

SPORIDIAL DISCHARGE IN MELANOETAENIUM BRACHIARIAE

THE foliicolous smut *Melanotaenium brachariae* Viégas is fairly widespread in the country causing striate to blotchy, nonerumpent sori in the leaves and occasionally in the stems and rachis of *Brachiaria distachya* (L.) Stapf³. Morphology and cytology of teliospore germination and development of teliospores *in vivo* have been described earlier⁴. Teliospores from mature sori in the withering leaves stored at low temperature (12° C) were teased out and induced to germinate on slide mounts^{5,6}. Mature sporidia floating on the water films were aseptically transferred to potato dextrose agar with 0.5% yeast extract (pH 6.5) and incubated at 28°-30° C. Presoaked teliospores also were induced to germinate on plated PDA and those bearing young sporidia were transferred to PDA and incubated likewise. Association of compatible sporidial complements was ensured in both the culture isolates. The sporidia soon fused in compatible pairs and dikaryotic infective hyphae developed into small colonies. The colonies were slow in growth (1.5-2 cm diam./week), wrinkled, thick, dull chalky white and smooth, irregular in margin. They soon produced subcylindrical to allantoid secondary sporidia (3-8 × 1.4-2.5 μ) in large numbers. The colonies were thus composed of dikaryotic hyphae and secondary sporidia.

Incubation of cultures for 24-36 hr showed a growth of numerous tiny colonies scattered around the parent colony. Subcultures also showed growth of similar tiny colonies on PDA, both on slants and in petri plates. These obviously appeared from the secondary sporidia (buds) forcibly shot out from the young colony. The secondary colonies were circular, pale buff with crenate margin, slightly raised at the centre and composed of young budding sporidia; they soon enlarged and developed similarly as the parent colonies (Fig. 1).

Mature smut sori on the host parts go down to the soil with the withering leaves and gradually become released from the decomposing debris. The agglutinated teliospores in the sori get separated with the onset of monsoon rains, germinate and build up dikaryotic mycelial/sporidial colonies on the soil, underneath the host plants. The dikaryotic secondary sporidia bring about fresh infections on the young leaves late in August every year. Young grey sori become visible on the maturing leaves in early September.

Forceful discharge of infective or disseminative propagules is known to occur in several members

of Basidiomycetes such as Sporobolomycetales, Dacrymycetales, Uredinales and Ustilaginales^{1,2}. Several species of *Tilletia* Tul. and *Entyloma* de Bary in the family Tilletiaceae (Ustilaginales) have been observed to expel their sporidia, tenderly supported over the sterigmatal apices². Forceful expulsion of sporidia was hitherto not reported in the genus *Melanotaenium* de Bary as by *M. brachariae*.

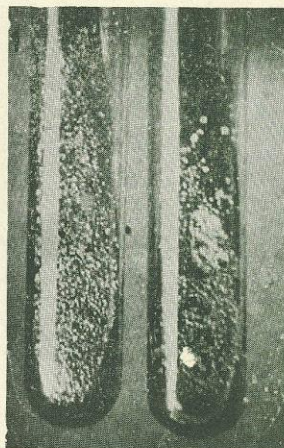


FIG. 1. Tiny colonies by expelled sporidia of *Melanotaenium brachariae*, × 1.

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