

**TWO BLIND LOBSTERS OF THE GENUS *POLYCHELES*
(CRUSTACEA: DECAPODA: ERYONOIDEA)
FROM TAIWAN¹**

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Tin-Yam Chan and Hsiang-Ping Yu (1989) Two blind lobster of the Genus *Polycheles* (Crustacea: Decapoda: Eryonoidea) from Taiwan. *Bull. Inst. Zool., Academia Sinica* 28(3): 165-170. Deep-sea blind lobsters of the superfamily Eryonoidea are firstly recorded in Taiwanese waters. The five specimens obtained consists of 2 species, namely *Polycheles typhlops* Heller, 1862 and *P. baccatus* Bate, 1878. Both of them are very rare and were collected at the depth of about 350 m. The morphological characteristics of these two *Polycheles* lobsters are briefly described, together with a key and color illustrations.

Key words: Blind lobsters, Eryonoidea, *Polycheles*, Taiwan new records.

Blind lobsters (Superfamily Eryonoidea) are characterized by their eyes being rudimentary and eyestalks immovably fixed at the frontal carapace. These lobsters are usually found in very deep waters (deepest record exceeding 4,000 m) while none of them have yet been recorded in Taiwan. Five specimens of these blind lobsters were obtained by the authors during the last few years of intensive decapod-crustacean survey. After a close examination on these specimens, two species are recognized. Both of them belong to the genus *Polycheles* Heller, 1862 which differs from the closely allied genus *Stereomastis* Bate, 1888 mainly by the epipods at the first four pairs of pereopods being better developed. The present report briefly describes the major morphological

characteristics of these two blind lobsters. A key and color illustrations are also provided for their identification.

MATERIALS AND METHODS

The specimens were obtained at fish markets. They were caught by "baby" shrimp trawlers off inshore waters at the depth of about 350 m on sandy and muddy bottoms. All of them are deposited at the Department of Fisheries in National Taiwan College of Marine Science and Technology (NTCMST). As to the measurements, carapace length (cl.) and body length (bl.) were measured along the middle line from the anterior incision of the carapace to the posterior margin of the carapaces and to the distal telson margin of fully stretched specimen respectively.

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RESULT AND REMARKS

Key to the blind lobsters of the Genus *Polycheles* found in Taiwanese waters:

- A. One single rostral tooth; frontal tooth of carapace well below rostral tooth; orbital sinuses subdivided; median carina at abdominal somite V culminating in hooked tooth and larger than that of IV.....*P. typhlops*
- B. Two rostral teeth; frontal tooth of carapace extraordinary large and reached far above rostral tooth; orbital sinuses not subdivided; median carina at abdominal somite V somewhat eroded and not forming large tooth anteriorly.....*P. baccatus*

SYSTEMATIC ACCOUNT

Polycheles typhlops Heller, 1862

(Pl. IA, B)

Polycheles typhlops Heller, 1862: 392 (not seen, type locality: probably Sicily); Kemp and Sewell, 1912: 24; de Man, 1916: 24; Stephensen, 1923: 67; Bouvier, 1925: 433; Balss, 1925: 201; Barnard, 1950: 568; Kotthaus, 1966: 348; Kensley, 1981: 29; Baba, 1986: 157.

Pentacheles Hextii Alcock, 1894: 237; 1901: 172.

Polycheles intermedius Balss, 1914: 599.

Stereomastis nana ([*nec*] Smith, 1882)—Miyake, 1982: Pl. 26-6.

Materials examined: 2 ♂♂, 21 mm and 40 mm cl., 48 mm and 96.5 mm bl., 16 March 1985, Su-Ao, I-Lan County, 2 ♂♂, 32 mm and 36 mm cl., 76 mm and 84 mm bl., 23 March 1985, Tong-Kang, Ping-Tong County.

Diagnosis: Carapace spinose and thickly setose. Single rostral tooth large and prominent. Conical tooth arose from frontal wall of carapace well below

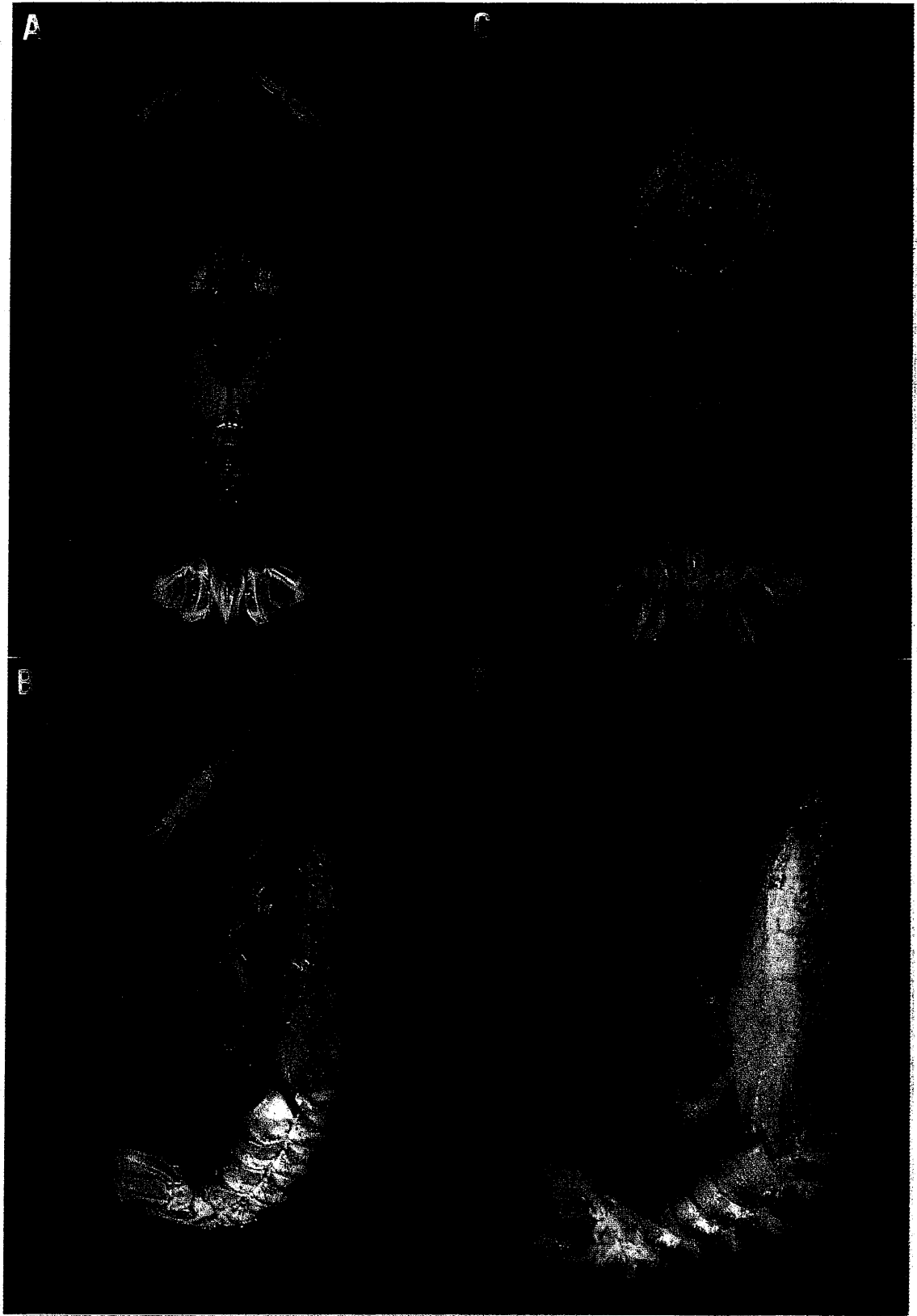
rostral tooth and not much larger than the latter. Orbital sinuses deep but subdivided by inter-locking spines projected from inner and outer borders. Medio-dorsal ridge sharply granulated and becoming double behind cervical groove, with 6 distinct teeth (excluded rostral tooth and with penultimate one doubled) anteriorly and 3 large paired teeth posteriorly to cervical groove. Lateral carapace with 7-8 (mostly 7)+4-5 (mostly 5)+20-25 teeth (last few teeth very small and hardly recognizable). Sublateral ridges almost parallel with lateral carapace and with 16-18 (mostly 16) serrations. Posterior border of carapace spinate. Pereiopod I (only present in two specimens) more or less as long as body length. Abdomen granulated and sculptured with wide transverse furrows. Median carina of tergite I culminating in small tooth which indistinct from adjacent serrations; those of tergites II to V developed into large hooked teeth and progressively larger posteriorly. Anterior angle of abdominal pleuron II somewhat obtuse. Telson tapering and uropods without any suteres.

Color: Body ivory. Setae light brown. Ridges, margins, tips of spinules and granules on dorsal surface orange-red. Antero-median carapace, anterior portion of tail-fan and pleopods with patches of orange-red.

Distribution: World-wide: Mediterranean, Atlantic northern most to Iceland, Indo-West-Pacific from South Africa to Japan. At depths of 200 to 2,055 m.

Remarks: *P. typhlops* is the type species

Plate I: A. *Polycheles typhlops* Heller, 1862. Dorsal view of a 76 mm bl. male. B. *Polycheles typhlops* Heller, 1862. Lateral view of a 96.5 mm bl. male, with tip of hooked tooth at abdominal somite III broken. C. *Polycheles baccatus* Bate, 1878. Dorsal view of a 70 mm bl. female, with large chelipeds missing. D. Lateral view of C.



of the genus and possesses the peculiar character of subdivided orbital sinuses (excellent drawing was provided by Bouvier, 1925). However, due to the inadequate information on the type specimen provided by Heller (1862), there were many confusions on the taxonomic status of the genus (eg. Faxon, 1895; Alcock, 1901; Kemp and Sewell, 1912; de Man, 1916) and the identity of the species itself in different localities (see Kemp and Sewell, 1912; de Man, 1916; Bouvier, 1925; Balss, 1925) during the turn of the century. After all, it turns out that the distribution of *P. typhlops* is much wider than hitherto assumed and also is one of the most widely distributed species of the genus. The epipod at the maxilliped III of the present species is rudimentary and minute (Balss, 1925, textfig. 14) while those at the anterior four pereopods are normal and plate-like, but rather delicate.

P. typhlops is rare in Taiwanese waters although it has been found in both of the north-eastern and south-western coasts. Other than the unique configuration of the orbital sinuses, *P. typhlops* can easily be separated from the other related species by having a large single rostral tooth instead of two.

***Polycheles baccatus* Bate, 1878**

(Pl. IC, D)

Polycheles baccatus Bate, 1878: 278 (not seen, type locality: Fiji Islands); de Man, 1916: 26.

Polycheles baccata: Bate, 1888: 131.

Material examined: 1 ♀, 30 mm cl. and 70 mm bl., 2 May 1985, Su-Ao, I-Lan County.

Diagnosis: Carapace spinose and thickly setose. Two rostral teeth. Conical tooth arose from frontal wall of carapace huge and reached far above rostral teeth. Orbital sinuses triangular, not subdivided. Medio-dorsal ridge before cervical groove sharply granulated, with 5 large teeth at anterior half (excluded

rostral teeth and with last one doubled) and granulated in double series with some large pointed tubercles at posterior half. Behind cervical groove medio-dorsal ridge as two rows of spinules. Posterior border of carapace also spinate. Armature of lateral carapace 7+4+28 at left and 8+4+30 at right, with last few ones minute and indistinct. Sublateral ridges covered with 26 serrations and slightly baccated. Abdomen granulated and sculptured with narrow but deep transverse furrows. Median carina at abdominal tergites I to IV forming large tooth anteriorly; those of II to IV similar in size while that of I smaller but distinct. Abdominal tergite V with median carina somewhat eroded and not forming large tooth anteriorly. Anterior angle of abdominal pleuron II pointed and protruded forward. Tail-fan as that of *P. typhlops*.

Color: Body generally ivory and covered with large patches of orange-red on dorsal surface. Setae light brown.

Distribution: Fiji Islands. Bali Sea and Taiwan. At depths of about 350 m to 915 m.

Remarks: Since the original description *P. baccatus* have only been reported by de Man from the Bali Sea in 1916 and now in the present paper. This species is very rare in Taiwan and the only specimen, with the pereopod I missing, was obtained in the north-eastern coast.

According to the examination of the "Challenger" types by de Man (1916), the description and figures of *P. baccatus* given by Bate (1888) were somewhat inaccurate. However, the morphological characters of our single specimen conform almost exactly to the extensive description and figures provided by de Man (1916). The present species is very similar to *P. euthrix* (Will-Shum, 1875), but differs from the latter mainly by the spinature at the anterior border of the

carapace and the abdomen being markedly sculptured (see Bate, 1888). Furthermore, the exceptionally large frontal carapace tooth which can easily be mistaken as a rostral tooth, is the most unique characteristic of the present species.

The spiny *P. baccatus* also shows resemble to *P. typhlops*, and the condition of the epipods at the maxilliped III and the anterior four pereopods is only slightly less developed and thinner in the former. As Bate (1888) indicated, the epipod at the maxilliped III in *P. baccatus* is as poorly developed as those of some *Stereomastis* species. Therefore, it is rather inappropriate to include the degree of development of the epipod at the maxilliped III as one of the major characteristics to separate the two genera as proposed by many other authors (eg. Alcock, 1901; de Man, 1916; Barnard, 1950; Burukovskii, 1983).

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臺灣海域之二種多螯蝦

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本報告首次記錄二種採自臺灣海域，屬於鞘蝦總科 (Eryonoidea) 多螯蝦科 (Polychelidae) 多螯蝦屬 (*Polycheles*) 之蝦。分別為；盲眼多螯蝦 *Polycheles typhlops* Heller, 1862 及梨形多螯蝦 *P. baccatus* Bate, 1878。此二種蝦之標本獲自水深 350 公尺之沙泥地海域，均為罕見之蝦類。

本文除簡述外部形態特徵外，並附檢索表及彩色圖片以供參考。