

# ***Platypodiella georgei* spec. nov. (Brachyura: Xanthidae), a new crab from the island of St. Helena, South Atlantic Ocean, with notes on the genus *Platypodiella* Guinot, 1967**

J.C. den Hartog & M. Türkay

Hartog, J.C. den & M. Türkay. *Platypodiella georgei* spec. nov. (Brachyura: Xanthidae), a new crab from the island of St. Helena, South Atlantic Ocean, with notes on the genus *Platypodiella* Guinot, 1967. Zool. Med. Leiden 65 (15), 24.xii.1991: 209-220, figs. 1-11.— ISSN 0024-0672.

Key words: Crustacea; Brachyura; Xanthidae; *Platypodiella*; association; Zoantharia; *Palythoa*; Atlantic Ocean; St. Helena; Cape Verde Islands; Senegal; eastern Caribbean.

A new species of *Platypodiella* Guinot, 1967, from the island of St. Helena, *P. georgei* spec. nov., is described. This species was found associated with encrusting species of *Palythoa* Lamouroux, 1816 (Zoantharia). Ample evidence is presented that both the eastern Atlantic *P. picta* (A. Milne-Edwards, 1869) and the western Atlantic *P. spectabilis* (Herbst, 1794) also live habitually associated with encrusting species of *Palythoa*, rarely with other zoantharians. For each of the two East-Pacific members of the genus, *P. rotundata* (Stimpson, 1860) and *P. gemmata* (Rathbun, 1902), there is at least one rather detailed published record suggesting that these species too associate with *Palythoa*. Thus, this habit would seem to go for all five members of the genus. Data are added on two other crab species, viz. *Pitho lherminieri* (Desbonne & Schramm, 1867) (Majidae) (western Atlantic) and *Banareia armata* A. Milne Edwards, 1869 (Xanthidae) (Indonesian waters), which may also associate with *Palythoa* colonies.

J.C. den Hartog, Nationaal Natuurhistorisch Museum [formerly Rijksmuseum van Natuurlijke Historie], Postbus 9517, 2300 RA Leiden, The Netherlands.

M. Türkay, Forschungsinstitut und Naturmuseum Senckenberg, Senckenberganlage 25, 6000 Frankfurt 1, Germany.

## **Introduction**

The genus *Platypodiella* was founded by Guinot (1967: 562) to include all the Atlantic and East-Pacific crab species previously accommodated in the genus *Platypodia* Bell, 1935. Altogether, four species of *Platypodiella* were recognized, viz.:

1. *P. spectabilis* (Herbst, 1794), the type of the genus.— Western Atlantic: Bermuda, Bahamas, Florida Keys, southward through the Gulf of Mexico and the Caribbean to Brazil, including Fernando do Noronha.

2. *P. picta* (A. Milne Edwards, 1869).— Eastern Atlantic: Canary and Cape Verde Islands, São Tomé and Ilha do Príncipe, Ascension Island (however, see p. 214), and the African mainland coast from Senegal southward to Congo.

3. *P. rotundata* (Stimpson, 1860).— East Pacific: Gulf of California southward to Ecuador, including Clipperton Island and the Galápagos.

4. *P. gemmata* (Rathbun, 1902).— East Pacific: Bay of Panama (Taboga Island) and the Galápagos.

A fifth species, *P. georgei* spec. nov. from the island of St. Helena, South Atlantic Ocean, is here added and described. In the description the nomenclature of Dana (1852: 28-31 unnumbered fig.) is used for the surface lobulation of the carapace. This terminology uses capital letters for lobe-groups (F, M, L, O, P and R) and has also

been shown by e.g. Rathbun (1930: 6 fig. 3), Guinot (1977: 8 fig. 1) and Serène (1984: 18 fig. C). The following abbreviations for depositories have been used: RMNH = Nationaal Natuurhistorisch Museum (Rijksmuseum van Natuurlijke Historie), Leiden; SMF = Senckenberg-Museum, Frankfurt am Main.

**Platypodiella georgei spec. nov.**  
(figs. 1-5)

*Platypodiella* spec. Den Hartog, 1989: 119, col. fig. on p. 117.

Material.— **St. Helena Island**, South Atlantic Ocean: ovigerous ♀ holotype, RMNH D 41169 (NW coast, Sta. 6, Rupert's Bay near landing-stage, 5.vi.1983, snorkeling, 3-4 m, under carpet of *Palythoa* spec., leg. J.C. den Hartog); ♂ allotype, RMNH 37662 (same data). Paratypes: RMNH D 37663 (same data, 8 ♀♀, 3 ovigerous ♀♀); SMF 20336 (same data; 1 ♂, 1 ovigerous ♀); RMNH D 37664 (NW coast, Sta. 9, James Bay, south of Ladder Hill Point, 7.vi.1983, snorkeling, 2-3 m, 1 ♂ and 2 ♀♀ under encrusting colonies of *Palythoa* spec., leg. J.C. den Hartog); RMNH D 37665 (NW coast, Sta. 13 between "The Lion" and "Long Ledge", 12.vi.1983, snorkeling, 1-2 m, 2 ♂♂ and 1 ovigerous ♀ among *Palythoa* spec.; 2 very small ♂♂ in empty barnacle shell covered by *Zoanthus* cf. *sanctahelenae*).

**Diagnosis.**— Carapace clearly sculptured, lobes faintly granular, 2M completely subdivided lengthwise. Antero-dorsal border of propodi of walking legs simply angular, not highly crested. Tip of male first pleopod distinctly incurved to 90° angle with respect to stem.

**Description of the female holotype (fig. 1).**— Carapace very uneven in anterior half through well delimited and convex regions. 2F-lobes of frontal region faintly indicated. Medial part: 1M distinctly prominent; 2M completely subdivided lengthwise, each half longer than broad and lateral half larger than medial half; 3M with slender, well delimited distal part reaching beyond frontal edge of 2M, and caudal (broader) part nearly separated from distal part; 4M clearly delimited. Lateral part: 1L, 2L, and 3L individually bulging, but confluent at their bases; 4L transversely subdivided, with larger anterior and smaller posterior part; 5L well delimited. All lobes set with fine granules, anteriorly more distinct than posteriorly. Frontal margin sinuous, with clear-cut median notch; lateral parts with distinct concavity next to orbit. Antero-lateral borders cut into four lobes, the first and third broader than the two others. A distinct crest continuous with antero-lateral border of carapace behind regions 4L and 5L, fading away towards edge of 6L. Carapace behind this crest smooth with posterior and postero-lateral parts not discernible. Suborbital border with inner tooth broadly rounded, not very prominent; orbital hiatus open. Subbranchial regions with three transverse grooves originating at antero-lateral lobe notches and meeting pterygostomian line. Anterior crest of buccal frame with distinct notch opposite antero-internal corner of merus of third maxilliped.

Merus of third maxilliped very uneven, with rounded groove near mesial border and distinct granular hump near the middle of anterior border. Ischium with narrow, longitudinal groove near midline, otherwise smooth. Merus of first pereopod (= cheliped) strongly crested on upper border, less so on lower one; otherwise completely smooth. Carpus distinctly granular on outer face; inner anterior corner with triangular tooth. Palm with upper border bearing a high crest and outer surface coarsely

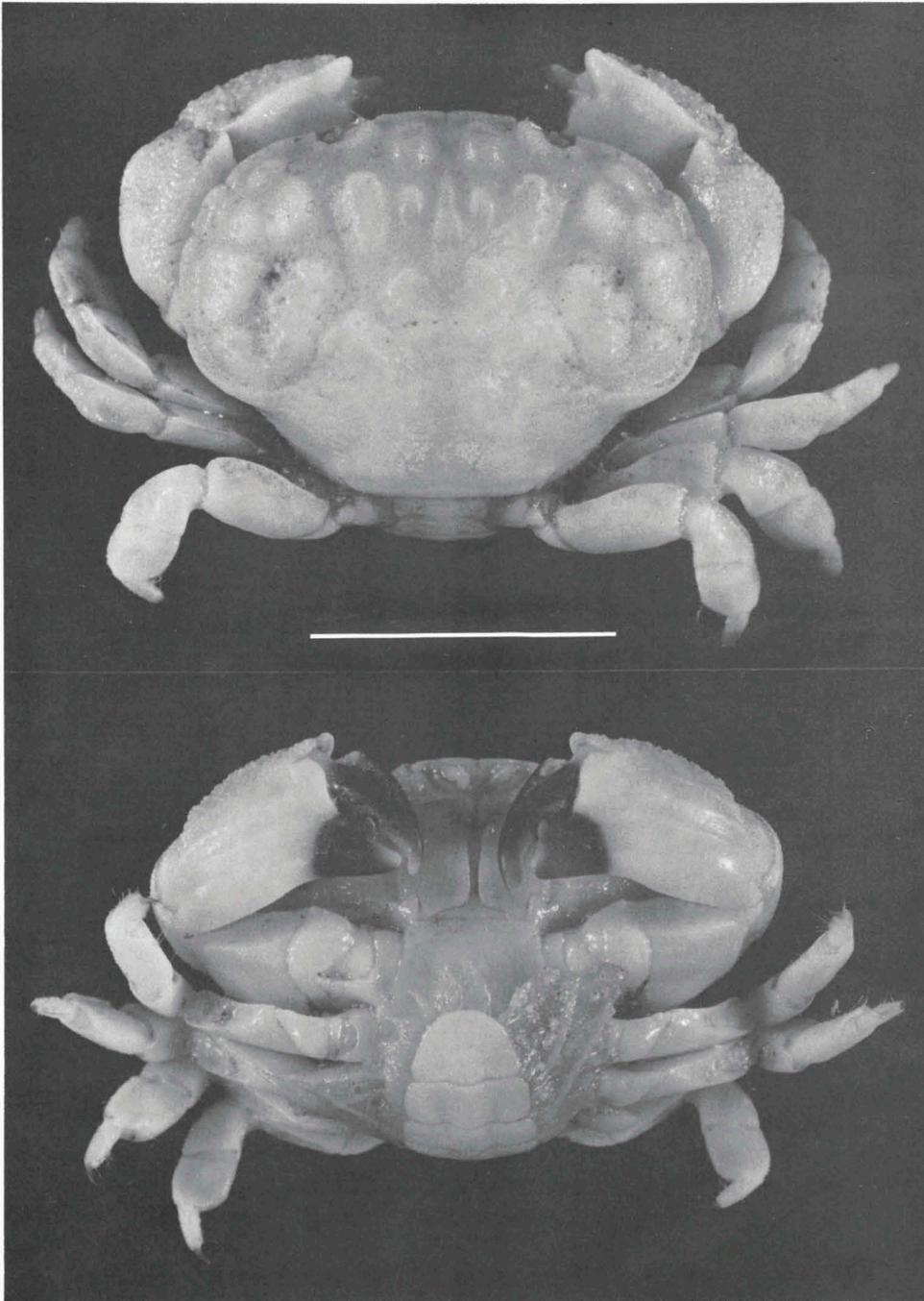


Fig. 1. *Platypodiella georgei* spec. nov., ♀ holotype, RMNH D 41169, dorsal and ventral aspect (photo Senckenberg-Museum, E. Haupt). Scale 10 mm.

granular in upper half; lower half rather smooth, only with three crests beginning near proximal end and reaching base of fixed finger; inner surface smooth; fixed finger short, bent downwards, with a lamellose tooth near proximal end of cutting edge having three strong tips. Dactylus clearly crested on upper border; between this and another longitudinal crest in midline of finger a triangular granular field is present; dentition of cutting edge faint. Second to fifth pereopods with upper margins of merus and carpus distinctly crested; these leg segments otherwise smooth. Propodus granular in upper half. Dactylus clearly shorter than propodus; upper and lower border with fur-like setation; tip chitinous, clearly incurved. Sternum oblong; last two segmental grooves (lines between thoracic segment VI/VII and VII/VIII) meeting midline, others stopping well before; median groove clearly developed in segments IV and VI-VIII, i.e. not continuous throughout sternum. Abdomen with all segments separated. Segment II longer than segment III. Segments III to VII (telson) successively increasing in length.

Measurements.— Carapace breadth 17.2 mm; carapace length 12.5 mm; body height 7.5 mm; frontal breadth 5.1 mm.

Variation.— The general sculpture of the carapace is very similar in all specimens; in some the caudal (broader) part of lobe 3M is less distinctly delimited from the distal part; the granulation of the anterior lobes varies in development. The sculpture of the limbs is not very variable, though slight changes in the height of crests of the ambulatory legs occur. The very small males of RMNH D 37664 and 37665 have the lowest crests, but this is probably due to their small size, as the crests are better developed in the larger males of RMNH D 37663. In some specimens the proximal, lamellose tooth on the fixed cheliped finger loses its three-tipped appearance and is simply rounded.

Male characters (fig. 2).— Abdomen with all segments free; penultimate segment slightly longer than telson. First pleopod with stem S-shaped and tip incurved under a 90° angle to stem, tapering to distal end. Subdistal spines on dorsal margin short and stout, replaced by plumose hairs near distal end. Suture following curvature of limb; distal opening of sperm channel situated on the spoon-shaped tip.

Pattern and colour (figs. 3-5).— Upper parts, i.e. carapace and exposed parts of pereopods, ochre, with irregular purplish black to black blots, often surrounded by a narrow, indistinct, whitish zone, and arranged in a distinct, bilaterally symmetrical pattern, although there may be deviating details. Blots are mainly restricted to prominent areas of the carapace and to the first pereopods; the latter with both dactylus and fixed finger of cheliped black. Ambulatory legs with one small black spot on merus, carpus and propodus, and with dark-tipped dactylus. Margin of carapace and upper border of leg segments orange rather than ochre. Unexposed, ventral parts of body and legs pale creamy; abdomen with a few blackish spots. Eggs yellow to orange.

Comparison with other species in the genus.— The Atlantic species of *Platypodiella* can easily be distinguished from the eastern Pacific ones by the sculpture of the carapace. In the latter, lobe 2M is not subdivided and very convex; also the lateral parts of the carapace and the chelipeds are densely set with distinct, pearly granules. In the Atlantic species lobe 2M is entirely subdivided and the granules on the carapace are less conspicuous, if present at all.

The new species, *P. georgei*, has the male first pleopod very similar to that of *P. picta*. In *P. spectabilis* the tip is far less incurved and makes this species easily recogniz-

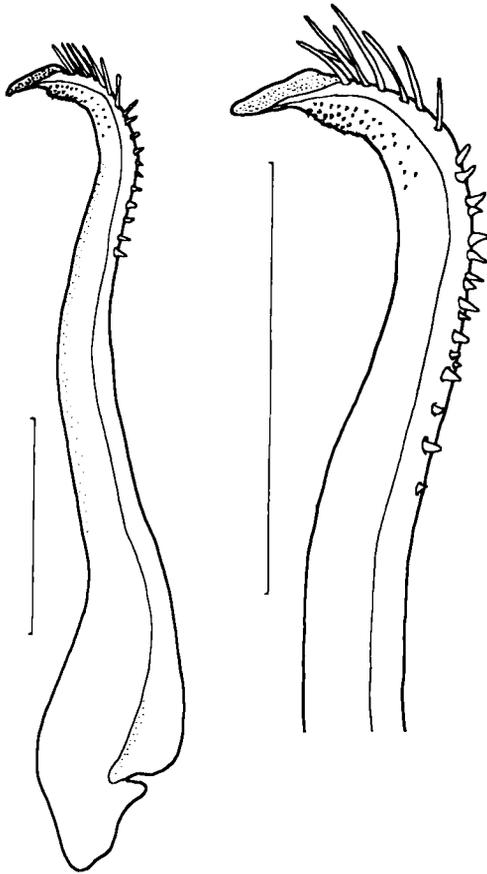


Fig. 2. *Platypodiella georgei* spec. nov., first  $\sigma$  pleopod, mesial aspect (left: total; right: distal part); allotype, RMNH D 37662. Scales 1 mm.

able. The sculpture of the carapace is much less developed in *P. picta* than in the other two species. Also *P. picta* has the antero-dorsal border of the walking leg propodi distinctly crested, whereas it is simply angular in the other two species. In *P. georgei* the lobes on the surface of the carapace are set with low but distinct granules. This condition is rare in *P. spectabilis* and never present in *P. picta*. Thus, the new species is readily identifiable by a combination of pleopodal characters and external morphology as laid down in the diagnosis.

Furthermore, the colour pattern seems to be different. The eastern Pacific species are not conspicuously spotted. *P. rotundata* is uniformly red to orange (Kerstitch 1989: 92 col. photo 232), while *P. gemmata* has a reddish naphthalene violet carapace with dark purple tubercles and margin (Garth, 1946: 429). The Atlantic species are spotted irregularly on a paler coloured carapace. The size, form and number of spots are extremely variable. *P. picta* (figs. 6-9) and *P. spectabilis* (figs. 10-11) usually have a pale ochreous to yellowish carapace (sometimes almost white in *P. picta*), with orange reddish to red-

dish brown or violet spots, always surrounded by a dark brown delimiting line mostly with a contrasting, whitish zone on its outside. In *P. spectabilis* the spotted pattern frequently merges into a predominantly plain orange to reddish colour, with the characteristic delimiting lines remaining conspicuous. In *P. georgei* spec. nov. (figs. 3-5) the spots are uniformly black without any delimiting lines discernible, or surrounded by a vague, whitish zone only; the remaining parts of the carapace are ochre.

**Habitat.**— All specimens of *Platypodiella georgei* but two were collected under or among encrusting colonies of one or two species of *Palythoa* (Zoantharia)\*. An extensive *Palythoa* colony at Rupert's Bay, covering several m<sup>2</sup> of irregular rocky substrate, was heavily infested by the crabs. This colony showed many irregular, often lumpy

\* The taxonomy and nomenclature of the Atlantic Zoantharia is in a deplorable state, which makes proper identification extremely difficult. At least some species show a wide variation and not only has a number of both western and eastern Atlantic species been described under various names, but it is also likely that several species are in fact ampho-Atlantic.

elevations, open holes and slits. Most of these lumps, hollow inside, were occupied by a crab, the largest lumps harbouring the most sizeable individuals. It is obvious, therefore, that the crabs themselves affect the growth form of the *Palythoa* host-colony by creating their own, snug, well-protected living space connected with the exterior by an open tunnel or slit.

The other colonies of *Palythoa* were rather flat, with few irregularities, and only yielded a few individuals of *P. georgei*. As mentioned in "Material" two very small specimens were found in a large, empty barnacle [*Megabalanus azoricus* (Pilsbry, 1921)] covered by a colony of *Zoanthus* cf. *sanctahelenae* Carlgren, 1941.

As in other species of *Platypodiella*, the conspicuous colours of *P. georgei* may suggest to have a warning function, but there is no evidence of this. First of all the crabs normally (at least in the day-time) live hidden from view under, or embedded in their zoantharian host-colony; and what is more, the crabs are certainly not avoided by fish predators; when extracting the crabs from under and among their *Palythoa* host-colonies several fish species (Blennidae, Labridae) were alert to snatch up any living creature emerging, and one specimen of *P. georgei* was actually lost to a St. Helena Wrasse or "Greenfish" [*Thalassoma sanctahelenae* (Valenciennes, 1839)].

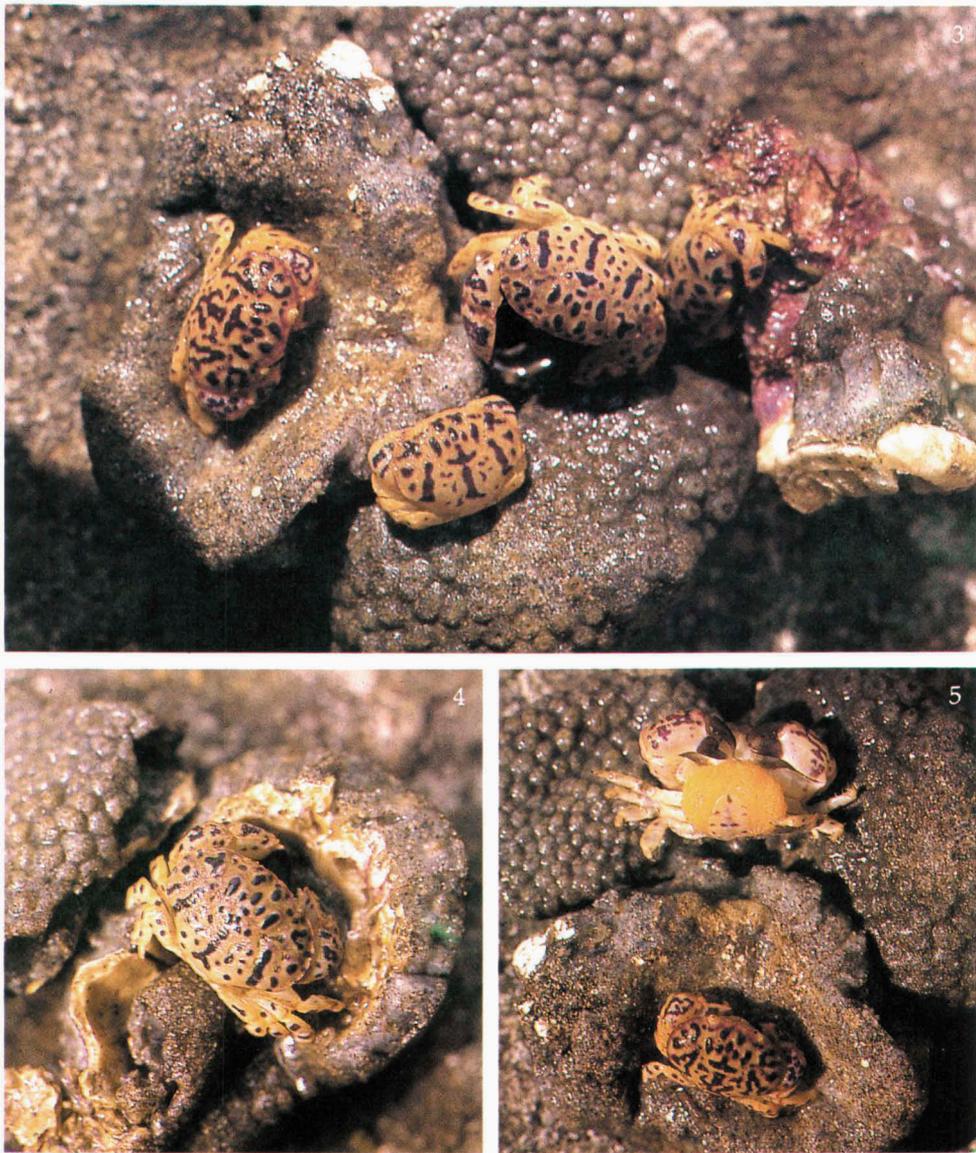
Etymology.— The species is named after Mr Basil A. George, education officer at James Town, St. Helena Island.

Remarks.— It is interesting to note that two specimens of *Platypodiella* recently recorded from Ascension Island by Manning & Chace (1990: 59-60) were identified by these authors as the widely distributed eastern Atlantic *P. picta*. A re-examination of these specimens would seem desirable in view of the now established presence of a closely related but distinct species on St. Helena, and the notable faunistic resemblance between Ascension and St. Helena (cf. Manning & Chace l.c.: 72-78).

#### **Associated occurrence of other species of *Platypodiella* and Zoantharia, in particular encrusting species of *Palythoa* Lamouroux, 1816**

Associated occurrence of *Platypodiella* species and zoantharians, as here recorded for *P. georgei* on St. Helena Island, was previously reported by Den Hartog & Holthuis (1984) for the eastern Atlantic *P. picta*. They listed a few incidental observations of this phenomenon and suggested that this association probably is habitual rather than exceptional, species of *Palythoa* being the main hosts (see also figs. 6-8). This idea was fully confirmed during recent trips to Senegal (1983) and the Cape Verde Islands (CANCAP-VII expedition, 1986), when no less than 13 samples comprising over 60 specimens of *P. picta* were collected (see "Reference material"). It was shown that this species, of which only relatively few records are mentioned in the literature (cf. Den Hartog & Holthuis, l.c.: 24), in fact is a common associate of encrusting *Palythoa* species, notably of *P. dartevellei* Pax, 1951. All but two of the larger specimens were found under *Palythoa* crusts, whereas one or two small specimens of a few mm carapace width were found in open pits in the upper surface of these crusts, in which they fitted tightly. Even the two specimens that were not found in direct contact with a zoantharian host (RMNH D 37671 pro parte) were hidden under a stone which was covered by *Zoanthus* and *Palythoa* colonies.

In the Cape Verde Islands *P. picta* is known by the suggestive name "custódio" (=



Figs. 3-5. *Platypodiella georgei* spec. nov., freshly collected specimens (somewhat enlarged) among fragments of *Palythoa* host-colony, showing variation in colour and pattern; note also colour of eggs [RMNH D 37663, St. Helena, Sta. 6, Ruperts Bay; it is possible that the female holotype (RMNH D 41169) and/or the male allotype (RMNH D 37662) are among the specimens depicted].

custodian, guardian) (information by Mr. Ifigenio Tavares, São Tiago), presumably as it is considered to "guard" its enclosed living space (cf. Den Hartog & Holthuis, l.c. pl. 2).

A close association with *Palythoa* was also reported for the western Atlantic *Platypodiella spectabilis* by Von Prahl & Manjarrés (1984) from the Caribbean coast of Colombia. In 1986, during a cruise of the Dutch vessel MS "Plancius", it was confirmed that this association is also common in the eastern Caribbean; altogether some 30 specimens were collected in several scattered localities (see "Reference material"), almost without exception associated with the crust forming *Palythoa caribaea* Duchassaing & Michelotti, 1866. Two specimens were found among *P. cf. mamillifera* (Ellis & Solander, 1786), which tends to form thicker, cushion-like colonies. In accordance with observations on *P. picta*, small specimens were found in particular in little depressions in the surface of the host colonies, whereas larger crabs occupied cavities between the host colony and the underlying substrate. Hence it would seem that at least a considerable percentage of *Platypodiella* larvae or juveniles do not infest encrusting *Palythoa* colonies from below, but from above. The location of juvenile crabs further suggests that settlement is initiated by penetrating and occupying the gastric cavities of polyps, involving removal and presumably consumption of soft polyp tissues. Increase in size of the juvenile crabs would go with expansion of these cavities and end up with perforation of the under surface of the *Palythoa* crust. The crabs would subsequently create their well-protected and well-fitting living cavities under the crust, often causing malformation of host colonies. The entrance to these cavities, often slit-like and adapted to the body shape of the crabs, would in most cases seem to represent the modified original penetration holes.

It is obvious that *Palythoa* colonies offer shelter and protection from outside predators to *Platypodiella* specimens. To what extent host colonies serve also as a food source still needs further study. That host tissues are eaten at least occasionally is beyond doubt (cf. Den Hartog & Holthuis, 1984: 22 and pl. 1). The crabs as a rule live solitary (the senior author cannot recall a single instance of two or more individuals occupying the same living space). This habit and the character of the dwellings, often perfectly adapted to individual body-size and shape, suggest that the crabs are both territorial ("custódio"; see also Den Hartog & Holthuis, l.c.: 24 and pl. 2) and quite sedentary. There is no doubt, however, that they leave their shelters at least occasionally to move about, presumably for short range movements only; this is obvious from records from outside zoantharian colonies by previous authors (cf. Den Hartog & Holthuis, l.c. 22, 24, 27). An additional record of such behaviour concerns the observation by the senior author in 1986 in Saba, Netherlands Antilles, of an individual of *P. spectabilis* walking about on a *Palythoa* carpet (RMNH D 37684).

Basing ourselves on day-time observations, these movements may seem exceptional, but it is quite possible that the crabs are more active at night. They must in any case leave their shelters to meet individuals of the opposite sex to mate, and presumably also to forage. Although the conclusion seems justified that the crabs are basically sedentary, they may not stick to their original dwelling throughout life and occasionally occupy new shelters.

Data on habitat and biology of the two East-Pacific species of *Platypodiella* are very scarce, but in the literature there is some evidence that these species too live associated with *Palythoa*. Rathbun (1930: 249) lists a sample of *P. rotundata* from Point

Elena, Ecuador, collected by W.L. Schmitt, whose field notes explicitly stated that the crabs were found "among brown sea anemones". In view of the habitual association of the Atlantic species of *Platypodiella* and encrusting species of *Palythoa*, Schmitt's "brown sea anemones" are quite suggestive of *Palythoa*. This idea was recently confirmed by Kerstitch (1989: 92, col. photo 232), who stated: "This uncommon crab is occasionally found living commensally among colonial anemones", the accompanying photograph clearly showing the crab (as *Platypodia rotundata*) on top of a *Palythoa* colony. In addition, Garth (1946: 428-430), referring to *P. gemmata* from the Galápagos, mentioned that this species is to be found "in circular depressions, in particular in sponges", and that "These *Platypodias* fit so snugly into circular depressions which they have hollowed out for themselves that they are likely to be overlooked". It may here be noted that encrusting species of *Palythoa* with closed and retracted polyps (a common condition during low-tide in the tidal zone) may not be recognized as such by a non-specialist, so that, again in view of our present knowledge, it is quite possible that Garth (who obviously made his observations in the tidal zone) mistook patches of *Palythoa* for encrusting sponges.

In conclusion, although confirmation is necessary for *Platypodiella gemmata*, it seems quite obvious that a way of life in association with zoantharians, in particular encrusting species of *Palythoa*, is a general trait of crabs of the genus *Platypodiella*.

#### Further notes

Occasionally other crustaceans, including porcellanids, alpheid shrimps and other xanthid crabs may be found under *Palythoa* crusts. Experience in the field, however, has shown that the species concerned can often be found anywhere in rock-pools and shallow water under stones, in fissures, excavations, etc. Their presence under *Palythoa* crusts in at least the vast majority of cases obviously represents just one way to hide. This does not mean that no other associations of crabs and zoantharians would occur. In 1984, during the Dutch-Indonesian Snellius II expedition in East-Indonesian waters attention was paid to the possible occurrence of such associations. Zoantharia, however, proved relatively scarce in these waters. Cover percentage and biomass were negligible as compared with the situation in the tropical Atlantic (cf. Den Hartog & Holthuis, l.c.: 26). Only on one occasion a single xanthid crab, *Banareia armata* A. Milne Edwards, 1869 (RMNH D 37686) was found snugly fitting in the hollow interior of a *Palythoa* lump (see "Reference material"). Crabs of the genus *Banareia* are known to occur associated with Alcyonacea, but scleractinian and sponge associates have also been reported (Guinot, 1977: 135-181; Serène, 1984: 37). So far there were no records of zoantharian hosts. Hence, further attention to this host group is desirable.

In 1986, in Antigua, eastern Caribbean, some well-developed colonies of *Palythoa* cf. *variabilis* (Duerden, 1898), were found in shallow water. This is not a truly encrusting species, but one that forms bunchy colonies of large, separate but closely arranged polyps, up to ca 6 cm long, connected only by basal coenenchyme. Hidden between the polyp stems one colony accommodated a male specimen of the majid crab *Pitho lherminieri* (Desbonne & Schramm, 1867) (identification by Mr H.P. Wagner), and another colony, similarly, lodged an additional male and an ovigerous

female (RMNH D 37685). The intimate association of crabs and polyps reminded strongly of the situation once observed in the Canary Islands for *Platypodiella picta* and *Palythoa canariensis* (Haddon & Duerden, 1895)(fig. 8), another bunched rather than crust-forming species of *Palythoa* (cf. Den Hartog & Holthuis, l.c.: 21-22). This association too definitely needs further attention.

### Reference material

#### *Platypodiella picta* (A. Milne Edwards, 1869)

Material collected in 1983 (leg. J.C. den Hartog) on the Cape Verde Peninsula (Senegal), between Cap Manuel (14°39'N 17°26'W) and Plage du Virage (14°46'N 17°30'W); mostly in quiet tidal pools with proficil cover of encrusting *Palythoa*.— RMNH D 37666 (Sta. SEN 05, 18.xi., 4 ♂♂, 9 ♀♀, 18 ovigerous ♀♀; SMF 20337 (same data, 2 ♂♂, 2 ovigerous ♀♀); RMNH D 37667 (Sta. SEN 07, 22.xi., 1 ♂ with bopyrid parasite, 2 ♀♀, 1 ovigerous ♀), RMNH D 37668 (Sta. SEN 08, 21/25.xi., 3 ovigerous ♀♀), RMNH D 37669 (Sta. SEN 09, 16.xi., 1 ♂, 1 ovigerous ♀), RMNH D 37670 (Sta. SEN 12, 23/24.xi., 1 ♂), RMNH D 37671 (Sta. SEN 17, 30.xi., 3 ♀♀, 1 ovigerous ♀). For further details on the stations, see Van der Land (1987: 77-78).

Material collected during the CANCAP-VII expedition in 1986 (leg. J.C. den Hartog) in the Cape Verde Islands.— RMNH D 37672 (Sta. 7.K01, São Tiago, 10.viii., 1 ♀); RMNH D 37673 (Sta. 7.K07, São Tiago, 14.viii., 1 ovigerous ♀); RMNH D 37674 (Sta. 7.K10, São Tiago, 21.viii., 1 ♂ with bopyrid parasite?), RMNH D 37675 (Sta. 7.K15, Ilhéu Sal Rei, Boa Vista, 27/28.viii., 2 ♂♂, 1 ♀ with bopyrid parasite); RMNH D 37676 (Sta. 7.K19, Sal, 30.viii., 2 ♂♂); RMNH D 37677 (Sta. 7.K26, Razo, 3.ix., 2 ovigerous ♀♀); RMNH D 37678 (Sta. 7.K27, Razo, 4.ix., 1 ♀, 1 ovigerous ♀). For further details on the stations, see Van der Land (1987: 91-93).

#### *Platypodiella spectabilis* (Herbst, 1794)

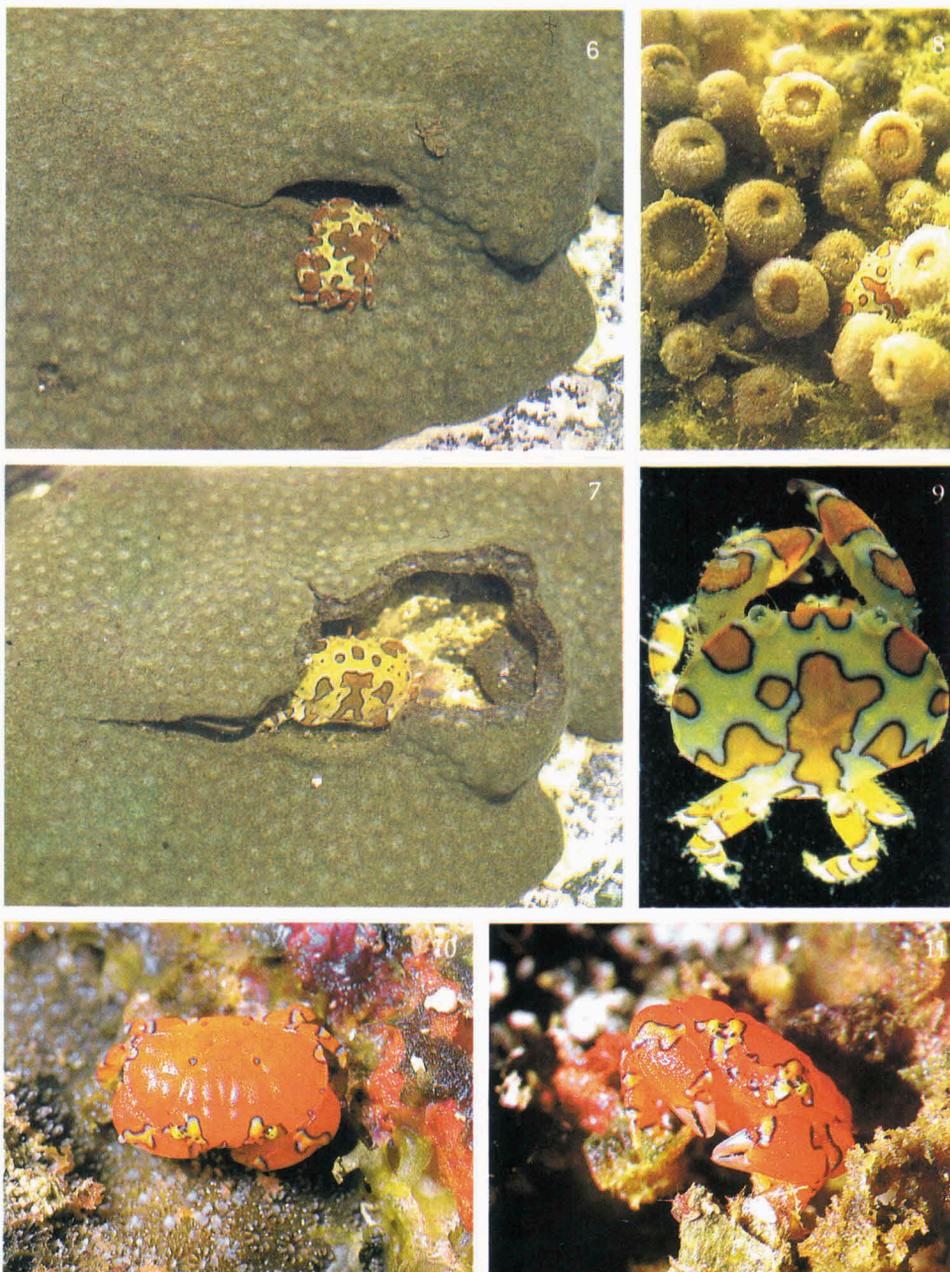
Material collected in 1986 (leg. J.C. den Hartog) during a cruise of MS "Plancius" in the eastern Caribbean.— RMNH D 37679 (Sta. 2, 17.ii., Tobago, SW coast, Buccoo Reef, 1-3 m; 1 juvenile ♀); RMNH D 37680 (Sta. 8, 27.ii., Little Tobago, sandy bay with patch reef opposite Tobago, 1-2 m; 2 ♂♂, 1 ♀, 2 ovigerous ♀♀); RMNH D 37681 (Sta. 13, 4.iii., Grenada, south of St. George harbour, just below low-water-mark; 4 juvenile ♂♂, 1 juvenile ♀, 1 ovigerous ♀); RMNH D 37682 (Sta. 14, 5.iii., Grenadines, Ile de Ronde, leeward side, patch reef down sandy beach, 1-3 m; 2 small ♂♂, 2 ♀♀, 3 ovigerous ♀♀) SMF 20338 (same data; 1 small ♂, 1 ovigerous ♀); RMNH D 37683 (Sta. 17, 6.iii., Dominica, W. coast, southern end of Prince Rupert Bay, sand with boulders, 1-4 m; 1 small ♀); RMNH D 37684 (Sta.21, 10.iii, Saba, between Fort Bay and Ladder Bay, 4-6 m, 5 small specimens; 1 ♀, 1 ovigerous ♀, 1 juvenile ♀, 1 ♂, 1 juvenile ♂).

#### *Pitho lherminieri* (Desbonne & Schramm, 1867)

Material collected in 1986 (leg. J.C. den Hartog) during a cruise of MS "Plancius" in the eastern Caribbean.— RMNH D 37685 (Sta. 26, 14.iii., Antigua, NW coast, Bay at St. Johns ca 1 mile N of Fort James, sand-stone cliffs near beach, 0.5-3 m; 2 ♂♂, 1 ovigerous ♀).

#### *Banareia armata* A. Milne Edwards, 1869

Material collected during the Dutch-Indonesian Snellius II Expedition in 1984 (leg. J.C. den Hartog).— RMNH D 37686 (Sta. 4.006, 29.viii., Amboina, Ambon Bay, near Eri, sandy bay with patch reef, ca 2 m, under firm dome-shaped colony of *Palythoa spec.*, 1 ♂).



Figs. 6-9. *Platypodiella picta* (A. Milne Edwards, 1869). Fig. 6. Specimen (placed) in front of slit-like entrance of cavity in encrusting colony of *Palythoa* spec. Fig. 7. Same *Palythoa* crust opened up, showing another specimen of *P. picta* in its lair (both crabs RMNH D 35562, CANCAP-VI, Sta. K07, 6.vi.1982, Cape Verde Islands, W coast of São Tiago; photos in situ in tidal pool). Fig. 8. Specimen emerging between separate polyps of small colony of *Palythoa canariensis* (Haddon & Duerden, 1895) (RMNH D 35561, CANCAP-IV, Sta. K06, 4.v.1980, Canary Islands, E coast of Gran Canaria). Fig. 9. Specimen in dorsal view (CANCAP-VII, Cape Verde Islands, presumably Maio; specimen mislaid; photo RMNH, F. Verbiest). Figs. 10-11. *Platypodiella spectabilis* (Herbst, 1794), freshly collected specimen in dorsal and frontal view (RMNH D 27693, Pillsbury Sta. 1298, 20.vii.1970, Caribbean, S coast of Dominican Republic, 22-24 m; this same specimen was depicted in 1973 on Haiti postage stamp of 0.50 gourde; photos D.M. Opresko). Most specimens shown at more than natural size.

### Acknowledgements

The senior author thanks Mr & Mrs B.A. George for hospitality and help during his stay in St. Helena in 1983. The same applies to Mr & Mrs F.C. Roest, previously Dakar, Senegal, during field-work on the Cape Verde Peninsula in the same year.

The trip to St. Helena was financially supported by the Netherlands Foundation for the Advancement of Tropical Research (WOTRO). The "Plancius Foundation", Amsterdam, is acknowledged for facilities offered in 1986 during a cruise with MS "Plancius" in the eastern Caribbean.

We thank Dr L.B. Holthuis and Mr C.H.J.M. Fransen (RMNH, Leiden) for critically reading the manuscript and for helping in other ways, and Dr D.M. Opresko (Oak Ridge National Laboratory, Tennessee) for providing the figs. of *Platypodiella spectabilis*. Mr H.P. Wagner (ITZ, Amsterdam) is acknowledged for the identification of *Pitho lherminieri*.

### References

- Dana, J.D., 1852: Crustacea.— U.S. explor. Exp. 13 (1): i-viii, 1-685.
- Garth, J.S., 1946. Littoral Brachyuran Fauna of the Galápagos Archipelago.— Allan Hancock Pac. Exp. 5 (10): i-iv, 341-601, fig. 1, pls. 49-87.
- Guinot, D., 1967. Recherches préliminaires sur les groupements naturels chez les Crustacés Décapodes Brachyours 3. A propos des affinités des genres *Dairoides* Stebbing et *Daira* de Haan.— Bull. Mus. natn. Hist. nat. Paris (2) 39: 540-563.
- Guinot, D., 1977. Constitution de quelques groupes naturels chez les Crustacés Décapodes Brachyours. I. La superfamille des Bellioidea et trois sous-familles de Xanthidae (Polydectinae Dana, Trichiinae de Haan, Actaeinae Alcock).— Mém Mus. nation. Hist. nat. (N.S., A, Zool.) 97: 1-308, figs. 1-47, pls. 1-19. (Although 1976 figures on the cover of this volume as the year of publication, it was not published until 1977).
- Hartog, J.C. den, 1989. Herinneringen aan een reis naar St. Helena (3).— Dieren 6 (4): 114-120, 7 figs., 8 col. figs.
- Hartog, J.C. den & L.B. Holthuis, 1984. An interesting association of the crab *Platypodiella picta* (A. Milne-Edwards 1869) and species of Zoantharia.— Courier Forsch. Inst. Senckenberg 68: 21-29, pls. 1-2.
- Kerstitch, A., 1989. Sea of Cortez marine invertebrates. A guide for the Pacific coast, Mexico to Ecuador: v, 1-114, col. figs. 1-283.— Leiden, New York, København, Köln.
- Land, J. van der, 1987. Report on the CANCAP-project for Marine Biological Research in the Canarian-Cape Verdean region of the North Atlantic Ocean (1976-1986). Part I. List of Stations.— Zool. Verh. Leiden 243: 1-94.
- Manning, R.B. & F.A. Chace, 1990. Decapod and Stomatopod Crustacea from Ascension Island, South Atlantic Ocean.— Smiths. contr. Zool. 503: i-v, 1-91, figs. 1-47.
- Prahl, H. Von & Manjarrés, G., 1984. La asociación del cangrejo xantido *Platypodiella spectabilis* con corales blandos del genero *Palythoa* en el Caribe Colombiano.— Actual. Biol. 13 (20): 106-108, figs. 1-2.
- Rathbun, M., 1930. The Cancroid Crabs of America of the families Euryalidae, Portunidae, Atelecyclidae, Cancridae and Xanthidae.— U.S.N.M. Bull. 152: i-xvi, 1-609, figs. 1-85, pls. 1-230.
- Serène, R., 1984. Crustacés Décapodes Brachyours de l'Océan Indien occidental et de la Mer Rouge. Xanthoidea: Xanthidae et Trapeziidae.— Faune tropicale 24: 1-298, figs. 1-207, pls. 1-44.

Received: 12.ix.1991

Accepted: 17.ix.1991

Edited: R. de Jong