

1. Esau, K., *Plant anatomy*, 2nd edn, John Wiley, New York, 1965.
2. Mohana Rao, P. R., *Phytomorphology*, 1974, 24, 113.
3. Esau, K., *Anatomy of seed plants*, 2nd edn, John Wiley, New York, 1977.
4. Johansen, D. A., *Plant microtechnique*, 2nd edn, Tata McGraw Hill, Bombay, New Delhi, 1940.

BASIC NUMBER SIX IN *SPOROBOLUS* FROM SOUTH INDIA

J. CHRISTOPHER

Department of Botany, University of Kerala,
Kariattom, Trivandrum 695 581, India.

SPOROBOLUS R Br is a large genus consisting of about 100 species which are annual or perennial, erect or prostrate grasses (family Gramineae) and predominantly tropical in distribution. The chromosome numbers of about 32 species known so far range¹ from $2n = 18$ to 72 and the basic numbers^{2,3} of the genus is considered to be $x = 9, 10$ and 12. Only three Indian members have been studied previously⁴ and they show $2n = 20$ or 24. *S. maderaspatanus* collected from South India and studied for the first time shows the haploid number of $n = 6$ in pollen mother cells.

Young spikes of this species were collected from plants growing wild in the coastal areas of Colachel near Kanyakumari. Meiosis was studied from smear-preparations of pollen mother cells after fixation in Carnoy's fluid and staining in acetocarmine. Meiosis was regular and 6 bivalents were observed at metaphase I (figure 1). The plant showed high pollen fertility (90.5%) and regular seed set.



Figure 1. *S. maderaspatanus*. Meiosis, metaphase I. $n = 6$ ($\times 1500$).

The somatic numbers commonly occurring in this genus¹ are $2n = 20, 24, 36, 40$ and 72 which indicate three basic numbers 9, 10 and 12. However Tateoka⁵ has reported $2n = 12$ in *S. molleri* from East Africa and he proposed another basic number $x = 6$ for this genus which is confirmed by the present study of *S. maderaspatanus* from South India. Therefore, the species of *Sporobolus* with chromosomes in multiples of 12 reported so far³ may be considered to have $x = 6$, which is comparatively a rare basic number in the grass family.

9 February 1985; Revised 29 April 1985

1. Fedorov, A., *Chromosome numbers of flowering plants*. Rept. Koenigstein, 1974.
2. Brown, W. V., *Bull. Torrey Bot. Club*, 1951, 78, 292.
3. De Wet, J. M. J., *Am. J. Bot.*, 1960, 47, 44.
4. Darlington, C. D. and Wylie, A. P., *Chromosome atlas of flowering plants*. George Allen and Unwin Ltd., London, 1955.
5. Tateoka, T., *Am. J. Bot.*, 1965, 52, 864.

OBSERVATIONS ON FUNGAL INFECTION OF EGGS AND FINGERLINGS OF *CHANNA PUNCTATUS* BL

S. K. PRABHUJI, G. C. SRIVASTAVA*
and S. K. SINHA*

Department of Botany, U. N. Postgraduate College,
Padrauna 274 304, India.

* Department of Botany, St. Andrew's College,
Gorakhpur 273 001, India.

DURING a survey of parasitic watermoulds a large number of eggs and fingerlings of *Channa punctatus* Bl bearing fungal infections were collected from the river Rapti, Gorakhpur, during Aug-Sep. 1983. The infection resulted in mass mortality of about 80% of the infected eggs and fingerlings. The infected eggs and fingerlings showed the presence of cottony outgrowths of fungal mycelium on their surface. The transparency of such infected eggs was lost and they did not hatch.

The fungus involved in the infection was isolated from the infected eggs and fingerlings of *C. punctatus* on sterilized boiled hempseeds. Single spore, bacteria-free cultures of the fungus were raised by standard methods¹⁻³. The fungus was identified as *Allomyces arbuscula* Butler (Sparrow⁴). To ascertain the parasitic

ability of the fungus, controlled infection tests were conducted at room temperature (25–28°C) as suggested by Scott and O'Warren⁵. Infection appeared in about 90% of the eggs and 70–80% of fingerlings within 24 hr of inoculation. Only 5% of the eggs hatched but the hatchlings too, in most cases, developed fungal infection soon. The fungus growing on these artificially infected eggs and fingerlings was isolated and compared with the original culture and was found to be identical. To maintain a control for the experiments, eggs and fingerlings (100 each) were kept under the same conditions but not exposed to the fungal inoculum.

Scott and O'Bier⁶ have reported *A. anomalous* for the first time as a fish pathogen, but they failed to prove its pathogenicity. Sati⁷ has reported *A. arbuscula* Butler parasitizing the eggs of *Cyprinus carpio* var *communis* and has also proved its pathogenicity. Scott and O'Bier⁶ expressed the view that negative results in pathogenicity experiments do not prove the fungus to be strictly saprophytic and positive results simply demonstrate that the fungus is capable of growing on the experimental fish species under a given set of conditions. As *A. arbuscula* is primarily a saprophyte, the pathogenicity tests during the present investigation confirm the contention that the saprophytic fungal forms may become parasitic under certain conditions and exhibit facultative parasitism.

The present investigation also extends the host range of *A. arbuscula* to the eggs of *C. punctatus* and it is being reported for the first time as a naturally occurring parasite of the fingerlings.

14 November 1984; Revised 15 April 1985

1. Raper, J. R., *Science*, 1937, 85, 342.
2. Tiffney, W. N., *J. Elisha Mitchell Sci. Soc.*, 1939, 55, 134.
3. Johnson, T. W., Jr., *The Genus Achlya: Morphology and Taxonomy*, Univ. of Michigan Press, Ann Arbor, Michigan, 1956.
4. Sparrow, F. K., *Aquatic Phycomycetes*, *Ibid.*, 1960.
5. Scott, W. W. and O'Warren, C., *Tech. Bull. Virg. Polytech. Inst., Virginia*, 1964, 171, 1.
6. Scott, W. W. and O'Bier, A. H., *Prog. Fish-cult.*, 1962, 24, 3.
7. Sati, S. C., *Sci. Cult.*, 1983, 49, 396.

MARINE FUNGI FROM INDIA-II

B. D. BORSE*

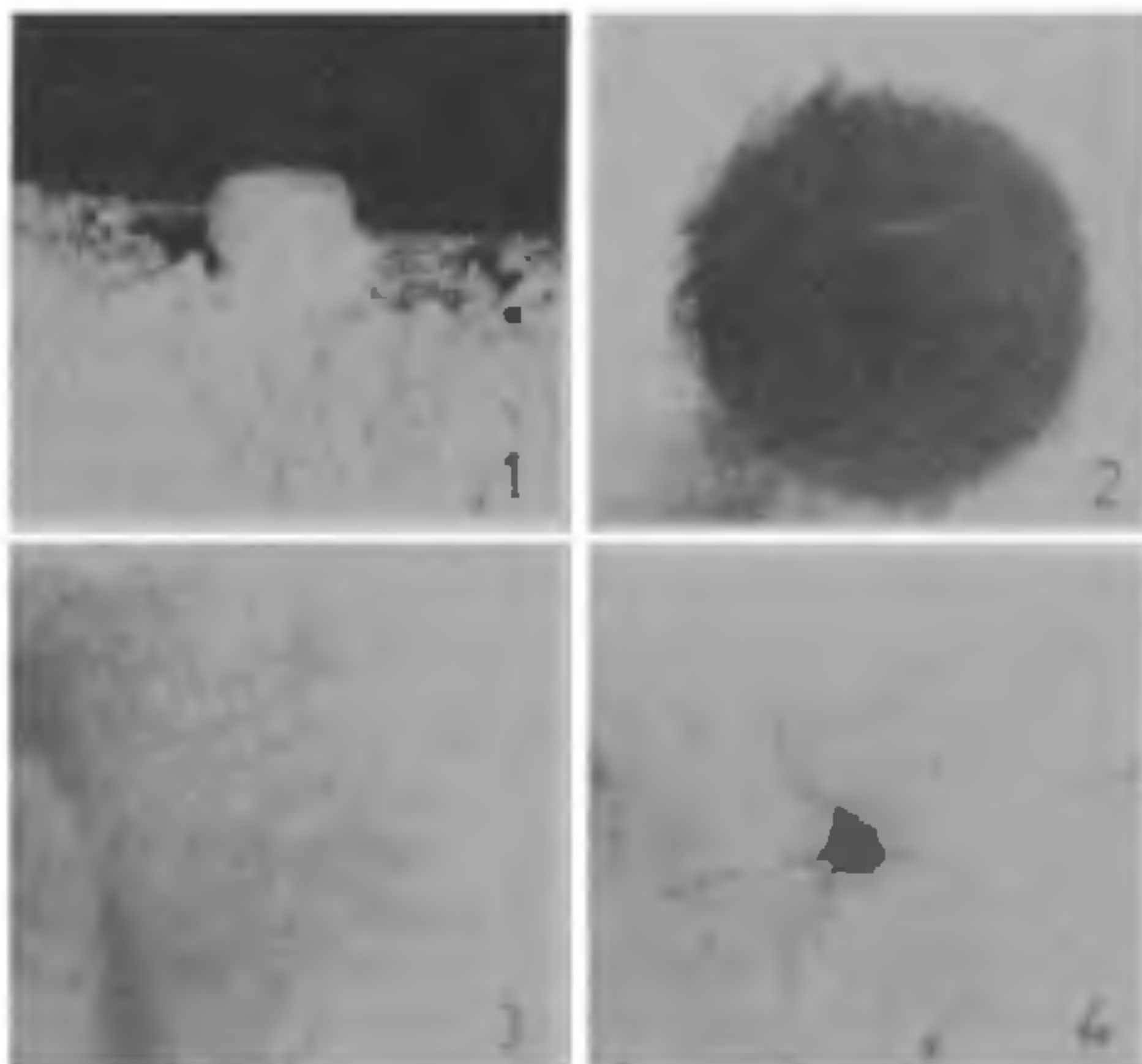
Department of Botany, University of Poona,
Pune 411007, India

* Present address: Department of Botany,
Arts, Commerce and Science College,
Erandol 425 109, India.

DURING the survey of marine fungi, the author collected a Basidiomycetous fungus *Nia vibrissa* Moore and Meyers, which is a new record for India. The specimen has been deposited in the herbarium, at the University Campus. (M. F. M. no. 43).

Representatives of Basidiomycetes are rarely found in the marine environment. Only four filamentous marine Basidiomycetes are known¹. Originally *Nia* was described as a member of Deuteromycetes², but Doguet³ demonstrated its affinity with Gymnomyces. A brief description of the fungus is given below:-

Basidiocarps 1–3 mm in diameter, subglobose, superficial, anchored in the substrate with an inconspicuous, cylindrical pedicel, whitish, yellowish, pinkish and finally orange-coloured soft, thin-walled, villose or smooth, opening by irregular rupture of the peridium, solitary or gregarious. Peridium 10–15 μm thick, bearing on the outside long hairs upto 275 μm in length, 4–7 μm in diameter, thick-walled, straight or curved, somewhat slightly curved apically and un-



Figures 1–4, 1. Habit \times 20. 2. Basidiocarp \times 150. 3. Peridium external hairs \times 670. 4. Basidiospore \times 1900.