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**CYCLASPIS PURPURASCENS SP. NOV., A NEW CUMACEAN
CRUSTACEA FROM TANABE BAY, KII PENINSULA¹⁾**

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With 4 Text-figures

The present paper deals with a new species of cumacean Crustacea, *Cyclaspis purpurascens* sp. nov. (Subfamily Bodotriinae, Family Bodotriidae) which was found in a collection made by myself at Tanabe Bay near the

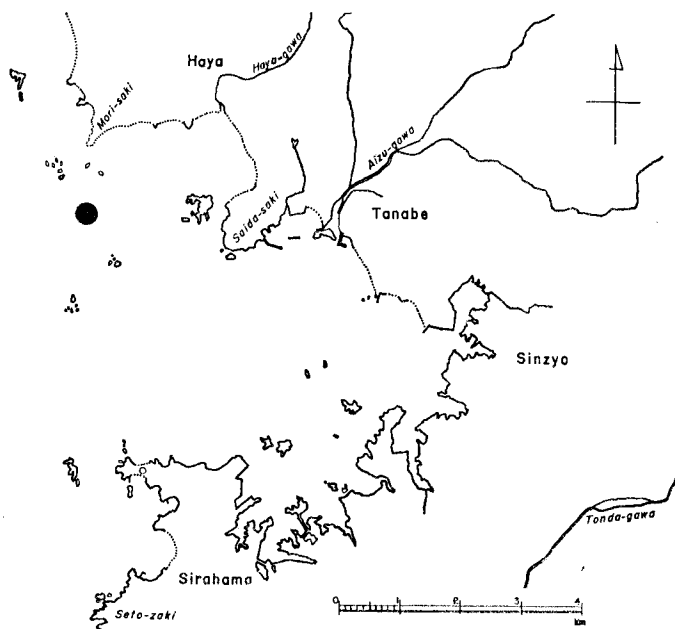


Fig. 1. Map of Tanabe Bay. Solid circle indicates the locality of *C. purpurascens*.

- 1) Contributions from the Seto Marine Biological Laboratory, No. 420.
- 2) Further results of the investigation will be given later.

Seto Marine Biological Laboratory in the late spring of 1963 (Fig. 1)²⁾. The new species was taken with both sexes from Station 14, sandy mud bottom, 23 meters deep, at the northern part of Tanabe Bay. *C. purpurascens* herein described seems to be aberrant for the genus *Cyclaspis*.

Before going further I wish to acknowledge my indebtedness to Professor Tune SAKAI for his kind guidance. My gratitude is due to Professor Dr. Huzio UTINOMI of the Seto Marine Biological Laboratory in giving me an opportunity of performing the study. Further I wish to express my thanks to Professor Masao IWASA of the Seikei University for his kind advice.

Description of the Species

Cyclaspis purpurascens sp. nov.

(Figs. 2-4)

Description of the holotype: The holotype is an adult female (length, about 2.9 mm) with well-developed marsupium, in which fifteen embryos are carried.

The integument is somewhat semi-transparent and the colour of body in life is light purple generally. The carapace is light purple, rather reddish in the middle lower portion; the frontal lobe is mostly white and a similar-coloured narrow crossband runs downwards from it to the lower margin of the carapace; on the antero-lateral portion there is a large yellow-orange blotch which extends backwards from just below the ocular lobe to the base of the antero-lateral corner. The ocelli are dark reddish. The peduncular segments of the antennule are yellowish orange. The basis, ischium and merus of the first peraeopod are partly purplish and the three remaining distal segments are colourless. The basal segments of the second and third peraeopods and the peduncle of the uropod are also slightly purplish, whereas the fourth and fifth peraeopods and both rami of the uropod are colourless.

The carapace is calcified and rather brittle; the surface is very smooth and glossy in appearance, but it is clothed with minute reticulated texture as illustrated in the Fig. 2, C-D. The length of the carapace is nearly two-sevenths of the total length of the animal and about one and one-half times the depth, which is a little more than the width. As seen from above it is almost acute-triangular in shape and both sides of the middle portion are slightly compressed. As seen from the side the dorsal outline is a little arched. The dorso-median portion is much elevated and provided with a well-marked dorso-median carina with a median line like a suture; both almost reach the apex of the ocular lobe; there are three forwardly directed teeth on the two-thirds anterior portion of the dorso-median carina. About twenty small tuberculate granules are scattered around the both sides of the carina, and such discernible

one is on the dorsal surface near the distal end of the pseudorostrum. There is a faint short ridge on each of the sides of the anterior portion of the carapace. The pseudorostral lobes meet in front of the ocular lobe and almost horizontally project forward about one-sixth as long as the carapace. The ocular lobe is semi-circular in shape, slightly longer than the width and beset with

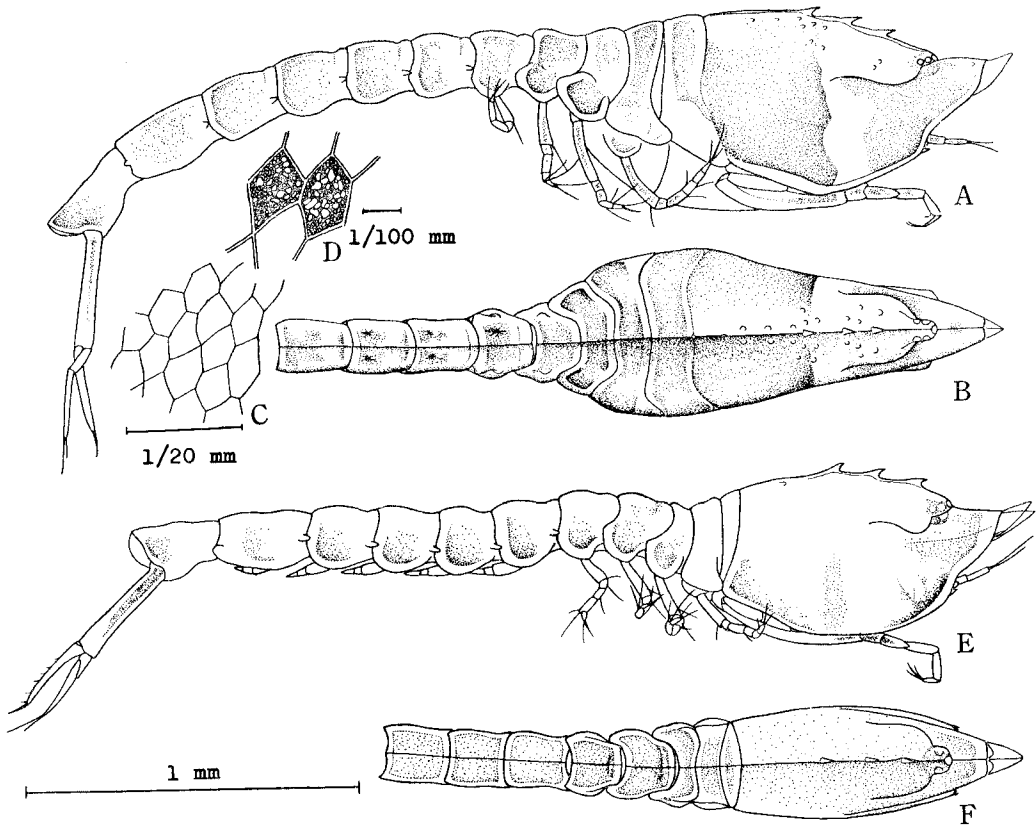


Fig. 2. *Cyclaspis purpurascens* sp. nov., holotype adult ovigerous female (length, ca. 2.9 mm): A: lateral view. B: anterior portion of body, from above. C-D: texture on carapace and much enlarged its texture. Paratype subadult male (length, ca. 2.6mm): E: lateral view. F: anterior portion of body, from above.

discernible ocelli. The antero-lateral border is shallowly sinuated and on the inner side of the rounded antero-lateral corner there are two small teeth.

The combined length of all the free thoracic segments (or pedigerous segments) is five-sixths of the length of the carapace. The five segments are successively decreasing in depth. The dorso-median carina is well-marked on all the segments and the first three segments are rather elevated dorsally.

The first free thoracic segment is large, exposed dorsally and laterally and nearly fused with the carapace, but well defined by a suture line from the posterior portion of the carapace; its length (if measured along the middle line of the dorsum) is slightly more than the second segment and the sides are expanded laterally, prominent like those of the second segment; the width is more than the carapace. The last four segments are successively narrowed. The third segment is nearly as long as the second and slightly shorter than the fourth; the sides of the third and fourth are very prominent. The fifth is a little longer than the fourth and very like the abdominal segment in appearance as seen from the side.

The abdomen is rather slender, less than one-half of the total length of the animal. On each antero-lateral portion of the first to fifth segments there is a distinct articular peg. The fifth segment is longer than each of the preceding four segments which are much alike in appearance. The sixth segment is about equal to the length of the fifth.

The first segment of the peduncle of the antennule is nearly twice as long as the second. The third segment is rather long, slender and one and one-third times as long as the second. The main flagellum is two-segmented; the distal segment is one-half the length of the proximal one and furnished with a long aesthetascs. The accessory flagellum is minute.

The mandible is of a normal type of that of the family Bodotriidae.

The second maxilliped is illustrated in the Fig. 2, C.

The length of the basis of the third maxilliped (if measured along the middle line of the segment, exclusive of the external prolongation) is slightly more than one and one-third times as long as the remaining distal segments together; its external angle is developed into a long prolongation, about equal to one-fourth of the length of the basis and almost reaches the end of the merus. The merus with an outer angle which reaches the level of the end of the carpus, is slightly more than the ischium. The carpus is a little longer than the propodus. The dactylus is nearly two-thirds as long as the propodus.

The first pereopod is rather small and the distal end of the carpus almost reaches the level of the under side of the rounded antero-lateral corner in the natural position. The length of the basis (if measured along the middle line) is fully one and one-fifth times the length of the remaining distal segments together. The ischium is rather long and less than the length of the merus (inclusive of the acute outer angle). The carpus is fully one and one-fourth times as long as the merus, which is nearly equal to that of the propodus; it bears two spinules on the distal outer end. The propodus is provided with a rather long seta near the distal inner border. The dactylus is two-thirds as long as the propodus and bears three long subequal spines on the distal end.

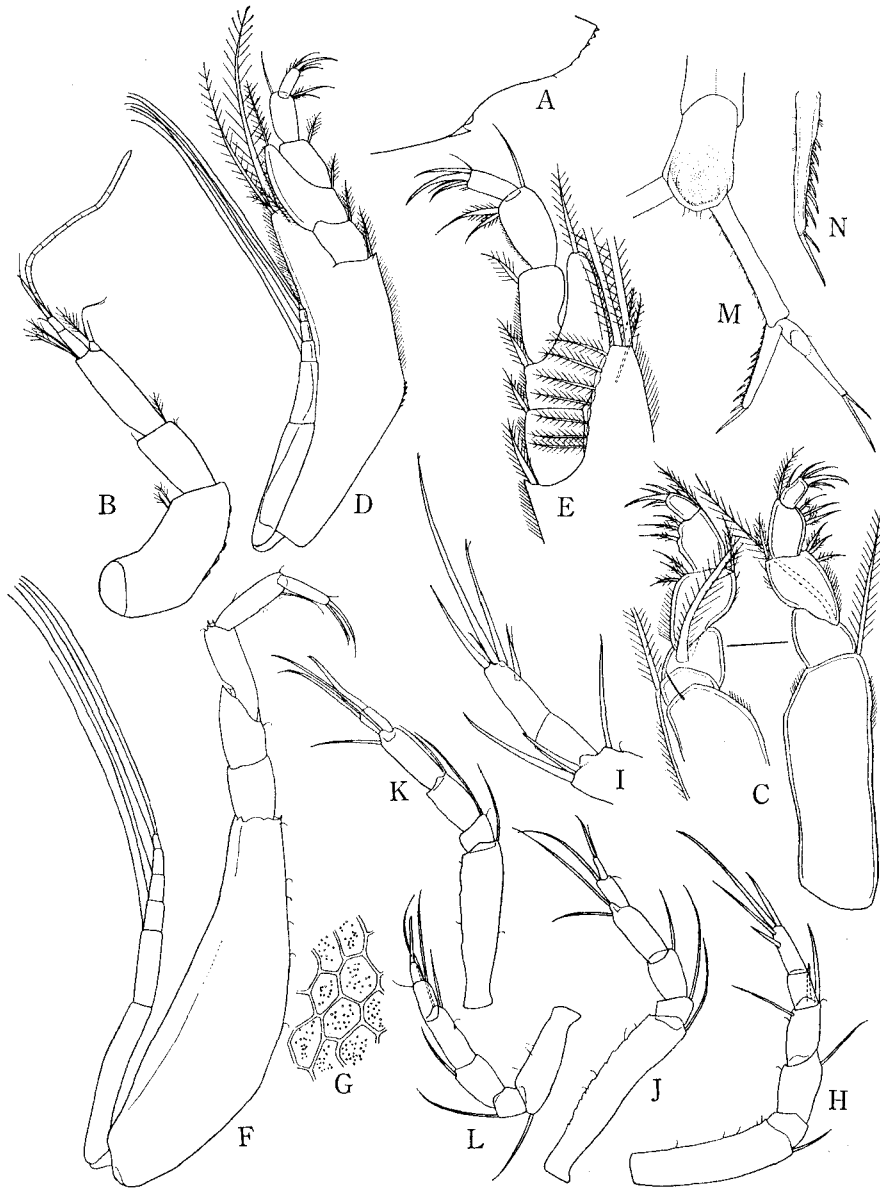


Fig. 3. *Cyclaspis purpurascens* sp. nov., holotype adult ovigerous female: A: pseudorostrum and anterior portion of carapace, lateral view. B: antennule. C: second maxilliped. D-E: third maxilliped and its enlarged distal segments, dorsal view. F-G: first peraeopod with enlarged sculpture on surface of basis. H-I: second peraeopod and its enlarged distal portion. J-L: third to fifth peraeopods. M-N: uropod with last two abdominal segments and enlarged endopod of uropod.

The second peraeopod is subequal to one-half the length of the first and seven-segmented (including the coxa). The basis is a little more than two-thirds as long as the remaining distal segments together. The ischium is short and not ankylosed with the basis. The merus is slightly longer than the carpus. The carpus is less than twice as long as the propodus and bears two unequal long spines on the distal end. The dactylus is subequal to one and one-third times as long as the propodus and provided with three distal spines, of which the longest one much more exceeds the length of twice as long as the propodus.

The third peraeopod is slightly more than the length of the second peraeopod. The basis is subequal to the length of the remaining distal segments together. The fourth peraeopod is equal to the length of the third and the basis of the fourth is much shorter than the remaining distal segments together. The fifth peraeopod is nearly three-fourths of the length of the fourth peraeopod and the basis is more than one-half the combined length of the remaining distal segments.

The peduncle of the uropod is a little longer than the last abdominal segment and bears eight spinules interspersed with small serrations on the inner border. The endopod is fully two-thirds as long as the peduncular segment and furnished with six spines interspersed with serrations, of which the proximal ones are very difficult for observation; the distal end of the endopod bears two unequal spines. The exopod is slightly longer than the endopod and provided with two unequal apical spines.

Paratype subadult male (length, about 2.6 mm): The colour of body in life is very like that of the female. The length of the carapace is about one-third of the total length of the animal and one and three-fourths times the depth, which is a little less than one and one-half times the width. The carapace is somewhat compressed laterally, widest across the middle portion and narrowed towards the anterior and posterior portions. The dorso-median carina with a median line is distinct and reaches the apex of the ocular lobe. The median portion along the carina is much elevated dorsally and provided with three teeth on the two-thirds anterior part of the carina. There is a discernible small tubercle on the postero-dorsal portion. The antero-lateral border is shallowly sinuated with the rounded antero-lateral corner; its inner border bears two small teeth. On the antero-lateral side there is a faint ridge leading back for a short distance from the apex of the pseudorostrum. The ocular lobe is semi-circular in shape and beset with discernible ocelli. The pseudorostrum is forwardly projected in front of the ocular lobe about one-sixth of the length of the carapace.

The combined length of all the free thoracic segments is nearly two-thirds as long as the carapace. The first segment is relatively small and nearly

fused with the carapace, but well defined by a distinct suture line. Its length is a little shorter than the second. The lateral portion is narrowly exposed and its hinder part is partly concealed by the anterior portion of the side plate of the second segment. The second segment is larger and wider than each of the first and third segments and its sides are expanded laterally.

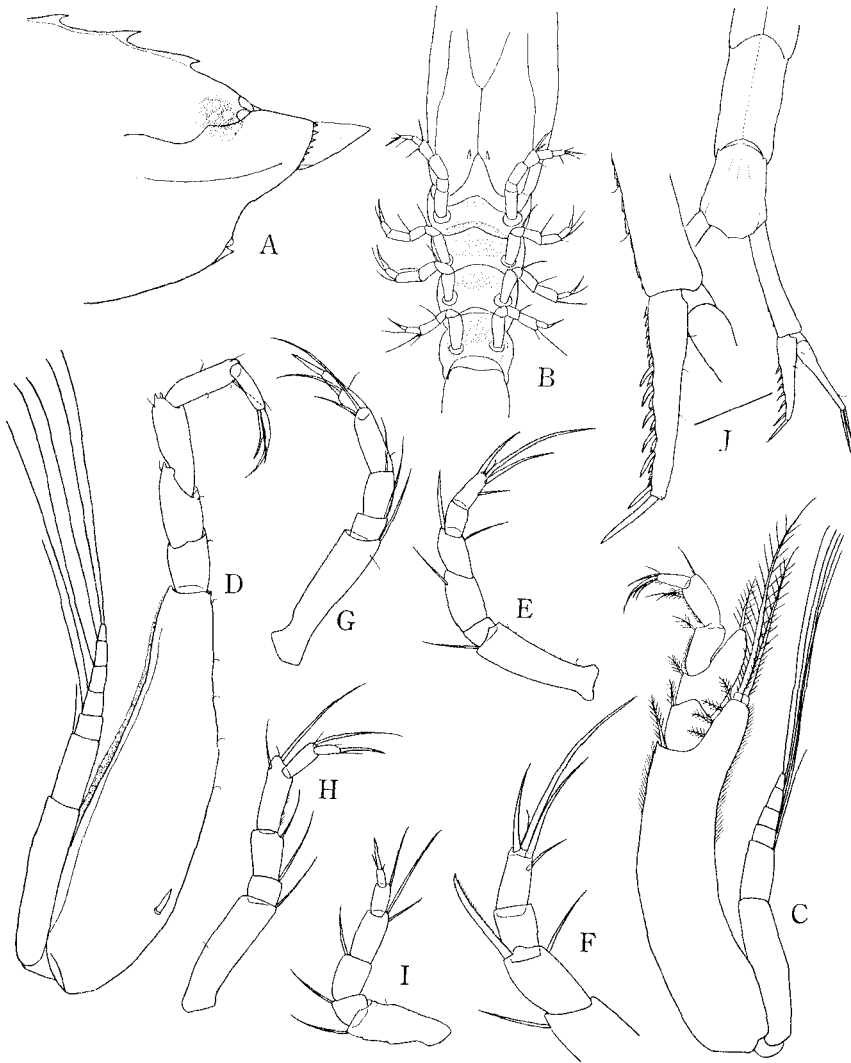


Fig. 4. *Cyclaspis purpurascens* sp. nov., paratype subadult male: A: anterior portion of carapace, lateral view. B: thoracic sternites, from below. C: third maxilliped. D: first pereopod. E-F: second pereopod and its enlarged distal segments. G-I: third to fifth pereopods. J: uropod with last three abdominal segments and its enlarged distal portion.

The fourth and fifth segments are much alike in appearance as seen from the side and the former is a little wider than the last named. The second to fourth segments are successively decreased in width as well as in depth.

The abdomen is nearly one-half of the total length of the animal and bears five pairs of undeveloped pleopods; on each of the first five segments there is an articular peg on the antero-lateral portion. The first four segments are almost of the same size. The fifth segment is nearly one and one-half times as long as the fourth segment and a little longer than the sixth.

The first segment of the peduncle of the antennule is nearly twice as long as the second. The third segment is more than the length of the second. The main flagellum bears two segments like that in the female. The accessory flagellum is very minute.

The antenna is not yet fully developed like that in the adult condition and the flagellum is very short.

The basis of the third maxilliped is relatively elongated than that of the female and fully one and one-half times the length of the remaining distal segments together; its prolonged outer angle is nearly equal to one-fifth as long as the basis. The general features of the distal segments are almost like those in the female.

The first peraeopod is relatively short and the distal end of the carpus barely reaches the level below the rounded antero-lateral corner in the natural position. The basis is fully one and one-third times as long as the remaining distal segments together. The general features of the distal segments are almost like those in the female.

The second peraeopod is two-fifths of the length of the first peraeopod. The basis is one and one-half times as long as the remaining distal segments together. The ischium is short and not fused with the basis. The merus is rather long and more than the length of the carpus which is much less than twice as long as the propodus. The distal end of the carpus bears a long distal spine. The dactylus is a little more than the length of the propodus and bears three long apical spines, of which the longest one is nearly equal to three times the length of the dactylus.

The third peraeopod is much longer than the second and its basis is shorter than the remaining distal segments together. The fourth peraeopod is subequal to the length of the third peraeopod and the basis of the fourth is much shorter than the remaining distal segments together. The fifth peraeopod is a little less than the fourth.

The peduncle of the uropod is a little longer than the last abdominal segment; its inner border is faintly serrate and furnished with spaced hairs. The endopod is nearly three-fourths of the length of the peduncular segment and furnished with five spines interspersed with serrations on the inner

border and two unequal spines on the distal end. The exopod is a slightly longer than the endopod and furnished with two long apical spines.

Material: 1 ♀ ovigerous (holotype), 1 ♂ subadult (paratype), collected by Ekman-Berge bottom-sampling grab at St. 14, northern part of Tanabe Bay, sandy mud bottom, depth 23 m; May 13, 1963. The specimens are deposited in the author's collection.

Remarks: General appearance of this new species is very like that of the genus *Iphinoe*, from which it may be distinguished by that the endopod of the uropod is not two-segmented and that the ischium of the second pereopod is not ankylosed with the basis. The genus *Cyclaspis* may be distinguished from the genus *Iphinoe* in the above-mentioned points of characters. The new one may be referred to the genus *Cyclaspis* by the general similarities and mainly distinguished from the allied genera as follows: in *Bodotria* and *Upselaspis* (JONES 1955) the second pereopod is provided with six segments (including the coxa) and the first three pedigerous segments of *Cyclaspoides* are fused with the carapace. However, this remarkable species differs considerably from most species of *Cyclaspis* (inclusive of four species formerly known from Japan: *C. strumosa* HALE, *C. bidens* GAMÔ and *C. amamiensis* GAMÔ (GAMÔ 1962, 1963)) in having the large first free thoracic segment which is nearly fused with the carapace, especially in the female and also in having the rami of the uropod with stout distal spines instead of ending in an acute apex.

It resembles very closely the following eleven species: *C. herdmani* CALMAN from Ceylon (CALMAN 1904); *C. thompsoni* CALMAN, *C. laevis* CALMAN from New Zealand and *C. longipes* CALMAN, *C. unicornis* CALMAN from West Indies (CALMAN 1907); *C. nubila* ZIMMER from California (ZIMMER 1936); *C. peruana* ZIMMER from Peru, *C. testudinum* ZIMMER from Galapagos Islands and Columbia (ZIMMER 1943); and *C. platymerus* ZIMMER from Gulf of Mexico, *C. dentifrons* ZIMMER from southern Brasil, *C. dolera* ZIMMER from Costa Rica (ZIMMER 1944). This species differs from all of them by that the ocular lobe does not reach the apex of the pseudorostrum.

C. purpurascens is the most closely related to *C. costata* CALMAN, *C. picta* CALMAN from Ceylon (CALMAN 1904); *C. varians* CALMAN from Woods Hole of North America (CALMAN 1912) and *C. carinata* ZIMMER from east coast of Africa (ZIMMER 1921) in the following points of characters: the pseudorostral lobes meet and horizontally project in front of the ocular lobe; the rami of the uropod are provided with similar armatures. It is easily distinguished from any of the above-mentioned five species in having the carapace with three forwardly directed teeth.

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