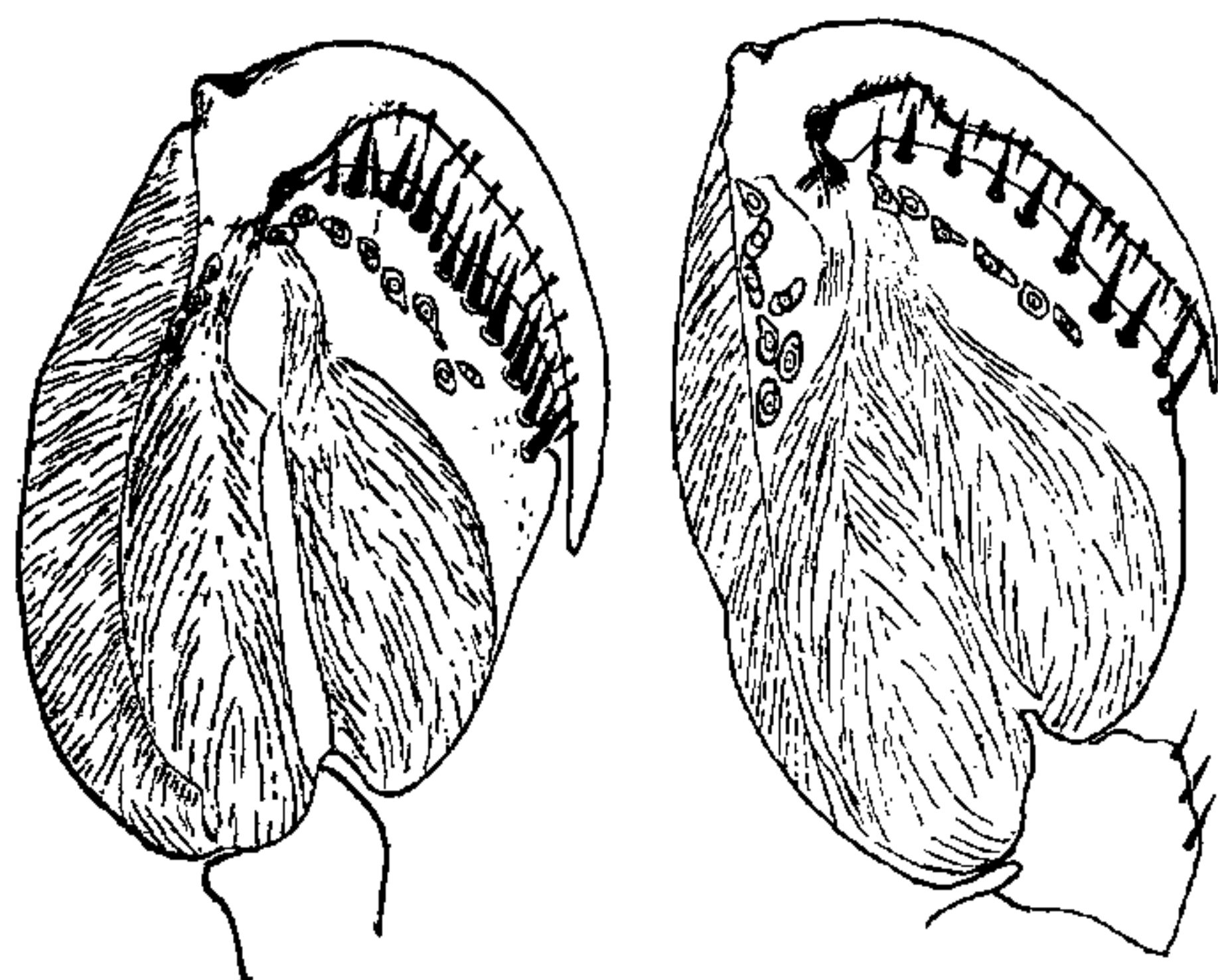


Shoemaker's comment that at times it is difficult to decide the placement of species which are intermediate between *Talorchestia* and *Orchestia*. It has also been mentioned that in general the truly terrestrial species belong to the genus *Orchestia* and the littoral species are entirely separable. In the present study it has been found that apart from this ecological distinction the characters mentioned above serve as an accurate guide in distinguishing the genera *Talorchestia* and *Orchestia*. Furthermore a feature of great potential value in taxonomy at least in such confusing situations seems to be the occurrence of certain differences in the neurosecretory cells discovered in the present investigations.

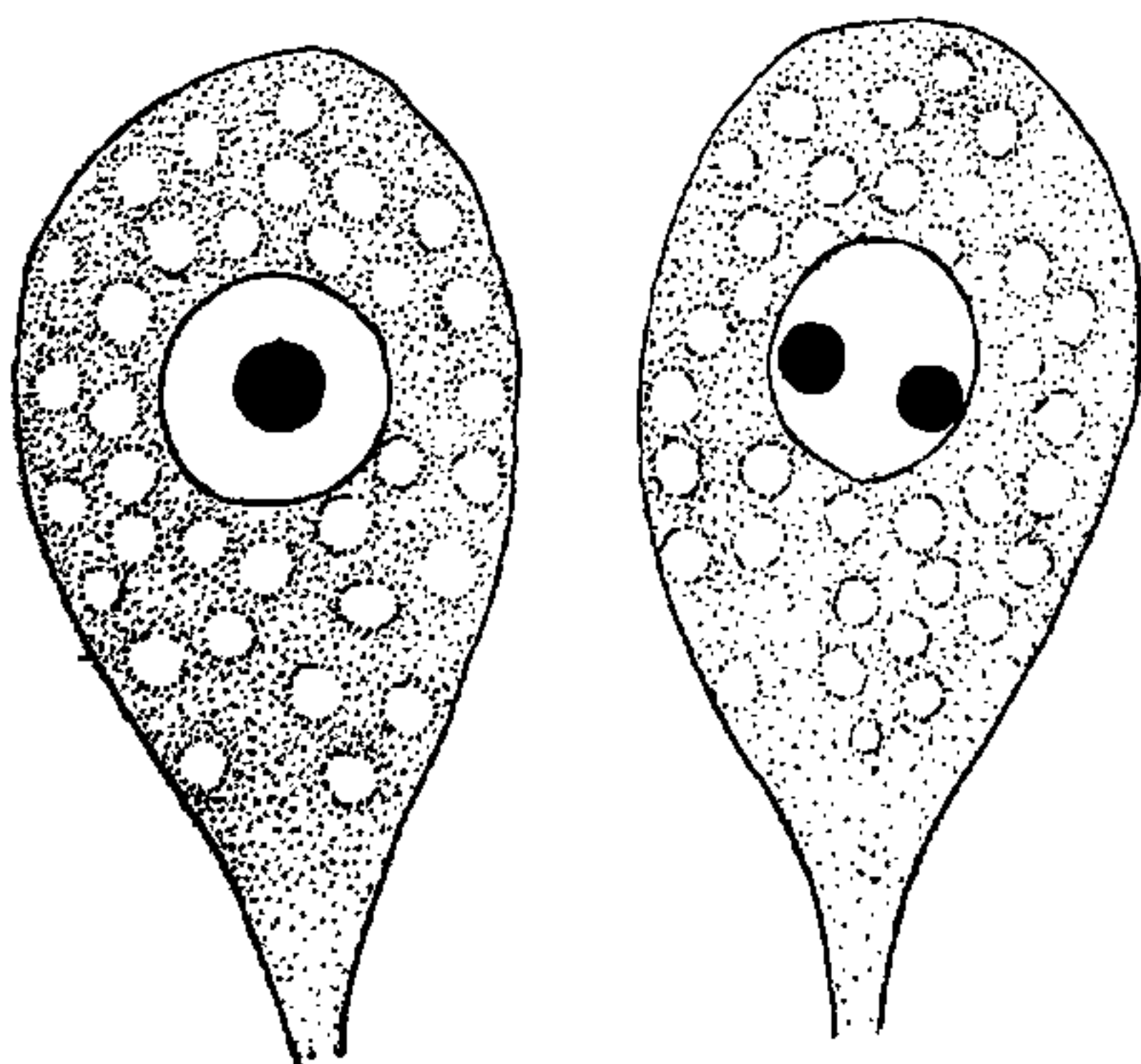
During the course of work on the neurosecretory system of the talitrids *Talorchestia martensii* and *Orchestia platensis* attention was drawn to the occurrence of two characteristic neurosecretory cells 'A' and 'a' situated anterolaterally one in each circumoesophageal commissure respectively. A symmetrical arrangement of the neurosecretory cells is a noteworthy feature. The A cell of *Talorchestia* is pear-shaped with a nucleus possessing a comparatively bigger nucleolus more or less in the central area (Fig. 5). The a cell of *Orchestia* has a nucleus possessing two nucleoli situated well apart (Fig. 6). This characteristic difference has been found to occur consistently in every specimen of both species examined.

I am indebted to Prof. K. Hanumatha Rao, Head of the Department of Zoology, for his constant advice and valuable suggestions in carrying out this work.

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Andhra University,
Waltair, September 11, 1971.



FIGS. 3-4. Fig. 3. Second gnathopod of male *T. martensii*. Fig. 4. Second gnathopod of male *O. platensis*.



FIGS. 5-6. Fig. 5. Neurosecretory cell A in the circumoesophageal commissure of *T. martensii* (Note single large nucleolus). Fig. 6. Neurosecretory cell in the circumoesophageal commissure of *O. platensis* (Note two relatively smaller nucleoli).

1. Barnard, K. H., *Rec. Ind. Mus.*, 1935, 37, 279.
2. Chevreux, E. and Fage, L., *Faune de France*, 1925, 9, 1.
3. Chilton, C., *Mem., Indian Mus.*, 1921, 5, 521.
4. Hurley, D. E., *Trans. Roy. Soc. New Zealand*, 1953, 81, Pt. 4, 563.
5. — and —, *Ibid.*, 1956, 84, Pt. 2, 359.

A NEW SPECIES OF *PHYLLACHORA* NKE. FROM INDIA

DURING the course of their study on the development and cytology of some species of *Phyllachora* from this region, the authors have collected the leaves of *Dendrocalamus strictus* Nees (Bambuseae) showing fungal infection in the form of brownish spots. On microscopic examination of these spots it was observed that the infection is caused by a new species of *Phyllachora*. This species shows significant differences in spore measurements and other morphological characters from those already reported on the different hosts of this group *Bambuseae* (family *Graminae*). These are shown in Table I. As the present fungus has several distinct morphological features which separates it from other known species it is considered to be new to science and named as *Phyllachora dendrocalamii*.

TABLE I

Comparative study showing morphological characters of different species of *Phyllachora* on the plants from the group Bambuseae (family Graminae)

Sl. No.	Species	Host	Asci		Ascospores		Spermatophores		Spermatia in μ	Remarks
			Length in μ	Breadth in μ	Length in μ	Breadth in μ	Length in μ	Breadth in μ		
1	<i>Phyllachora bambusae</i> Syd. & Butl.	<i>Bambusa</i> sp.	100-150	10-16	22-35	4-5	..	..	..	..
2	<i>P. bambusina</i> Speg.	..	55-60	7-8	12-13	5-5.5	..	..	..	..
3	<i>P. gracilis</i> Speg.	..	90-180	14-25	24-34	9-13	7-9	1.5-2	1-1.5	Globose spermatia
4	<i>P. maculans</i> (Karst) Theiss. & Syd.	..	90-100	15-20	24-35	5.5-8	..	..	..	..
5	<i>P. malbarensis</i> Syd. & Butl.	..	70-100	20-25	15-19	6.5-8.5	21-36	3	25-30 $\times 1$	Filiform spermatia
6	<i>P. orbiculata</i> Rehm. & Leaft.	..	55-70	10-13	12-18	5-7.5	6.5-8	1.5	8 $\times 0.5$	..
7	<i>P. Skiriaina</i> Syd.	..	70-100	8-10	15-22	5.5-8	..	..	..	..
8	<i>P. tetrasperma</i> Chard.	..	81-100	12-15	27-37	10-13	..	..	..	4-spored ascus
9	<i>P. longinaviculata</i> Nom. & Nov.	..	80-90	15-16	35-42	7-8	14-17	1.5-2.5	25 $\times 1$	Filiform spermatia
10	<i>P. arthrostylidii</i> Fet. & Clif.	<i>Arthrostylidium multispiculatum</i> Pilger	90-120	20-25	19-24	8.5-10	11-13	1.5-2.5	28-27 $\times 0.5$	..
11	<i>P. dendrocalamii</i> Awati & Kul., sp. nov.	<i>Dendrocalamus strictus</i> Nees	126.28-215	7.7-9.9	18.48-21.64	7.7-9.9	6.16-7.7	1.54	2.31	Globose spermatia

Phyllachora dendrocalamii AWATI & KUL.,
SP. NOV.

The infection starts with spermogonial development. The spermogonia are internal, without an ostiole and are in the form of irregular cavities; spermatophores slightly tapered or obclavoid, acuminate, 6.16-7.7 μ long; spermatia globose to sub-globose, distinct, hyaline, one-celled, uninucleate and 1.54-2.31 μ in diameter.

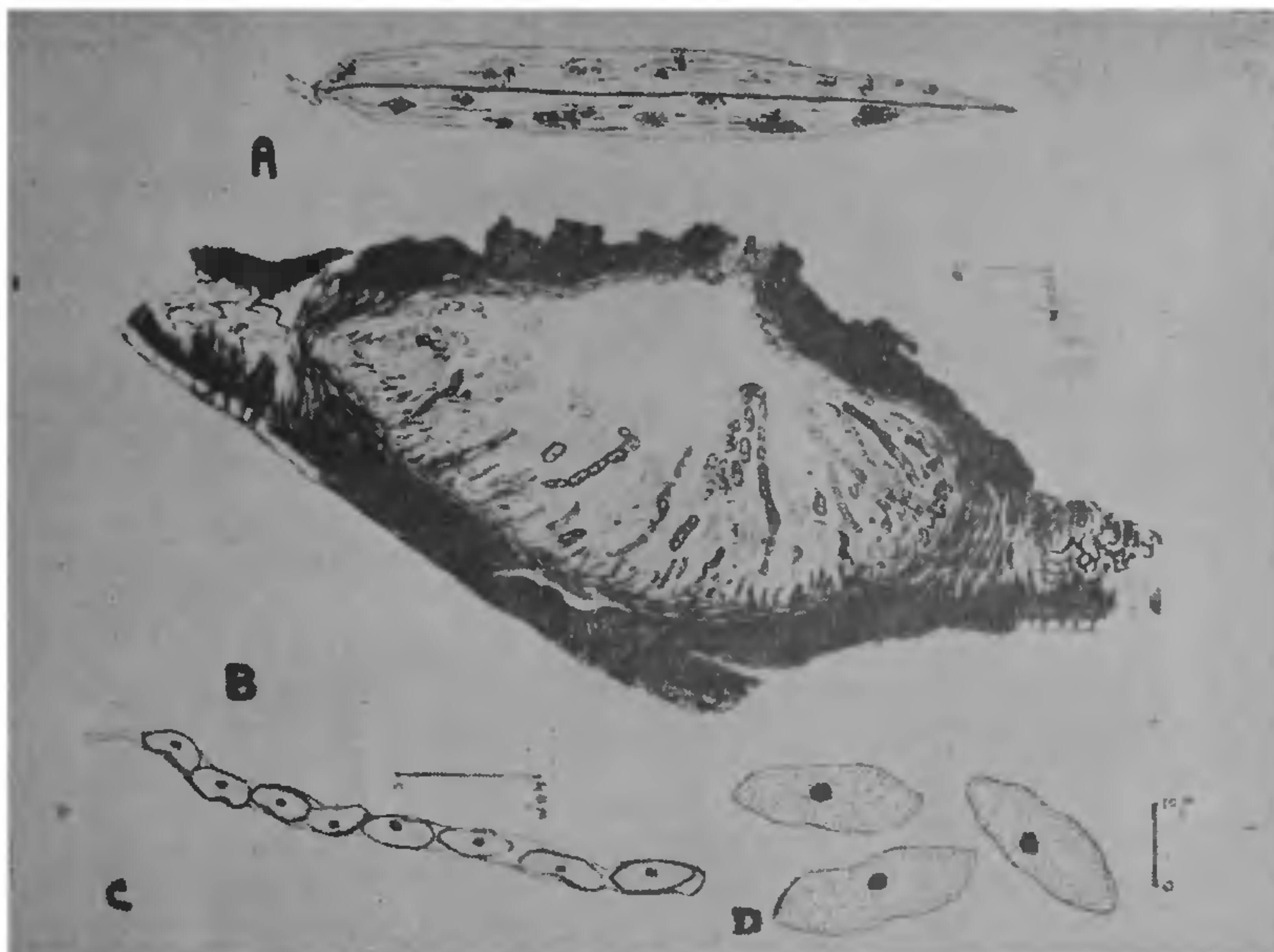
Stroma hypophyllous, black, scattered, uniloculate; perithecia bowl-shaped, 870-915 $\mu \times 450-525 \mu$ with an ostiole 120-150 μ . The wall plectanchematous, 16.5 μ thick, made up of 2-3 layers of elongated cells, paraphyses present. Asci cylindrical, 8-spored, slightly stipitate, the ascus 126.28-215 $\mu \times 7.7-9.9 \mu$ with distinct crown at the apex. Ascospores

one-celled, uninucleate, equatorially constricted with two characteristic guttules, hyaline, monostichous, generally 18.48-24.64 $\mu \times 7.7-9.9 \mu$, very rarely 19.9-29.7 μ in length.

Phyllachora dendrocalamii AWATI & KUL.,
SP. NOV.

Infectio evolutione spermagoniarum incipit, spermagonia interna, sine ostiolo, cavitatibus irregularibus similia, spermatophora paulo attenuata vel obclavoidea, acuminate, distincta, hyalina, unicellulata, uninucleata, 1.54-2.31 μ diam.

Stromata hypophylla, nigra, dispersa, uniloculata; perithecia crateriformia 870-915 $\mu \times 450-525 \mu$, ostiolis 120-150 μ diam. Paries plectenchymata, 16.5 μ lata, stratis 2 vel 3 cellularum elongatarum efformata. Asci cylindrici, 8-sporei, stipitati, coronam ad apicem distincta, 126.28-



FIGS. A-D. Fig. A. Habit. Fig. B. T.S. of the leaf showing stroma, perithecium, asci and ascospores. Fig. C. Ascus with ascospores. Fig. D. Ascospores.

215 μ \times 7.7-9.9 μ . Ascospores unicellulatae, uninucleatae, equatorialiter duabus propriis guttulis constrictae, hyalinae, monostichae, generaliter 18.48-24.64 μ \times 7.7-9.9 μ raro 19.80-29.7 μ longae.

The fungus *Phyllachora dendrocalamii* was collected on the living leaves of *Dendrocalamus strictus* Nees, from Panhala, Mahabaleswar and Ganpati Pule (Maharashtra State) by the authors between February and June 1970 and has been deposited in the mycological herbarium of Shivaji University, Kolhapur (Maharashtra State).

Authors are grateful to Dr. C. J. Saldhana (Bangalore) for the Latin diagnosis and to Dr. D. G. Parberry (Australia) for help.

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August 30, 1971.

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DEVELOPMENT OF GENERATIVE AND APOSPORIC EMBRYO-SACS IN *CUCUMIS METULIFERUS* E. MEY. EX. SCHRAD

Cucumis metuliferus E. Mey. ex. Schrad., commonly known as 'horned cucumber' or 'jelly melon', is a native of Africa occurring south of Sahara. It occurs in two types, bitter and non-bitter, and the fruits of the latter are used as vegetable in South Africa. It was introduced in the National Botanic Gardens, Lucknow and the material for this study was collected in August-September, 1963. Embryologically the Cucurbitaceae are fairly constant and are characterised by a monosporic Polygonum type of embryo-sac¹⁻⁹. *Benincasa cerifera*¹⁰⁻¹¹ shows usually bisporic and rarely monosporic embryo-sacs whereas in the abnormal ovules of *Momordica charantia*, the female archesporial cell directly forms the embryo-sac¹².

The inferior tricarpellary ovary bears usually 3, rarely 4 rows of ovules on each half of the T-shaped parietal placentae. The ovules are horizontal, anatropous, bitegmic and crassinucellar with a flask-shaped nucellus but

1. Parberry, D. G., *Aust. Jour. Bot.*, 1967, 15, 271.
2. Saccardo, P. A., *Syll. Fung.* 2, 594; 9, 1006; 11, 398; 14, 663; 16, 617 and 1144; 22, 1484; 24.