

Table 2 Controlled inoculation studies to establish the pathogenicity of the different isolates of fungi on the eggs of *Macrobrachium lamarrei* H.M. Edw.

Name of the Fungus inoculated	Number of eggs used	Number of eggs infected
<i>Achlya orion</i> Coker and Couch	1. 100	80
	2. 100	85
	3. 100	87
<i>Achlya flagellata</i> Coker	1. 100	80
	2. 100	86
	3. 100	90
<i>Aphanomyces helicoides</i> Minden	1. 100	82
	2. 100	90
	3. 100	87
<i>Aphanomyces laevis</i> de Bary	1. 100	79
	2. 100	82
	3. 100	88
Control	1. 100	—
	2. 100	—
	3. 100	—

Mycosis evident within 24 hr.

Singh, Principal and Dr S. B. Singh, Head, Botany Department, U.N. Postgraduate College, Padrauna, for facilities and encouragement.

2 July 1984

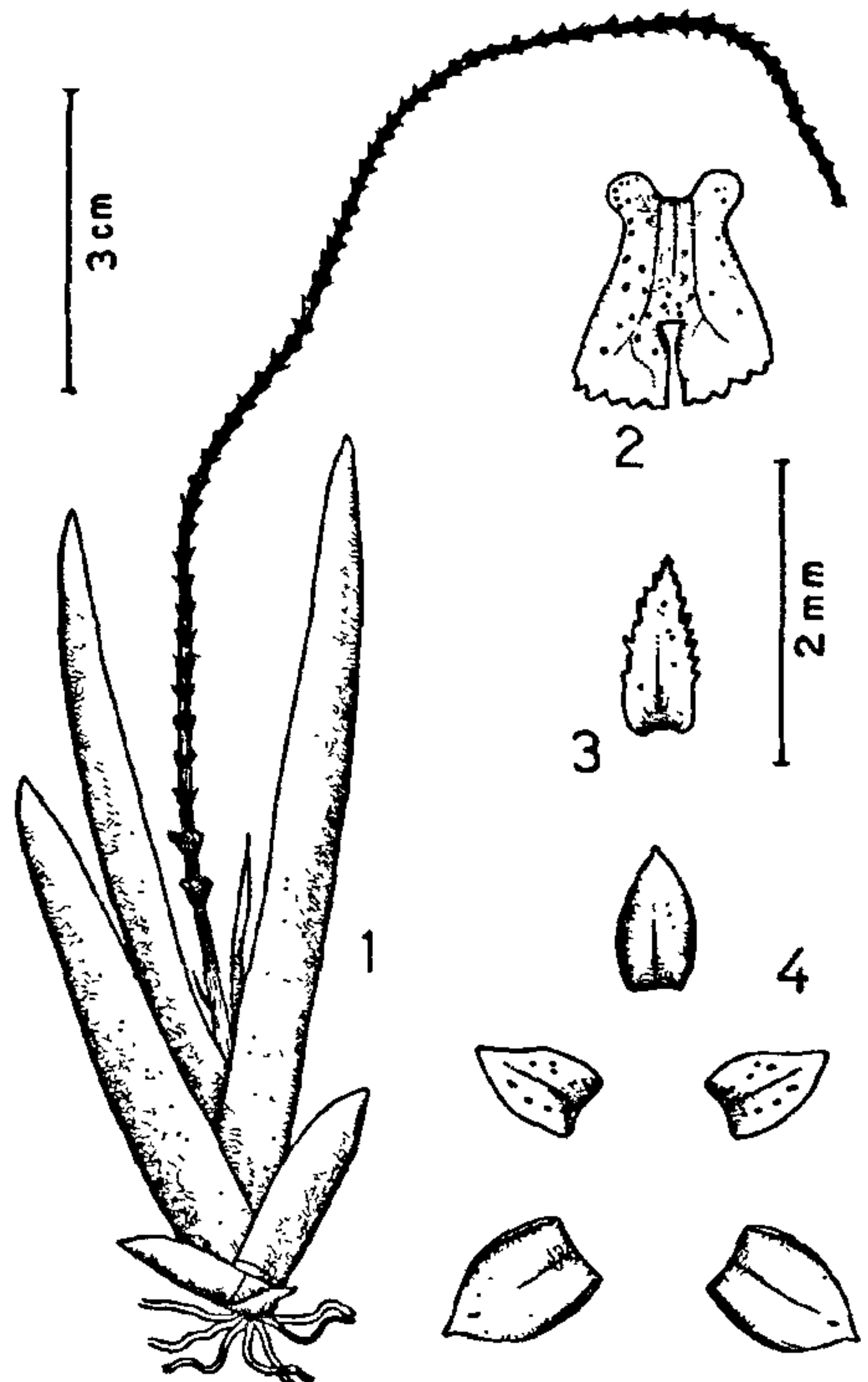
1. Raper, J. R., *Science*, 1937, **85**, 342.
2. Tiffney, W. N., *J. Elisha Mitchell Sci. Soc.*, 1939b, **55**, 134.
3. Johnson, T. W., Jr., *The Genus Achlya: Morphology and Taxonomy*, Univ. of Michigan Press, Ann Arbor, Michigan, 1956.
4. Scott, W. W., *A Monograph of the Genus Aphanomyces*, Vir. Agr. Expt. Stat. Tech. Bull., 1961, **151**, 1.
5. Rajyalakshmi, T., Key for the identification of commercially important Prawns of India, *Misc. Cont.*, 1962, **1**, p. 11, CIFRI, Barrakpore.
6. Scott, W. W. and O'Warren, C., *Tech. Bull. Vir. Polytech. Inst., Virginia*, 1964, **171**, 1.
7. Prabhuji, S. K., Srivastava, G. C., Sinha, S. K. and Srivastava, S. K., *J. Indian Bot. Soc.*, 1982, **61**, (Suppl.), 4.

OBERONIA THWAITESII HK. F., AN ADDITION TO THE ORCHID FLORA OF INDIA

K. S. MANILAL and C. SATHISH KUMAR

Department of Botany, Calicut University, Calicut 673635, India.

THE genus *Oberonia* Lindl. is represented in South India by about 20 species. While having several endemic and characteristic orchid elements of its own, this region possesses many other species which are of wider occurrence and sometimes a few elements of the flora of the adjacent countries also¹⁻³. The occurrence of South African, Sri Lankan and South East Asian elements in the flora of South India is of considerable phytogeographical interest^{4,5}. A species of *Oberonia* was collected in 1977 from Thenmalai, Quilon district,



Figures 1–4. *Oberonia thwaitesii*. 1. Habit, 2. Lip, 3. Floral bract and 4. Sepals and petals.

Kerala, at an altitude of 650 m. On a close examination, this specimen has turned out to be *O. thwaitesii* Hk. f., which has hitherto been considered as an endemic to Sri Lanka. The present report is, therefore, a new record of this species for the Indian sub-continent and hence an addition to the Orchid flora of India.

O. thwaitesii is closely related to *O. verticillata* Wight, in some of its external features. However, it can be easily distinguished from the latter by its cuneiform-obcordate lip that is 3-lobed, side lobes that are small, orbicular and lengthening beyond the column and the 2-lobulate midlobe with an obtuse sinus in between (figures 1-4).

Lindley⁶ considered this taxon as a variety of *O. verticillata*, viz., *O. verticillata* var. *pubescens*, but this was later raised by Hooker¹ to the rank of a species. Specimens examined: Kerala. Quilon district, Thenmalai, at an altitude of 650 m, 8-6-1977, Sivadasan 15255 (CALI).

This work was carried out under the Silent Valley Flora Project, supported by the Department of Science & Technology, Government of India. The authors are also thankful to Dr Jeffrey J. Wood, Orchid Herbarium Kew, for confirming the identification and to Dr M. Sivadasan and Mr. K. T. Joseph of Calicut University Herbarium for various helps.

26 March 1984; Revised 20 July 1984

1. Hooker, J. D., *Flora of British India*, L. Reeve & Co., London, 1890.
2. Trimen, H., *A Handbook to the Flora of Ceylon*, Bishen Singh Mahendra Pal Singh, Dehra Dun (Rep.) 1974.
3. Jayaweera, D. M. A., *A Revised Handbook to the Flora of Ceylon*, (eds) M. D. Dassanayake and F. R. Fosberg, Amerind Publishing Co., New Delhi, 1981.
4. Seidenfaden, G., *Dansk Bot. Arkiv*, 1968, 25, 1.
5. Seidenfaden, G., *Dansk Bot. Arkiv*, 1978, 33, 1.
6. Lindley, J., *Folia Orchidacea. Oberonia*, 1859. A. Asher & Co., Amsterdam (Repr.) 1964.

ENDOCRINE CONTROL OF ACETYLCHOLINESTERASE ACTIVITY IN FRESHWATER FIELD CRAB, *OZIOTELPHUSA SENEX SENEX* (FABRICIUS)

B. NEERAJA KUMARI, S. SIVA PRASAD and K. YELLAMMA

Department of Zoology, Sri Venkateswara University, Tirupati 517 502, India

THOUGH the role of eye-stalk arising principle in crabs has been demonstrated earlier in spontaneous activity¹ phosphorylase activity² AChE activity³ and free amino acids⁴, attempts have not been made to evaluate the role of eye-stalk arising principle, on acetylcholinesterase activity in the nerve and muscle of the crab. Hence the present investigation was taken up.

Adult crabs of the species *Oziotelphusa senex senex*, were used. Since the organs secreting the neurosecretory substance are located in the eye-stalks, the organs were removed by extirpating the eye-stalks at the base without prior ligation. The eye-stalk extract was prepared according to Silverthorn⁵ and was injected in a dose equivalent to two eye-stalks through the arthroidal membrane at the base of the coxa of the first walking leg. AChE activity in the nervous system and the muscle was estimated according to Metcalf as given by Vijayalakshmi *et al*⁶. The enzyme activity is expressed as the μmol of ACh hydrolysed/mg protein/hr. The protein content in the tissues was determined⁷.

The eye-stalk extirpation caused a raise in AChE activity (table 1) both in nerve and muscle in 1-day post extirpated (1 PE) animals, followed by a drop in 2-day post extirpated (2 PE) and 4-day post extirpated (4 PE) animals. It is likely that the eye-stalk organs possessed a neurodepressant factor (NDF) the lack of which, due to removal of eye-stalks, could cause an elevation of AChE activity in 1 PE animals. Other biochemical parameters were similarly suggested earlier^{3,8,9}. Compensatory influence by other parts of the nervous system could in due course cause a decrease in AChE activity in 2 PE and 4 PE animals. The occurrence of NDF in thoracic and supra oesophageal ganglia was suggested earlier¹. However later studies proved that the brain and thoracic ganglion are free from NDF³. Depression of AChE activity upon injection of eye-stalk extract into control animals in the present study supports the presence of NDF in the eye-stalk organs. Since the nervous system has more levels