

ADDITIONS TO THE FUNGI OF MADRAS—XVII

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Plasmopara wildemaniana P. Henn.

P. A. Saccardo, *Syll. Fung.*, 21, 861.

On living leaves of *Justicia simplex* D. Don. (Acanthaceæ), Ambalavayal (Wynaad), 3-9-1954, N. V. Sundaram.

The imperfect stage alone was present. The same fungus has been previously recorded on *Peristrophe bicalyculata* from this State.

Catacauma microcentum (B. and Br.) Theiss. and Syd.

F. Theissen and H. Sydow., *Ann. Mycol.*, 1915, 13, 384.

On living leaves of *Artocarpus hirsuta* Lamk. (Moraceæ), Mangalore, 12-11-1954, T. S. Ramakrishnan.

The stromata are amphigenous and form isolated or confluent crusts.

Elsinoe fawcetti Bitancourt and Jenkins.

A. A. Bitancourt and A. E. Jenkins, *Phytopath.*, 1936, 26, 393-96.

On living leaves and fruits of *Citrus paradisi* (Rutaceæ), Kallar, 10-11-1953, T. S. Ramakrishnan; on leaves and fruits of *C. sinensis*, Tudyalur (Coimbatore) and Kodur, 15-10-1952, T. S. Ramakrishnan.

The scab of *Citrus* has been observed in different parts of the State in recent years. The incidence is however confined to the two species recorded above. The imperfect stage—*Sphaceloma fawcetti* Jenkins—alone has been noticed. The leaves and fruits are infected. The disease on *C. sinensis* has been kept under control by repeated sprayings of Bordeaux mixture.

Guignardia bidwellii (Ell.) Viala and Rav.

On fruits of *Vitis vinifera* L. (Ampelideæ), Ganguvarapatty (Madura District), 5-8-1953, N. V. Sundaram.

The black rot of grapes has been recorded for the first time from this State. The pycnidial state was produced in abundance on the berries and their stalks. The disease causes serious damage to some exotic purple-fruited varieties especially when rains are received at the fruiting period.

The local green variety is much less infected. The disease becomes evident when the fruits are half ripe and entire bunches rot and become blackened. The results of the experiments to control the disease showed that the disease could be easily kept in check by spraying the bunches with Cupravit OB 21 or Bordeaux mixture, once after fruit set and again after an interval of a fortnight. More sprayings are necessary if the weather continues to be humid.

Mycosphærella agapanthi-umbellati nov. sp.

Syn. *M. agapanthi* Ramak. T. S. and K. *Proc. Indian Acad. Sci.*, 1950, 32 B, 98.

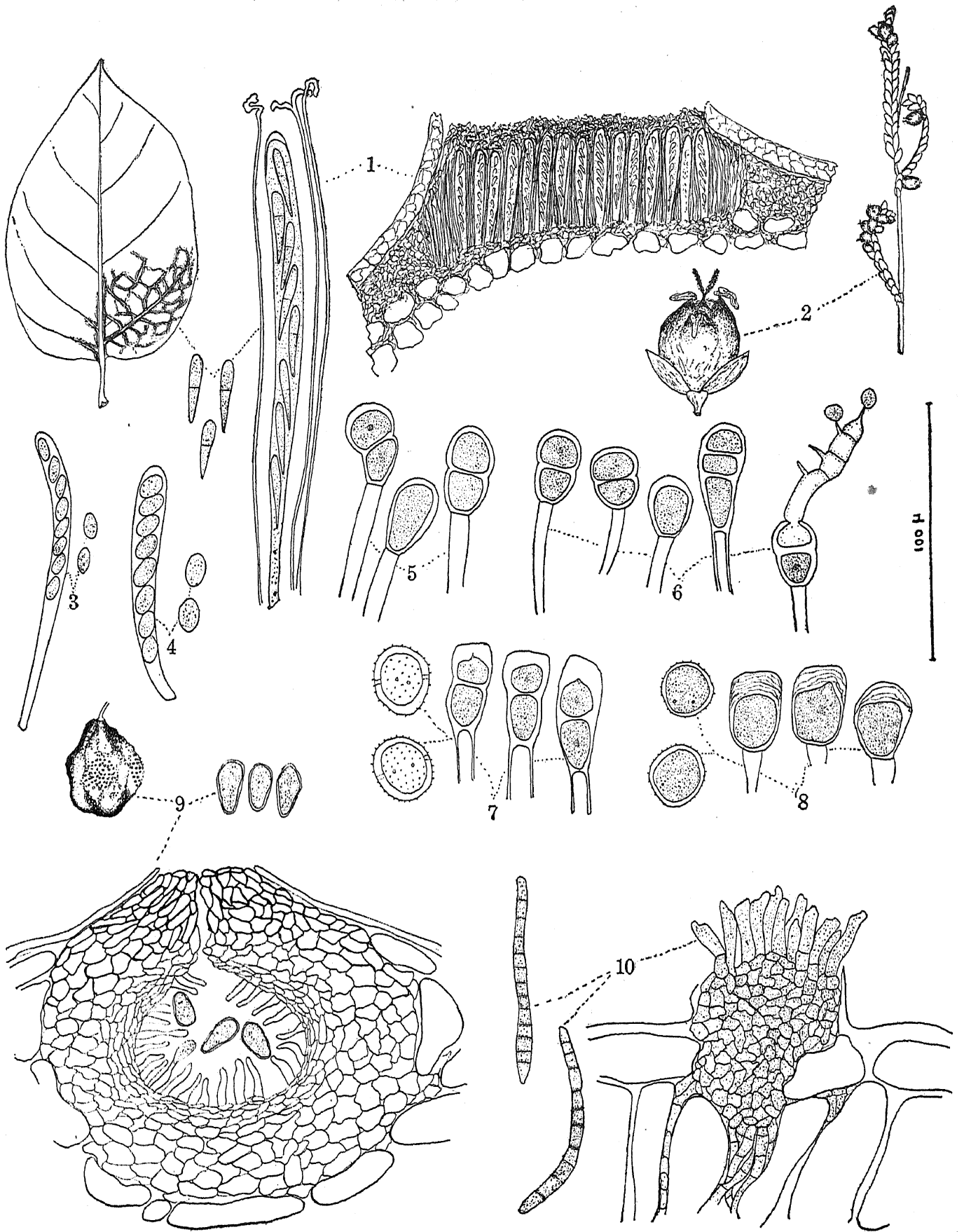
Ramakrishnan, T. S. and K. have described *M. agapanthi* on *Agapanthus umbellatus*. This specific name for the pathogen has been used earlier by Lindau (in Engler and Prantl., *Naturl. Pflanzenfam.* 1 Teil, 1 Abt., 1897), p. 427). But the fungus recorded by them is different. Therefore the specific name has to be changed as mentioned above.

Hypoderma leschenaultiæ nov. sp.

Patches foliicolous, irregular, brown, mostly epiphyllous; apothecia invariably epiphyllous, dark brown, strap shaped, branching profusely to simulate a reticulate appearance, mostly along the midrib and the lateral veins, intraepidermal and later erumpent, dehiscing longitudinally by a long split all along the length, up to 2 cm. long and 1 mm. broad; asci hyaline, clavate, 8-spored, $151 \times 12 \mu$ ($117-189 \times 10.5-16$), paraphysate, paraphyses hyaline, longer than the asci, filiform, often hooked or branched at the apex; ascospores clavate, broader at the apex and tapering towards the base, apex rounded, obliquely arranged, hyaline, becoming 1-septate at maturity only, $31 \times 3.5 \mu$ ($25-37 \times 3-4.5$).

Maculæ foliicolæ, irregulares, brunneæ, ut plurimum epiphyllæ, apothecia semper epiphylla, fusce brunnea, elongata, ita profuse ramosa ut simulent reticulationem, ut plurimum ad nervos medium et laterales, intraepidermalia et tandem erumpentia, dehiscencia longitudinaliter per totam longitudinem, usque 2 cm. longa 1 mm. lata; asci hyalini, clavati, octospori, $151 \times 12 \mu$ ($117-189 \times 10.5-16$), paraphysati, paraphysibus hyalinis, asco longioribus, filiformibus, sæpe curvatis vel ramosis ad apicem; ascosporæ clavatæ, latiores ad apicem, fastigatæ ad basim, apice rotundato, oblique dispositæ, hyalinæ evadentes uniseptatæ tantum ad maturitatem, $31 \times 3.5 \mu$ ($25-37 \times 3-4.5$).

On living leaves of *Lonicera leschenaultii* Wall. (Caprifoliaceæ), Ootacamund, 10-5-1954, T. S. Ramakrishnan.



FIGS. 1-10

Brown discoloured patches are formed on the upper surface of the leaves in the early stages. On these patches the characteristic reticulately branched ribbon-like apothecia can be easily distinguished. In advanced stages the discolouration extends to the lower surface of the leaves also. But the apothecia are usually observed on the upper surface only. Very rarely incipient development of the apothecia was noticed on the corresponding lower surface also. The upper surface is brown. The hypothecium is hyaline and can be readily differentiated. The paraphyses are filiform and straight, bent or sometimes branched at the apex. The apices are closely entangled and do not separate readily. The ascospore is one-celled in the early stages. Even at maturity the septum can be distinguished only in some under the oil-immersion lens.

Phyllachora aliena Syd.

Sydow, H. and P., *Ann. Mycol.*, 1912, 10, 407.

On living leaves of *Memecylon deccanense* (Myrtaceæ), Mangalore, 15-11-1954, T. S. Ramakrishnan.

Circular hypertrophied spots are formed on the leaves. These are yellow or rose coloured in the initial stages. Later the colour fades when the stromata develop epiphyllously. These are dark and form raised dome-shaped growths on the upper surface with corresponding depressions on the lower surface. In some cases the stromata form a raised ring.

Phyllachora minuta P. Henn.

Hennings, P., *Hedwigia*, 1902, 41, 143.

On living leaves of *Hibiscus tiliaceus* L. (Malvaceæ), Alwaye, (T.-C. State), 8-12-1954, T. S. Ramakrishnan.

Black stromata are visible on both sides of the leaf in the centre of reddish brown irregular spots. The perithecia are developed deepseated occupying the entire thickness of the leaf. The paraphyses break down early.

Older perithecia are readily invaded by *Fusarium* sp. which results in their disorganisation. A pink growth develops over the stromata and on these the conidia of the hyperparasite are produced.

Ustilago trichophora (Link) Kunze

P. A. Saccardo, *Syll. Fung.*, 1888, 7, 462.

On the ovaries of *Paspalidium geminatum* Stapf (Gramineæ), Mangalore, 10-11-1954, T. S. Ramakrishnan.

Infection is confined to some of the spikelets in the inflorescence. The sorus is enlarged 4 to 6 times the size of the normal grain. It has usually 3 conical projections at the apex and on these the anthers are borne. From the centre arise the two stigmatic branches.

Phakopsora vitis Syd.

P. Sydow, *Hedwigia*, 1899, 38, 141.

E. J. Butler, *Ann. Mycol.*, 1912, 10, 153-58.

On living leaves of *Vitis vinifera* L. (Ampelideæ), Kallar (Coimbatore), 15-11-1952; on *Ampelocissus arnottiana* Planch. (Ampelideæ), Walayar (Malabar), 25-12-1954, T. S. Ramakrishnan and N. V. Sundaram.

This rust is prevalent on the cultivated grapes in Coimbatore, Kallar and Ketti (Nilgiris) affecting mainly the blue grapes. The more widely cultivated green variety is not infected. The uredia form bright orange powdery sori on the lower surface of the leaves, often covering the entire surface. The affected leaves turn prematurely yellow and are shed. Besides infecting grapes the same rust is also prevalent on *Cissus* sp. and *Ampelocissus arnottiana* in Walayar and Coimbatore. The incidence of the rust on the grapes occurs during the cold months alone. The uredial state alone was present on all these.

Puccinia elytrariæ P. Henn.

Sydow, P. and H., *Monogr. Ured.*, 1904, 1, 232.

On living leaves of *Justicia betonica* L. (Acanthaceæ), Sultan's Battery (Malabar), 3-9-1954, N. V. Sundaram.

The telia are hypophyllous and foliicolous forming compact dark brown erumpent structures of varying sizes. Numerous mesospores are found along with the normal 2-celled teliospores. Rarely 3-celled teliospores are also noticed.

Puccinia iridis (D.C.) Wallr.

P. A. Saccardo, *Syll. Fung.*, 1888, 7, 657.

On living leaves of *Iris germanica* (Iridæ), Sims' Park, Coonoor, 4-10-1954, N. V. Sundaram.

Both uredia and telia are present on both sides of the leaves. The uredia were severely infected by *Darluca filum*.

Puccinia tiliæfolia sp. nov.

Rust spots indefinite, amphigenous, brown; telia hypophyllous, gregarious, pulvinate, erumpent, brown, minute; teliospores 2-celled, elliptic, oblong or obovate, apex rounded, sometimes thickened (up to 4.5μ), slightly constricted at the septum, brown, $27 \times 16 \mu$ ($19-43 \times 12-19$), pedicel persistent, subhyaline, up to 65μ long; mesospores are numerous, obovate, $19-25 \times 12-19 \mu$; 3-celled spores are also seen rarely.

Maculæ rubiginosæ indefinitæ, amphigenæ, brunneæ; telia hypophylla gregaria, pulvinata, erumpentia, brunnea, minuta; teliosporæ bicellulatæ, ellipticæ, oblongæ vel obovatæ, apice rotundato crasso (usque 4.5μ), tenuiter constrictæ ad septum, brunneæ, $27 \times 16 \mu$ ($19-43 \times 12-19$), pedicellis persistentibus, subhyalinæ usque ad 65μ longæ; mesosporæ plurimæ, $19-25 \times 12-19 \mu$; ter-cellulatæ sporæ visæ sed raro.

On living leaves of *Grewia tiliæfolia* Vahl. (Tiliaceæ), Ambalavayal (Malabar), 3-9-1954, N. V. Sundaram.

Several telia are formed close together forming compact groups. The telial stage alone was present. The teliospores germinate readily on maturity. The basidiospores are globose and are borne on sterigmata.

Uromyces anotis-monospermæ sp. nov.

Uredia hypophyllous, minute erumpent, cinnamon to chestnut brown; urediospores subglobose or obovate, ochraceous brown, echinulate, $25 \times 19 \mu$ ($22-31 \times 16-22$), germ pores 2 or 3, subequatorial; telia mixed with uredia and similar in appearance; teliospores 1-celled, elliptic, oblong or obovate, smooth, apex rounded, flattened or obtuse, very much thickened (up to 16μ) yellowish brown, $34 \times 19 \mu$ ($25-45 \times 16-22$), pedicellate, pedicel subhyaline.

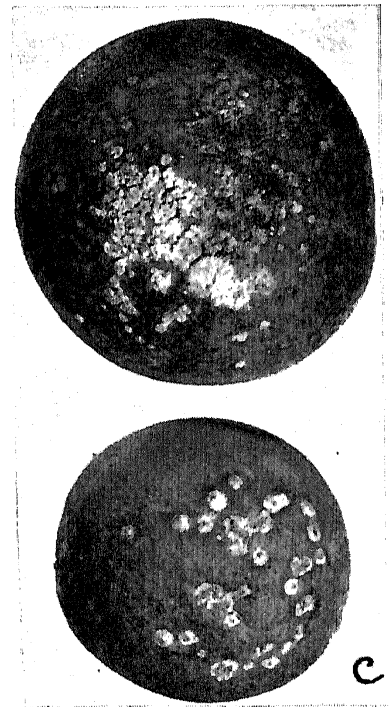
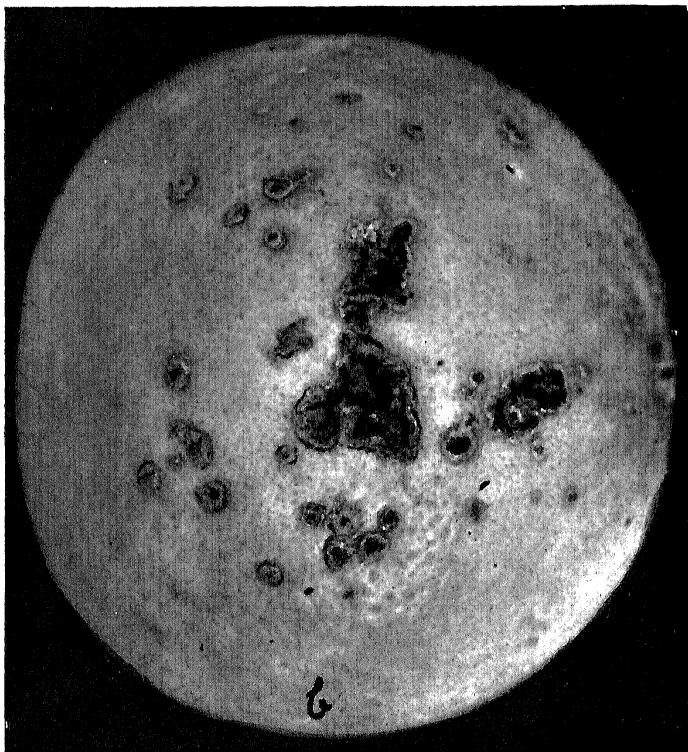
Uredia hypophylla, minuta, erumpentia, cinnamomo vel castaneo brunnea; uredosporæ subglobosæ vel obovatæ, ochraceo-brunneæ, echinulatæ, $25 \times 19 \mu$ ($22-31 \times 16-22$), germinationis poris binis vel ternis, subequatorialibus; telia cum urediis mixta, eisque similia aspectu; teliosporæ semel cellulatæ, ellipticæ, oblongæ vel obovatæ, leves apice rotundato, vel complanato, vel obtuso et crassissimo (usque ad 16μ), luteo-brunneæ, $34 \times 19 \mu$ ($25-45 \times 16-22$), pedicellatæ, pedicellis subhyalinis.

On living leaves of *Anotis monosperma* Benth. (Rubiaceæ), Nanjanad (Nilgiris), 3-11-1954, N. V. Sundaram.

The germ pores in the urediospores are usually two in number but some spores have 3 germ pores also. These are located below the middle, half way to the base. The teliospores are much thickened at the apex and

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lamellations are evident. The lateral walls are very thin. This rust differs from *U. anotidis* Petch in not possessing æcia and in the teliospores not being crusted or incised.

Cercospora gliricidiæ Syd.

Sydow, *Philipp. J. Sci.*, 1913, 8, 283.

On living leaves of *Gliricidia maculata* L. (Papilionatæ), Pattambi, 2-12-1954, N. V. Sundaram.

The fungus causes indefinite yellowish spots visible on both sides of the leaves. On both sides of the spots black stromata occur as minute dots. The conidiophores are brown, flexuous, with one or two septa and geniculate apex. The conidia are fuliginous elongate and measuring $28-90 \times 4-8 \mu$. Three to nine septa may be present. Chupp is of opinion that this may belong to *Corynuem*.

Cercospora jasminicola Muller and Chupp.

C. Chupp, *Monogr. of fungus genus Cercospora*, 1954, 416.

On living leaves of *Jasminum grandiflorum* L. (Oleaceæ), 15-12-1954, Coimbatore, T. S. Ramakrishnan.

The fungus causes reddish brown circular or irregular amphigenous spots of varying sizes on the leaflets. In rainy weather the infection spreads rapidly resulting in the withering of the foliage accompanied by defoliation. The disease is prevalent from July to January in Coimbatore.

We wish to express our grateful thanks to Rev. Fr. H. Santhapau for the Latin translation and to the Professor of Botany, Agricultural College, Coimbatore, for the identification of some of the host plants.

EXPLANATION OF PLATE

PLATE IX

a. Scab of *Citrus* on leaves of *C. paradisi*; b. Scab on fruits of *C. paradisi*; c. Scab on fruits of *C. sinensis*.

EXPLANATION OF TEXT-FIGURES

FIGS. 1-10. Fig. 1. *Hypoderma leschenaultiæ*, diseased leaf, section of apothecium (diagrammatic), ascus and ascospores. Fig. 2. *Ustilago trichophora*, infected panicle and a single sorus (enlarged). Fig. 3. *Phyllachora aliena*, ascus and ascospores. Fig. 4. *Phyllachora minuta*, ascus and ascospores. Fig. 5. *Puccinia elytrariæ*, teliospores and mesospore. Fig. 6. *Puccinia tiliæfolia*, teliospores, mesospore and germinating teliospore. Fig. 7. *Puccinia iridis*, urediospores and teliospores. Fig. 8. *Uromyces anotis-monospermæ*, urediospores and teliospores. Fig. 9. *Guignardia bidwellii*, infected berry, pycnidium and pycnidiospores. Fig. 10. *Cercospora gliricidiæ*, section through a cluster of conidiophores and conidia.