

Death occurred in 5-8 days (Table I). The polyhedra of all the 3 insect pests are being multiplied on their respective hosts, purified and maintained for further detailed studies.

TABLE I  
Mortality rate due to respective NPV  
(average of 5 replications)

Host	Number of larvae inoculated	Number of larvae dead	Per cent mortality	Time (days)
<i>S. inferens</i>	50	50	100	3-5
<i>S. incertulas</i>	50	50	100	4-6
<i>P. mathias</i>	50	45	90	5-8

Among the insect pests of rice, nuclear polyhedroses of swarming caterpillar (*Spodoptera mauritia* Boisduval)<sup>2</sup>, rice moth (*Corcyra cephalonica* St.)<sup>4</sup> and granulosis of rice leaf roller (*Cnaphalocrocis medinalis* Guenee)<sup>1</sup> have been reported earlier. The present report constitutes the first record of nuclear polyhedroses on the rice pests, *S. inferens*, *S. incertulas* and *P. mathias*.

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- Jacob, A., Das, N. M. and Thomas, M. J., *Agric. Res. J., Kerala*, 1971, 9, 103.
- , Saradamma, K. and Thomas, M. J., *Curr. Sci.*, 1973, 42, 369.
- Nayak, P., Rao, P. S. and Padmanabhan, S. Y., *Proc. Indian Acad. Sci.*, 1978, 77 B, 59.
- Rabindra, R. J., *Curr. Sci.*, 1973, 42, 757.

### TWO NEW MEMBERS OF DIATRYPACEAE FROM INDIA

THE fungus genus *Diatrype* was established by Fries<sup>2</sup> with *Diatrype disciformis* (HOFFM) FR. as the type species. It is represented in the Indian flora by 16 species. Another genus *Eutypa* erected by Tulasne (1861) with *Eutypa lata* (Perr.) Tul. as the type species is represented by 5 species in the Indian flora. Recently during his mycological collections of Marathwada region writer has collected the above two genera on *Gymnosporia montana* (Benth.) and *Combretum ovalifolium* (Roxb.) respectively.

The detailed studies carried out on the morphology of these fungi clearly indicate that they differ in several morphological features from the earlier species and hence are proposed as new to science.

#### 1. *Diatrype gymnosporiae* sp. nov. (Fig. 1a)

Stroma elongati, in matricis superficie evolutum, nigrum, carbonaceum, perithecia globosa vel subglobosa, 2-4 aggregatae, 330-375 = 180-300  $\mu$ , separatim dehiscentes, ostiolata, ostiolo periphysato, Asci clavati, pedicellati 45-65 = 5-6  $\mu$ , originem ducentese, serie basali peritheciarum parietes unitunicati, octospori, tenuiter tunicati, Asci ad spicem ornati annulo incrassato, paraphysati, Ascospores unicellulatae 11-12 = 3-4  $\mu$  hyalini allantoideae, biseriales.

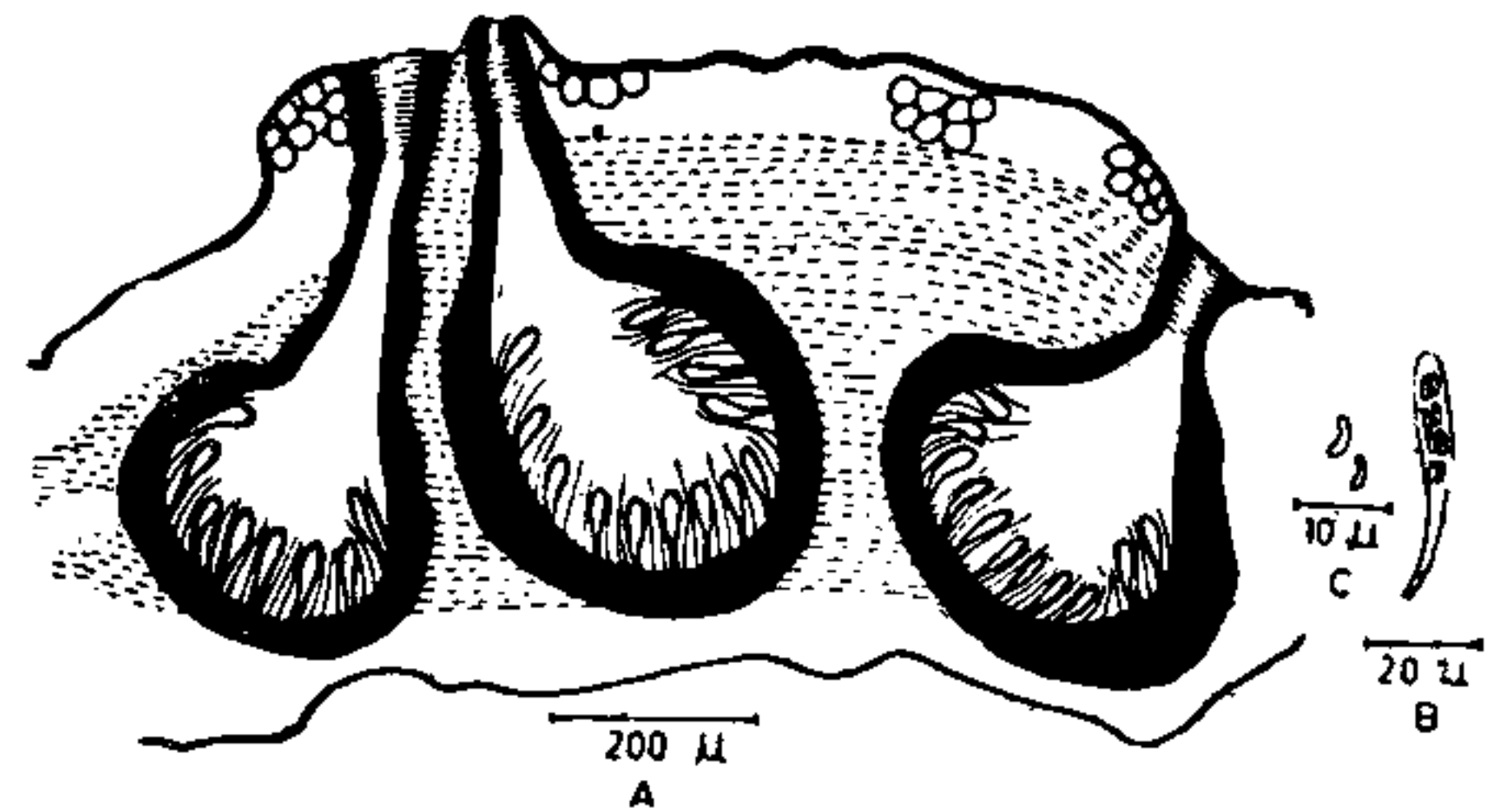


FIG. 1a

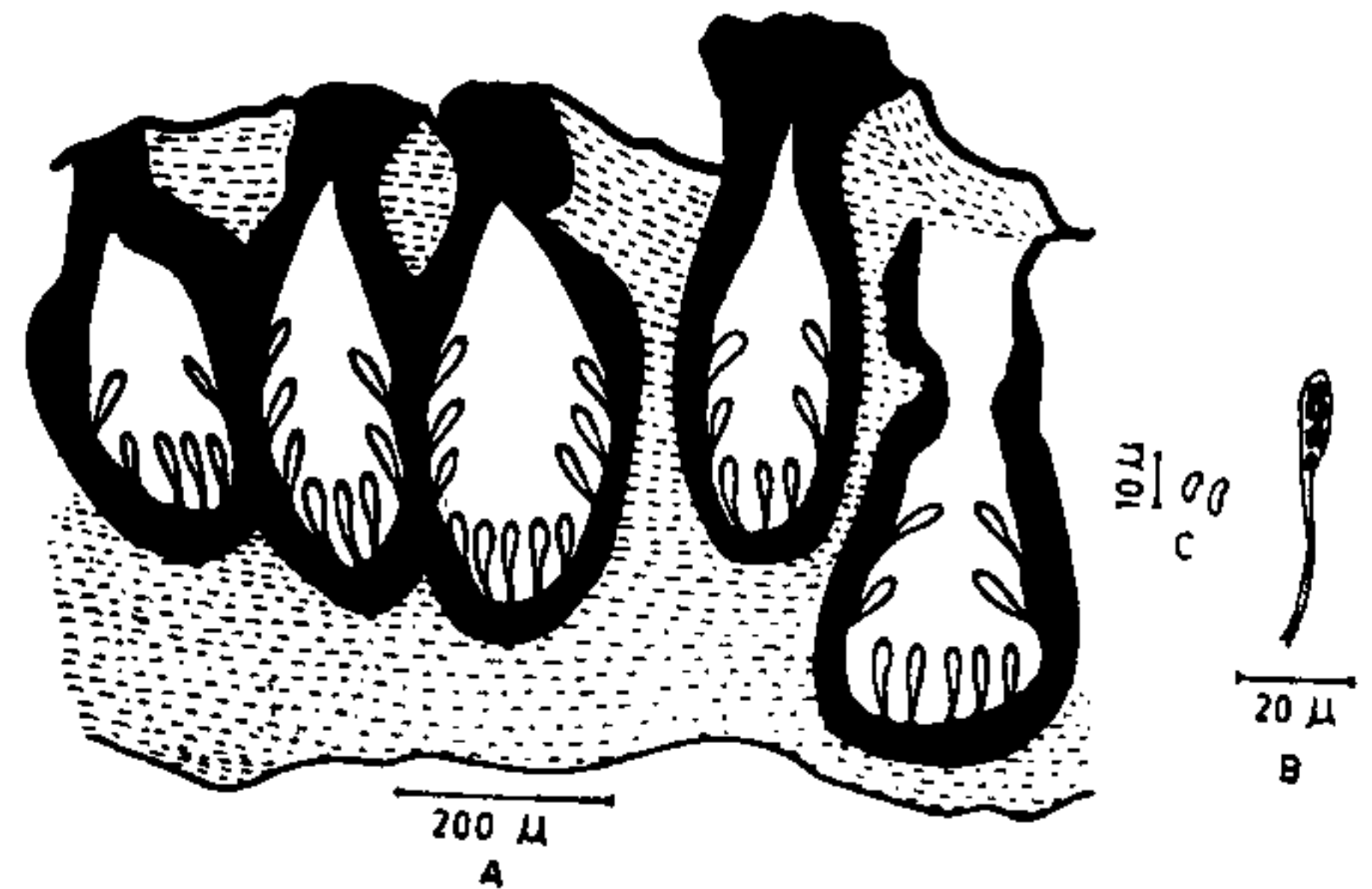


FIG. 1b

FIG. 1 a-b. (a) *Diatrype gymnosporiae* sp. nov. (b) *Eutypa combretae* sp. nov.

A. Vertical section of perithecia through stroma, B. Ascus and C. Ascospores.

Stroma elongated, superficial on the bark, black, carbonaceous, perithecia globose to subglobose, in groups of 2-4, 330-375 = 180-300  $\mu$ , separately opening, ostiolate, ostioles periphysate, Asci clavate, stalked 45-65 = 5-6  $\mu$  arising from the base of the perithecial wall, unitunicate, 8-spored, thin walled, provided with an apical ring, paraphysate, Ascospores 1-celled 11-12 = 3-4  $\mu$ , hyaline allantoid biserially arranged.

Collected on dead stems of *Gymnosporia montana* (Benth.) at Bellora in the month of October, 1975 Leg. S. P. Gambhir and deposited under No. AMH 3624 in the Herbarium of M.A.C.S., Poona.

2. *Eutypa combretae* sp. nov. (Fig. 1 b)

Stroma immersa in matricis, levio, carbonaceum, perithecia subglobosa vel ovoidea, 2-6 gregaria, 375-480 = 210-375  $\mu$ , ornata paulum emergente cortice, ostiolo periphysato, externa series obscure brunnea, interna series hyalinae, tenuiter tunicati, Asci cylindrici, clavati, 45-75 = 4-7  $\mu$ , unitunicati, longo stipitati, octospori, aparaphysati, Ascospores unicellulatae, 7-11 = 3-4  $\mu$ , hyalini vel lutcae, allantoideae, curvatae, biseriales.

Stroma immersed in the bark, soft, carbonaceous, perithecia subglobose to flask-shaped, in groups of 2-6, 375-480 = 210-375  $\mu$ , necks short, slightly projecting above the surface, ostioles periphysate, outer region dark brown, inner region hyaline, thin walled, Asci cylindrical, clavate 45-75 = 4-7  $\mu$ , unitunicate, long stalked, 8-spored, thin walled, aparaphysate, Ascospores 1-celled 7-11 = 3-4  $\mu$ , hyaline to light yellow in mass, allantoid, curved, biserially arranged.

Collected on dead stems of *Combretum ovalifolium* (Roxb.) at Patnadevi in the month of December, 1975 Leg. S. P. Gambhir and deposited under No. AMH 3625 in the Herbarium of M.A.C.S., Poona.

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1. Butler, E. J. and Bisby, G. R., *The Fungi of India*, Imp. Coun. Agric. Res. India Sc. Mono. 1, Calcutta, 1931, 18, 237 pp.
2. Fries, E., *Sum. Veg. Scan.*, 1849, p. 385.
3. Jadhav, V. K., "Studies in some Allantoporous Ascomycetes," *Thesis accepted for Ph.D. Degree of Marathwada University, Aurangabad (Dn.)*, 1972.
4. Munk, A., "Danish Pyrenomycetes," *Dansk. Bot. Arkiv.*, 1957, 17, 1.
5. Muller, E. and Von Arx, J. A., "Die Gattungen der didymosporen pyrenomyceten," *Beit. Kryptogff. Sch.*, 1962, 11, 1.
6. Sydow, H. P., "Fungi Indiae Orientalis, Parts III," *Ann. Mycol.*, 1911, 9, 415.
7. Tilak, S. T., "A new species of *Diatrype* from India," *Mycopath. et Mycol. Appl.*, 1964, 23, 249.
8. Tendulkar, J. S., "Four new species of *Diatrype* from India," *Sydonia*, 1970, 24, 282.

9. Tilak, S. T. and Jadhav, V. K., "Contribution to our knowledge of Ascomycetes of India—XXVIII," *Ibid.*, 1971, 25, 62.

#### DURATION OF MEIOSIS IN RHOEO

DURING an investigation on the temporal shift of intracellular pH of the pollen mother cells (PMCs) of *Rhoeo discolor*, Hance. (Nasar<sup>5</sup>), determination of the duration of meiosis was necessary. The duration of meiosis has been defined by Bennett<sup>1</sup> as the time taken by a meiocyte to proceed from the start of leptotene to the end of telophase II. The duration of meiosis in *Rhoeo* PMCs has thus been determined roughly by a modification of the technique involving the observation of meiosis within single anthers (Bennett<sup>1</sup> and Bennett *et al.*<sup>3</sup>). In *Rhoeo*, an absolute correlation between the size of the anther lobe and the meiotic stages therein, as found in *Lilium* (Taylor and McMaster<sup>6</sup>), was not obtained. Anthers with the two lobes unequal in dimensions generally gave asynchronous stages of meiosis. However, all the PMCs from one anther and belonging to the two lobes equal in size showed absolute synchrony.

This method consisted of excising with a sharp razor blade one lobe from the selected anther and staining in aceto-carmin. The time of excision (sampling time) was noted, and the entire bud floated in Bonner's<sup>4</sup> solution. Throughout the period of the experiment the unexcised anther lobe remained attached to the receptacle by its filament. The nutrient solution was changed hourly. The method involved measuring the time taken by the PMCs at a known stage of meiosis to develop to a later stage. Later, at fixing time, the unexcised anther lobe was stained. Care was taken to minimize injury to unexcised anther lobes; sharp and uncontaminated instruments always being used. The duration of meiosis and its constituent stages was determined from the results obtained from more than 200 anthers. Meiosis aborted in most of the PMCs when anthers were floated for 12 hours or more.

The results (Table I) show the average time taken by the PMCs to pass through the different meiotic stages at 27° ± 2° C. As can be seen in the table, the duration of meiosis from the start of leptotene to the end of telophase II is about 32 hours. The duration of the individual stages of meiosis ranges from 30 minutes to 6 hours. The prophase I stage is long; zygotene lasting for about 3-5 hours, and pachytene for 5 hours. The second prophase is much briefer than the first prophase. The tetrads persist for about 6 hours before they break up into pollen grains.

Bennett<sup>2</sup> has found a correlation between the nuclear DNA content per cell and the duration of meiosis in a number of herbaceous plants. Vasil<sup>7</sup> found the duration of meiosis to be about 48 hours in cultured