

16. PEDUNCULATE CIRRIPEDES, *CONCHODERMA VIRGATUM* (SPENGLER) ATTACHED TO A PENNELLID COPEPOD, *PENNELLA* SP. PARASITIC ON A FLYING FISH, *CYPSILURUS (HIRUNDICHTHYS) SPECULIGER* (CUV. ET VAL.)

(With two photographs)

During the 35th cruise of the U.S.S.R. Research Vessel "Vityaz" in the eastern sector of the Indian Ocean in which one of us (A.D.) participated, a flying fish, *Cypsilurus (Hirundichthys) speculiger* (Cuv. et Val.) was captured at Station No. 5173 (Lat. 13° 32' 4" S., Long. 105° 04' 3" E.) on 19-7-1962. On examination of the fish, a parasitic copepod, *Pennella* sp. was found attached to the abdominal region (Photo 1).

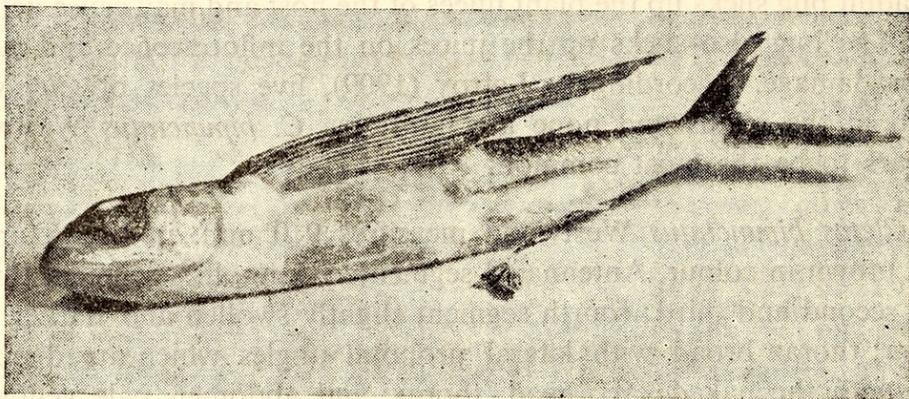


Photo 1

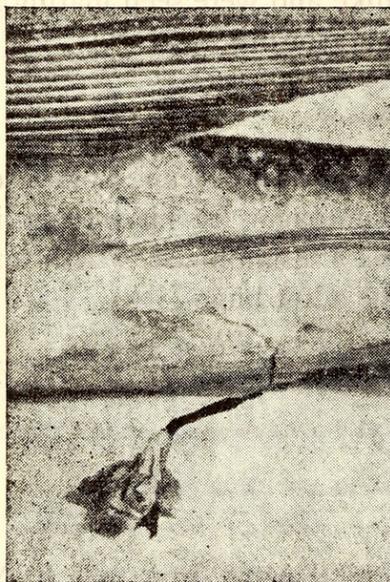


Photo 2

Three specimens of pedunculate cirripede, *Conchoderma virgatum* (Spengler) were also in turn found attached to the parasitic copepod (Photo 2). There appears to be no published account of this type of tripartite animal relationship between a flying fish, parasitic copepod and pedunculate cirripedes. Hence it is considered worthwhile to photograph *in situ* and record this interesting relationship between different forms of life.

The flying fish was obtained in a ring trawl. The parasitic copepod is directly embedded into the body of the fish and conveniently draws its

nourishment from the fish. The cirripedes are attached to the fish indirectly by means of an intermediate copepod and are greatly aided by the movement of the fish resulting in wider scope in the procurement of their food by the thoracic cirri.

ZOOLOGICAL SURVEY OF INDIA,
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A. DANIEL
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17. *EUCLIDIUM TENUISSIMUM* (PALLAS) FEDT. AND
MEDICAGO RUGOSA DESCR.: TWO NEW RECORDS FOR INDIA

(With a plate)

During a floristic survey of Bashahr Himalayas, the author collected a species of *Euclidium* (Cruciferae) growing as a weed in wheat fields which was later identified as *E. tataricum* DC.

The genus *Euclidium* has two species, of which only *E. syriacum* R. Br. has been reported from India earlier. Examination of the material in Dehradun (DD) revealed a specimen of *E. tataricum* (*E. tenuissimum*) collected by R. N. Parker in 1928 from Bashahr. There is no Indian specimen of this plant in the Central National Herbarium, Calcutta (CAL.). The plant is a native of Europe and has been reported from Afghanistan and Baluchistan.

Euclidium tenuissimum (Pallas) Fedtschenko in Bull. Herb. Boiss. Ser. 2, 4: 915, 1904. *Vella tenuissima* Pallas Reise 3 : 521, 1776.

Annual erect herbs; branches many, hispid. Leaves linear, deciduous. Racemes lateral, sub-capitate. Flowers white, minute. Sepals oblong, erect, acute, imbricate, deciduous. Petals almost equalling or shorter than sepals, equal, caducous, oblanceolate, unguiculate, limb elliptic, almost erect, retuse or truncate. Stamens 2 + 4, all nearly equal, anther 2-celled, sub-globose, base cordate. Ovary bilocular, 2-seeded, indehiscent. Seeds elliptic or suborbicular, emarginate, compressed, pendulous. *Material examined*—Chini (Bashahr) 3000 m. R. N. Parker 2919, May 1928, (DD). Sarahan 2400 m. N. C. Nair 21908 May 1962 (BSD). Kalpa 2775 m. N. C. Nair 22300 A, B, June 1962 (BSD).

A species of *Medicago* collected by me from Ferozapore, Punjab proved to be *M. rugosa* Descr. (Plate). It is distinguished easily by its pod. This taxon is a new record for India and is described here.



Daniel, A. and Prem-Kumar, V K. 1967. "Pedunculate Cirripedes, *Conchoderma Virgatum* (Spengler) Attached To a Pennellid Copepod, *Pennella* Sp. Parasitic on a Flying Fish, *Cypsilurus* (*Hirundichthys*) *Speculiger* (Cuv. Et Val.)." *The journal of the Bombay Natural History Society* 64, 132-133.

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