## OCCURRENCE OF A NEW PODOCOPAN OSTRACOD *TANELLA VASISHTA* IN THE VASISHTA GODAVARI ESTUARY, EAST COAST OF INDIA

In the course of a study of the systematics and ecology of the living benthic ostracodes inhabiting marginal water bodies on the east coast of India, a new species belonging to the genus *Tanella*, a podocopan ostracod was encountered in the lower reaches of the Vasishta Godavari estuary. (Lat. 16° 18′ N long. 81° 42′ E). So far only two species are known namely *Tanella gracilis* Kingma[1] and *T miurensis* Hanai[2] identified on the structure of the carapace.

*Tanella vasishta* sp. nov. was collected at several points in the intertidal region up to 5 km up the river from confluence in the month of November 1977. The various ecological parameters and their ranges of variation prevailing at times of collection are:

Water temperature 32° to 33° C, salinity of the water 2·56 to 3·8‰, dissolved oxygen 4·628 to 4·760 ml/L, organic matter 0·92 to 2·05%, sand 36·98 to 64·48%, silt 3·54 to 36·92%, clay 19·52 to 31·98%.

*Description of the Carapace* (Fig. 1 A–C)

Carapace narrow and elongate, highest towards the anterior cardinal angle. Anterior margin obliquely rounded. Dorsal margin nearly straight inclined towards the posterior. Ventral margin straight slightly concave towards the anterior end. Posterior margin truncated above narrowly rounded below. Surface sculptured by hexagonal network. Anterior median ridge beginning at anterior cardinal angle and ending in antero ventral area. Hingement of right valve consists of elongate teeth which project slightly interiorly, an intermediate bar and a posterior crenulate tooth which is distinctly arched postero-dorsally. Hingement of left valve consists of posterior socket an intermediate crenulate ridge with a distinct anti-slip tooth at its anterior end, a posterior socket opens interiorly. Marginal area wide at the anterior end and narrower at the posterior end. Marginal pore canals bifurcate. Muscle scars arranged in a vertical row of four. Sexual dimorphism clear.

*Description of Soft parts*

*Antennule* (Fig. 2 *a*) : 4 jointed, penultimate podomere with single slender seta, ultimate podomere bulbous and divides into 3 claw-like setae, 3 slender setae in between the claw like setae.

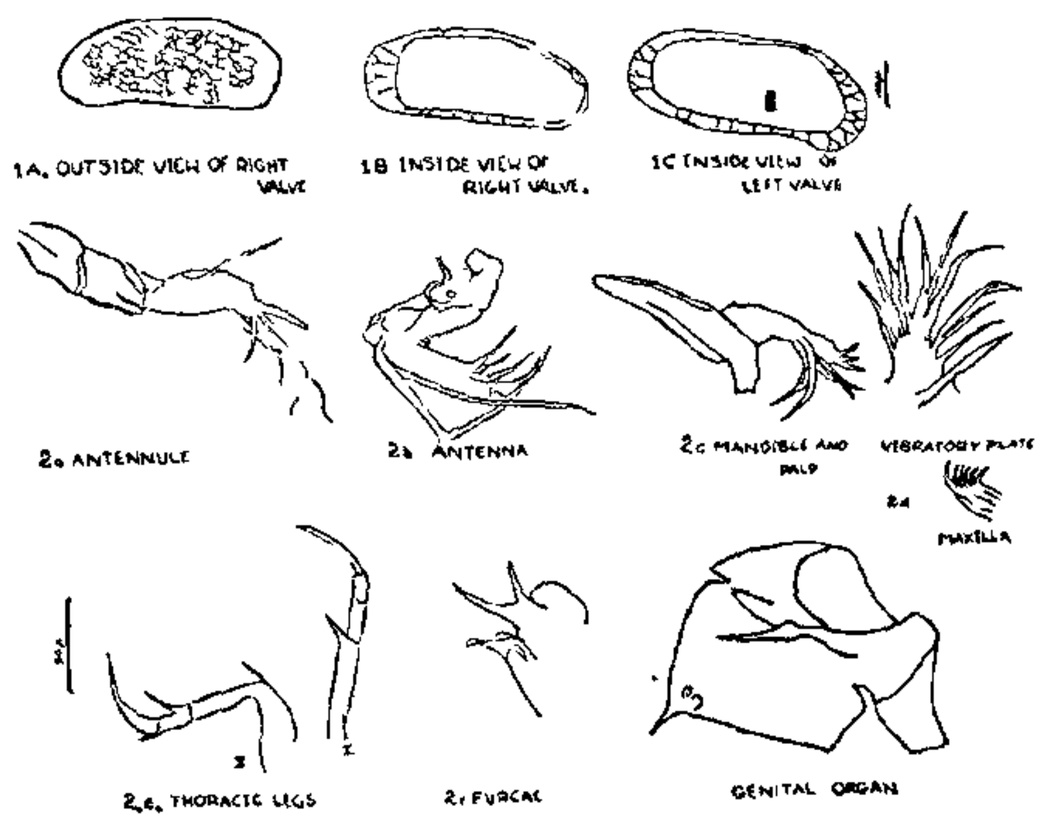
*Antenna* (Fig. 2 *b*) : 3 joined, exopodite with single slender seta and spinneret seta well developed reaching the distal ends of claws. Ultimate podomere ends in 2 curved claws and bearing 1 anterior slender seta and 3 posterior claw-like setae.

*Mandible* (Fig. 2 *c*) : 3 serrate teeth placed laterally on cutting edge. Mandibular palp 3 jointed. 1st segment bulbous, 2nd segment narrow and short with 2 long curved setae and 1 blade like structure which is bulbous in the beginning and ends in a narrow spine. Last segment bulbous and it divides into 3 spines.

*Maxilla* (Fig. 2 *d*) : 2 Masticatory lobes narrow and short with 3 pairs of setae. Vibratory plate with 12 unfeathered rays.

*Thoracic legs* (Fig. 2 *e*) : 4 jointed, end in curved claws bearing 1–3 setae on distal ends of each joint. Three pairs of thoracic legs similar in structure but varying in size.

*Furcae* (Fig. 2 *f*) : Paired furcae attached to the posterior end of the body and unsegmented.




FIGS. 1–2. *Tanella vasishta* sp. nov.

Table provides a comparative account of the three species of *Tanella*.

TABLE I

| | *T. vasishta* sp. nov. | *T. gracilis* Kingma 1948 | *T. miurensis* Hanai 1957 |
|---|---|---|---|
| Size | | | |
| Male | | | |
| Length | 0·54 mm | 0·45 mm | 0·56 mm |
| Height | 0·255 mm | | 0·28 mm |
| Female | | | |
| Length | 0·45 mm | | 0·60 mm |
| Height | 0·22 mm | | 0·32 mm |
| Shape | Narrow and elongate | Elongate | Oblong and tumid |
| Ornamentation | hexagonal network with median ridge prominent | Reticulated longitudinal ridges strong and arched | 4 or 5 pits in reticulation |
| Marginal porecanals | Bifurcate | Polyfurcate | Polyfurcate |

While the present species agrees with the other two species already described in the structure of the hinge, inner lamella and pattern of muscle scars, it differs substantially in characters of systematic importance such as the size, the narrow and elongate shape, hexagonal network ornamentation with a single median ridge, bifurcate nature of the marginal porecanals, which strongly warrant creation of a new species. The species is named after the estuary.

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Waltair, *July* 5, 1978.

1. Kingma, J. TH., *Acad. Thesis, Utrechet.*, 1948, 118 pp.
2. Hanai, T. *J. Fac. Sci.*, Univ. Tokyo, Sec. II, 1957, **10** (3), 431.

## RESPONSE OF CHROMATOPHORES TO ADRENALIN TREATMENT IN THE MARINE CRAB, *PORTUNUS PELAGICUS* (RATHBUN)

FINGERMAN[1] discussed the physiology of chromatophores in the Crustacea. So far as the effects of pharmacological agents on the crustacean chromatophores are concerned only a few reports[2–7] have, appeared. Injection of adrenalin had a darkening effect on *Palaemon*[8]. Similar treatment in *Leander adspersus*[2] and *Orconectes virilis*[9] induced dispersion of red pigment. Similar effect was also observed in the red, black and yellow pigments of the prawn, *Metapenaeus monoceros*[5]. On the other hand the state of the red pigments after administration of adrenalin to *Palaemon paucidens*[4] remains unaltered. Among brachyurans, injection of adrenalin to destalked *Gelasimus annulipis*[6] evoked dispersion of red pigment whereas similar treatment was without any effect on the black chromatophores of *Uca puglator*[10]. As the responses of different chromatophores to adrenalin treatment are variable, further work on other species is desirable. The following account deals with the responses of the pigments within the chromatophores to injection of adrenalin in the marine crab, *Portunus pelagicus*.

The crabs under investigation, ranging from 9 to11 cms in carapace width were collected on the Worli sea coast at Bombay and kept for two days in aquarium containing 2" deep seawater for acclimatization. On the following day ten crabs were selected from the stock aquarium and divided into two groups of five each and kept in two separate white containers in seawater under illumination using 100 watt bulb at a distance of 32 cms from the surface of seawater. After the crabs were adapted fully to white background, each crab from the first group was injected with 0·05 ml of adrenalin (BDH, 1 : 1000), whereas each crab of the second group (control) received 0·05 ml of seawater[5–7] The red, black and yellow pigments within the monochromatic chromatophores on the terminal portion of the peripod of each animal of the respective group were staged according to the system of Hogben and Slome[11] before giving the injection and again 15, 30, 45, 60, 90 and 120 minutes after the injection. The results obtained are presented in Fig. 1.

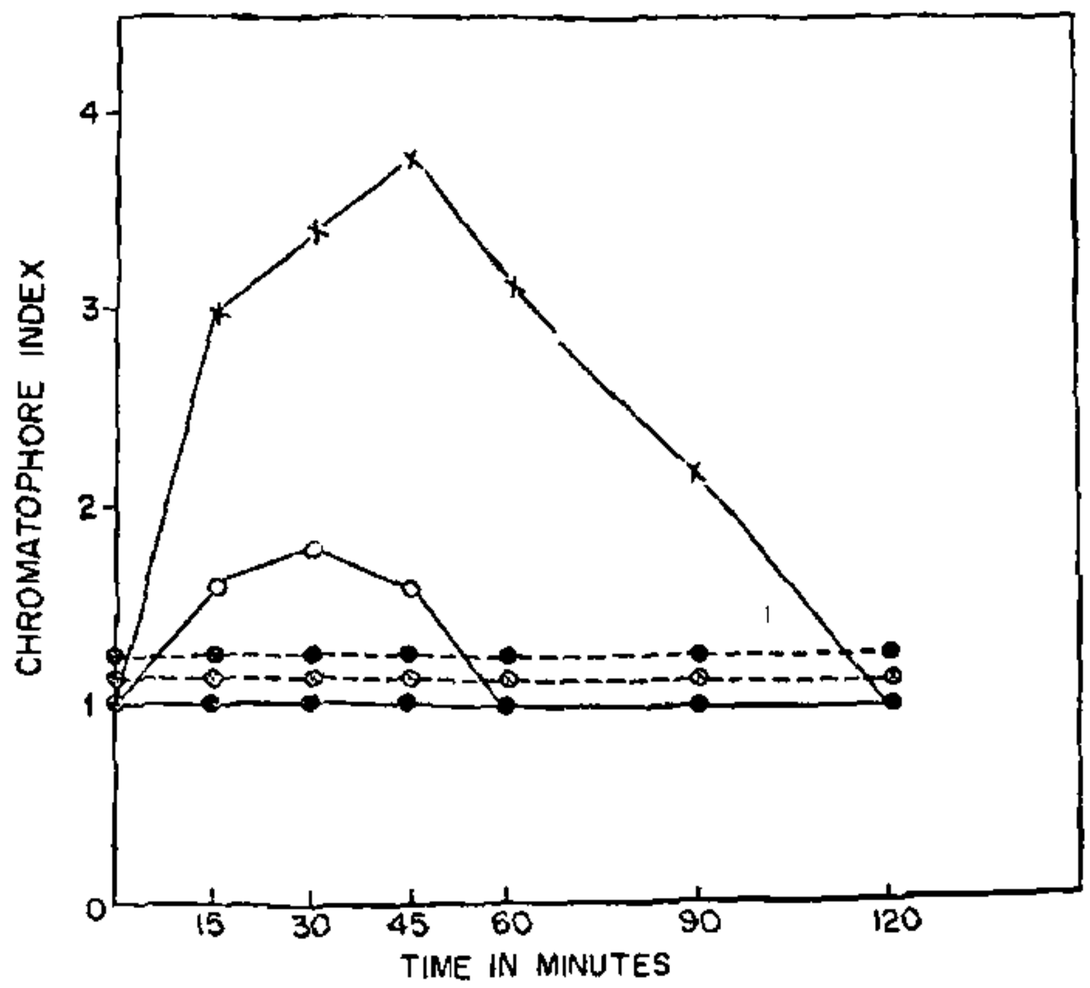


FIG. 1. Responses of the red, yellow and black pigments of white adapted crab, *P. pelagicus* to adrenalin injection.

Concentration of the red, black and yellow pigments is observed in the white adapted animals before injection of adrenalin. From the figure it is evident that adrenalin when injected into white adapted *P. pelagicus* induced maximum dispersion of black pigment and a slight dispersion of the red pigment. However, the yellow pigment is without any visible effect. The administration of adrenalin resulted in the dispersion of red pigment in the prawn, *Leander adspersus*[2] and the crayfish, *Orconectes virilis*[9] which is in agreement with our observation. But similar