

## Some Foliicolous Fungi On Pineapple From India\*)

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With Plate IX

Pineapple (*Ananas comosus* Merr.) plant is now domesticated and occurs all over the Peninsula and other parts of India. Its fruits and leaves are valued commercially. In several places, the plant is cultivated for fibre extracted from the leaves; the fibre is white, soft, fine, silky and strong, remaining unaffected by moisture and is widely used in making ropes, strings and fishing lines. A small pineapple nursery was cultured in the College Farm on the University Campus and few fungi parasitic on young leaves were collected during periodical visits. An account of the identifications is given here. Relatively very few fungi parasitizing this important tropical plant have been reported from India and the present collection will make an interesting addition. Portions of Type materials are being deposited in the Herbarium Crypt. Indiae Orient., Indian Agricultural Research Institute, New Delhi.

1. *Myiocopron pandani* v. Hoehnel in Ann. Mycol 17: 115, 1919.

On living leaves of *Ananas comosus* Merr. at Varanasi, U. P. on 21 December, 1964. Leg. P. C. G u p t a. (Figs. 1—3).

The infection incited pale yellow indefinite spots on the upper leaf surface in November—December, which later turned brown and the leaves gradually withered and dried. Nearly 10 to 15% of the plants were showing infection. Minute, dot-like, dark brown and apparently superficial ascostromata developed on the browning surface. The were shield-like, ostiolate and measured 210 to 400  $\mu$  in diam. The asci were numerous, pale amber, clavate, sessile, octosporous and measured 24.7 to 41.2  $\mu \times 10$  to 16.5  $\mu$  (33  $\times$  13.2  $\mu$ ). Paraphyses were absent. The ascospores were oblong to almond-shaped, slightly tapering at one end, hyaline to pale amber in mass and measured 8.2 to 13.2  $\mu \times 5.6$  to 6.6  $\mu$  (10.7  $\times$  6.1  $\mu$ ).

Morphology of the fungus under study agrees with *M. pandani*, to which it is referred. Occurrence of this species has not so far been reported from India and this constitutes a new record for the country.

\*) Contribution from Plant Pathology Laboratory, College of Agriculture, Banaras Hindu University, India in honor of Dr. Franz Pet rak on his 80th birthday.

2. *Dinemasporium microsporium* Saccardo in Sylloge Fungorum 3: 684, 1884.

On living leaves of *Ananas comosus* Merr. at Varasani, U. P. on 5 January, 1965. Leg. P. C. Gupta. (Figs. 4—6).

The infection appeared as small, scattered later enlarging and coalescent, irregular spots on the leaves. They turned brownish yellow in color, later changing to dark brown. Blackish brown, papillate pycnidia sparsely developed on these spots, which were visible to an unaided eye. Infection on the host plants appeared negligible and the infected leaves slowly withered and dried. Dry necrotic tissues frayed occasionally. The pycnidia were dark brown to black, cup-shaped, superficial and setose; setae were long, needle-like and stiff, dark brown and measured 65—140  $\mu \times$  6.6—13.2  $\mu$ . Conidia were subhyaline to slightly green or olivaceous brown in mass, unicellular, ovate to allantoid, bearing a long thread-like hyaline bristle at each end. The bristles measured 10—13.5  $\mu$  in length and the conidia 6.6—10  $\mu \times$  1.6—3.2  $\mu$ .

Morphological characters of the present fungus closely resembled those of *D. microsporium* to which it is referred here. Occurrence of this species has not so far been reported from India and this constitutes the first report from the country. Two other species, *D. graminum* (Berk) Lev. (1) and *D. hispidulum* (Schred.) Sacc. (5) have been reported earlier from other states. The fungus has not hitherto been found parasitic on this host.

3. *Leptothyrium indicum* sp. nov.

Maculae pallide brunneae, diffusae, irregulares, postea brunneae; pycnidii obscure brunneis punctatae; pycnidia dispersa, erumpentia, scutiformia, ostiolata, 230—300  $\mu$  diam.; conidiophora simplicia, hyalina; conidia hyalina, unicellularia, ovoidea vel oblonga, 6.6—10  $\times$  5—6.6, plerumque 8.3  $\times$  5.7  $\mu$ .

Infection spots on leaves, light brown, diffuse, irregular, later turning brown. Dark brown pycnidia develop on these spots; pycnidia scattered, erumpent, shield-like, ostiolate and measuring 230—300  $\mu$  in diam. Conidiophores simple and hyaline. Conidia hyaline, unicellular, ovoid to oblong and measuring 6.6—10  $\mu \times$  5—6.6  $\mu$  with a mean of 8.3  $\times$  5.7  $\mu$ .

On living leaves of *Ananas comosus* Merr. at Varasani, P. P. on 25 December, 1964. Leg. P. C. Gupta. TYPE (MSP no. 348). (Figs. 7 to 9).

The infection was fairly widely distributed and the infected leaves gradually withered and dried later. The genus *Leptothyrium* Kunze ex Wallr. has so far been represented in India by 3 species parasitic on different host species from widely scattered locations (1, 2, 4, 6). The species under study is distinct in morphology and parasitism from those

described so far and is, therefore, being described as new to science. No *Leptothyrium* species has hitherto been reported parasitizing this host.

4. *Myrothecium roridum* Tode ex Fr. in Systema Mycologicum 3: 217, 1832; Saccardo in Sylloge Fungorum 4: 750, 1886.

On living leaves of *Ananas comosus* Merr. at Varanasi, U. P. on 15 December, 1964. Leg. P. C. Gupta. (Figs. 10 to 12).

The infection appeared on the leaves in November—December as brown colored, ellipsoidal to irregular spots surrounded by dark necrotic rings. Minute, dark brown sporodochia distinct from each other developed on the central zone. The leaves gradually withered and dried until March. The sporodochia were cushion-like, dark brown and setose. The setae were 8—12 in number, stiff and measured  $66\text{--}135\ \mu \times 6\text{--}7\ \mu$ . Conidiophores were greenish in color, repeatedly branched bearing the conidia terminally. The conidia were light green to pale brownish, unicellular, ovoid to ovate and measured  $5\text{--}13.2\ \mu \times 2.5\text{--}3.2\ \mu$ . The fungus is widely distributed in several world regions parasitizing a variety of host plants. The pineapple adds yet another one to its host series.

5. *Phoma comosa* sp. nov.

Maculae flavo-brunneae, orbiculares, ellipticae vel irregulares, annulo obscuro necrotico circumdatae; pycnidia in macularum centro evoluta, dispersa, numerosa, globosa, ostiolata, innata, postea erumpentia; conidiophora brevia, simplicia; conidia hyalina, unicellularia, ovoidea vel oblonga,  $6.6\text{--}10\ \mu \times 2.5\text{--}3.2$ , plerumque  $8.3 \times 2.8\ \mu$ .

Infection spots on the leaves; spots yellowish brown, circular, ellipsoidal to irregular and surrounded by a dark necrotic ring. Numerous dark brown scattered pycnidia developing on the inner zone later. Pycnidia ostiolate, globose, immersed in the host tissues, erumpent. Conidiophores short and simple. Conidia hyaline, unicellular, ovate to elongate and measuring  $6.6\text{--}10\ \mu \times 2.5\text{--}3.2\ \mu$  with a mean of  $8.3 \times 2.8\ \mu$ .

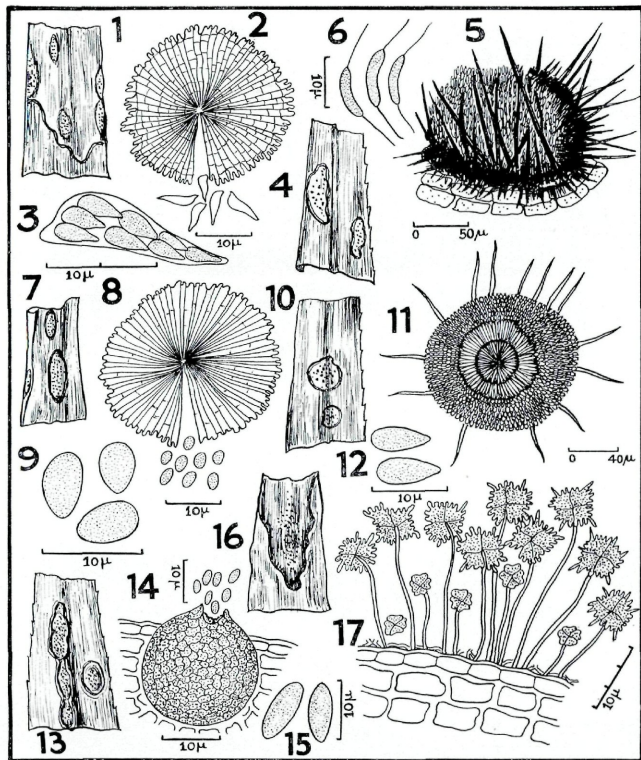
On living leaves of *Ananas comosus* Merr. at Varanasi, U. P. on 8 January, 1965. Leg. P. C. Gupta. TYPE (MSP no. 349). (Figs. 13 to 15).

The infection appeared fairly widely distributed in the area. Heavily infected leaves gradually wilted and dried sometime in March.

6. *Spegazzinia tessarthra* (B. & C.) Saccardo in Sylloge Fungorum 4: 758, 1886.

On leaves of *Ananas comosus* Merr. at Varanasi, U. P. on 10 January, 1965. Leg. P. C. Gupta. (Figs. 16, 17).

The sporodochia were black producing 2 types of spores. Four-celled spiny spores were borne apically on long, light brown slender conidiophores. The spores measured  $16.5\text{--}26.5\ \mu \times 13.2\text{--}23\ \mu$  with a mean





of  $21.5 \times 18 \mu$ . The other type of spores were borne on short similarly light brown conidiophores. These spores were also 4-celled but smooth-walled, smaller than the spiny type and measured  $10-14.8 \mu \times 10-13.2 \mu$  with a mean of  $12.5-11.5 \mu$ .

The fungus appears widely distributed in this region. It is primarily a saprophyte occurring on monocotyledonous plant debris in the field. The present collection was made on dry necrotic portions of the host leaves and might not be parasitic on it. It essentially resembled *S. tessarthra* in morphology of the conidiophores and conidia as emended by Damon (1953) and was, therefore, referred to it.

#### Acknowledgement

We are grateful to Dr. Franz Petrak for kindly translating into Latin diagnoses of the new species.

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#### Explanation of the plate.

Infection on pineapple leaf, perithecium or pycnidium or sporodochium, asci and ascospores or typical conidia of: Figs. 1-3. *Myiocopron pandani*; — Figs. 4-6. *Dinemasporium microsporium*; — Figs. 7-9. *Leptothyrium indicum*; — Figs. 10-12. *Myrothecium roridum*; — Figs. 13-15. *Phoma comosa*; — Figs. 16, 17. *Spegazzinia tessarthra*.

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Autor(en)/Author(s): Pavgi M. S., Gupta Km. S.

Artikel/Article: [Some Foliicolous Fungi On Pineapple From India. 96-99](#)