerous species that were not represented in the Mycological Herbarium, Pretoria. It was soon realised that there is stil a big gap in our knowledge of the South African fungus flora.

Knowledge of the fungus flora of a region is of academic as well as of potential economic importance, especially were crops new to the area are being planted. At present the planting of coffee and tea on a large scale is being planned in the northern Transvaal and knowledge of the pathogens of these crops occurring on wild host plants in this area is becoming very important, e.g. it is known that Hemileia vastatrix occurs on Gardenia species in this region (DOIDGE, 1950).

In order to increase the knowledge of the fungi occurring in the Transvaal and to obtain an indication of their distribution, it was decided to collect and study a large number of fungi parasitic on indigenous host plants. The fungi studied included collections made by Dr. C.J. Rabie at Marieps-

kop during 1962 and collections made by Dr. Rabie and the author during various collecting trips to the following localities in 1963 and 1964:

De Hoek Forestry Station, Tzaneen, Letaba Distr.

Entabeni Forestry Station, Louis Trichardt, Zoutpansberg Distr.

Mariepskop Forestry Station, Pilgrims Rest Distr.

F.C. Erasmus Reserve, Bosbokrand, Pilgrims Rest Distr.

The author also had the opportunity to accompany Mr. G.P. Visagie of the Department of Nature Conservation of the Transvaal Provincial Administration on collecting trips to the following nature reserves:

Hans Merensky Nature Reserve, Tzaneen, Letaba Distr.

Percy Fyfe Nature Reserve, Potgietersrust Distr.

Most of the fungi were collected on host plants growing under humid conditions in indigenous forests (Inland Tropical Forest Types of ACOCKS (1953)). The forestry stations at De Hoek, Mariepskop and Entabeni as well as the F.C. Erasmus and Hans Merensky Nature Reserves can all be classified as Inland Tropical Forest Types. A few fungi were also collected in more arid localities such as the Percy Fyfe Nature Reserve which is classified as Sour Bushveld by ACOCKS (1953).

The Ascomycetes and Deuteromycetes collected at these localities are enumerated in the following way:

i. Collections of known species are enumerated in an annotated list and arranged according to the taxonomic concepts of modern authors. These authors are: Von ARX & MÜLLER (1954) for the amerosporous Ascomycetes and MÜLLER & v.ARX

(1962) for the didymosporous Ascomycetes. Other groups of Ascomycetes are treated according to specific monographs, e.g. FITZPATRICK (1942) for the Coryneliales, HANSFORD (1961) for the Meliolaceae, BATISTA (1959) for the Micropeltaceae and BATISTA & CIFERRI (1962) for the Chaetothyriales. The Saccardoan system is used for the Deuteromycetes as a much needed, comprehensive revision of these organisms has not yet been made. (The system proposed by HUGHES (1953a) dealt only with the Hyphomycetes).

ii. New records for South Africa are provided with descriptions.

iii. New species are described fully and provided with Latin diagnoses.

MATERIALS AND METHODS

Fungus infected leaves of the host plants were dried and preserved in plant presses between drying paper which was changed regularly to prevent rotting of the material. The dried specimens were stored between blotting paper in 14" - 10" envelopes. The host plants were identified by the staff of the National Herbarium, Pretoria. After identification of the fungi, the material was mounted on herbarium sheets and deposited in the Mycological Herbarium of the Plant Protection Research Institute, Pretoria under their allocated PRE herbarium numbers. Portions of the type collections of the new species described will also be deposited in the herbarium of the Commonwealth Mycological Institute, Kew, England.

SQUASH PREPARATIONS

Superficial fungi were removed from the leaves with needles and mounted in lactophenol (SMITH, 1954) or in the case of fungi with hyaline spores in lactophenol containing 0.5% cotton blue (SMITH, 1954). In isolated cases a potassium hydroxide solution with phloxine (TALBOT, 1954) was used to swell the material. When necessary ascocarps or pycnidia were squashed by pressing a needle on the cover glass.

COLLODION FILM MOUNTS

Mounts of superficial colonies, e.g. Asterina, Meliola, etc. were made by spreading a drop of liquid collodion (Flexible collodion, Arthur H. Thomas Co., Philadelphia) over the colony. After drying for 30 minutes, the thin collodion film with the fungus embedded in it was stripped from the leaf.

The collodion was then dissolved in equal parts of 80% ethanol and di-ethyl ether and the entire colony mounted in lactophenol. This method permitted examination of the mycelial characters, setae, hyphopodia, etc.

MICROTOME SECTIONS

The following technique for making microtome sections was suggested by van Warmelo (personal communication):

Material for sectioning was 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 then embedded in molten wax (B.D.H. Paraffin Wax with Ceresin, congealing point 55°C). The material was left for at least 12 hours in each of three changes of molten wax, after which the block was made.

Superficial ascocarps were embedded first in 2% water agar. A small block of agar with the fungus embedded in it was then removed and treated as described above.

Sectioning was done on a Jung rotary microtome and sections of 8μ, 10μ and 12μ were cut. The sections were mounted on slides with Haupts Adhesive (JOHANSEN, 1940) and left to dry for 24 hours.

The wax was removed from the sections by placing the slide in xylene for 90 minutes followed by a further 30 minutes in fresh xylene. The sections were then dehydrated in a mixture of equal

parts of absolute ethanol and xylene and stained in Pianeze III b (CONN & DARROW, 1946) for 45 minutes. The slides were then washed with 70% ethanol, briefly differentiated in acid alcohol, washed in 70% ethanol, dehydrated in a mixture of equal parts of absolute ethanol and xylene, cleared in xylene and mounted in Canada Balsem.

All the measurements of spores given are of 25 spores mounted in lactophenol except in the case of some Chaetothyriales and Micropeltaceae where fewer spores were seen. The colour names used are those of RIDGWAY (1912).

ANNOTATED ACCOUNT OF FUNGI COLLECTED

ASCOMYCETES

Erysiphales

Erysiphaceae

Phyllactinia erythrinae Doidge in Bothalia 4:841 (1948).

On leaves of Erythrina lysistemon Hutch., Nelspruit, May 1963 (PRE 42647).

Two collections of P. erythrinae have previously been made (PRE 23398 and PRE 25991), but in both cases the hosts were wrongly identified as Erythrina caffra Thunb. In both cases the hosts are E. lysistemon. (E. caffra occurs only in coastal regions).

Meliolaceae

The group of fungi collectively known as the Meliolineae are usually classified in the same order as the Erysiphaceae, e.g. Perisporiales (DOIDGE, 1917; CLEMENTS & SHEAR, 1931); Myriangiales (HANSFORD, 1946); Erysiphales (MILLER, 1949; LUTTRELL, 1951). GÄUMANN (1964) however, considered the resemblances between the Meliolales and Erysiphales to be the result of their convergent evolution and placed the Erysiphales much higher in his system. In modern revisions of the Ascomycetes (MILLER, 1949; LUTTRELL, 1951) the authors agree that not enough is known about the developmental characteristics of the Meliolaceae to indicate their affinities conclusively. For the purpose of this account, the Meliolaceae is placed with the Erysiphaceae in the Order Erysiphales of the subseries Pyrenomycetes according to

LUTTRELL (1951). The arrangement of genera and species is based on the monograph by HANSFORD (1961).

Asteridiella atra (Doidge) Hansford in Sydowia 10:46 (1957); Hansford, Sydowia, Beiheft II:136 (1961).
Syn.: Irene atra Doidge - S.Afr.J. Nat. Hist. 2:40 (1920).

On leaves of Eugenia natalitia Sond., Mariepskop, Jan. 1963 (PRE 42679).

The material is very scanty and heavily parasitised by Helminthosporium dorycarpum Mont. Also present is Asterina bukobensis Hansford.

HANSFORD (1956, 1961) proved that the genus Irene sensu Theissen and Sydow is identical with and long antedated by Asteridiella McAlpine. Accordingly he transfered all the species of the Meliolineae without mycelial setae, perithecial setae or larviform appendages to the genus Asteridiella.

Asteridiella ekebergiae (Doidge) Hansford in Sydowia 10:47 (1957); Hansford, Sydowia, Beiheft II:403 (1961).
Syn.: Irene ekebergiae Doidge-Bothalia 4:193 (1941).

On leaves of Ekebergia pterophylla (D.C.) Hofmeyer, Mariepskop, Jan. 1963 (PRE 42596).

Only the type material of this fungus had been collected previously (Lydenburg, Transvaal, 1923 PRE 25909). HANSFORD & DEIGHTON (1948) described Irenina ekebergiae (Doidge) Hansford & Deighton = Irene ekebergiae Doidge on Trichilia heudelotii from Sierra Leone and the Gold Coast

(now Ghana), but HANSFORD (1961) listed these collections as Asteridiella bersamae Hansford.

Abundant material of this fungus has been collected at Mariepskop. The perithecia are larger and more mature than those in the type collection. Many mature ascospores can be seen on the leaves through a dissecting microscope.

Asteridiella podocarpi (Doidge) Hansford in Sydowia 10:49 (1957); Hansford, Sydowia, Beiheft II:750 (1961).

Syn.: Irene podocarpi Doidge - S.Afr. J. Nat. Hist. 2:40 (1920); Doidge, Bothalia 2:431 (1932).

On leaves of Podocarpus latifolius (Thunb.) R.Br. ex Mirb. (= P. thunbergiae Hook.), Mariepskop, 1962 (PRE 42597).

This fungus had been found on a number of Podocarpus species in the indigenous forests of the Cape, Natal and Transvaal provinces of the Republic of South Africa. It had also been reported from the Philippines by HANSFORD (1961).

Meliola behniae Sydow in Bothalia 2:444 (1928); Hansford, Sydowia, Beiheft II:713 (1961).

On leaves of Behnia reticulata Didrichs, Mariepskop, 1962 (PRE 42684).

The Meliola is not fruiting and is heavily parasitised by Isthmospora trichophila (At.) Damon (PRE 42681).

M. behniae is represented in the Mycological Herbarium, Pretoria, by a few collections from the northern Transvaal and one from Natal.

Meliola carissae Doidge in Bothalia 1:72 (1921); Hansford, Sydowia, Beiheft II:557 (1961).

On leaves of Carissa bispinosa (L.) Desf. ex Bren var. acuminata (E. Mey) L.E. Codd, Magoebaskloof, Tzaneen, Oct. 1963 (PRE 42631); Entabeni, Louis Trichardt, Oct. 1963 (PRE 42642).

M. carissae is very common in the Cape Province, but had not been collected previously in the Transvaal. Both the collections are heavily parasitised by Isthmospora trichophila (At.) Damon, while No. 42631 is also parasitised by Dimerina mindanaense (P. Henn.) Hansford.

Meliola cnestidis Doidge in Bothalia 2:453 (1928); Hansford, Sydowia, Beiheft II:476 (1961).

On leaves of Cnestis natalensis Planch & Sond., Magoebaskloof, Tzaneen, Oct. 1963 (PRE 42601).

A few collections of this fungus had been made in the Cape Province and Natal, but it had not been collected previously in the Transvaal.

Meliola cryptocaryae Doidge in Trans. Roy.Soc. S.Afr. 8:112 (1920); Doidge & Sydow, Bothalia 2:456 (1928); Hansford, Sydowia Beiheft II:55 (1961).

On leaves of Cryptocarya liebertiana Engl. (= C. transvaalensis Burt Davy), De Hoek, Tzaneen, Oct. 1963 (PRE 42644).

M. cryptocaryae is found on a number of Cryptocarya species and is very common and widespread in South Africa, especially in Natal.

Meliola evansii Doidge in Trans. Roy.Soc. S.Afr. 8:112 (1920); Doidge & Sydow, Bothalia 2:438 (1928); Hansford, Sydowia, Beiheft II:343 (1961).

On leaves of Maytenus acuminatus (L.f.) Loes. (= Celastrus acuminatus L.f. = Gymnosporia acuminata Szyszyl.), Entabeni, Louis Trichardt, Oct. 1963 (PRE 42637).

M. evansii is common on Celastraceae in South Africa but it had not been recorded on Maytenus acuminatus. A few colonies are parasitised by Calonectria erysiphoides Berl. & Roum. (PRE 42638).

Meliola furcata Leveille in Ann. Sci. Nat. III (5): 266 (1864); Hansford, Sydowia, Beiheft II:372 (1961).

Syn.: M. merrilii Syd.-Philipp. J. Sci. C. 8:479 (1913); Doidge & Sydow, Bothalia 2:445 (1928).

M. varia Doidge-Trans. Roy. Soc. S. Afr. 5:738 (1917).

On leaves of Rhoicissus rhomboidea E. Mey, De Hoek, Tzaneen, Jan. 1963 (PRE 42639).

M. furcata is wide-spread in South Africa on R. rhomboidea, but appears to be limited to this species of the genus Rhoicissus.

Meliola ganglifera Kalchbrenner & Cooke in Grevillea 9:34 (1880); Doidge & Sydow, Bothalia 2:439 (1928); Hansford, Sydowia, Beiheft II:478 (1961).

On leaves of Curtisia dentata (Burm.) C.A. Smith, Mariepskop, 1962 (PRE 42657).

This fungus is very common and wide-spread in South Africa.

Meliola littoralis Sydow in Bothalia 2:462 (1928); Hansford, Sydowia Beiheft II:592 (1961).

On leaves of Grumilea capensis Sond., Entabeni, Louis Trichardt, Oct. 1963 (PRE 42630).

This fungus is very common and widespread on Rubiaceae in South Africa.

Meliola peltata Doidge in Trans. Roy. Soc.S. Afr. 5:727 (1917); Doidge & Sydow, Bothalia 2:437 (1928); Hansford, Sydowia, Beiheft II:750 (1961).

On leaves of Podocarpus latifolius (Thunb.) R. Br., De Hoek, Tzaneen, Oct. 1963 (PRE 42634).

M. peltata is found on Podocarpus species in the indigenous forests of the Cape, Natal and Transvaal.

DOIDGE & SYDOW (1928) stated: "The systematic position of this fungus is more than a little doubtful, but a more critical study must be deferred until better material is available." Although the present material is scanty, the author's observations on this fungus are in full agreement with the description of DOIDGE & SYDOW (1928). As this fungus definitely belongs in the genus Meliola and is the only species of that genus known to occur on the Taxaceae (HANSFORD, 1961), there appears to be no reason to consider its systematic position as doubtful.

Meliola polytricha Kalchbrenner & Cooke in Grevillea 8:72 (1880); Hansford, Sydowia, Beiheft II:104 (1961).

On leaves of Pittosporum viridiflorum

Sim., Mariepskop, 1962 (PRE 42636); Dec. 1963 (PRE 42635).

M. polytricha is a new fungus record for the Transvaal. According to HANSFORD (1961) this fungus also occurs on a number of Pittosporum species in Uganda, Australia and India.

Meliola rigida Doidge in Trans. Roy. Soc. S. Afr. 5:736 (1916); Doidge & Sydow, Bothalia 2:452 (1928); Hansford, Sydowia, Beiheft II:41 (1961).

On leaves of Xymalos monospora (Harv.) Baill., De Hoek, Tzaneen, Oct. 1963 (PRE 42600).

A few cauliicolous colonies are present in the material.

This species is common in South Africa and is also found in the Congo Republic (HANSFORD, 1961).

Meliola toddaliae Doidge in Trans. Roy. Soc. S. Afr. 5:732 (1916); Doidge & Sydow, Bothalia 2:449 (1928); Hansford, Sydowia, Beiheft II:387 (1961).

On leaves of Fagara davyi Verdoorn, De Hoek, Tzaneen, Oct. 1963 (PRE 42602).

This species occurs on several species of Rutaceae and is very common and wide-spread in South Africa.

Meliola woodiana Saccardo in Hedwigia 38:132 (1889); Doidge & Sydow, Bothalia 2:446 (1928); Hansford, Sydowia, Beiheft II:587 (1961).

On leaves of Cantium inerme (L.C.) O. Ktze., Mariepskop, Jan. 1963 (PRE 42641); De Hoek, Tzaneen, Oct. 1963 (PRE 42640).

C. inerme is a new host record for

M. woodiana. This is a very common and conspicuous fungus occurring on several species of Canthium in South Africa. According to HANSFORD (1961) it is also found on Rubiaceae in Australia and Brazil.

Sphaeriales

Hypocreaceae

Calonectria erysiphoides Berlése & Roumeguere in Rev. Mycol. 10:76 (1888); Hansford, Mycol. Papers, Commonwealth Mycol. Inst. 15:120 (1946).

Hyperparasitic on Meliola evansii Doidge on Maytenus acuminatus (L.f.) Loes., Entabeni, Louis Trichardt, Oct. 1963 (PRE 42638).

This is a new record for South Africa. As far as could be determined, the only other collection of this fungus that had been made before is the type material described by BERLESE & ROUMEGUERE (1888) from Tonkin, Indo-China (now Thailand). Unfortunately the author's material is too limited for descriptive purposes as there are only a few perithecia present. An attempt will be made to collect more material of this interesting fungus.

Polystigmataceae

Glomerella cingulata (Stonem.) Spaulding & v. Schrenk; v. Arx & Müller, Beitr. Krypt. Fl. Schweiz II (1):188 (1954).

On leaves of Clivia nobilis Lindl., Mariepskop, 1962 (PRE 42656).

G. cingulata is not often found on host plants in South Africa, but it has been isolated

in culture. The fungus known as Glomerella phacidiomorpha (Ces.) Petr. which occurs on Phormium tenax along the east coast of South Africa, is, however, synonymous with G. cingulata (v. ARX & MÜLLER, 1954).

The fungus on Clivia agrees fairly well with the description of Physalospora cliviae Syd. given by SYDOW (1924). The ascospores of G. cingulata on Clivia measure 19.5 - 24.5 x 7.0 - 7.5µ, those of P. cliviae are given in the description as 17 - 23 x 7.5 - 10µ. Unfortunately no material of P. cliviae could be examined, but most probably it will prove to be identical with G. cingulata.

Phaeochorella parinarii (P. Henn.) Theiss. & Sydow in Ann. Mycol. 13:405 (1915); Doidge, Bothalia 4:456 (1942); Petrak, Sydowia 1:120 (1947).

On leaves of Parinari curatellifolia Planch. ex Benth. s.sp. mobola (Olive.) R. Grah. (= Parinari mobola Olive), Mariepskop, 1962 (PRE 42649); Erasmus Reserve, Bosbokrand, Jan. 1963 (PRE 42648).

This is a very common and conspicuous species, occurring wherever the host is found.

Phyllachora amaniensis P. Hennings in Botan. Jahrb. 38:113 (1905); Theissen & Sydow, Ann. Mycol. 13:473 (1915); Doidge, Bothalia 4:440 (1942).

On leaves of Ficus capensis Thunb., Mariepskop, 1962 (PRE 42561).

This species of Phyllachora was originally described from central Africa. In South Africa

it is known to occur in the provinces of Transvaal and Natal.

Phyllachora ficuum Niessl in Hedwigia 20:99 (1881); Doidge, Bothalia 4:441 (1942).

On leaves of Ficus sycomorus L., Merensky Reserve, Tzaneen, Aug. 1963 (PRE 42553).

According to v. ARX & MÜLLER (1954) who cited 22 synonyms of P. ficuum, this fungus occurs on several species of Ficus in Africa and Asia. Considering its wide distribution, it is remarkable that this fungus has been collected only once before in South Africa (Nelspruit, Transvaal, 1931 (PRE 25969)).

Phyllachora heterospora P. Hennings in Ann. Mycol. 13:453 (1915); Doidge, Bothalia 4:434 (1942). Syn.: Phyllachora evansii Sydow - Ann. Mycol. 10:40 (1912); Doidge, Bothalia 4:436 (1942).

On leaves of Panicum deustum Thunb., Duivelskloof, Tzaneen, Oct. 1963 (PRE 42554); Mariepskop, Dec. 1963 (PRE 42555); Setaria chevalieri Stapf., Erasmus Reserve, Bosbokrand, Jan. 1963 (PRE 42559).

Dr. D.G. Parberry of the University of Melbourne examined a portion of the type material of P. evansii Syd. and in a personal communication to Miss B.A. Louwrens of the Plant Protection Research Institute, Pretoria, expressed the opinion that P. evansii Syd. is a synonym of P. heterospora P. Henn. This view is accepted here. A few characters of these two species are compared in Table 1 to illustrate the close resemblance between them (DOIDGE, 1942):

Table 1. Comparison of characters of Phyllachora heterospora and Phyllachora evansii.

	P. heterospora	P. evansii
Stroma	Amphigenous	Amphigenous
Perithecia	4-10 per stroma	1 - few per stroma
	180-360 μ in diameter	250-500 μ in diameter
	100-160 μ high	120-200 μ high
Asci	60-80 x 10-16	70-120 x 7-12 μ
Ascospores	13-17 x 7-8 μ	14-18 x 6-8 μ
Conidia	15-20 x 0.5 μ	15-20 x 1 μ

Phyllachora hieronymi P. Hennings; Theissen & Sydow, Ann. Mycol. 13:438 (1915); Doidge, Bothalia 4:423 (1942).

On leaves of Cyathea dregei O. Kze., Mariepskop, 1962 (PRE 42562); Entabeni, Louis Trichardt, Oct. 1963 (PRE 42646).

Only two collections of this fungus had been made previously in South Africa, one from the Transvaal and one from Natal.

Phyllachora melianthi (Thüm.) Saccardo in Syll. Fung. IX:1013 (1891); Theissen & Sydow, Ann. Mycol. 13:528 (1915); Doidge, Bothalia 4:449 (1942).

On leaves of Bersama transvaalensis Turr., Mariepskop, 1962 (PRE 42556); Entabeni, Louis Trichardt, Oct. 1963 (PRE 42557).

P. melianthi occurs on several species of Melianthus and Bersama in South Africa, but had not yet been recorded on Bersama transvaalensis. P. bersamae occurs on Bersama species in East Africa (CICARONE, 1951), but this species has larger spores than P. melianthi.

Phyllachora microstegia Sydow in Ann. Mycol. 22:430 (1924); Doidge, Bothalia 4:452 (1942).

On leaves of Ochna holstii Engl., Mariepskop, Jan. 1963 (PRE 42558).

Only two collections of this fungus had been made previously: the type collection from Woodbush, Transvaal (PRE 20448) and one from Natal (PRE 35300).

Phyllachora peltophori Sydow in Ann. Mycol. 10:40 (1912); Doidge, Bothalia 4:446 (1942).

On leaves of Peltophorum africanum Sond., Mariepskop, 1962 (PRE 42563).

This species is known only from the northern Transvaal.

Phyllachora pterocarpi Sydow in Ann. Mycol. 10:40 (1912); Doidge, Bothalia 4:446 (1942).

On leaves of Pterocarpus angolensis D.C., Erasmus Reserve, Bosbokrand, Jan. 1963 (PRE 42564).

P. pterocarpi is common on several species of Pterocarpus in the northern Transvaal and Rhodesia.

Phyllachora strelitziae Sacc. emend. Doidge in Bothalia 4:439 (1942).

On leaves of Strelitzia caudata R.A.D. (= S. augusta Thunb.), Mariepskop, Dec. 1963 (PRE 42565).

This is a new record for the Transvaal. P. strelitziae had been collected previously in Natal and once from Kentani in the Cape Province. The host is rare in the Mariepskop area and occurs in groups on precipitous slopes. Numerous other fungi are present on dead and dying leaves of S. caudata collected at the same locality.

Phyllachora sp.

Sub. Phyllachora puncta (Cooke) Doidge in Bothalia 4:445 (1942).

On leaves of Dalbergia armata E. Mey, De Hoek, Tzaneen, Jan. 1963 (PRE 42560).

The name Phyllachora puncta (Cooke) Doidge can not be used for this fungus on Dalbergia as it is a homonym of Phyllachora punctum (Schw.) Orton.

The synonymy of P. puncta (Cooke) Doidge is as follows:

Phyllachora puncta (Cooke) Doidge - Bothalia 4:445 (1942).

= Dothidea puncta Cooke - Grevillea 10:128 (1882).

= Parodiella puncta (Cooke) Sacc.- Syll. Fung. 1:718 (1882).

= Catacauma punctum (Cooke) Theiss. & Syd. - Ann. Mycol. 15:141 (1917).

The synonymy of P. punctum (Schw.) Orton is as follows (pro parte):

Phyllachora punctum (Schw.) Orton - Jour. Dept. Agr. Puerto Rico 2:153 (1918) (According to ORTON, 1944).

= Sphaeria punctum Schw. - Trans. Am. Phil. Soc. II, 4:209 (1832). (According to ORTON, 1944).

From the above evidence it is clear that Phyllachora puncta (Cke.) Doidge is a later homonym of Phyllachora punctum (Schw.) Orton. It is concluded that a new name will have to be made for P. puncta (Cke.) Doidge unless it can be proved that this fungus is identical with one of the other species of Phyllachora described on Dalbergia or a closely related genus. Other species and varieties of Phyllachora found on Dalbergia are:

i) P. dalbergiae Niessl in Hedwigia 20:99 (1881).

ii) P. dalbergiae Niessl var. macrasca Rehm in Syll. Fung. IX:1007 (1891).

iii) P. dalbergiicola P. Henn. in Hedwigia 36:224 (1897).

iv) P. dalbergiicola P. Henn. var. perforans Rehm in Hedwigia 39:232 (1900).

P. perforans (Rehm.) Sacc. & Sydow in Syll. Fung. XVI:619 (1902).

v) Catacauma dalbergiicola (P. Henn.) Theiss. & Sydow var. philippinensis Theiss. & Sydow in Ann. Mycol. 15:447 (1916).

These species will have to be critically compared to determine whether they are in fact distinct species and varieties and whether any of them are identical with the Phyllachora occurring on Dalbergia armata in South Africa. Attempts to obtain material of the Brazilian species (P. dalbergiicola, P. dalbergiicola var. perforans and P. dalbergiae) from the Museum Nacional in Rio de Janeiro were unsuccessful.

Stigmochora deightonii (Syd.) v. Arx in Beitr. Krypt. Fl. Schweiz 11(2):662 (1962).

Syn.: Endodothella deightonii Syd. - Ann. Mycol. 36:162 (1938); Doidge, Bothalia 4:457 (1942).

On leaves of Albizzia adianthifolia (Schum.) W.F. Wight, Entabeni, Louis Trichardt, Oct. 1963 (PRE 42595).

This new combination was made by MÜLLER & v. ARX (1962) because the type species of Endodothella proved to have one-celled ascospores and could accordingly be placed in Phyllachora. The species of Endodothella with two-celled ascospores are now placed in the genus Stigmochora Theiss. & Syd.

The material examined was not fully mature, but the measurements of the asci (88 x 12.5µ) and

ascospores (18 - 23 x 5.5 - 6μ) agree well with those given by DOIDGE (1942) for other South African collections of this fungus.

In South Africa S. deightonii had been collected previously only in Natal. It is also reported from India by MÜLLER & v. ARX (1962). Its occurrence on A. adianthifolia is recorded here for the first time.

Coryneliales

Coryneliaceae

The taxonomic position of the coryneliaceous fungi is still uncertain (GAUMANN, 1964) and they were not included in the study of the amerosporous Pyrenomycetes by v. ARX & MÜLLER (1954). In his first monograph of the group, FITZPATRICK (1920) placed the Coryneliaceae in the Perisporiales. In his later monograph (FITZPATRICK, 1942), he followed SEAVER & CHARDON (1926), cited by FITZPATRICK (1942) in placing the family in a new order, the Coryneliales. LUTTRELL (1951) classified the Coryneliales under the subseries Pyrenomycetes of the series Unitunicatae. The inclusion of this order in a modern system of classification of the Ascomycetes presents a serious problem since these fungi form unitunicate asci in ascostromatic ascocarps.

Corynelia uberata Fries; Doidge, Bothalia 1:218 (1921); Fitzpatrick, Mycologia 12:247 (1920), Mycologia 34:469 (1942).

On leaves and fruits of Podocarpus latifolius (Thunb.) R. Br. ex Mirb., Mariepskop, (PRE 42588).

C. uberata is wide-spread in the indigenous forests of South Africa on several species of Podocarpus. This species also occurs in East Africa, Japan and Australia according to FITZ-PATRICK (1942).

Coryneliospora fructicola (Pat.) Fitzpatrick in Mycologia 34:484 (1942).

Syn.: Corynelia fructicola (Pat.) v. Höhnel - Doidge, Bothalia 1:217 (1924).

On fruits of Rapanea melanophleos Mez., Tate Vondo, Louis Trichardt, Apr. 1964 (PRE 42587).

Abundant material of C. fructicola in a very good condition has been collected at Louis Trichardt. This fungus has a wide distribution in South Africa on Rapanea and also occurs in China and India on Myrsine species according to FITZPATRICK (1942).

Dothiorales

Asterinaceae

Asterina bosmanae Doidge in Bothalia 4:291 (1942).

On leaves of Bequaertiodendron magalis-montanum (Sond.) Heine & Hemsley (= Chrysophyllum magalismontanum Sond.), Mariepskop, 1962 (PRE 42572).

Only the type material of this fungus had been collected previously (Rooiwal, Nelspruit Distr., 1934 PRE 32808).

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

On leaves of Eugenia natalitia Sond.,

Mariepskop, Jan. 1963 (PRE 42678).

This is the first record of the occurrence of this fungus in South Africa. Eugenia natalitia is a new host record for A. bukobensis which had been described in detail on Eugenia bukobensis from Uganda by HANSFORD (1945). This species is characterised by hyphopodia which are at first terminal, later becoming lateral on the hyphae. The hyphopodia are two-celled and 16.0 - 19.5 μ long. (Fig. 27).

Asterina combreti Sydow in Botan. Jahrb. 44:264 (1910); Doidge, Bothalia 4:301 (1942).

On leaves of Combretum kraussii Hochst., Entabeni, Louis Trichardt, Oct. 1963 (PRE 42577); Combretum erythrophyllum (Burch.) Sond. (= C. glomeruliflorum Sond.), Entabeni, Louis Trichardt, Oct. 1963 (PRE 42576).

This fungus is common on a number of Combretum species in the Transvaal and Natal.

Thyriothecia and pycnidia are represented in the material and numerous conidia showing the characteristic light-coloured medial band are present.

Asterina fimbriata Kalchbrenner & Cooke in Grevillea 9:33 (1880); Doidge, Bothalia 4:300 (1942).

On leaves of Schlerochiton harveyanus Nees., Mariepskop, 1962 (PRE 42578).

A. fimbriata had previously been collected on a number of genera of Acanthaceae in the Cape and Natal provinces but not in the Transvaal.

Asterina opaca Sydow in Ann. Mycol. 10:3 (1912); Doidge, Bothalia 4:289 (1942).

On leaves of Bequaertiodendron natalense (Sond.) Heine & Hemsley, Mariepskop, Jan. 1963 (PRE 42573).

This fungus is known only from the type collection (PRE 1663) and one other collection (PRE 11555), both from Natal.

Asterina oxyanthi Doidge in Bothalia 4:284 (1942).

On leaves of Oxyanthus gerrardi Sond., Mariepskop, 1962 (PRE 42571).

This fungus is represented in the Mycological Herbarium, Pretoria by a few records from the northern Transvaal and Natal.

Asterina secamonicola Doidge in Bothalia 2:233 (1927); Doidge, Bothalia 4:286 (1942).

On leaves of Secamone alpini Schultes, Mariepskop, Jan 1963 (PRE 42570).

A. secamonicola had only been collected twice: the type material (PRE 17716, Woodbush, Transvaal) and PRE 34027 from the same locality as the present collection.

Asterina streptocarpi Doidge in Bothalia 1:203 (1924); Doidge, Bothalia 4:296 (1942).

On leaves of Streptocarpus sp., Mariepskop, 1962 (PRE 42568).

This fungus is a new record for the Transvaal and had previously been collected only in the Knysna district of the Cape Province. The material

collected at Mariepskop is very scanty but nevertheless in good condition.

Asterodothis solaris (Kalchbr. & Cooke) Theissen in Ann. Mycol. 10:179 (1912); Doidge, Bothalia 1:10 (1921); Ellis, Mycol. Papers, Commonwealth Mycol. Inst. 70:9 (1958); Müller & v. Arx, Beitr. Krypt. Fl. Schweiz 11(2):90 (1962).

On leaves of Olea capensis (L.) s.sp. macrocarpa (C.H. Wr.) Verdoorn, Entabeni, Louis Trichardt, Apr. 1964 (PRE 42665).

A. solaris is very common and wide-spread in South Africa on a number of Olea species. According to ELLIS (1958) it also occurs in the Sudan, Tanganyika (now Tanzania) and Uganda.

Ascostromata and conidia are present in the material. The conidial stage had been described as the "Clasterosporium state of Asterodothis solaris" by ELLIS (1958).

Asterolibertia megathyria Doidge in Bothalia 4:314 L942); Müller & v. Arx, Beitr. Krypt. Fl. Schweiz 11(2):99 (1962).

On leaves of Tricalysia lanceolata (Sond.) Burtt-Davy, Mariepskop, 1962 (PRE 42590); Erasmus Reserve, Bosbokrand, May 1963 (PRE 42589).

This fungus is common and wide-spread in South Africa on a number of Tricalysia species.

Macowaniella congesta (Wint.) Doidge in Bothalia 1:9 (1921); Müller & v. Arx, Beitr. Krypt. Fl. Schweiz 11(2):147 (1962).

On young branches and leaves of Carissa

bispinosa (L.) Desf. ex Bren. var. bispinosa, Percy Fife Reserve, Potgietersrust, Aug. 1963 (PRE 42586); branches of Carissa edulis Vahl., Erasmus Reserve, Bosbokrand, Jan. 1963 (PRE 42585).

Carissa edulis is a new host record for M. congesta which is very common and wide-spread in South Africa.

Prillieuxina tecleae (Doidge) v. Arx, in Beitr. krypt. Fl. Schweiz 11(2):134 (1962).
Syn.: Asterinella tecleae Doidge - Bothalia 4:316 (1942).
Echidnodes tecleae (Doidge) Batista & Nascimento Inst. Mic. Univ. Recife Publ. 72:13 (1959).

On leaves of Teclea natalensis Engl., Entabeni, Louis Trichardt, Apr. 1964 (PRE 42709).

MÜLLER & v. ARX (1962) placed most of the species previously classified under Asterinella in the genus Prillieuxina Arnaud. Members of this genus are identical with Asterina in structure but lack hyphopodia.

Pycnostromata of Prillieuxina tecleae are very numerous and interspersed with the ascostromata in the material. The conidia are cylindrical-clavate, truncate at both ends, straight or slightly curved, hyaline at first but becoming brownish, three to seven septate, not constricted, 42 - 51 x 3.5µ. BATISTA & CIFERRI (1959) described this pycnidial stage as Allothyriella tecleae Batista & Nascimento.

Trichasterina popowiae (Doidge) Doidge in Bothalia 4:279 (1942); Müller & v. Arx, Beitr. Krypt. Fl.

Schweiz 11(2):96 (1962).

On leaves of Popowia caffra (Sond.) Benth., Erasmus Reserve, Bosbokrand, Jan. 1963 (PRE 42669); May, 1963 (PRE 42670).

This fungus is common on Popowia caffra in Natal, but had not been collected in the Transvaal before.

Botryosphaeriaceae

Parastigmatea nervisita Doidge in Bothalia 1:22 (1921); v. Arx & Müller, Beitr. Krypt. Fl. Schweiz 11(1):83 (1954).

On leaves of Stephania abyssinica (Dill. & Rich.) Walp. (=S. hernandifolia Walp.), Mariepskop, Jan 1963 (PRE 42654).

P. nervisita is common in the Transvaal and Natal provinces. In the Mariepskop area the host plants are often very heavily parasitized.

Vestergrenia chaenostoma (Sacc.) Theissen in Hedwigia 39:132 (1899); Theissen, Ann. Mycol. 16:179 (1918); Doidge, Bothalia 2:229 (1927); v. Arx & Müller, Beitr. Krypt. Fl. Schweiz 11(1):74 (1954).

On leaves of Maesa lanceolata Forsk. (= M. rufescens A.D.C.), Mariepskop, 1962 (PRE 42566); Entabeni, Louis Trichardt, Oct. 1963 (PRE 42567).

This is a common fungus with a wide distribution in South Africa.

The taxonomic position of the genus had been in a state of confusion. CLEMENTS & SHEAR (1931) placed it in the Sphaeriaceae while DOIDGE (1950) placed it in the Mycosphaerellaceae. Von

ARX & MÜLLER (1954) have shown that species of this genus form unilocular ascostromata which open by the disintegration of stromal tissue. Accordingly they placed the genus in the order Dothiorales and in the family Botryosphaeriaceae because of the one-celled, smooth-walled ascospores.

Parmulariaceae

Cycloschizon brachylaenae (Rehm) P. Hennings in Botan. Jahrb. 33:39 (1902); Doidge, Bothalia 1:6 (1921); Müller & v. Arx, Beitr. Krypt. Fl. Schweiz 11(2):52 (1962).

On leaves of Brachylaena discolor D.C., Mariepskop, 1962 (PRE 42592); De Hoek, Tzaneen, Oct. 1963 (PRE 42593).

C. brachylaenae is very common and widespread in South Africa on a number of Brachylaena species.

Cycloschizon fimbriatum Doidge in Bothalia 1:6 (1921); Müller & v. Arx, Beitr. Krypt. Fl. Schweiz 11(2):52 (1962).

On leaves and inflorescenses of Catha edulis Forsk., Mariepskop, Jul. 1961 (PRE 42591).

This species is represented in the Mycological Herbarium, Pretoria by a number of collections from the northern Transvaal and Mocambique. In the present collection the stromata are amphigenous and also occur on the rachis, bracts and calyx.

Hysterostomella oxyanthae Doidge in Bothalia 4:870 (1948); Müller & v. Arx, Beitr. Krypt. Fl. Schweiz 11(2):65 (1962).

On leaves of Oxyanthus gerrardi Sond., Mariepskop, 1962 (PRE 42569); Jan. 1963 (PRE 42668).

This fungus is common and wide-spread on Oxyanthus gerrardi in South Africa.

Pleiostomella halleriae Doidge in Bothalia 1:17 (1921).

On leaves of Halleria lucida L., Entabeni, Louis Trichardt, Oct. 1963 (PRE 42645).

P. halleriae has a wide distribution in South Africa, occurring in the Cape, Natal and Transvaal provinces.

The genus Pleiostomella was described by SYDOW & SYDOW (1917) as a new genus of the Polystomellaceae with dictyosporous, hyaline ascospores. P. halleriae was described as the second species of the genus by DOIDGE (1921). This species is characterised by spores which are at first one-septate, later becoming muriform with five to seven transverse septa and one longitudinal septum. Both immature and mature spores are present in the author's collection.

CLEMENTS & SHEAR (1931) and HANSFORD (1946) spellt the generic name incorrectly as Pleostomella.

The genus is tentatively placed in the Parmulariaceae sensu MÜLLER & v. ARX (1962) because of the bitunicate asci, the presence of a hypostroma and a radial covering membrane opening by fissures and the absence of superficial mycelium.

Perisporiopsidaceae

Balladyna autrani (P. Henn.) v. Arx in Beitr. Krypt. Fl. Schweiz 11(2):187 (1962).

Syn.: Balladynastrum glabrum Hansford - Proc. Linn. Soc. London 157:157 (1945).

On leaves of Canthium gueinzii Sond., De Hoek, Tzaneen, Oct. 1963 (PRE 42583); Mariepskop, Jan. 1963 (PRE 42584).

B. autrani is common on a number of Rubiaceae in South Africa and Uganda.

Balladyna leonensis Sydow in Ann. Mycol. 37:203 (1939); Hansford, Proc. Linn. Soc. London 157:156 (1945); Müller & v. Arx, Beitr. Krypt. Fl. Schweiz 11(2):186 (1962).

On leaves of Oxyanthus gerrardi Sond., Mariepskop, 1962 (PRE 42580).

B. leonensis is common on various members of the Rubiaceae in South Africa and Uganda.

Balladyna secedens (Sacc.) Batista & Nascimento in Ann. Soc. Botan. Pernambuco 15:454 (1957); Müller & v. Arx, Beitr. Krypt. Fl. Schweiz 11(2):186 (1962).

Syn.: B. ugandensis Syd. - Ann. Mycol. 37:202 (1939); Hansford, Proc. Linn. Soc. London 157:154 (1945).

On leaves of Canthium inerme (L.f.) O.Kze., Entabeni, Louis Trichardt, Oct. 1963 (PRE 42581).

C. inerme is a new host record for B. secedens which occurs on a number of Rubiaceae in South Africa and Uganda.

Balladyna velutina (Berk. & Curt.) v. Höhnel in Ann. Mycol. 10:16 (1912); Hansford, Proc. Linn. Soc. London 157:154 (1945); Müller & v. Arx, Beitr. Krypt. Fl. Schweiz 11(2):184 (1962).

On leaves of Pavetta lanceolata Eckl., Mariepskop, 1962 (PRE 42582).

B. velutina is very common and wide-spread on many genera of Rubiaceae in South Africa. It also occurs in Uganda and the Phillippines according to HANSFORD (1945).

Schizothyriaceae

Johansonia amadelpha (Syd.) v. Arx in Beitr. Krypt. Fl. Schweiz 11(2):212 (1962).

Syn.: Microcallis amadelpha Syd.- Ann. Mycol. 24:342 (1926).

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

On leaves of Syzygium cordatum Hochst., Mariepskop, 1962 (PRE 42617).

Mycelium hypophyllous, hyaline, not hyphopodiate, setose. Setae brown, septate, straight to slightly curved,obtuse, concentrated round the ascostromata, 122 - 160 x 5 - 7.5µ. Ascostromata superficial, gregarious, globose-depressed, membranous, Blackish Brown, glabrous, 135 - 400µ in diameter; superior wall epithecioid. Asci clavate, sessile or briefly stipitate, bituni-cate, eight-spored, 36 - 42 x 12 - 15µ.; para-physoids dichotomously branched, anastomosed, hyaline, filiform, 1µ in diameter. Ascospores oblong-clavate, hyaline, one-septate, not constric-

ted, 7.5 - 12 x 3 - 5μ. (Fig. 15).

This is a new record for South Africa and a new host record for J. amadelpha which is known to occur on Phoebe and Roupala in Central America (MÜLLER & v. ARX, 1962).

The ascostromata occur in groups of two definite sizes: small, ca. 135 - 184μ in diameter and large, ca. 336 - 400μ in diameter. SYDOW (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. The only differences 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 author's collection the smaller stromata contain no differentiated asci and are considered to be immature stromata of J. amadelpha and not a separate species. Unfortunately the material of this most interesting fungus is very limited.

Pseudosphaeriales

Dimeriaceae

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

Parasitic on Meliola carissae Doidge on Carissa bispinosa (L.) Des. f. ex Bren. var. acuminata (L.) L.E. Codd, Magoebaskloof, Tzaneen, Oct. 1963 (PRE 42632).

Mycelium densely reticulate between the hyphae of the Meliola host, branched, very indistinctly septate, not hyphopodiate, subhyaline, 3 - 3.5µ in diameter. Ascocarps superficial, globose, ostiolate, dark-brown, smooth, 74 - 112µ in diameter, wall composed of Mummy Brown polygonal cells. Asci very numerous, clavate or cylindric, subsessile or nodose-stipitate, wall somewhat thickened at the apex, eight-spored, 32 - 48 x 6 - 8µ. 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, constricted at the septum, upper cell slightly wider and shorter than the lower, 9.5 - 11 x 3 - 4µ. (Fig. 19).

This is the first record of the occurrence of D. mindanaense in South Africa.

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 (See Fig. 19). HANSFORD (1946) tentatively placed Dimerosporium eutrichum Sacc. & Berl. (= Dimerina eutricha (Sacc. & Berl.) Theiss.) in synonymy with Dimerina mindanaense. He expressed the opinion that Dimerina eutricha would have been the correct name for this species if the suggested synonymy could have been established by comparison of specimens. In their original description of Dimerosporium eutrichum, SACCARDO & BERLESE (1885) stated that three-septate

ascospores had been seen.

The author's collection fits the description of Dimerosporium eutrichum by SACCARDO & BERLESE (1885) very well. The fact that the mature ascospores are also three-septate further substantiates the suggestion made by HANSFORD 1946) that Dimerosporium eutrichum and Dimerina mindanaense are identical.

Episphaerella gymnosporiae (Hansf.) v. Arx in Beitr. Krypt. Fl. Schweiz 11(2):497 (1962).

Syn.: Eudimeriolum gymnosporiae Hansf. - Mycol. Papers, Commonwealth Mycol. Inst. 15:50 (1946).

On leaves of Maytenus undatus (Thunb.) Blake. (= Gymnosporia undata Szyszyl = G. fasciculata Loes.), Erasmus Reserve, Bosbokrand, Jan. 1963 (PRE 42594).

E. gymnosporiae is known on various Maytenus species from South and Central Africa.

The new combination was made by MÜLLER & v. ARX (1962) because this species penetrates the host through the stomata and produces a parenchymatous mass in the substomal cavity. The genus Eudimeriolum was reserved by them for completely superficial fungi growing epiphytically on the leaf hairs.

Micropeltaceae

LUTTRELL (1951) described the ascocarp of the "Hemisphaeriales" as a flattened-hemisphaeric, dimidiate, inverse ascostroma. He thought that if the structure of the ascostroma were to be regarded

as of primary importance, fungi with this type of ascostroma would form a separate order of stromatic Pyrenomycetes. But in his system centrum structure was regarded as a more important taxonomic criterion. He recognised two distinct centrum types in this group. These were assigned to two new families: the Microthyriellaceae and Myiocopronaceae. The Microthyriellaceae was included in the Myriangiales and the Myiocopronaceae in the Pseudosphaeriales.

MÜLLER & v. ARX (1962) considered the structure of the ascocarp of the Micropeltaceae to be identical with that of the Microthyriaceae. The Micropeltaceae were distinguished from the latter family by their exclusively superficial growth. They treated both these groups as families of the Pseudosphaeriales.

The classification of the Micropeltaceae as a family of the Pseudospaeriales by MÜLLER & v. ARX (1962) is accepted here. The generic classification of BATISTA (1959) is used although it is realised that the soundness of some of his generic criteria, e.g. the presence or absence of paraphysoids and ostioles have been questioned by MÜLLER & v. ARX (1962). At present however, the monograph by BATISTA (1959) is the most comprehensive treatise of this group available. Furthermore it presents the most practical key for the generic placing of the collections of Micropeltaceae described here.

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).

On leaves of Euclea crispa (Thunb.) Guerk var. crispa, Mariepskop, Dec. 1963 (PRE 42619).

Colonies hypophyllous, Black, confluent; mycelium superficial, pelliculose; hyphae septate, branched, reticulate, Olive-Brown, 2.5 - 6.0µ in diameter; mycelial setae scattered, rigid, septate, simple, attenuated, obtuse, straight or curved, Mummy Brown, 165 - 213µ long, 5µ wide at the base and 2.5µ at the apex. Ascostromata gregarious, globose-depressed, ostiolate, Olive-Brown, 126 - 165µ in diameter, composed of meandriform hyphae, setose; setae like the mycelial setae. Asci bitunicate, obclavate, briefly stipitate, eight-spored, 42 - 49 x 12 - 14µ; paraphysoids present, clavate, septate, hyaline, up to 2.5µ wide at the apex. Ascospores oblong-clavate, one-septate, hyaline, 12 - 15 x 3 - 5µ. (Fig. 14).

This is a new record for South Africa and a new host record for C. musarum which is known to occur on Musa, Smilax, and various other host plants in tropical America, Africa and Asia (MÜLLER & v. ARX, 1962).

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

On leaves of Ilex mitis (L:) Radl., De Hoek, Tzaneen, Jan. 1963 (PRE 42620).

Free mycelium absent. Ascostromata hypophyllous, superficial, Olivaceous Black,

becoming subhyaline to hyaline at the margin, glabrous, rounded, composed of reticulate hyphae, opening with an irregular stellate fissure, 372 - 390 μ in diameter. Asci bitunicate, wall more or less uniformly thickened, clavate, numerous, attenuated towards the base or briefly stipitate, two- to eight-spored, 54 - 83 x 12 - 22μ; paraphysoids present, filiform, branched, 2.5μ in diameter. Ascospores polystichous, clavate, hyaline, with two to twelve transverse septa, constricted, cells not equal in size, becoming separated, 27 - 42μ long, the basal cell 2.5 - 5.0μ and the apical cell 4.5 - 7.5μ wide. (Fig. 5).

M. obscurum is a new record for South Africa. The publication in which the original description appeared is not locally available.

Parapeltella maitlandii (Hansf.) Batista in Inst. Mic. Univ. Recife Publ. 56:292 (1959).
Syn. Micropeltella maitlandii Hansford - Proc. Linn. Soc. London 153:49 (1941).

On leaves of Rawsonia lucida Harv. & Sond., De Hoek, Tzaneen, Oct. 1963 (PRE 42621).

Free mycelium absent. Ascostromata hypophyllous, superficial, Olivaceous Black but with a hyaline margin, glabrous, 280 - 400μ in diameter, composed of reticulate hyphae, opening with an irregular pore. Asci bitunicate, wall more or less uniformly thickened, obclavate, numerous, sessile or briefly stipitate, six- to eight-spored, aparaphysate, 60 - 85 x 17 - 25μ. Ascospores at

first obliquely monostichous, becoming polystichous, clavate, hyaline, two- to six-septate, constricted, cells not equal in size, 29 - 44 x 5 - 7μ. (Fig. 4).

This is a new record for South Africa and a new host record for P. maitlandii which had previously been collected on Rubiaceae and Apocynaceae from Uganda (BATISTA, 1959).

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

On leaves of Syzygium gerrardii (Harv.) Hochst., De Hoek, Tzaneen, Oct. 1963 (PRE 42622).

Free mycelium absent. Ascostromata hypophyllous, superficial, scattered, rounded, Olivaceous Black but with a hyaline margin, upper membrane meandriform, 490 - 500μ in diameter, ostiole central, round, 65 - 75μ in diameter. Asci bitunicate, cylindrical to obclavate, briefly stipitate, two- to six-spored, 80 - 110 x 17 - 23μ; paraphysoids filiform, branched, hyaline, up to 2 μ wide. Ascospores distichous to polystichous, clavate, hyaline, with five to twelve transverse septa, constricted, 37 - 104 x 5 - 8μ, cells becoming separated. (Fig. 6).

The asci contain mostly immature spores or no spores at all and only a few mature phragmospores were observed. This is a new record for South Africa and a new host record for S. racemosae which is known on Paullinia from Brazil (BATISTA, 1959).

Stomiopeltella petiolaris Doidge in Bothalia 2:241 (1927); Batista, Inst. Mic. Univ. Recife Publ. 56:432 (1959).

On leaves of Clivia caulescens R.A. Dyer, Mariepskop, Dec. 1963 (PRE 42623).

S. petiolaris was described by DOIDGE (1927) on the petioles of Cussonia spicata. Only the type material of this fungus had been collected in South Africa previously (Woodbush, Zoutpansberg Dist. PRE 17718). BATISTA (1959) cited Microthyriella byrsonimae Petr. & Cif., described on Byrsonima crassifolia from the Dominican Republic, as a synonym of S. petiolaris. In the Mariepskop area S. petiolaris is common on Clivia caulescens.

Mycosphaerellaceae

Microcyclus kentaniensis Doidge in Bothalia 4:837 (1948).

On stems and phyllocladia of Asparagus plumosus Bak., Mariepskop, Jan. 1963 (PRE 42653); De Hoek, Tzaneen, Oct. 1963 (PRE 42651).

Only the type material of this fungus had been collected previously (Kentani, Cape Province PRE 8885).

Mycosphaerella molleriana (Thuem.) Lindau in Naturl. Pfl Fam. I Teil, I Abt.:425 (1897); Doidge, S. Afr. J. Sci. 30:227 (1931); Doidge, Bothalia 4:861 (1948).

On leaves of Eucalyptus sp., De Hoek, Tzaneen, Oct. 1963 (PRE 42650).

M. molleriana is common in South Africa and

causes a leaf spot disease on several species of Eucalyptus.

Rosencheldiella rapaneae Batista & Silva & Peres in Inst. Mic. Univ. Recife Publ. 431 (1964).

On leaves of Nuxia oppositifolia (Hochst.) Benth., Hans Merensky Nature Reserve, Tzaneen, Aug. 1963 (PRE 42664).

Mycelium hypophyllous, superficial but with the hyphae invading the stomata, concentrated round the ascostromata; hyphae olivaceous, reticulate, composed of cylindrical cells, 13.5 - 38 x 4 - 8.5µ. Ascostromata superficial, numerous, diffuse, globose, Olivaceous-Brown, glabrous, uniloculate or biloculate by confluence, ostiole not defined, 54 - 74µ in diameter. Asci ovoid, sessile, wall thickened at the apex, eight-spored, aparaphysate, 22 - 28 x 12 - 15µ. Ascospores oblong to subclavate, conglobate, both ends rounded, one-septate, sometimes constricted at the septum, 10 - 12 x 3 - 5µ.

R. rapaneae is a new record for South Africa. The publication in which the original description appeared is not locally available.

Pleosporaceae

Leptosphaeria protearum Sydow in Ann. Mycol. 10:441 (1912); Doidge, Bothalia 2:231 (1932).

On leaves of Protea rhodantha Hook var. falcata Beard, Mariepskop, Jan. 1963 (PRE 42599).

P. rhodantha var. falcata is a new host

record for L. protearum which is common on various species of Protea in the Cape Province, but had not been collected in the Transvaal before.

MÜLLER (1950) placed the genus Leptosphaeria in the Pseudosphaeriales: Pseudosphaeriaceae (Pleosporaceae). He divided the genus into four sections based on characters of the ostiole, asci, ascospores and the centrum structure. L. protearum has cylindrical to clavate asci embedded in parenchymatous tissue without distinct filiform paraphysoids. The centrum structure is typical of the section Scleropleella while the cylindrical to clavate asci are typical of the section Eu-Leptosphaeria. L. protearum can accordingly be considered as intermediate between these two sections.

Venturiaceae

Coleroa senniana (Sacc.) v. Arx in Beitr. Krypt. Fl. Schweiz 11(2):418 (1962).

Syn. Aphysa senniana (Sacc.) Doidge-Bothalia 4:213 (1941).

On leaves of Protea sp., Mariepskop, 1962 (PRE 42655).

This fungus is common on numerous species of Protea in South Africa.

According to MÜLLER & v. ARX (1962) the genus Aphysa differs from the genus Coleroa only in the presence of a subcuticular stromatic covering membrane in the former genus. They did not consider this character of generic importance and placed Aphysa in synonymy with Coleroa.

Chaetothyriales

HANSFORD (1946) instituted the family Chaetothyriaceae, characterized by perithecia developing underneath the mycelial pellicle. He placed the family in the Sphaeriales. BATISTA & CIFERRI (1957) instituted the new order Chaetothyriales for fungi with the perithecia developing underneath the mycelial pellicle. BATISTA & CIFERRI (1962) designated three families: Chaetothyriaceae characterized by hyaline mycelium; Phaeosaccardinulaceae characterized by dark mycelium and Euceramiaceae characterized by dark mycelium and plurilocular ascostromata. They considered the systematic position of the Chaetothyriales as parallel to the Capnodiales, both being derived from the Pseudosphaeriales.

MÜLLER & v. ARX (1962) placed the family Chaetothyriaceae in the Pseudosphaeriales. They did not accept the new order Chaetothyriales or the new families Phaeosaccardinulaceae and Euceramiaceae.

The chaetothyriaceaous fungi collected in the northern Transvaal are treated here according to the system proposed by BATISTA & CIFERRI (1962). It is recognised that this may not be a natural classification and that some genera may be heterogenous, e.g. certain species of the genus Phaeosaccardinula have unitunicate asci and others bitunicate asci. Their system does, however, provide a very useful, practical generic key to a difficult group of fungi.

Chaetothyriaceae

Ainsworthia roraimensis Batista & Cavalcanti in Inst. Mic. Univ. Recife Publ. 431 (In Press).

On leaves of Rawsonia lucida Harv. & Sond., De Hoek, Tzaneen, Oct. 1963 (PRE 42613).

Mycelium hypophyllous, superficial, pelliculose, composed of hyaline, reticulate, septate hyphae with cylindrical cells, 5 - 7.5 µ wide. Ascostromata single, scattered, globose-flattened, not setose, Mummy Brown, semitranslucent, 152 - 210 µ in diameter. Asci subglobose to broadly clavate, sessile, aparaphysate, 54 x 34 µ. Ascospores conglobate, polystichous, clavate to cylindraceous, straight or curved, hyaline, with seven to fifteen transverse and none to two longitudinal or oblique septa, slightly constricted, 39 - 69 x 7 - 10 µ. (Fig. 11).

This is a new record for South Africa. The publication in which the original description of this fungus appeared is not yet available locally.

Ainsworthia xanthoxylii Batista & Costa in Inst. Mic. Univ. Recife Publ. 158:7 (1962).

On leaves of Ilex mitis (L:) Radl., De Hoek, Tzaneen, Jan. 1963 (PRE 42614).

Mycelium epiphyllous, superficial, pelliculose, not setose, composed of hyaline, septate hyphae with cylindrical cells. Ascostromata globose-depressed, Mummy Brown, membranous, semitranslucent, 164 - 190 µ in diameter. Asci numerous,

subglobose to clavate, sessile or briefly stipitate, 37 - 44 x 17 - 22 µ; paraphysoids present, filiform, coiled at the apex, hyaline, 1µ in diameter. Ascospores polystichous, cylindraceous, straight to slightly curved, hyaline but becoming subhyaline when mature, with seven to eight transverse and two to four longitudinal septa, constricted, 29 - 42 x 5.5 - 10µ. (Fig. 10).

This is a new record for South Africa and a new host record for A. xanthoxylii which had been collected previously on Ilex glabra and various unrelated hosts in the United States and South America (BATISTA & CIFERRI, 1962).

Phaeosaccardinulaceae

Deslandesia javanica (Zimm.) Bat. & Cif. var. harana (Trotter) Ciferri & Batista in Inst. Mic. Univ. Recife Publ. 158:44 (1962).

On leaves of Syzygium guineense (Willd.) D.C., Entabeni, Louis Trichardt, Oct. 1963 (PRE 42616).

Mycelium epiphyllous, superficial, pelliculose, not setose; hyphae Brownish, branched, septate, constricted, composed of cylindrical cells, 12.5 - 20 x 4 - 5µ. Ascostromata single, scattered, globose-depressed, membranous, semi-translucent, Blackish-Brown, glabrous, 154 - 260µ in diameter. Asci ovoid to ellipsoid, rarely clavate, sessile or rarely briefly stipitate, wall prominently thickened at the apex when immature but becoming uniformly thickened when mature, six- to eight-spored, 50 - 73 x 23 - 33µ.

Ascospores polystichous, cylindraceous to clavate, straight or slightly curved, hyaline to subhyaline with six to nine transverse septa and the apical cells becoming muriform, constricted, 35 - 68 x 6.5 - 10µ. (Fig. 12).

This is a new record for South Africa and a new host record for D. javanica var. harana which is known to occur on Citrus sp. in Japan and Mangifera indica on the island of St. Thomas (BATISTA & CIFERRI, 1962).

Vitalia ekmanii (Petr. & Cif.) Batista & Ciferri in Inst. Mic. Univ. Recife Publ. 158:111 (1962).

On leaves of Clivia sp., Mariepskop, 1962 (PRE 42708).

Mycelium epiphyllous, superficial, pelliculose, Blackish-Brown, hyphae septate slightly constricted, branched, setose; mycelial setae arising from a multicellular base, scattered, numerous, simple, erect, straight, acute, continuous, Blackish-Brown, 80 - 120µ long, 9 - 10µ wide at the base and 2.5µ at the apex, covered with mycelial hyphae. Ascostromata globose-depressed, scattered, membranous, setose, 144 - 175µ in diameter; setae numerous, erect, continous, simple, straight or slightly curved, dark-brown but becoming lighter brown towards the apex, 75 - 100µ long, 7.5µ wide at the rounded base, tapering to the acute apex, 1 - 2.5µ wide. Asci ellipsoidal to subclavate, very briefly stipitate, wall thickened at the apex, six- to eight-spored,

aparaphysate 45 - 58 x 10 - 15µ. Ascospores monostichous or distichous, fusiform-elliptical, hyaline, one-celled when immature, becoming four-celled, not constricted, 12.5 - 15 x 5µ. (Fig. 13, 20, 21).

This is a new record for South Africa and a new host record for V. ekmanii which is known on a number of unrelated host plants from South America (BATISTA & CIFERRI, 1962).

DEUTEROMYCETES

Moniliales

Dematiaceae

Cercospora cocculi Sydow in Ann. Cryptog. exot. 2:264 (1929).

On leaves of Cocculus hirsutus (L.) Diels., Mariepskop, 1962 (PRE 42682).

This is a new record for South Africa and C. hirsutus is a new host record for Cercospora cocculi. The material agrees well with the description of C. cocculi given by CHUPP (1953) except that the hypophyllous fruiting layer is very dense and not "scantily effuse". The spores are two- to five-septate and measure 20 - 42 x 4.5 - 6µ.

A collection from Barberton, PRE 25975, filed as Helminthosporium sp. in the Mycological Herbarium, Pretoria, is identical with the author's material of C. cocculi.

Cercospora liebenbergii Sydow in Ann. Mycol. 33:235 (1935); Chupp & Doidge, Bothalia 4:887 (1948).

On leaves of Rauvolfia caffra Sond., Entabeni, Louis Trichardt, Apr. 1964 (PRE 42685).

C. liebenbergii is represented in the Mycological Herbarium, Pretoria only by the co-type collection (PRE 26177) and one other collection (PRE 30964), both from Schagen in the Nelspruit district, Transvaal.

Cercospora melaena Sydow in Ann. Mycol. 22:434 (1924); Chupp & Doidge, Bothalia 4:888 (1948).

On leaves of Flemingia grahamiana W. & A., Magoebaskloof, Tzaneen, Oct. 1963 (PRE 42683).

The author's material is identical with two other collections of C. melaena from the northern Transvaal (PRE 32911 and 41401) in the Mycological Herbarium, Pretoria. Unfortantely the type in the Herbarium P.A. van der Byl, Stellenbosch (STE-VB 1522) could not be examined. According to CHUPP (1953) the type collection has more characteristics of Helminthosporium than Cercospora. The author's material and the two other collections from the northern Transvaal do not have "wide, thick-walled conidia" and definitely belong in the genus Cercospora. These collections will have to be critically compared with the type of C. melaena to determine if they are conspecific. If not, these collections from the northern Transvaal will have to be described as a new species of Cercospora.

Helminthosporium dorycarpum Mont.; Hansford, Mycol. Papers, Commonwealth Mycol. Inst. 15:214 (1946).

Parasitic on Asteridiella atra (Doidge) Hansford on Eugenia natalitia Sond., Mariepskop, Jan. 1963 (PRE 42680).

HANSFORD (1946) placed all the three-septate members of the genus Helminthosporium parasitic on Meliola and related hosts, in H. dorycarpum. Species of Helminthosporium belonging to this group are very common parasites of Meliola and Asteridiella in South Africa.

Tuberculariaceae

Isthmospora trichophila (Atkinson) Damon = Trichothyrium asterophorum (Berk. & Br.) v. Höhnel; Hughes, Mycol. Papers, Commonwealth Mycol. Inst. 50:77 (1953); Damon, Bull. Torrey Botan. Club. 80:163 (1953).

Syn.: Spegazzinia meliolae Zimm.-Zentr. Bakteriol. 11:221 (1902).

For complete synonymy see DAMON (1953) and HUGHES (1953b).

Parasitic on Meliola behniae Syd. on Behnia reticulata Didr., Mariepskop, 1962 (PRE 42681); on Meliola carissae Doidge on Carissa bispinosa (L:) Des.f. var. acuminata (E. Mey.) L.E.Codd, Entabeni Louis Trichardt, Oct. 1963 (PRE 42643) and Magoebaskloof, Tzaneen, Oct. 1963 (PRE 42633).

DAMON (1953) showed that the genus Ishtmospora differs from Spegazzinia in its more complex spore morphology and the association with Meliola. Furthermore he lists various species

of Spegazzinia and Isthmospora as synonyms of Spegazzinia trichophila Atkinson for which he makes the new combination Isthmospora trichophila (Atkinson) Damon. HUGHES (1953b) proved that Spegazzinia meliolae Zimm. (= Isthmospora trichophila (Atkinson) Damon) is the conidial stage of Trichothyrium asterophorum (Berk. & Br.) v. Höhnel.

Trichodochium disseminatum Sydow in Ann. Mycol. 25:159 (1927).

On leaves of Rapanea melanophloeos (L.) Mez., Mariepskop, 1962 (PRE 42666); Entabeni, Louis Trichardt, Apr. 1964 (PRE 42667).

Trichodochium is a monotypic genus of rather uncertain affinities. T. disseminatum was originally described on Rapanea pellucido-punctata from Costa Rica by SYDOW (1927). Subsequently two collections on R. melanøpholoeos had been made in the northern Transvaal.

Sphaeropsidales

Sphaeropsidaceae

Asterostomella walleniae Petrak & Ciferri in Ann. Mycol. 30:265 (1932); Batista & Ciferri, Inst. Mic. Univ. Recife Publ. 72:54 (1959).

On leaves of Mackaya bella Harv., Entabeni, Louis Trichardt, Oct. 1963 (PRE 42615).

Mycelium amphigenous, superficial, brown, branched, septate, not constricted, 2.5 - 4.5µ wide, hyphopodiate; hyphopodia unilateral or alternate, one-celled, lobed, 9 - 10µ long and 5 - 7.5 µ broad. Pycnidia superficial, diffuse,

Blackish-Brown, rounded, dimidiate, radiate, 48 - 80μ in diameter, dehiscing by a stellate fissure. Pycnidiospores sessile, pyriform or subglobose, one-celled, brown, 11 - 15 x 7.5 - 10μ.

BATISTA & CIFERRI (1959) assigned the conidial stages of Asterina clausenicola Doidge, A. rinorae Doidge and A. tertia var. africana Doidge, described by DOIDGE (1942), to Asterostomella walleniae. The author's collection of this fungus is associated with an Asterina species of which the material is too scant to permit a critical examination. This species of Asterina is possibly identical with A. tertia var. africana which occurs on Acanthaceae in South Africa.

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

On living leaves of Syzygium guineense (Willd.) D.C., Tate Vondo, Louis Trichardt, Apr. 1964 (PRE 42714).

Pycnidia amphigenous, not on definite leaf spots but causing Deep Brownish Drab protuberances of the leaf surrounded by a Light Yellow-Green discolouration; gregarious, black, completely immersed with definite, protruding, rounded ostioles; contents exuding in long black tendrills which spread over the leaf surface to form black conidial mats; cavity globose to ellipsoid or irregular in shape, sometimes occupying the whole thickness of the leaf, convoluted, uniloculate but sometimes two to four pycnidia develop adjacent to

each other and then their walls are confluent; wall poorly developed so that the delimitation of the pycnidia is indistinct, pseudoparenchymatous, hyaline to brownish, composed of a few layers of thin-walled cells, becoming thicker and more stromatic round the ostiole, 6 - 22μ thick; 112 - 385μ in diameter and 85 - 225μ high. Conidiophores formed from the cells of the pycnidial wall, erect, cylindrical, hyaline. Pycnidiospores formed singly and acrogenously on the conidiophores, elliptic or broadly obpyriform, smooth-walled, Dark Olive Brown, 12.5 - 15μ long, one-septate below the middle; basal cell much shorter and narrower than the upper cell, base truncate or sometimes rounded, 4.5 - 6.5μ long and 4.5 - 6.5μ wide at the septum; upper cell broadly elliptical with a rounded apex, brown but with a lighter coloured area directly above the septum, 8 - 9.5μ long and 6.5 - 12.5μ wide in the widest part. The conidiophores are persistent but very indistinct.

As noted by RAMAKRISHNAN & RAMAKRISHNAN (1950) the majority of the spores have unequal cells. These spores 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, i.e. 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 that the pycnidiospores of the former lack apical setae. As the author is unable to suggest a more suitable genus, he follows RAMAKRISHNAN & RAMAKRISHNAN (1950) in placing this fungus in Diplodia.

This is a new record for South Africa and Syzygium guineense is a new host record for Diplodia longipedicellata.

Mycohypallage congesta (Berk. & Br.) B.C. Sutton in Mycol. Papers, Commonwealth Mycol. Inst. 88:5 1963).

Syn.: Neobarclaya congesta (Berk. & Br.) Petch-Ann. Roy. Botan. Garden Peradeniya 9:165 (1924); Laughton, Bothalia 4:831 (1948).

Neobarclaya natalensis Sydow - Hedwigia 38:134 (1899).

On leaves of Syzygium guineense (Willd.) D.C., Mariepskop, 1962 (PRE 42671).

The fructification of M. congesta had previously been interpreted as an acervulus and it was accordingly classified in the Melanconiales (GUBA, 1961). ANANTHANARAYANAN (1962) reported this fungus (as Neobarclaya natalensis Syd.) from India and pointed out its sphaeropsidaceous nature. SUTTON (1963) described the new genus Mycohypallage of the Sphaeropsidales to accommodate this fungus and made the new combination Mycohypallage congesta (Berk. & Br.) B.C. Sutton.

Oothecium stylosporum (Cke.) Doidge in Bothalia 4:327 (1942).

Syn.: Asterina stylospora Cke.- Grevillea 10:129

(1882).

Oothecium consimile Syd.- Ann. Mycol. 28:443 (1930).

On leaves of Trema guineensis (Schum) Ficalho, De Hoek, Tzaneen, Oct. 1963 (PRE 42672).

This is a new record for the Transvaal. In her description of the conidia, DOIDGE (1942) omitted the measurements. THEISSEN (1912) gave the conidial dimensions for the type collection of Asterina stylospora (PRE 9499) as 28 - 38 x 11 - 13µ. SYDOW (1930) gave the measurements of the conidia of Oothecium consimile (considered a synonym of O. stylosporum by DOIDGE, 1942) as 20 - 32 x 11 - 14µ. The conidia of the author's collection measure 22 - 35 x 12.5 - 16µ.

Phomopsis pterocarpi Hughes in Mycol. Papers, Commonwealth Mycol. Inst. 50:54 (1953).

On leaves of Pterocarpus angolensis D.C., Erasmus Reserve, Bosbokrand, Jan. 1963 (PRE 42675, 42676, 42677).

This is a new record for South Africa. Pterocarpus angolensis is a new host record for P. pterocarpi which was described on Pterocarpus erinaceus from the Gold Coast by HUGHES (1953b). The South African material agrees in detail with Hughes' description.

The placing of this fungus in the genus Phomopsis by HUGHES (1953b) is not entirely clear as there are no B-conidia (stylospores) present. Because of the confusion which exists between Phoma, Phyllosticta, Phomopsis, Dendrophoma, Cytospora, etc., and because of the fusoid, bigut-

tulate conidia which are typical A-spores of Phomopsis (GROVE, 1935), the author follows Hughes in placing this fungus in Phomopsis.

Phyllosticata dioscoreae Cooke in Grevillea 6:136 (1878); Saccardo, Syll. Fung. III:58 (1884).

On leaves of Dioscorea cotinifolia Kunth. (= D. malifolia Bkr.), Entabeni, Louis Trichardt, Apr. 1964 (PRE 42686).

The pycnidia are amphigenous but mostly epiphyllous and are immersed in definite leafspots. The leaf spots are round, 4 - 8 mm. in diameter and consist of a Straw Yellow centre and a dark, Blackish-Brown margin, circa 2mm. wide. The spores are one-celled, hyaline, granulose, globose or ovoid to irregular, measuring 6.0 - 9.5 x 5 - 6μ.

The present collection is identical with PRE 26313 from Nelspruit, filed as Phyllosticta ? dioscoreae Cooke in the Mycological Herbarium, Pretoria. Both these collections fit well into the description of P. dioscoreae which is known on Dioscorea species from the United States and France (SACCARDO, 1884).

Excipulaceae

Pilidium eucleae (Kalchbr. & Cke.) Saccardo in Syll. Fung. III:689 (1884).

On leaves of Euclea crispa (Thunb.) Guerke var. crispa de Winter (=E. lanceolata E. Mey ex A.D.C.), Warmbad, Oct. 1963 (PRE 42673); Percy Fyfe Reserve, Potgietersrust, Sept. 1963 (PRE 42674).

This fungus is very common on several species of Euclea and is widely distributed in South Africa.

DESCRIPTIONS OF NEW SPECIES

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, 18.

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 - 74μ in diameter, 32.5 - 42.5μ 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 x 25.0 - 32.5μ. Ascospores elliptical, hyaline, continuous, 15.0 - 17.5 x 7.5 - 9.5μ.

Conidiophores and conidia not seen.

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

The asci were measured after squashing the cleistothecia in lactophenol. The cleistothecia were measured in microtome sections. The values obtained were probably smaller due to a certain amount of shrinkage which occurred during prepara-

ration (See Microtome Sections under Materials and Methods).

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 2.

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 superficiarium, albidum, sparse effusum; conidiophora et conidia non visa. Cleistothecia numerosa, gregaria, globoso-depressa, prima hyalina, deinde aurea, non ostiolata sine appendicibus, 47 - 74μ diam., 32.5 - 42.5μ alt.; parietis ordinis unius cellularum magnarum irregulariter lobatum consistus. Asci in quoque cleistothecio 5 - 8, ovati, breviter pedicellati, 5 - 8-spori, 45.0 - 52.5 x 25.0 -

Table 2. Comparison of characters of Brasiliomyces malvastri, Salmonia malachrae and Brasiliomyces entadae

	B.malvastri	S.malachrae	B.entadae
Host	Malvastrum coromandelianum (Malvaceae).	Malachra capitata and Gossypium hirsutum (Malvaceae).	Entada spicata (Mimosaceae).
Habit	Amphigenous	Epiphyllous	Epiphyllous
Conidial Stage	Present and well developed.	? Poorly developed.	Absent
Cleistothecia	Hyaline, later slightly coloured.	White, later pale brown.	Hyaline, later orange.
	50 - 60 µ in diameter.	45 - 80 µ in diameter.	47 - 74 µ in diameter.
Asci	?	3 per cleistothecium.	4 - 5 per cleistothecium.
	4-spored	5-spored	5 - 8-spored
	36-40x28-30 µ.	40 x 30 µ.	45 - 52.5 x 25-32.5µ.
Ascospores	22-24x15-17µ.	20 x 14µ.	15-17.5x 7.5 - 9µ.

32.5µ. Ascosporae ellipsoideae, hyalinae, continuae, 15.0 - 17.5 x 7.5 - 9.5µ.

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

Uncinula sparsichaeta Marasas sp. nov.

Figs. 2, 17.

Colonies amphigenous, mostly epiphyllous; mycelium evanescent or persistent and then thin and forming whitish patches or covering the whole surface of the leaf; hyphae branched, 2.5 - 6.5µ wide; appressoria usually opposite, lobed, 7.5 - 12.5µ long, 5 - 10µ broad. Cleistothecia gregarious or scattered, globose-flattened, dark-brown, 75 - 105µ in diameter; wall composed of irregularly angular cells. Appendages equatorial, 10 - 15 to each cleistothecium, straight to more or less flexuous, hyaline, simple, aseptate, 50 - 113µ long, 5.0 - 7.5µ wide but narrowing near the apex; tips uncinate to more or less helicoid; walls externally warted, especially at the base, 1.5µ thick at the base, thinning towards the apex. Asci ovate or subglobose, sessile or very briefly stipitate, five-spored, 50 - 60 x 40 - 50µ. Ascospores elliptical, hyaline, continuous, 22.5 - 27.5 x 12 - 15µ, mostly 25 x 12.5µ.

On leaves of Ficus sycomorus L., Hans Merensky Nature Reserve, Letaba Distr., Aug. 1963 (PRE 42661) Holotype. Also present: Phyllachora ficuum Niessl. (PRE 42553).

The type material of Uncinula aspera Doidge in the Mycological Herbarium, Pretoria was examined and the ascospores found to exceed the dimensions given by DOIDGE (1948) by 5 - 11μ in length and up to 3.5μ in width. It is not known what mounting medium Doidge used, but it is improbable that the author would have obtained higher values because lactophenol was used. An acid mounting medium like lactophenol would have had attenuating rather than swelling effects (GRAHAM, 1959).

The only other Uncinula sp. reported on Ficus is U. religiosa Ramakrishnan (RAMAKRISHNAN, 1959).

U. religiosa, U. aspera and U. sparsichaeta are compared in Table 3 (See also Fig. 2, 3 and Fig. 16, 17).

TAI (1946) considered differences in the diameter of cleistothecia, length of appendages and ascospore size in different collections of Uncinula delavyi on the same host species as climatological variations and described these collections as varieties of U. delavyi. In this case however, where marked differences in the number of appendages per cleistothecium, length of appendages and ascospore size have been observed and where different host species are involved, it was considered necessary to propose a new species:

Table 3. Comparison of characters of Uncinula religiosa, Uncinula aspera and Uncinula sparsichaeta.

	U.religiosa	U.aspera	U.sparsichaeta
Host	Ficus religiosa	Ficus petersii	Ficus sycomorus
Habit	Epiphyllous	Epiphyllous	Amphigenous, mostly epiphyllous
Cleistothecia	75-90 μ in diameter.	90-105 μ in diameter.	75-105 μ in diameter.
Number of appendages	16 - 20	15 - 30	10 - 15
Length of appendages	140 - 170 μ.	125 - 165 μ.	50 - 113 μ.
Asci	4-spored 45-60x28-35 μ.	4-6 spored 51-57x45-48 μ.	5-spored 50-60x40-50 μ.
Ascospores	24-28x10-15 μ.	24.5-32.5x 12.5-17.5 μ. (mostly 29.5x15.5 μ)	22.5-27.5x 12-15 μ. (mostly 25x12.5 μ)
Appressoria	-	10-17.5 μ broad 17.5-27.5 μ long	5-10 μ broad 7.5-12.5 μ long

Uncinula sparsichaeta Marasas sp. nov.

Mycelium amphigenum plerumque epiphyllum, evanescens vel persistens, albidum, ramosum, 2.5 - 6.5µ latum; appressoria opposita, lobata, 5 - 10µ lata, 7.5 - 12.5µ longa. Cleistothecia gregaria vel sparsa, globoso-depressa, atro-brunnea, 75 - 105µ diam.; cellulae parietis exterioris irregulariter angulatae; appendices in quoque cleistothecio 10 - 15, rectae vel leniter curvulae, hyalinae, simplices, aseptatae, 50-113µ longae, basi 5 - 7.5µ latae, apice uncinatae vel interdum helicoideae; parietes asperi, basi 1.5µ lati, ad apicem attenuati. Asci ovati vel subglobosi, sessiles, 5-spori, 50 - 60 x 40 - 50µ. Ascosporae ellipticae, hyalinae, continuae, 22.5 - 27.5 x 12.0 - 15.0µ.

Hab. in foliis vivis Fici sycomori L., Hans Merensky Nature Reserve, Letaba distr., leg. Marasas, PRE 42661. Holotypus.

Thyriopsis sphaerospora Marasas. sp. nov.

Figs. 22 - 25.

Ascostromata scutellate to conical, suborbicular, irregularly tuberculate, amphigenous, subcuticular, black, 280 - 884 µ in diameter, 65 - 120µ 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 multi-locular, 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 - 7.5μ 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 of dark, thick-walled, stromatic cells 5 - 10μ high. Asci parallel on the basal wall between hyaline, deliquescent pseudoparaphyses, broadly clavate, wall thickened, especially at the apex, bitunicate, deliquescing before spore maturation, 28 - 42.5 x 15 - 23μ. Ascospores hyaline when immature, becoming dark brown, thick-walled, subglobose to globose, finely verrucose, uni-septate, 10 - 15 x 10 - 12.5μ; mature spores collecting in the ascolocular cavity.

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

This fungus agrees with the genus Phaeothyriolum (= Micromycothelia sensu MÜLLER & v. ARX (1962)) of the Stigmateaceae 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 (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 intra-cuticular, 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 condition than that found in Thyriopsis halepensis as an adaptation to the parasitic habit of T. sphaerospora.

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 are 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 in stead 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.

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

Hab. in foliis Eucalypti camaldulensis Dehn., Nylstroom distr., Transvaal, leg Marasas, PRE 42659, Holotypus.

Microcyclus halleriae Marasas & Rabie sp. nov.

Fig. 8, 32, 33.

Stromata hypophyllous, surrounded by reddish-brown haloes on yellowish discoloured areas of leaf tissue, erumpent, gregarious, irregularly tuberculate, 65 - 150µ in diameter, 64 - 78µ high; stroma not very well developed, causing a yellowish discolouration of the epidermal cells and the sub-epidermal layers of mesophyll cells; outer stromatic wall composed of several layers of dark-brown, thick-walled cells, 9 - 13 x 4 - 7µ; 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 - 80µ wide, 42 - 58µ 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, aparaphystate, eight-spored, 30 - 38 x 12.5 - 17.5µ. Ascospores polystichous, oblong-elliptical, hyaline, immature spores uniseptate in the middle, mature spores three-septate, slightly constricted, rounded at both ends, 16 - 19 x 4 - 5µ.

On leaves of Halleria lucida L., Entabeni, Louis Trichardt, Transvaal, Oct. 1963 (PRE 42687) Holotype; Entabeni, Louis Trichardt, 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 para-physoids, 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. 8). 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.

Ascostromata hypophylla, sine maculis, decoloratione flavo textus folii et corona rufo-brunneola circumdata, gregaria, irregulariter tuberculata, 65 - 150μ diam., 64 - 78μ alta; paries exterioris ordinum plurum cellularum brunnearum parietibus crassis, 9 - 13 x 4 - 7 μ

consistus; basi tota ad hypostromata fixa vel in pedem 38 - 80µ latum attenuata. Loculi immersi, usque 6 in quoque stromate, subglobosi vel ellipsoidei, 32 - 80µ lati, 42 - 58µ alti; ostiolo complaneto rotundo. Asci ovati vel obclavati, ventricosi, stipitati, aparaphysati, octospori, 30 - 38 x 12.5 - 17.5µ. Ascosporae polystichae, oblongae, hyalinae, immaturae medio uniseptatae, maturae triseptatae, vix constrictae, 16 - 19 x 4.5µ.

Hab. in foliis vivis Halleriae lucidae L., Entabeni, Louis Trichardt, Transvaal, leg. Marasas & Rabie, PRE 42687 Holotypus.

Phyllachora ehrhartae Marasas sp. nov.

Figs. 7, 30, 31.

Ascostromata amphigenous in Straw Yellow discoloured areas, the whole leaf dying later and becoming Straw Yellow, shiny-black, scattered, well-defined, convex, lengthened, oblong to ellipsoidal or irregular in outline, developing parallel to the veins, 0.5 - 2.5 x 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 - 19µ thick; stroma in the mesophyll rather poorly developed. Perithecia one to nine in each stroma, ellipsoid, occupying the entire thickness of the leaf, 109 - 330µ in diameter, 109 - 182µ high; ostiole completely immersed in the clypeus, periphysate; perithecial wall well defined, merging above and

below with the clypeus, brown, concentric fibrose, 6.5 - 12.5μ thick. Asci cylindrical, rounded at the apex, attenuated below to the short, straight or geniculate pedicel, paraphysate, eight-spored, 64 - 80 x 9.5μ; paraphyses numerous, filiform, branched, hyaline, 1 - 2μ in diameter. Ascospores obliquely monostichous, subglobose to broadly oval, hyaline, continuous, 6.5 - 13 x 5.0 - 6.5μ.

On living leaves of Ehrharta erecta Lam., Mariepskop, Pilgrims Rest distr., Dec. 1963 (PRE 42628) 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 material collected by Zeyher as Zeyher 83 and not Drège 83 as cited by DOIDGE (1950). The asci were described as clavate, swollen in the middle, apiculate and with the 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 col-

lection 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.

Ascostromata amphigena, sine maculis definitis decoloratione flavo-brunnea cincta, atra, nitida, sparsa, convexa, oblonga vel ellipsoidea aut irregularia, venis parallela evoluta, 0.5 - 2.5 x 0.2 - 0.5 mm.; clypeo amphigeno bene evoluto sed in epidermide hypophyllo per plus cellulas extento, 6.5 - 19.0μ crasso. Perithecia in quoque stromate 1 - 9, ellipsoidea, 109 - 330μ diam., 109 - 182μ alta; ostiolo plano, papilliformi, in clypeo omnino immerso; pariete perithecii 6.5 - 12.5μ crasso, brunneo, concentrice fibroso. Asci cylindracei, superne rotundati, inferne pedicello breve recto vel geniculato, octospori, 64 - 80 x 9.5μ; paraphyses numerosae, filiformes, ramosae, hyalinae, 1 - 2 crassae. Ascosporae oblique monostichae, subglobosae vel late ovatae, hyalinae, continuae, 6.5 - 13.0 x 5.0 - 6.5μ.

Hab. in foliis vivis Ehrhartae erectae, Mariepskop, Pilgrims Rest dist., Transvaal, leg. Marasas, PRE 42628 Holotypus.

Trichopeltum africanum Batista & Marasas sp. nov. Figs. 9, 26.

Free mycelium forming an epiphyllous, thalloid mycelial membrane; membrane radiate, prosenchymatous, linear, branched, brown-black, single

or coalescing, 75 - 310μ broad, composed of narrow rectangular cells, 5.5 - 11.0 x 3.0 - 3.5μ. Ascostromata formed under the mycelial membrane by pycnosis, applanately hemispherical, dimidiate, darker than the membrane, 115 - 192μ in diameter; upper wall composed of two layers of cells, 9 - 11μ thick; basal wall inconspicuous. Asci ellipoid to subclavate, broadly rounded at the apex, apical wall thickened, briefly stipitate, eight-spored, aparaphysate, 28 - 33 x 10 - 16.5μ. Ascospores polystichous, oblong-clavate, straight, hyaline, one-to four-septate, slightly constricted, 10 - 15 x 4μ.

On leaves of Clivia sp. Mariepskop, Pilgrims Rest distr., Transvaal, 1962 PRE 42707 Holotype.

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

BATISTA, COSTA & CIFERRI (1957) proposed the new genus Trichopeltum in stead of Trichopeltis Speg., which is a synonym of Trichothyrium according to HUGHES (1953b). 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 ascostromata develop beneath the mycelial membrane by pycnosis and in this character it differs from Trichothyrium which has superficial ascostromata.

Two species of Trichopeltula were described by DOIDGE (1921). Trichopeltula Theissen (Zentr. Bakteriol. 39: 636. 1914) is not

a valid name as it is a later homonym of Trichopeltulum Speg. (Fung. Puigg. No. 342, 1889). The type of the genus Trichopeltula (T. hedycaryae Theiss.) will have to be examined to determine whether it belongs in Trichothyrium or in the Trichopeltinaceae. If Trichopeltula hedycaryae 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 and
Trichopeltum kentaniensis (Doidge) Marasas.

The fungus on Clivia is closely related to both these species and appears to be somewhat intermediate between them. These two species and T. africanum differ from the type of the genus (Trichopeltum hawaiiensis Bat. & Costa) in that their ascostromata are ostiolate and the ascospores are four-septate, whilst the stromata of the type species are not ostiolate and the ascospores are three septate. As the author's collection could not be placed satisfactorily in any one of these species and was also collected on a hitherto unreported host, it is described here as a new species:

Trichopeltum africanum Batista & Marasas sp. nov.

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

Hab. in foliis Cliviae sp., Mariepskop, Pilgrims Rest distr., Transvaal, 1962, leg. Rabie, PRE 42707 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, Blackish-Brown, 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 toddaliae Batista & Marasas gen. nov. sp. nov.

Fig. 28, 29.

Mycelium hypophyllous, superficial, composed of sparingly branched, few septate, brown hyphae, 2.5 - 4μ 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, Blackish-Brown, uni- or bi-loculate, without a defined ostiole, 144 - 384μ in diameter; walls stromatic, pseudoparenchymatic, soft, composed of subglobose cells, 2 - 4.5μ in diameter. Conidiophores subulate, hyaline, simple or branched, at first continuous but becoming septate, 4.0 - 7.5 x 1.5 - 3.0μ. Pycnidiospores abundant, ellipsoid or fusoid, continuous, smooth, hyaline, 7.5 - 12.5 x 2.0 - 2.5μ.

On living leaves of Toddalia asiatica (L.) Lam., Mariepskop, Pilgrims Rest Distr., Transvaal, 1962 (PRE 42662). 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. 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 Syd. and Ascochytopsis Henn. The pycnostromata of Phellostroma however, are

e and large, whilst those of Ascochytopsis
carbonous and the conidia are falcate.
ng to the key presented by BARNETT (1960)
genus approximates Creothyriella Batista
, but the pycnostromata of the latter genus
several well defined, globose loculi
enate conidia.

The genus Oncostroma is characterised by
- or two-loculate pycnostromata developing
the mycelial network, the haustoria in the
ands, the subulate conidiophores and the
led, hyaline, ellipsoid or fusoid
ospores.

a Batista & Marasas gen. nov. Sphaerop-
rum.

Mycelium superficiale, brunneum, hyphis ab
romatibus radiatis; pycnostromata super-
a, sub reticulo hypharum evoluta, atro-
, membranosa, uni- vel biloculata, sine
definiti; conidiophorae subulatae, hyalinae,
es vel ramosae, primum continuae deinde
e; pycnidiosporae ellipsoideae vel
ae, continuae, hyalinae, leves.

Typus: Oncostroma toddaliae Batista &

a toddaliae Batista & Marasas gen. nov.

Mycelium hypophyllum, superficiale, hyphis
ostromatibus radiatis, paulo ramosis, paulo
s, brunneis, 2.5 - 3.8μ latis, haustoriis
dis foliorum, coralloidibus, hyalinis vel

olivaceis. Pycnostromata superficialia, sub reticulo hypharum, brunneo-atra, uni-vel biloculata, sine ostiolo definito, pseudoparenchymatica, mollia, 144 - 384 μ diam., ex cellulis subglobosis, 2 - 4.5 μ diam. composita. Conidiophorae subulatae, hyalinae, simplices vel ramosae, primum continuae deinde septatae, 4 - 7.5 x 1.5 - 3 μ. Pycnidiosporae copiosae, ellipsoideae vel fusoideae, continuae, hyalinae, leves, 7.5 - 12.5 x 2.0 - 2.5μ.

Hab. in foliis vivis Toddaliae asiaticae (L.) Lam., Mariepskop, Pilgrims Rest distr., Transvaal. Leg. Marasas & Rabie, PRE 42662. Holotypus.

NEW RECORDS FOR SOUTH AFRICA

1. Ainsworthia roraimensis Bat. & Cavalcanti - On leaves of Rawsonia lucida Harv. & Sond., De Hoek, Tzaneen, Oct. 1963.
2. Ainsworthia xanthoxylii Bat. & Costa - On leaves of Ilex mitis (L.) Radl., De Hoek, Tzaneen, Jan. 1963.
3. Asterina bukobensis Hansf. - On leaves of Eugenia natalitia Sond., Mariepskop, Pilgrims Rest Dist., Jan 1963.
4. Calonectria erysiphoides Berl. & Roum. - Parasitic on Meliola evansii Doidge on Maytenus acuminatus (L.f.) Loes., Entabeni, Louis Trichardt, Oct. 1963.
5. Cercospora cocculi Syd. - On leaves of Cocculus hirsutus (L.) Diels, Mariepskop, Pilgrims Rest Distr., 1962.
6. Chaetothyrina musarum (Speg.) Theissen - On leaves of Euclea crispa (Thunb.) Guerk var. crispa, Mariepskop, Pilgrims Rest Distr., Dec. 1963.
7. Deslandesia javanica (Zimm.) Bat. & Cif. var harana (Trotter) Cif. & Bat. - On leaves of Syzygium guineense (Willd.) D.C., Entabeni, Louis Trichardt, Oct. 1963.
8. Dimerina mindanaense (P. Henn.) Hansf. - Parasitic on Meliola carissae Doidge on Carissa bispinosa (L.) Des. f. ex Bren. var acuminata (L.) L.E. Codd, Magoebaskloof, Tzaneen, Oct. 1963.
9. Diplodia longipedicellata T.S. & K. Ramakrishnan - On leaves of Syzygium guineense (Willd.) D.C., Tate Vondo, Louis Trichardt, Apr. 1964.
10. Johansonia amadelpha (Syd.) v. Arx - On leaves of Syzygium cordatum Hochst., Mariepskop, Pilgrims Rest Distr., 1962.

11. Micropeltidium obscurum Bat. & Bezerra - On leaves of Ilex mitis (L.) Radl., De Hoek, Tzaneen, Jan. 1963.
12. Parapeltella maitlandii (Hansf.) Batista - On leaves of Rawsonia lucida Harv. & Sond., De Hoek, Tzaneen, Oct. 1963.
13. Phomopsis pterocarpi Hughes - On leaves of Pterocarpus angolensis D.C., Erasmus Reserve, Bosbokrand, Pilgrims Rest Distr., Jan 1963.
14. Rosenschieldiella rapaneae Bat. & Silva & Peres - On leaves of Nuxia oppositifolia (Hochst.) Benth., Hans Merensky Nature Reserve, Tzaneen, Aug. 1963.
15. Scolecopeltidium racemosae Bat. & Lima - On leaves of Syzygium gerrardii (Harv.) Hochst., De Hoek, Tzaneen, Oct. 1963.
16. Vitalia ekmanii - On leaves of Clivia sp., Mariepskop, Pilgrims Rest Distr., 1962.

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SUMMARY

A new genus of Sphaeropsidaceae, Oncostroma Batista & Marasas, and the type species of the genus, O. toddaliae Batista & Marasas, are described. Descriptions are also given of six new species of Ascomycetes, i.e. Brasiliomyces entadae Marasas & Rabie, Uncinula sparsichaeta Marasas, Thyriopsis sphaerospora Marasas, Microcyclus halleriae Marasas & Rabie, Phyllachora ehrhartae Marasas and Trichopeltum africanum Batista & Marasas. Two new combinations, Trichopeltum carissae (Doidge) Marasas and Trichopeltum kentaniensis (Doidge) Marasas, are made.

An annotated account is given of collections of foliicolous Ascomycetes and Deuteromycetes from the indigenous forests of the Transvaal Province of the Republic of South Africa. A list of 93 species of fungi, belonging to 54 genera and found on 66 host genera, is presented. Of these 16 are new records for South Africa while 22 represent new fungus-host relationships.

The genera Asterina, Meliola and Phyllachora appear to be the most common genera of foliicolous Ascomycetes in the northern Transvaal. Members of the Chaetothyriales and the Micropeltaceae also appear to be more numerous than indicated by previous workers.

The fact that seven new species have been encountered in a relatively small collection, is an indication of how incomplete our knowledge of the South African fungus flora is. Undoubtedly many more new species remain to be discovered in the indigenous forests of the northern Transvaal.

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Fig. 1. Brasiliomyces entadae

a. Ascocarp b. Ascus c. Ascospores

d. Five ascospores being released from a squashed ascocarp.

Fig. 2. Uncinula sparsichaeta

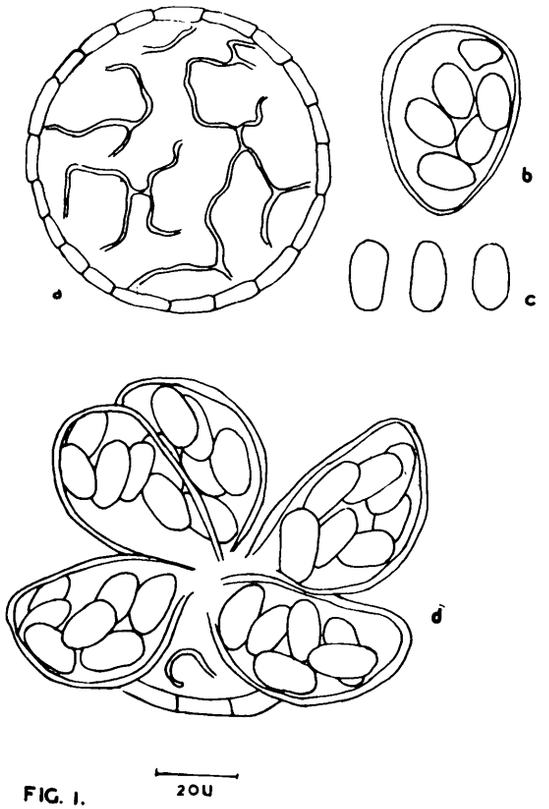
a. Cleistothecial appendages b. Asci

c. Ascospores d. Appressoria.

Fig. 3. Uncinula aspera

a. Cleistothecial appendage b. Asci

c. Ascospores d. Appressoria.



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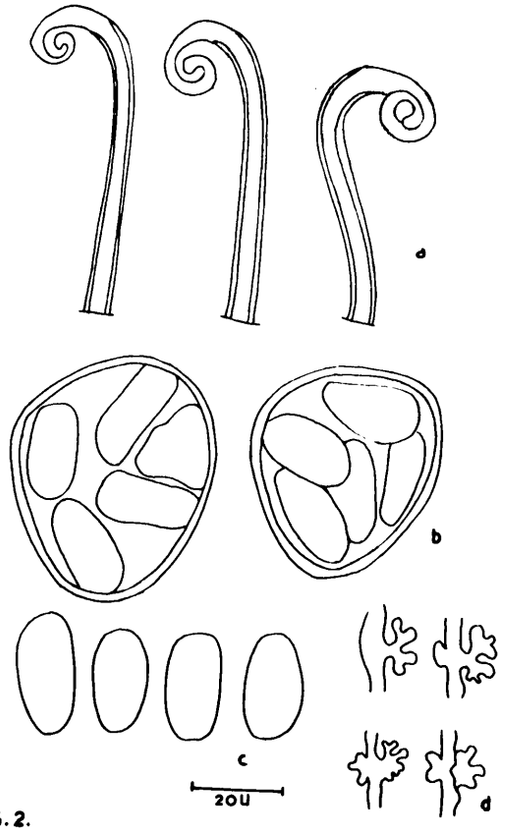

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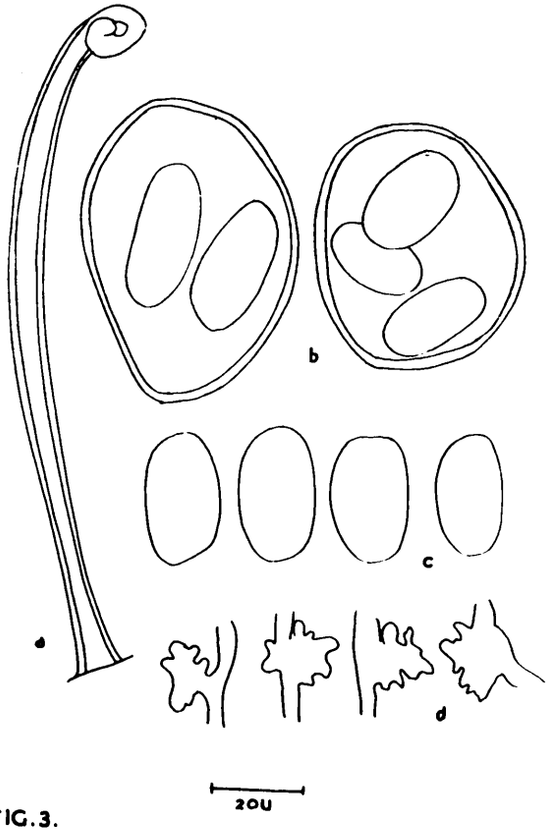

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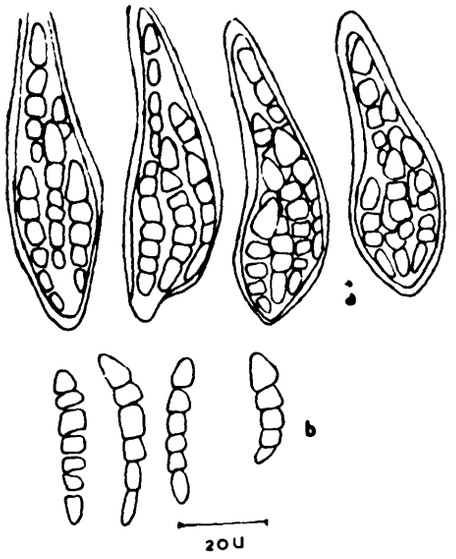

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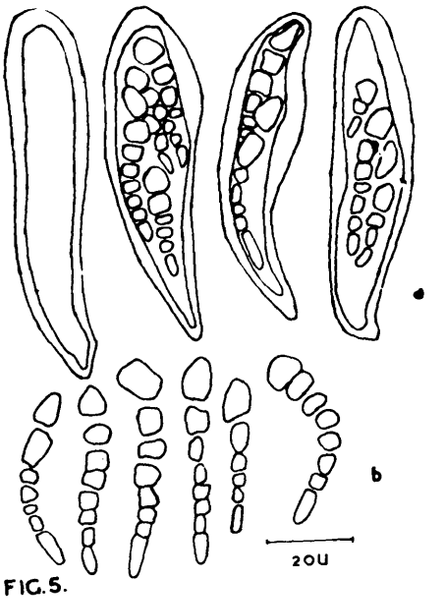

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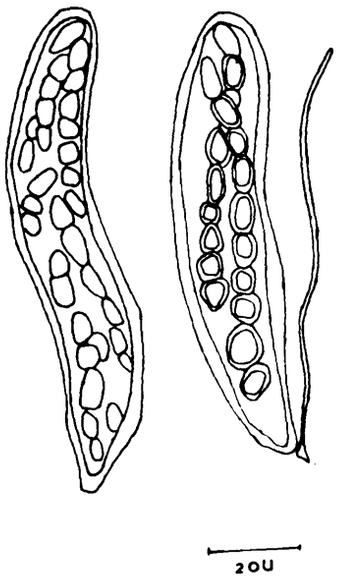

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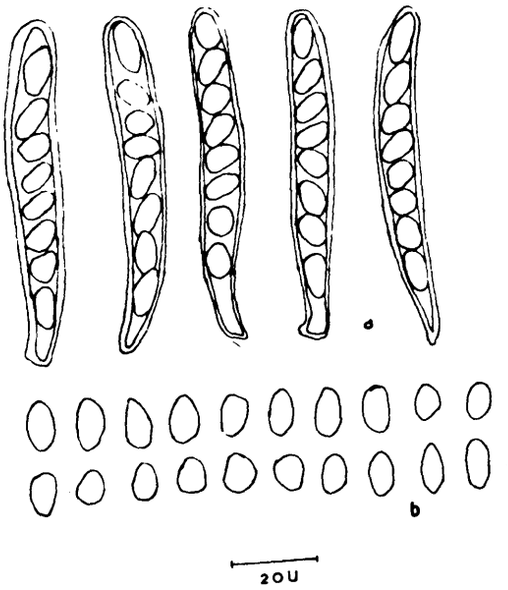

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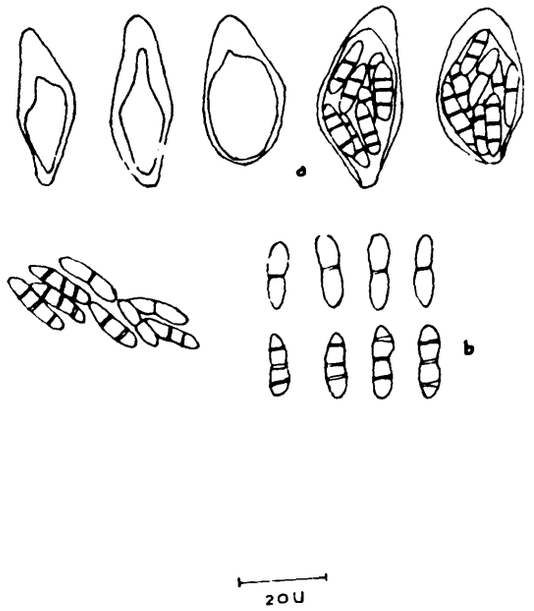

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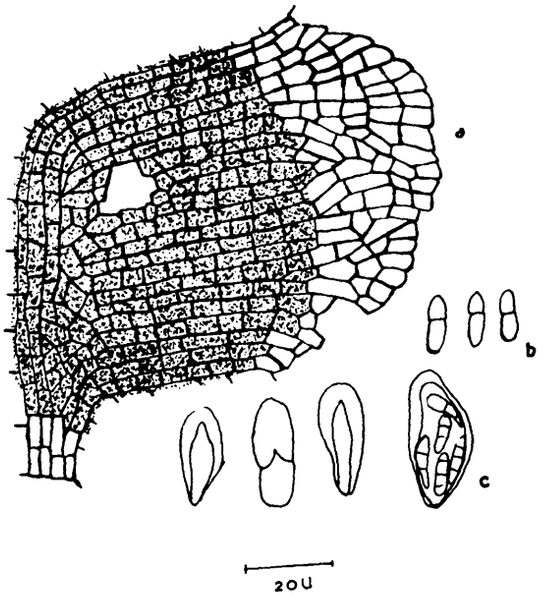


FIG. 9.

Fig. 10. Ainsworthia xanthoxylii

a. Asci b. Ascospores.

Fig. 11. Ainsworthia roraimensis

Ascospores.

Fig. 12. Deslandesia javanica var. harana

a. Asci b. Ascospores.

Fig. 13. Vitalia ekmanii

a. Mycelial seta b. Perithecial seta

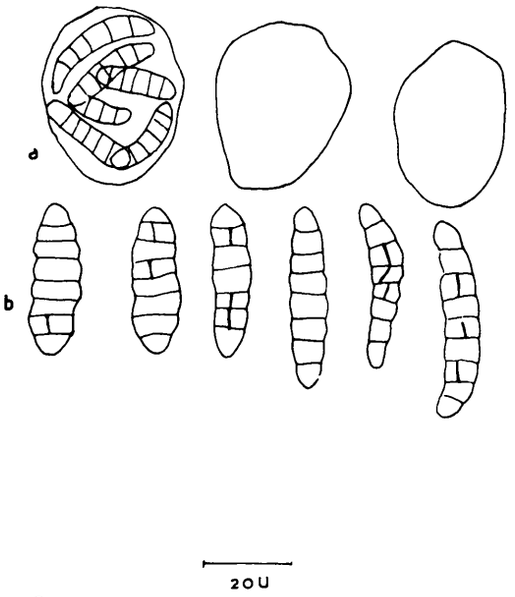
c. Asci d. Ascospores.

Fig. 14. Chaetothyrina musarum

a. Asci b. Ascospores c. Perithecial seta d. Base of mycelial seta.

Fig. 15. Johansonia amadelpha

a. Asci b. Ascospores c. Part of mycelial seta.



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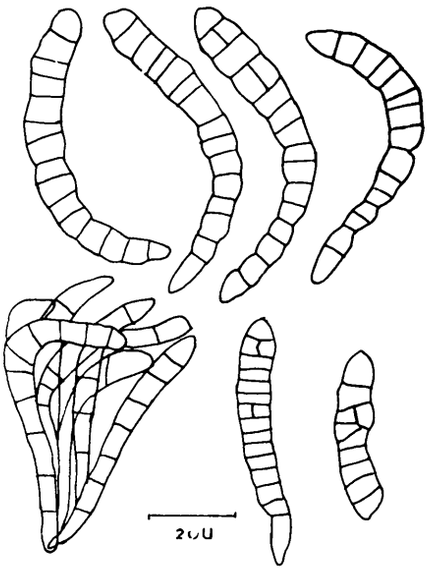

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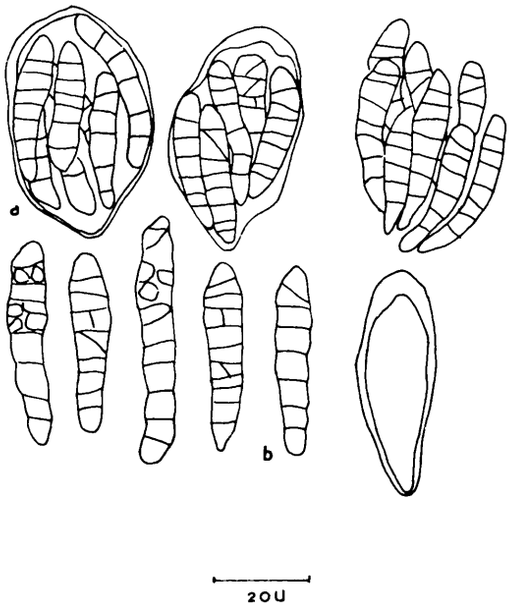

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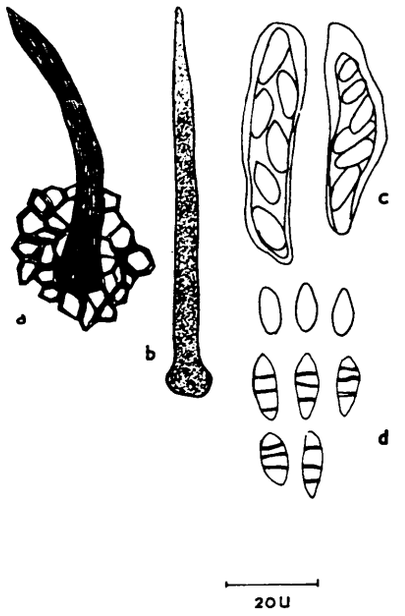

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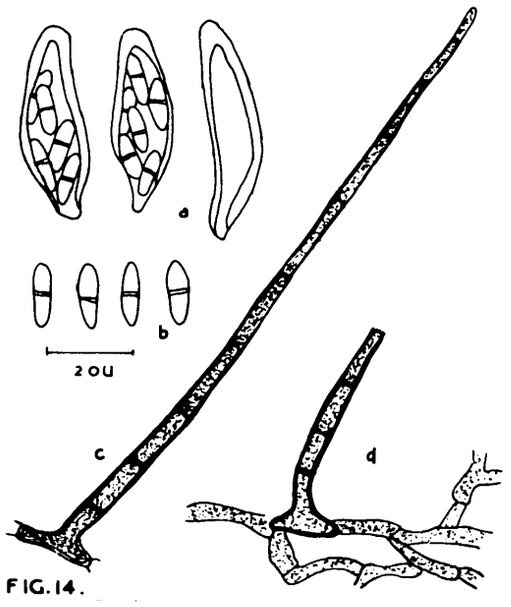

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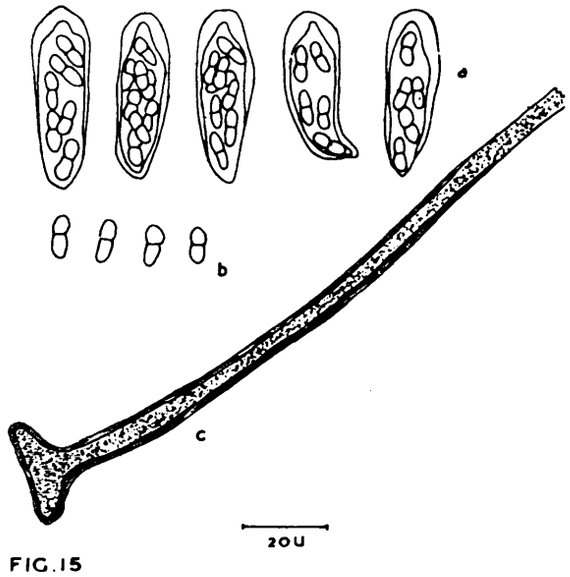


FIG. 15

Fig. 16. Uncinula aspera
Cleistothecia X 125.

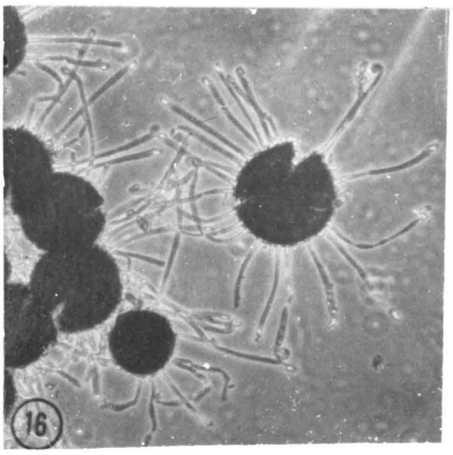
Fig. 17. Uncinula sparsichaeta
Cleistothecium X 125.

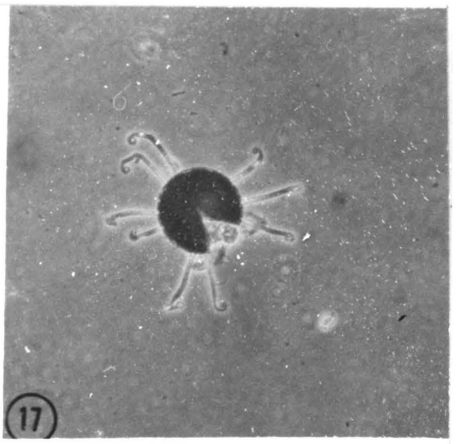
Fig. 18. Brasiliomyces entadae
Cleistothecium X 625.

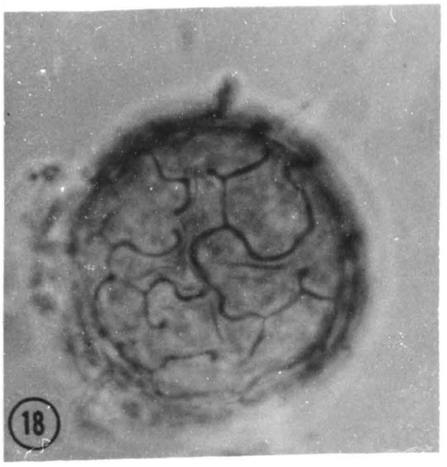
Fig. 19. Dimerina mindanaense
Ascospores X 1250.

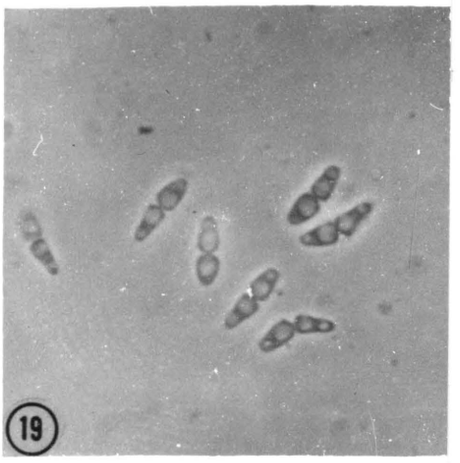
Fig. 20. Vitalia ekmanii
Mycelial setae X 400.

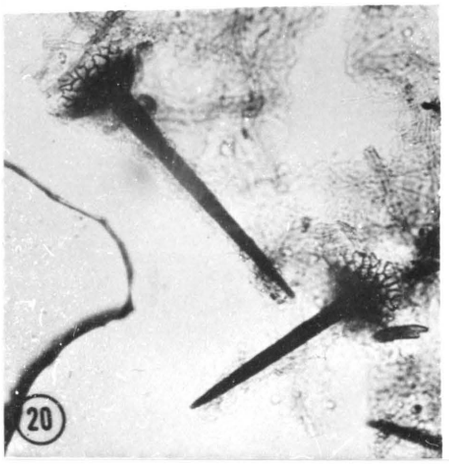
Fig. 21. Vitalia ekmanii
Perithecial setae X 400.











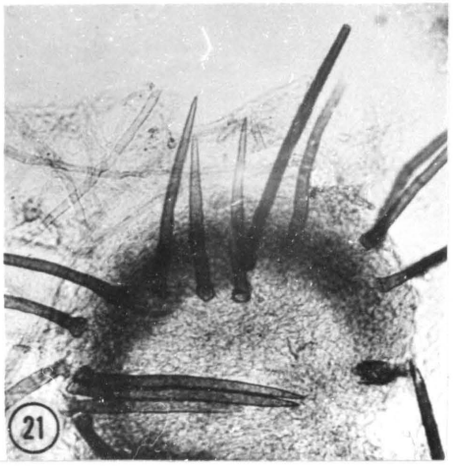


Fig. 22. Thyriopsis sphaerospora
Cross section of stroma showing two locules X 156.

Fig. 23. Thyriopsis sphaerospora
Cross section of stroma showing covering and basal membranes and ascospores in deliquescent asci X 625.

Fig. 24. Thyriopsis sphaerospora
Ascostromata on leaf surface X 20.

Fig. 25. Thyriopsis sphaerospora
Ascospores X 1250.

Fig. 26. Trichopeltum africanum

Mycelial membrane and ascostromata

X 125.

Fig. 27. Asterina bukobensis

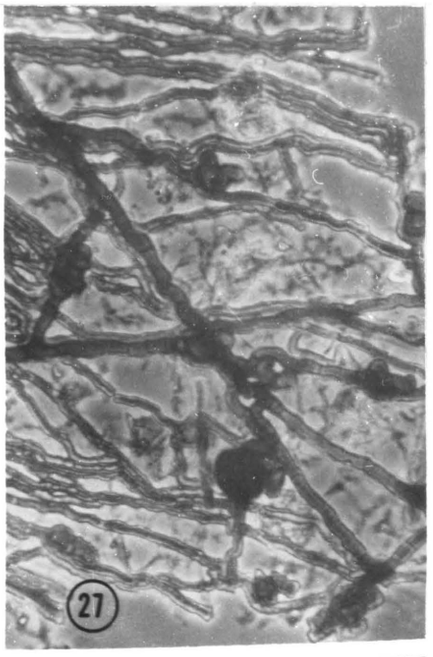
Hyphopodia X 500.

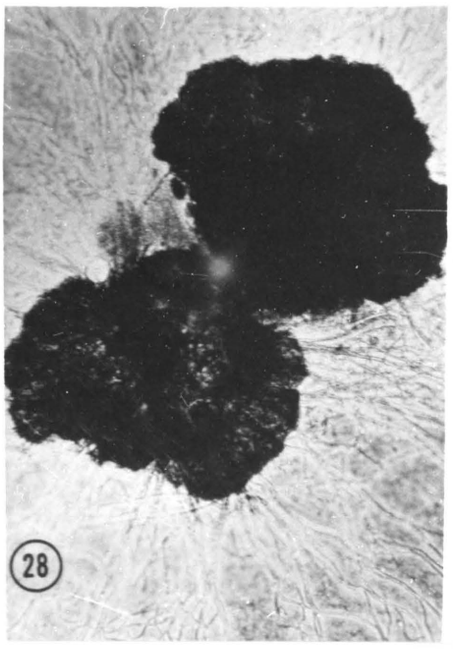
Fig. 28. Oncostroma toddaliae

Pycnidia under hyphal network X 125.

Fig. 29. Oncostroma toddaliae

Pycnidiospores X 500.





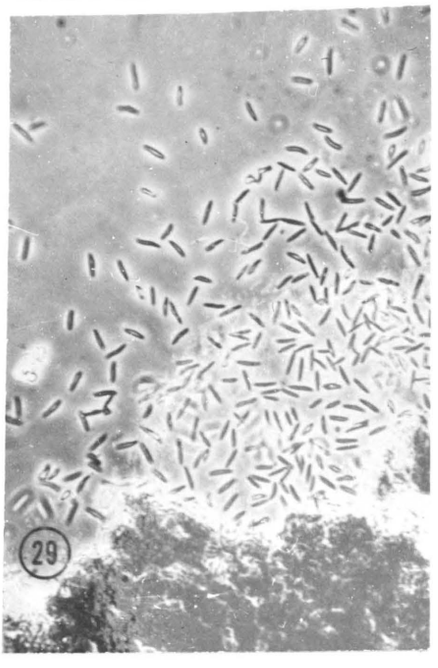


Fig. 30. Phyllachora ehrhartae
Longitudinal section of stroma showing five perithecia X 156.

Fig. 31. Phyllachora ehrhartae
Cross section of stroma X 400.

Fig. 32. Microcyclus halleriae
Cross section of uniloculate stroma X 400.

Fig. 33. Microcyclus halleriae
Cross section of stroma showing three loculi X 625.