CALANOPIA SEYMOURI SP. NOV. (COPEPODA : CALANOIDA) FROM THE ANDAMAN SEA*

In the course of studies on the pelagic *Copepoda of Andaman Sea* an undescribed species of calanoid copepod of the genus *Calanopia* Dana was encountered in the plankton collections made from Nicobar waters. The description of the new species follows.

Calanopia seymouri Sp. Nov. (Fig. 1, a-j)

Material.—Holotype CMFRI Reg. No. 113, *Female*, 2·62 mm., from surface plankton collected on 25-4-1968, 17·00-17·25 hours from Nancowrie Harbour, Nancowrie Islands; Allotype CMFRI Reg. No. 114, Male, 2·48 mm., from same sample as holotype; Paratypes CMFRI Reg. No. 115, 25 Males and 25 Females collected around Comorta and Champion Islands, Nicobars. The type specimens are

deposited in the research collections of the Central Marine Fisheries Research Institute, Mandapam Camp.

Description.—Female (Fig. 1, *a-e*): Length range 2·49 to 2·62 mm.; prosome-urosome

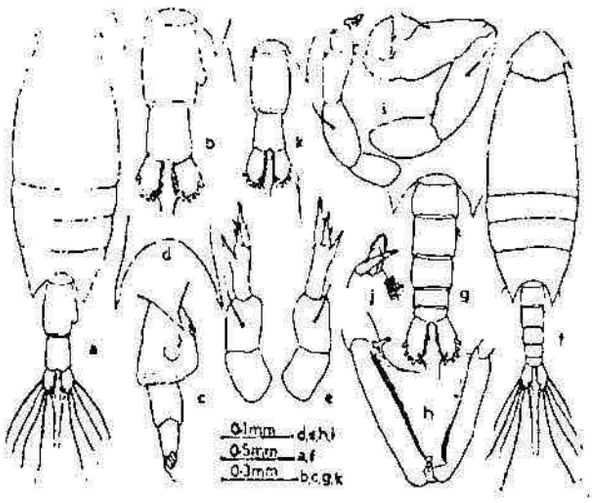

FIG. 1. *Calanopia seymouri* sp. nov. Female: *a*, dorsal view; *b*, urosome. dorsal view; *c*, urosome, lateral view; *d*, rostrum; *e*, P-5, Male; *f*, dorsal view; *g*, urosome, dorsal view; *h*, right A-1, segments 18 and 19-21 enlarged; *i*, P-5; *j*, terminal portion of left P-5 enlarged. *Calanopia australica* Bayly and Greenwood; *k*, female urosome, dorsal view.

length ratio range 2·56–2·68 : 1; cephalosome distinct from T-I and with conspicuous lateral hooks; rostrum deeply forked, each fork with a distal inner barb; T-IV and T-V fused, latter produced posteriorly into asymmetrical points, right tip reaching middle of genital segment; two-segmented urosome with caudal rami showing the ratio 50 : 29 : 21 = 100; genital segment asymmetrical with a hemispherical swelling on right lateral margin of segment at about posterior three-fourth of its length; genital segment enlarges ventrally up to about its posterior margin, the condition being quite different from the protuberance found in *C. thompsoni* A. Scott[1]; U-II longer than broad; caudal rami asymmetrical, right one slightly broader than long and each ramus with five major setæ and one minute seta; A-1 with 19 segments, when adpressed to the body reaches middle of genital segment; Mx_2 and Mxp typical of the genus; P-5 symmetrical with two-segmented basipods; B_2 1·3 times as long as wide and with a seta; exopods two-segmented, as long as the combined lengths of B_1 and B_2; Re-1 3·2 times as long as wide, produced at outer distal corner into sub-equal spine-like processes with serrated margin; distal process closely adpressed to Re-2 and extending to about half its length (in *C. thompsoni* distal process of Re-1 is directed outwards as the proximal process of Re-1); Re-2 with two small outer marginal spines, a stout terminal prong with fine lateral marginal serrations and with one minute spine at inner distal corner.

Male (Fig. 1, *f-j*).—Length range 2·48 to 2·52 mm.; prosome-urosome length ratio range 2·37–2·44 : 1; prosome resembles that of female; five-segmented urosome with caudal rami showing the ratio 17 : 22 : 17 : 11 : 9 : 24 = 100; second urosomal segment longest and provided with two hair-like setæ on right ventro-lateral margin; anal segment short; caudal rami symmetrical, length 2·5 times as long as broad; right A-1 with segments 13-16 enlarged and imperfectly fused; segment 18 with fine villiform marginal teeth; fusion segments 19–21 with inner marginal villiform teeth on proximal part; P-5 asymmetrical with three-segmented right leg; terminal portion of the leg is movably attached to B_2 and consists of a swollen basal portion with two smoothly curved protuberances along inner edge, proximal one with a short seta at its inner base; distal portion sharply recurved outwards swollen medially and tapering to pointed tip; two sub-equal setæ are inserted near outer proximal edge of curve and one seta at the inner junction of basal and distal portions; B_2 longest, 3·3 times as long as wide and with a seta; left P-5 four-segmented with total length equal to combined lengths of B_1 and B_2 of right leg; Re-1 twice length of Re-2 and with a spine at outer distal corner; Re-2 provided with a spine along middle of outer margin and three sub-equal spines distally—the terminal one directed inwards and serrated laterally the second and third spines directed distad, former broad and stout ending in a conical prong, latter with blunt tip and marginal serrations; a row of fine hairs present along inner margin of Re-2.

The new species is named after the late Dr. R. B. Seymour Sewell in honour of his pioneering works on the Copepoda of this region.

Remarks—Sewell[2] noted the differences dealt with above for the new species but he designated the specimens under *C. thompsoni*. Only three species of *Calanopia* have to date been described with cephalic hooks, *viz.*, *C. thompsoni*, *C. sewelli*[3] and *C. australica*.[4] *C. seymouri* will be the fourth species to be described under this group and in the characteristic modification of the genital segment and in the

nature of the fifth leg it differs from the other known species.

Specimens of *C. australica* were also obtained from plankton tows off Comorta and Nancowrie Islands, thus extending the distribution of this recently described Australian species (from Moreton Bay, Queensland) to the Andaman Sea.

I wish to record my grateful thanks to Dr. S. Jones, Director, for the encouraging guidance; to Dr. E. G. Silas for critical suggestions and to C.S.I.R. for the award of a Fellowship.

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ON THE FUNCTIONAL IDENTIFICATION OF THE ADENOHYPOPHYSEAL CYANOPHIL CELLS IN THE GIANT GOURAMI, *COLISA FASCIATA* (BLOCH AND SCHNEIDER)

THE cyanophil cells of proximal pars distalis region of the teleostean hypophysis have been differentiated functionally into two cell types: Gonadotrophs and Thyrotrophs, by means of experimental treatment and application of specific staining methods.[1-7] Except for a very brief description of the morphology of the pituitary of the giant gourami,[8] no work on the histophysiology of its pituitary appears to have been done. A short description of the pituitary of *Colisa fasciata* is given here to explain the location of the cyanophils in its proximal pars distalis region. The pituitary is closely applied to the brain and is histologically distinguishable into the neurohypophysis and the adenohypophysis. The latter is divided into three lobes: rostral and proximal pars distalis, and pars intermedia arranged one behind the other from front to rear (Fig. 1). The rostral pars distalis is primarily acidophilic and chromophobic with few cyanophil cells. The proximal pars distalis contains brightly staining acidophils and cyanophils, and a few chromophobes. The pars intermedia is comprised of predominantly acidophils having large nuclei and finely granulated cytoplasm, few cyanophil and chromophobe cells.

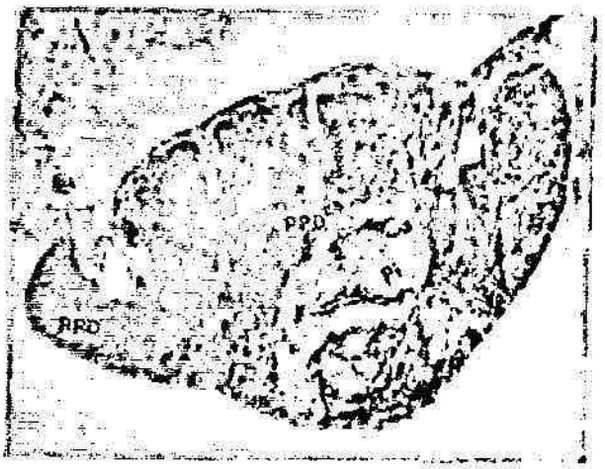

FIG. 1. Pituitary of *Colisa fasciata*. Bouin's fluid, CAHP, × 60. N = neurohypophysis, Pi = pars intermedia, PPD = proximal pars distalis, RPD = rostral pars distalis. Arrows show the position of cyanophils.

Of all the pituitary components in *Colisa*, the cyanophils of the proximal pars distalis exhibit profound correlative seasonal changes associated with the reproductive state of the fish. The cyanophils (Type 1) which lie interspersed with acidophils in the dorsal zone of the proximal pars distalis are variously shaped with round nucleus, conspicuous nucleolus and sparse chromatin material. These cells make their first appearance in the pre-spawning phase of the fish and with the advancement of the maturation of gonads, they show sign of activity. They are filled with darkly stained coarse secretory granules, and increase in size and number. During the spawning phase they are solidly packed with extreme dense granules and in some of the cells the secretory granules appear to have passed out into the neurohypophyseal branches surrounding the proximal pars distalis. These cells are brilliantly coloured with Aldehyde fuchsin (AF), Periodic acid-Schiff's (PAS) and Chrome-Alum-Hematoxylin-Phloxine (CAHP) stains, showing their glycoprotein or mucoprotein nature. They undergo active degranulation and vacuolization during the spawning phase and lose their contents during the post-spawning phase of the fish. Another type of Cyanophils (Type 2) are located in the ventral portion of the proximal pars distalis of the giant gourami, lying adjacent to the border of the pars intermedia. These cells are fusiform, elongated or oval in shape and