

THE NATURAL OCCURRENCE OF ERGOT IN SOUTH INDIA—II

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IN an earlier communication on the natural occurrence of ergot in South India, the authors (Thomas *et al.*, 1945) had recorded a number of new hosts of *Claviceps* observed for the first time in South India. Since then three more of the common grasses have been found to be naturally infected by *Claviceps* and the descriptions of the fungi are given below.

1. *Panicum maximum*.—This is the common cultivated 'Guinea grass' grown as a fodder. Shepherd (1926) has observed a *Sphacelia* on this host in Mauritius. But he has not given any description of the fungus or its spores. Barger (1931) has mentioned that inoculations of *C. microcephala* on *Panicum maximum* gave negative results. Apart from these the authors have not come across any reference of *Claviceps* on this host.

In December 1944, there was heavy infection in a plot of *Panicum maximum* by *Claviceps* at the Central Agricultural Research Station, Coimbatore. Nearly 30 per cent. of the spikelets were involved. But due to easy shedding many ergotised spikelets had fallen and only a few were seen at a time on the panicles. The conidial and sclerotial stages were present. The honeydew is a creamy semi-solid mass protruding beyond and overflowing the lemma and the palea. The spores are hyaline, oblong or reniform with rounded ends, measuring $18.9 \times 6.0 \mu$ (13.8 to 24.2×3.3 to 8.6). The sclerotia are prominent and are firmly clasped by the glumes at the base. The whole sclerotium with the glumes falls off easily from the panicle. The sclerotia are greyish white with the apex much lighter (cream coloured), tapering and slightly bent. They measure 5 to 6×0.75 to 1 mm. (Plate XIV, Fig. 1). The conidial characters suggest that this fungus may be similar to the *Claviceps* on *Cynodon dactylon*. Further studies to elucidate this are in progress.

2. *Themeda cymbaria* is a common tall-growing wild grass on the Pulneys in the neighbourhood of Kodaikanal, with big panicles. In December 1944 this grass was observed to be infected by *Claviceps* over a wide area at Kodaikanal. The honeydew is not very conspicuous and the presence of the pink overgrowth of a *Fusarium* was always helpful in locating infected panicles. Closer examination revealed inconspicuous whitish conidial masses in some of the spikelets. The spores are small, oblong or oval, hya-

line and measure $4.1 \times 1.7 \mu$ (3.4 to 5.2×1.7). The sclerotia are of varying lengths, 3.5 to 10.0×0.5 to 0.7 mm. often very conspicuously projecting out of the spikelets (Plate XIV, Fig. 2). They are slightly curved, dark grey in colour, with a number of grooves and wrinkles on the surface. The base of the sclerotium is often of a violet colour. It may be mentioned in this connection that the violet colour at the base of the sclerotium is common in *Claviceps* on a number of grasses. From the conidial and sclerotial characters, this fungus is found to closely resemble the *Claviceps* on *Amphiplophis Foulkesii*.

3. *Digitaria Wallichiana*.—The infection on this host was prevalent both at Kodaikanal and at Ootacamund from November to February. The conidial stage occurs as a whitish mass visible between the gaping glumes. The conidia are hyaline, oblong, sometimes curved and measure $16.6 \times 4.5 \mu$ (10.4 to 20.7×3.5 to 5.2). The sclerotia are small, smooth, dark brown and measure 1.5 to 3×1 mm. (Plate XIV, Fig. 3). They are oval to oblong with an abruptly flattened apex from the middle of which a short projection is formed. Though held between the gaping glumes the sclerotia easily separate from the spikelet. The conidial measurements and the appearance of the sclerotia suggest a close resemblance to *Claviceps* occurring on *D. chinensis*. Hansford (1941) has recorded *Claviceps digitariae* on *Digitaria scalaris* from Africa.

The authors had recorded *Claviceps viridis* on *Oplismenus compositus* from the higher elevations of Nilgiris and Kodaikanal. In January 1945 the same fungus was found on this host at Yercaud on the Shevaroy (5,000 feet above mean sea-level).

The fungi observed on these new hosts can be classified into one or other of the 5 groups into which *Claviceps* occurring on the 18 hosts were classified in the earlier communication (Thomas *et al.*, 1945).

SUMMARY

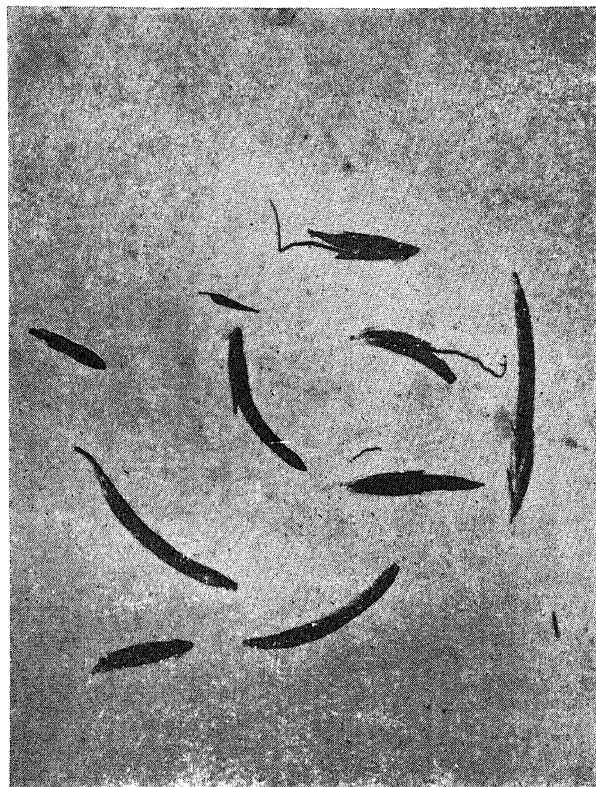
Ergot was observed on *Panicum maximum* at Coimbatore, on *Themeda cymbaria* at Kodaikanal and on *Digitaria Wallichiana* at Kodaikanal and at Ootacamund. The conidial and sclerotial measurements are given. These are new records of hosts for *Claviceps*. *Claviceps viridis* on *Oplismenus compositus* was recorded from Yercaud also.

REFERENCES

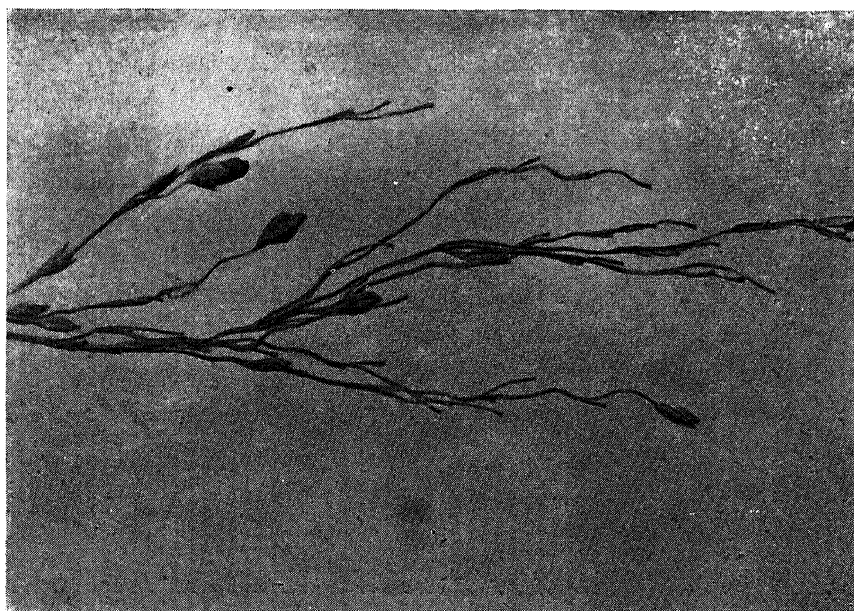
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2



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FIG. 1. Infected panicle of *Panicum maximum* showing ergots. $\times 2$.
FIG. 2. Ergots from *Themeda cymbaria*. $\times 2$.
FIG. 3. Panicle of *Digitaria Wallichiana* showing two ergots. $\times 2$.