

Fig. 5. *Polycheles granulatus* Faxon, male, cl. 32 mm, AM P25047, carapace.

south-east of Broken Bay, 33°40'S 151°56'E to 33°37'S 151°56'E, 732 m, 6 December 1977, FRV *Kapala*, stn K77-23-06; 2 females, cl. 24.5 and 30 mm, 1 male, cl. 23 mm, AM P39727, south-east of Broken Bay, 33°41'S 152°01'E, 805–869 m, 9 May 1989, FRV *Kapala*, stn K89-08-01; 1 female, cl. 41.5 mm, AM P38727, north-east of Long Reef Point, 33°43'S 152°03'E to 33°40'S 152°05'E, 1042–1070 m, 27 September 1984, FRV *Kapala*, stn K84-16-14; 1 female, cl. 23 mm, AM P20639, east of Long Reef Point, 33°44'S 151°55'E to 33°40'S 151°58'E, 720 m, 9 November 1972, FRV *Kapala*, stn K72-07-04; 1 male, cl. 32.5 mm, AM P44903, east of Long Reef Point, 33°44'S 151°57'E, 820–889 m, 11 February 1986, FRV *Kapala*, stn K86-01-07; 1 ovigerous female, cl. 59 mm, AM P39728, east of Long Reef Point, 33°45'S 152°00'E to 33°41'S 152°03'E, 969–1006 m, 1 November 1984, FRV *Kapala*, stn K84-20-03; 2 males, cl. 28.5 and 30 mm, AM P44897, east of Shoalhaven Bight, 34°55'S 151°13'E to 34°53'S 151°14'E, 823 m, 12 December 1978, FRV *Kapala*, stn K78-27-05; 1 female, cl. 31.5 mm, AM P44900, south-east of Point Hicks, 38°19'S 149°47'E to 38°17'S 149°49'E, 997–1017 m, 27 September 1983, FRV *Kapala*, stn K83-12-04; 1 female, 30.5 mm, AM P45098, off St Patricks Head, Tasmania, approx. 41°20'S 148°50'E, demersal trawl, 1100 m, K. Graham on FRV *Soela*, 12 July 1987, stn SO5/87/15.

Remarks. These specimens agree more closely with Alcock's description and figure (Alcock, 1894b, pl. 8, fig. 3) of *Pentacheles beaumontii* than with Faxon's (1895, pl. 33, figs 2, 2a) description and figure of *Polycheles granulatus* except that the scaphocerite is normally developed, as in *P. granulatus*. *Polycheles granulatus* appears very fragile and delicate. The carapace is somewhat ovate in shape with a finely granulate surface and lacks large spines except anteriorly on the medial carina and the lateral edges.

There are two strong rostral spines and a strong spine on both internal and external angles of the orbital notch. The orbital notch is relatively narrow and deep and the ocular peduncle has a spine on the anterior border.

The spinal formula of the lateral edge of the carapace is 7–9:3–4:13–17. The arrangement of spines along the mid-dorsal carina (excluding rostral spines) of the carapace varies from one to three single spines to two or three more or less paired spines, followed by smaller spinules or granules anterior to the cervical groove and paired low granules behind it. Only the superior branchial carina is obvious and is composed of minute spinulose granules. The posterior edge of the carapace is smooth.

Colour. (Based on AM P25047). Entire carapace, abdominal segments and telson light rose pink, spines tipped with white. Antennular and antennal flagella and peduncles, pereopods, pleopods, endopods and exopods of uropods a darker pink to red.

Distribution. Atlantic Ocean: south-west coast of Ireland, Spain, Madeira and Canary Islands, Azores, Nova Scotia, mid-Atlantic Bight, south-western Africa; Indian Ocean: Sri Lanka; Pacific Ocean: south-eastern Australia, western Tasman Sea, Hawaiian Islands; 347–2505 m.

Polycheles typhlops typhlops Heller

Figs 6–8

Polycheles typhlops Heller, 1862: 392, pl. 1 figs 1–6.—Kemp & Sewell, 1912: 23.—de Man, 1916: 2,6,24.—Bouvier, 1917: 35, pl. 2 figs 1–6.—Balss, 1925: 201, pl. 19 figs 12–14.—Bernard, 1953: 3,86.—Lewinsohn & Holthuis, 1964: 54.—Zariquiey, 1968: 209, fig. 86b.—George, 1983: 16,19 (key), 20.—Baba *et al.*, 1986: 156, 283, fig. 107.—Chan & Yu, 1989b: 166, pl. 1A,B.

Pentacheles Hextii Alcock, 1894a: 237.—Alcock, 1901: 172.—Alcock & Anderson, 1895: pl. 10 figs 2, 2a–c.

Polycheles typhlops typhlops.—Firth & Pequegnat, 1971: 39 (key), 51, fig. 7.—Wadley & Evans, 1991: 27, unnumbered figs.

Material examined. One male, cl. 49 mm, QM W11220, east of Murray Isles, Torres Strait, 9°50'S 144°11'E to 9°51'S 144°09'E, 460 m, Queensland Fisheries Service on *Gwendoline May*, 21 May 1983; 1 male, cl. 43.5 mm, AM P44911, south-east of Cape Byron, 28°37'S 153°50'E, 502 m, 19 August 1978, FRV *Kapala*, stn K78-17-21; 1 male,

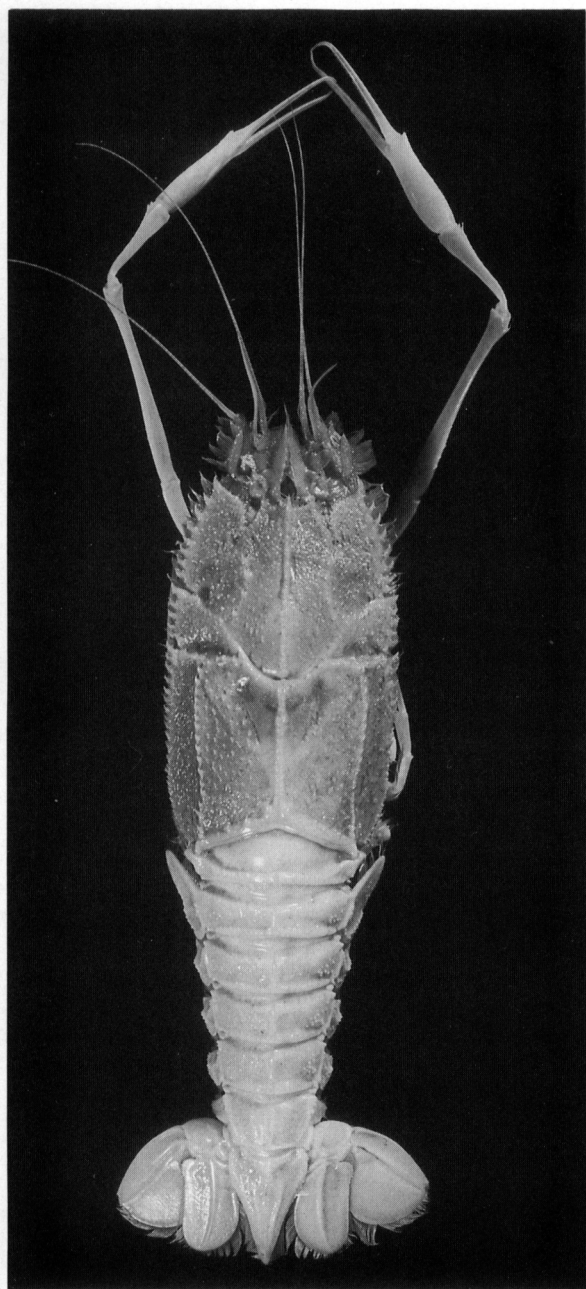


Fig. 6. *Polycheles typhlops typhlops* Heller, male, cl. 34.4 mm, AM P21799, dorsal view.

cl. 34.5 mm, AM P21799, north-east of Wooli, 29°52'S 153°43'E to 29°46'S 153°45'E, 503 m, 10 October 1975, FRV *Kapala*, stn K75-09-03; 1 male, cl. 39.5 mm, AM P20638, north-east of Broken Bay, 33°30'S 152°05'E to 33°26'S 152°08'E, 549 m, 5 October 1972, FRV *Kapala*, stn K75-02-08; 1 female, cl. 39 mm, AM P39741, east of Broken Bay, 33°34'S 151°57'E, 549–568 m, 10 September 1984, FRV *Kapala*, stn K84-15-02; 1 male, cl. 36 mm, AM P39740, east of Wollongong, 34°19'S 151°27'E to 34°24'S 151°24'E, 512 m, 19 July 1979, FRV *Kapala*, stn K79-08-12; 1 male, cl. 30.5 mm, AM P44912, east of Shoalhaven Bight, 34°42'S 151°15'E to 34°38'S 151°16'E, 613–640 m,

10 October 1984, FRV *Kapala*, stn K84-18-04; 1 male, cl. 26.8 mm, AM P20637, off New South Wales, 1971, FRV *Kapala*.

Remarks. *Polycheles typhlops* has been well described and figured by many authors. These specimens have the characteristic orbital notch described by Firth & Pequegnat (1971). The orbital peduncle has a sharp spine on the anterior edge. The carapace is long and narrow, its surface covered by minute spinules. Immediately below a single rostral spine, a conical tooth projects from the frontal wall of the carapace. The spinal formula of the lateral edges of the carapace is 7–9:5–6:24–26. The mid-dorsal carina is a line of irregularly spaced single, or posteriorly, paired spines anterior to the cervical groove and paired granules or occasionally spines behind the cervical groove. The posterior edge of the carapace is armed with several antrorse spines, two to three on each side of the mid-dorsal carina. The gastro-orbital carina is faint and comprises four antrorse spines or spinules; the superior branchial carina is marked by a line of 12–15 similar spines sometimes becoming smaller posteriorly. Other spines or spinules are located along the posterior branch of the cervical groove and on the branchio-cardiac carina.

Two subspecies are presently recognised: *Polycheles typhlops typhlops* Heller and *P. typhlops perarmatus* Holthuis (1952a). Firth & Pequegnat (1971) reported two intergrading forms which they termed "Form A" and "Form B" from the Gulf of Mexico and the Caribbean Sea. The east Australian males would be closer to Firth & Pequegnat's "Form B". They agree in having two to four spines on each side of the posterior border of the carapace, the second pleuron anteriorly obtuse (or right angled), tubercles on the edges of the pleura, 14–27 blunt tubercles on the edges of the terga, and strong spines on the cheliped. They differ from "Form B" in having only a partial third carina on the exopodites of the uropods and some spinules or small spines on the carina of the cervical groove. However, the two most important characteristics of the subspecies *P. typhlops perarmatus* are the rounded shape of the second pleuron and the great number of sharp spines on the edges of the terga. The east Australian specimens do not have these features and must be considered as *P. typhlops typhlops*.

Colour. (Based on AM P21799). Medial gastric and frontal region, scaphocerite and antennular peduncles, anterolateral edges and posterior border of carapace, cervical groove, mid-dorsal carina of carapace, carinae and granulate edges of abdominal terga bright orange. Remaining portions of carapace, abdominal terga and pleura white. Cheliped with proximal portion of merus white, distal third of merus and carpus orange. Upper surface of propodus and fingers orange, shading to pinkish white on underside and distal portions. All other pereopods white.