

Trapeziid crabs (Brachyura : Xanthoidea : Trapeziidae) of French Polynesia

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ABSTRACT

Identification of material recently collected in French Polynesia and of specimens from museum collections shows that a total of 22 species of crabs belonging to four genera (*Quadrella*, *Tetralia*, *Tetraloides*, and *Trapezia*) of the family Trapeziidae inhabit southeastern Polynesia. One species of *Trapezia* is new. A relatively high number of the species of *Trapezia*, a total of fourteen, inhabits the region. Of these, three appear to be endemic.

RÉSUMÉ

L'identification du matériel récolté récemment en Polynésie française et de matériel se trouvant dans des collections des musées permettent de montrer que 22 espèces de crabes appartenant à quatre genres (*Quadrella*, *Tetralia*, *Tetraloides*, et *Trapezia*) de la famille des Trapeziidae vivent dans le sud-est de la Polynésie. Une espèce de *Trapezia* est nouvelle. Quatorze espèces de *Trapezia* sont connues de la région, ce qui représente un nombre relativement important. Trois espèces sont endémiques.

INTRODUCTION

This work is the third in a series that aims at a review of the systematics and geographical distribution of trapeziid crabs, symbionts of reef corals and other colonial cnidarians. The first dealt with the eastern Pacific species (CASTRO, 1996), the second those from the Coral Sea region (CASTRO, 1997). These studies have

stressed the importance of color in the identification of the species of *Trapezia* and *Tetralia*, close sibling species that live as heterosexual pairs on their coral hosts. Species can be best recognized by color differences that are mostly lost with preservation, hence the confusion that has been created when traditional morphological characters are used. Whereas the first two investigations were initiated with the examination of live material in the field, information on the live color of the French Polynesian species has been obtained mostly from photographs of live and frozen individuals and recently preserved material generously provided by J. POUPIN (Service Mixte de Surveillance Radiologique et Biologique, France).

Most of the species in this survey are included in a list of the brachyuran crabs of French Polynesia compiled by POUPIN (1996), who also gives an account of the history of scientific expeditions to the region. Not included here are four species included in POUPIN's list : a new species of *Hexagonalia* Galil being described by B. GALIL, and *Jonesius triunguiculatus* (Borradaile), both of which are usually included in the Trapeziidae (GALIL & TAKEDA, 1986), and *Domecia glabra* Alcock and *D. hispida* Eydoux & Souleyet, which are sometimes placed in the Trapeziidae by some (SERÈNE, 1984).

The synonymy that is given for each of the species is not intended to be a complete list of references. Effort has been made to include the most important synonyms, all records for French Polynesia as listed by POUPIN (1996), and known references with useful illustrations, particularly those in color.

The material examined is deposited in the British Museum (BMNH), London, United Kingdom, The Natural History Museum of Los Angeles County (LACM), Los Angeles, California ; the Muséum national d'Histoire naturelle (MNHN), Paris ; the Nationaal Natuurhistorisch Museum (RMNH), Leiden, The Netherlands, and the United States National Museum of Natural History, Smithsonian Institution (USNM), Washington, D.C. Geographical names follow the spelling given by MOTTELER (1986). Measurements for specimens refer to carapace length (cl) and carapace width (cw).

LIST OF SPECIES

<i>Quadrella lewinsohni</i> Galil, 1986	<i>Trapezia digitalis</i> Latreille, 1828
<i>Quadrella maculosa</i> Alcock, 1898	<i>Trapezia ferruginea</i> Latreille, 1828
<i>Tetralia cinctipes</i> Paulson, 1875	<i>Trapezia flavopunctata</i> Eydoux & Souleyet, 1842
<i>Tetralia fulva</i> Serène, 1984	<i>Trapezia globosa</i> new species
<i>Tetralia rubridactyla</i> Garth, 1971	<i>Trapezia guttata</i> Rüppell, 1830
<i>Tetralia vanninii</i> Galil & Clark, 1988	<i>Trapezia lutea</i> Castro, 1997
<i>Tetraloides heterodactyla</i> (Heller, 1861)	<i>Trapezia punctimanus</i> Odinetz, 1984
<i>Tetraloides nigrifrons</i> (Dana, 1852)	<i>Trapezia rufopunctata</i> (Herbst, 1799)
<i>Trapezia areolata</i> Dana, 1852	<i>Trapezia serenei</i> Odinetz, 1984
<i>Trapezia bella</i> Dana, 1852	<i>Trapezia speciosa</i> Dana, 1852
<i>Trapezia cymodoce</i> (Herbst, 1801)	<i>Trapezia tigrina</i> Eydoux & Souleyet, 1842

SYSTEMATIC ACCOUNT

TRAPEZIIDAE Miers, 1886

QUADRELLA Dana, 1851

GALIL (1986c) revised the genus and recognized eight species. All are symbionts of alcyonaceans, antipatharians, and ahermatypic scleractinian corals.

Quadrella lewinsohni Galil, 1986

Quadrella lewinsohni Galil, 1986c : 285, figs 5 A, B, 6. — POUPIN, 1996 : 57 (list).

Quadrella sp. Monod, 1979 : 9, figs 1-8 (Tahuata).

Quadrella cyrenae — SERÈNE, 1975 : 510, figs 3, 4, pl. 1, figs B', E'.

MATERIAL EXAMINED. — Marquesas Islands. Tahuata, 10-15 m, on antipatharian, 18.3.1973, coll. M. DENIZOT : 1 ♂, 2 ♀ (MNHN-B 20411).

GEOGRAPHICAL DISTRIBUTION. — It is known only from the Nicobar and Marquesas islands (GALIL, 1986).

COLOR. — The three preserved specimens from the Marquesas Islands are dark red-brown.

Quadrella maculosa Alcock, 1898

Quadrella coronata var. *maculosa* Alcock, 1898 : 226.

Quadrella maculosa — SERÈNE, 1973 : 204, figs 4, 9, 20-22, pl. 3 ; 1984 : 288, fig. 194, pl. 41, fig. E. — GALIL, 1986c : 285, figs 5 C-F (full synonymy). — GALIL & CLARK, 1990 : 372. — ALLEN & STEENE, 1994 : 162 (color photograph). — COLIN & ARNESON, 1995 : 214, fig. 1007 (color photograph). — POUPIN, 1996 : 57 (Fatu Hiva). — CASTRO, 1997 : 63.

MATERIAL EXAMINED. — Marquesas Islands. Fatu Hiva, st. D86, 10°29'S, 138°40'W, 49 m, 29.1.1991, coll. J. POUPIN : 3 ♂, 3 ♀ (MNHN-B 23017).

GEOGRAPHICAL DISTRIBUTION. — Distributed across the Indo-west Pacific region from the Red Sea to French Polynesia (CASTRO, 1997).

TETRALIA Dana, 1851

Seven species of *Tetralia* resulted from its revision by GALIL (1986b, 1988a) and GALIL & CLARK (1988). Most of these species were originally treated as one species, *T. glaberrima* Herbst. Unfortunately, it is rarely possible to identify the material recorded in the literature by this name since color pattern is rarely given. All species are symbionts of *Acropora*, hermatypic reef corals.

Tetralia cincipes Paulson, 1875

Pl. 1 A

Tetralia cincipes Paulson, 1875 : 60, pl. 7, fig. 8. — GALIL, 1986b : 97, figs 1-3 (Rapa) ; 1987 : fig. 3 ; 1988b : 171, fig. 7. — GALIL & CLARK, 1988 : 138, figs 1 A, 3 A, 4 A, 4 F, 5 A, 6 A (full synonymy). — POUPIN, 1996 : 57 (list). — CASTRO, 1997 : 64.

Tetralia glaberrima forma *pullidactyla* Patton, 1966 : 287. — SERÈNE, 1984 : 282, pl. 40, fig. C.

Tetralia glaberrima — JONES & MORGAN, 1994 : 179 (color photograph).

? *Tetralia glaberrima* — DANA, 1852b : 262 (Carlshoff island = Aratika, Tahiti) ; 1855, fig. 3g (color).

MATERIAL EXAMINED. — Society Islands. Raiatea, Taoru I., st. 80, 29.4.1957, Smithsonian-Bredin Expedition : 3 ♂, 1 ♀ (USNM). — Moorea, 1982, coll. O. ODINETZ : 1 ♂, 1 ♀ (MNHN-B 25328).

Tuamotu Archipelago. Moruroa, 10 m, *Acropora*, 2.1996, coll. J. POUPIN : 1 ♂, 1 ♀ (MNHN-B 25327) ; 4.1996 : 2 ♂, 2 ♀ (MNHN-B 25326).

GEOGRAPHICAL DISTRIBUTION. — Across the Indo-west Pacific region from the Red Sea to French Polynesia, including Japan but excluding the Hawaiian Islands (GALIL, 1986b ; CASTRO, 1997).

COLOR. — Live color (pl. 1 A) has not been previously recorded. A diagnostic color characteristic that quickly disappears in preserved specimens is a light blue band across the frontal border of the carapace between the eyes and immediately below a red-brown margin. A faint blue band can be seen in a color photograph, identified as *Tetralia glaberrima*, that is given by JONES & MORGAN (1994). The eyes are light blue. The segments of the chelipeds are ornamented with brown reticulations that remain in preserved specimens for decades. Also retained in preserved specimens is the brown color on the ventral portion of the carapace between the eyes. The walking legs are typically banded since the segments are light tan with brown proximal portions.

REMARKS. — Specimens identified as *T. glaberrima* by DANA (1852b) may have included *T. cinctipes*. One color figure (DANA, 1855) shows a blue-green band across the front of the carapace. The characteristic banding of the walking legs, however, was not indicated.

T. cinctipes is also characterized by tuberculate chelipeds and by the slightly concave distal border of the endopod of the first maxillipeds.

Tetralia fulva Serène, 1984

Tetralia glaberrima forma *fulva* Patton, 1966 : 286.

Tetralia glaberrima fulva Serène, 1984 : 282 (part).

Tetralia fulva — GALIL, 1988a : 62, figs 1b, 2c, 2d (Tahiti). — CASTRO, 1997 : 65, pl. 1 C (color photograph).

Tetralia glaberrima — FOREST & GUINOT, 1961 : 139 (Hikueru) ; 1962 : 70 (list). — GUINOT, 1985 : 452 (list). — POUPIN, 1996 : 57 (list, part).

Tetralia sanguineomaculata Galil & Clark, 1990 : 375, figs 4, 5, 6b.

? *Tetralia glaberrima* — DANA, 1852b : 262 (Carlishoff island = Aratika, Tahiti ; part ?) ; 1855, fig. 3 a-f, h. — ORTMANN, 1893 : 486 (Tahiti). — NOBILI, 1907 : 404 (Marutea). — RATHBUN, 1907 : 60 (Fakarava, Makemo, Tahiti). — BOONE, 1934 : 174 (Raiatea, Tahiti ; part). — SEURAT, 1934 : 59 (list). — PEYROT-CLAUSADE, 1989 : 111 (Tikehau).

? *Trapezia serratifrons* Jacquinet, 1846 : pl. 4, fig. 20 (color)-23. — LUCAS, 1853 : 47 (Nuku Hiva).

? *Tetralia cavimana* — HELLER, 1865 : 26 (Tahiti).

MATERIAL EXAMINED. — Tuamotu Archipelago. Rangiroa, Mohican reef, 21.9.1899, *Albatross* : 1 ♀ (USNM). — Hikueru, 1952, Mission RANSON : 3 ♂, 2 ♀ (MNHN-B 13910). — Moruroa, *Acropora*, 4.1996, coll. J. POUPIN : 4 ♂, 3 ♀ (MNHN-B 25329) ; 15 m : 1 ♂ (MNHN-B 25330) ; dead corals : 1 ♂ (MNHN-B 25331).

Society Islands. Raiatea, Taoru I., st. 80, 29.4.1957, Smithsonian-Bredin Expedition : 5 ♂, 7 ♀ (USNM). — Tahiti, 1982, coll. O. ODINETZ : 1 ♂, 1 ♀ (MNHN-B 25550).

GEOGRAPHICAL DISTRIBUTION. — *T. fulva* has been reported from Indonesia to French Polynesia (GALIL, 1988a). The status of Indian Ocean populations identified as *T. fulva* (SERÈNE, 1984), awaits the study of color patterns in live individuals (see CASTRO, 1997).

COLOR. — Live individuals have an orange-brown to light pink-brown (peach) carapace (CASTRO, 1997). It is bordered anteriorly by a thin orange to red-orange line followed by a wider light-gray band. A faint gray band may be present on each of the anterolateral borders. The chelipeds are orange brown, with the distal edge of the carpus and the anterior border of the merus dark orange. The walking legs are orange brown, usually with a black spot at the distal end of the merus and another at the propodal joint.

REMARKS. — *T. fulva* can be distinguished by its characteristic color pattern and by the shape of the endopod of the first maxillipeds. Its inner side ends at a right angle but the outer edge is rounded (fig. 2c in GALIL, 1988a).

The typical light-gray band along the anterior border of the carapace was conspicuously black in one specimen

from Moruroa (MNHN-B 25331). The edges of the postorbital angles were also black. A similar color pattern, which was observed among specimens of *T. fulva* collected in New Caledonia and Australia (CASTRO, 1997), should not be confused with that of a close species, *T. nigrolineata* Serène & Dat. The latter species, which has not yet been reported from southeastern Polynesia, has a different color pattern (broader black bands along the anterior and anterolateral borders followed by a blue-green line) and the endopod of the first maxillipeds is spatulate (fig. 2e in GALIL, 1988a).

Many records from French Polynesia attributed to *T. glaberrima* probably represent *T. fulva*, as the examination of the material from the Mission RANSON (FOREST & GUINOT, 1961) has shown.

The authorship of *T. serratifrons*, like others first published in the Atlas of the *Astrolabe* and *Zélée* expedition, is clearly credited to H. JACQUINOT in a footnote in the introduction to a revised edition of the text (JACQUINOT & LUCAS, 1853).

Tetralia rubridactyla Garth, 1971

Tetralia glaberrima forma *rubridactyla* Patton, 1966 : 287.

Tetralia glaberrima rubridactyla Garth, 1971 : 185.

Tetralia glaberrima laevisima - SERÈNE, 1984 : 282, fig. 188, pl. 40, fig. B.

Tetralia rubridactyla - GALIL, 1988a : 65, figs 1d, 2g, 2h (full synonymy). — CASTRO, 1997 : 70 pl. 1 E (color photograph).

MATERIAL EXAMINED. — **Society Islands.** Tahiti, 21-27 m, 7.9.1967, N.G.S. - Smithsonian-Bishop Museum Marquesas Expedition : 1 ♂, 1 ♀ (USNM). - Material identified as *Tetralia glaberrima* by J. S. GARTH : Moorea, pass to Papetoai Bay, 15.5.1957, coll. J. E. RANDALL, Smithsonian-Bredin Expedition : 1 ♀ (USNM 228274).

GEOGRAPHICAL DISTRIBUTION. — *T. rubridactyla* is known from the Indian Ocean to southeastern Polynesia.

COLOR. — A diagnostic feature is the orange-red distal portion of the dorsal surface of the cheliped dactylus (CASTRO, 1997). This color pattern usually remains visible in specimens that have been preserved for some time. The rest of the cheliped is light brown, with dark-brown portions on the distal borders of the merus and carpus and on the proximal portion of the propodus. The anterior portion of the carapace is pink-purple to lavender.

Tetralia vanninii Galil & Clark, 1988

Fig. 1 A-D

Tetralia vanninii Galil & Clark, 1988 : 146, figs 1 C, 2 B, 3 C, 4 C, 4 H, 6 C.

? *Tetralia glaberrima* Rathbun, 1907 : 60 (Fakarava, part).

MATERIAL EXAMINED. — **Kenya.** Wasin Is., 5.10.1971, coll. A. J. BRUCE : 10 ♂, 6 ♀ (BMNH 1986 : 1037) paratypes of *Trapezia vanninii* Galil & Clark.

Tuamotu Archipelago. Anuanuraro, 1-5 m, *Acropora*, 4.1996, coll. J. POUPIN : 1 ♂ (MNHN-B 25334) ; 1 ♀ (MNHN-B 25335) ; 1 ♂ (MNHN-B 25336) ; 1 ♂ (USNM 282634). ? Fakarava, outer reef, *Albatross* : 1 ♂, 1 ♀ (USNM 33342).

Society Islands. Material identified as *Tetralia glaberrima* by J. S. GARTH : Raiatea, Taoru I., st. 80, 29.4.1957, Smithsonian-Bredin Expedition : 6 ♂, 4 ♀, 3 juv. (USNM). — Moorea, Hauru Point, st. 105, 8.5.1957, Smithsonian-Bredin Expedition : 5 ♂, 5 ♀ (USNM). — Moorea, Nuarei Bay, st. 127, 11.5.1957, Smithsonian-Bredin Expedition : 2 ♂, 2 ♀ (USNM 244129).

Seychelles. Mahé, Cap Maçons/Anse de Forbans, sta. 612, 4°65'S, 55°31'E, reef flat and slope, 5 m, *Acropora*, 12.12.1992, NIOP-E, Tyro Seychelles Expedition 1992-93 : 1 ♂, 1 ♀ (RMNH D 47218) ; Aride Island, south coast, sta. 711, 4°13'S, 55°40'E, 18/19.12.1992 : 1 ♀ (RMNH D 47219).

GEOGRAPHICAL DISTRIBUTION. — *T. vanninii* was previously recorded only from Somalia, its type

location, and Kenya (GALIL & CLARK, 1988). Its presence in French Polynesia and the Seychelles demonstrates a wider Indo-west Pacific distribution.

COLORS. — The small teeth along the anterior border of the carapace are brownish red. A black band that is followed by a thin, light-blue line extends across the anterior border and the eyestalks. This color pattern is repeated along the ventral surfaces of the carapace and eyestalks. The rest of the dorsal surface of the carapace is light grayish brown to very light tan. The merus, carpus, and proximal region of the propodus are light brown with small black dots. A thin orange line borders the anterior margins of the merus and carpus ; the raised articulation of the propodus with the carpus is orange red in one of the smaller individuals. The rest of the propodus is light tan. The fingers are orange red. The walking legs are tan to light brown with small black dots ; the distal borders of the segments orange brown in the larger individuals. The color pattern along the anterior portion of the carapace does not preserve well, changing into irregular greenish patches.

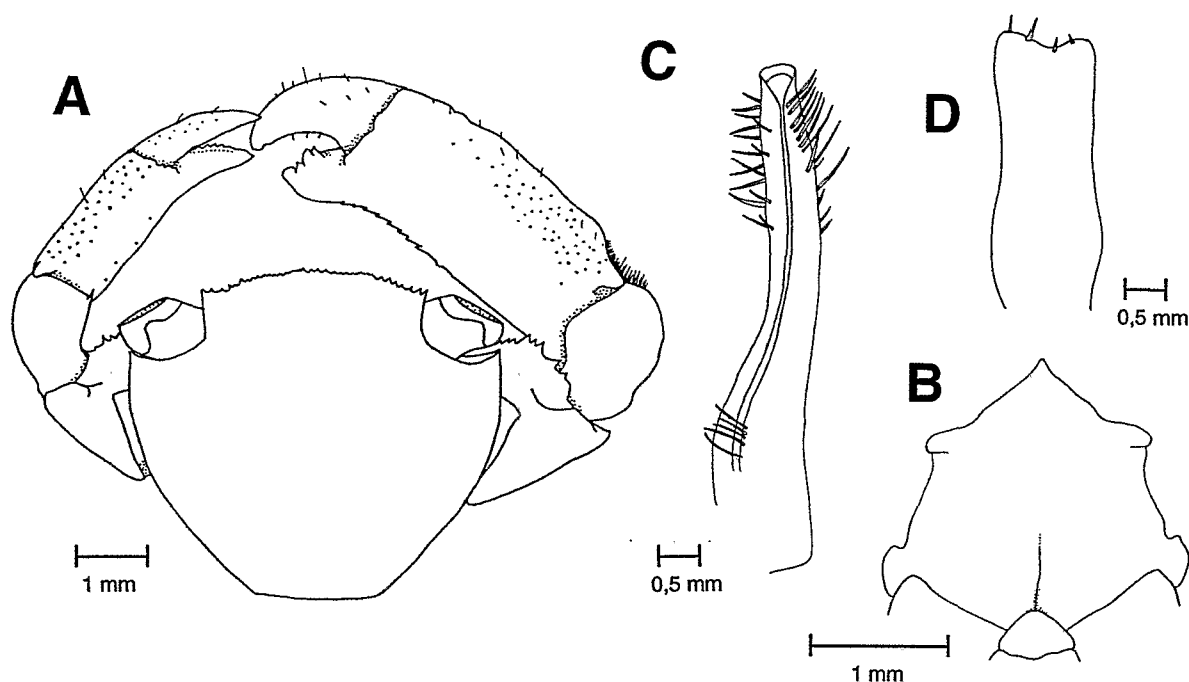


Fig. 1. — *Tetralia vanninii* Galil & Clark, 1988. Male, Tuamotu Archipelago, French Polynesia (MNHN-B 25334) : A. dorsal aspect of the carapace, B. anterior sternal region, C. first pleopod. Female, Tuamotu Archipelago, French Polynesia (MNHN-B 25335) : D. endopod of first maxilliped. The eyes were flattened anteriorly, the result of preservation.

REMARKS. — Specimens from French Polynesia and the Seychelles proved to be morphologically identical to sixteen paratype specimens of *T. vanninii* (BMNH 1986 : 1037). The only difference is in their color pattern since preserved specimens were used in the description of the species (GALIL & CLARK, 1988). The diagnostic red color of the fingers of the chelipeds and the black and blue-green lines across the anterior border of the carapace were missing in the paratypes, which had been preserved for twenty-five years. The preserved specimens used in the description of the species had orange-tipped fingers (of the large cheliped) and a brown band along the anterior border of the carapace.

Similarities in color are more marked between *T. vanninii* and *T. rubridactyla*, where the distal portion of the dactylus of the largest cheliped is orange red (see pl. 1 E in CASTRO, 1997). Other details of the color pattern of *T. rubridactyla* are very different from that of *T. vanninii*. The anterior half of the carapace of *T. rubridactyla* is

pink-purple and there is no black band along the anterior border. *T. vanninii* is morphologically closer to *T. cinctipes* Paulson. Both have tuberculate chelipeds, the denticulate anterior border of the cheliped merus does not form a prominent crest (pl. 1 A), and the distal border of the endopod of the first maxillipeds is concave (fig. 1 D). They differ in their color pattern.

TETRALOIDES Galil, 1986

Tetraloides heterodactyla (Heller, 1861)

Pl. 1 B

Tetralia heterodactyla Heller, 1861 : 14 (part).

Tetralia heterodactyla fusca Serène, 1959 : 153, fig. 5 C, 6 B (part) ; 1984 : 283, pl. 42, fig. B (part).

Tetraloides heterodactyla – GALIL, 1988b : 174, fig. 8 (part). — GALIL & CLARK, 1988 : 147, figs 1 D, 3 D, 4 D, 4 I, 6 D (full synonymy). — CASTRO, 1997 : 71.

Tetraloides nigrifrons – GALIL, 1986a : 72, figs 1-3 (part) ; 1987 : fig. 4 ? . — POUPIN, 1996 : 58 (list, part). non *Tetraloides nigrifrons* (Dana).

MATERIAL EXAMINED. — Tuamotu Archipelago. Marutea, coll. G. SEURAT, 1905 : 1 juv. (MNHN-B 8543). — Moruroa, *Acropora*, 4.1996, coll. J. POUPIN : 1 ♀ (MNHN-B 25323) ; 15 m : 1 ♂ (MNHN-B 25324) ; 10 m : 2 ♂, 2 ♀ (MNHN-B 25325). — Material identified as *Tetralia heterodactyla fusca* by J. S. GARTH : Tikehau, lagoon, st. 10a, 11.4.1956, Smithsonian-Bredin Expedition : 1 ♀ (USNM).

GEOGRAPHICAL DISTRIBUTION. — This is the first record of *T. heterodactyla* from French Polynesia, confirming a wide Indo-west Pacific distribution. Some of the records attributed to *T. nigrifrons* (Dana) by GALIL (1986a) were most probably for *T. heterodactyla* since they were identified before its recognition as a distinct species by GALIL & CLARK (1988).

COLOR. — The color pattern of live individuals (pl. 1 B) has not been previously described. The color of the carapace, however, is not much different from that of preserved specimens : light brown with the anterior border marked by a thin red-brown line followed by a much lighter band (CASTRO, 1997). A very light purplish band was also observed in one individual. The anterolateral borders are brown in some. The light-brown chelipeds are ornamented with red-brown spots, which are arranged as horizontal bands along the dorsal surface. Large black spots as well as smaller brown dots are always observed on the walking legs.

Tetraloides nigrifrons (Dana, 1852)

Tetralia nigrifrons Dana, 1852a : 83 (Honden island = Pukapuka) ; 1852b : 262 ; 1855 : pl. 16, figs 2a (color), b-d.

Tetralia heterodactyla forma *fusca* Patton, 1966 : 290.

Tetralia heterodactyla fusca Serène, 1984 : 283 (part).

Tetralia heterodactyla lissodactyla Serène, 1984 : 283, pl. 42, fig. C

Tetralia heterodactyla – JONES & MORGAN, 1994 : 178 (color photograph).

Tetraloides nigrifrons – GALIL, 1986a : 72 (Raiatea, Makemo, Tikehau ; part). — GALIL & CLARK, 1988 : 149, figs 1 E, 3 E, 4 E, 4 J, 5 B, 6 E (full synonymy). — POUPIN, 1996 : 58 (list, part). — CASTRO, 1997 : 72, pl. 1 F (color photograph).

MATERIAL EXAMINED. — Society Islands. Raiatea, 29.4.1957, Smithsonian-Bredin Expedition : 2 ♂, 2 ♀ (USNM).

Tuamotu Archipelago. Takapoto, 8.10.1967, N. G. S. - Smithsonian Bishop Museum Expedition : 1 ♀ (USNM). — Anuanuraro, 1 m, *Acropora*, 4.1996, coll. J. POUPIN : 1 ♂, 1 ♀ (MNHN-B 25322). — Material identified as *Tetralia glaberrima* by M. J. RATHBUN : Makemo, 21.10.1899, *Albatross* : 1 ♂, 2 ♀ (USNM 33343). — Material identified as

Tetralia heterodactyla heterodactyla by J. S. GARTH : Tikehau, lagoon, st. 10a, 11.4.1957, Smithsonian-Bredin Expedition : 1 ♀ (USNM).

GEOGRAPHICAL DISTRIBUTION. — Like *T. heterodactyla*, *T. nigrifrons* is now known across the Indo-west Pacific region from the western Indian Ocean to French Polynesia (CASTRO, 1997). Some of the records for *T. nigrifrons* by GALIL (1986a), however, probably included *T. heterodactyla*.

COLOR. — The carapace of live specimens is white to very light brown (cream) in sharp contrast to the dark-brown anterior and anterolateral borders (CASTRO, 1997). The walking legs are dark brown with large light-brown spots.

REMARKS. — The specimens from Makemo and Tikehau examined by GALIL (1986a) actually belong to *T. nigrifrons*, even when they were identified before the recognition of *T. heterodactyla* as different from *T. nigrifrons* by GALIL & CLARK (1988).

TRAPEZIA Latreille, 1828

Twenty-two species of *Trapezia* have been described so far. As in *Tetralia*, failure to recognize color differences resulted in much ambiguity. The more recent work on the taxonomy of these species has stressed the importance of color in addition to small morphological differences (CASTRO, 1997). All species are symbionts of pocilloporid corals (*Pocillopora*, *Seriatopora*, and *Stylophora*).

Trapezia areolata Dana, 1852

Pl. 1 C

Trapezia areolata Dana, 1852a : 83 (Tahiti) ; 1852b : 259; 1855 : pl. 15, figs 8 a (color), b. — CANO, 1888 : 173 (Tahiti). — ORTMANN, 1893 : 485 (Tahiti, part). — SERÈNE, 1959 : 149, figs 5 A, 6 C. — FOREST & GUINOT, 1961 : 135, fig. 133 (Hikueru, part). — ODINETZ, 1983 : 31 (French Polynesia) ; 1984a : 443, figs 3 C, 3 c, 4 C (Moorea, Tahiti, Takapoto). — GALIL & LEWINSOHN, 1985b : 286, figs 1, 3, 4 (Tahiti, Pitcairn Island). — GUINOT, 1985 : 452 (list). — ODINETZ-COLLART & RICHER DE FORGES, 1985 : 201 (Takapoto, Moorea ?, Tahiti ?). — POUPIN, 1996 : 58 (list).

Trapezia cymodoce maculata — RATHBUN, 1907 : 59 (Makemo, part).

Trapezia ferruginea areolata — SENDLER, 1923 : 40 (Tahiti). — SEURAT, 1934 : 59 (list).

Trapezia reticulata — KROPP & BIRKELAND, 1982 : 629 (Moorea, Takapoto). — ODINETZ, 1983 : 31, 85, 87, 107, 114, 134, 205, 214, 216, photograph 3 (Moorea, Tahiti, Takapoto). — GUINOT, 1985 : 452 (list). (non *Trapezia reticulata* Stimpson).

Trapezia septata — POUPIN, 1996 : 60 (list). (non *Trapezia septata* Dana).

MATERIAL EXAMINED. — Society Islands. Moorea, 1982, coll. O. ODINETZ : 1 ♂, 1 ♀ (MNHN-B 9710) ; 1 ♀ (MNHN-B 23037) ; 1 ♂, 1 juv. (MNHN-B 25433-25434). — Tahiti, coll. O. ODINETZ, 1982 : 1 ♂, 1 ♀ (MNHN-B 9708) ; *Pocillopora elegans* : 2 ♂, 1 ♀ (MNHN-B 9709) ; *P. elegans* : 1 ♂, 1 ♀ (MNHN-B 9711) ; 3 ♂, 3 ♀ (MNHN-B 25435-25436).

Tuamotu Archipelago. Takaroa, 12.2.1929, coll. A. W. HERRE : 1 ♂, 1 ♀ (USNM). — Hikueru, 1952, Mission RANSON : 1 ♀ (MNHN-B 16826). — Takapoto, 1982, coll. O. ODINETZ : 2 ♂, 2 ♀ (MNHN-B 9712) ; *Pocillopora verrucosa* : 1 ♂ (MNHN-B 9713) ; 1 ♀, P5-B3 (MNHN-B 22968) ; 20 m : 1 ♂, 1 ♀, E3-B2 (MNHN-B 22969) ; 1 ♂, 1 ♀, P5-C1 (MNHN-B 22970) ; 1 ♂, P3-A6 (MNHN-B 22971) ; 1 ♂, 1 ♀, P4-A2 (MNHN-B 22972) ; 10 m : 1 ♂, 1 ♀, E4-A3 (MNHN-B 22973) ; 1 ♂, P5-A2 (MNHN-B 22974) ; 1 ♂, P4-A6 (MNHN-B 22975) ; 1 ♂, 1 ♀, P6-A5 (MNHN-B 22976) ; 11 ♂, 10 ♀, 2 juv. (MNHN-B 25420-25432). — Anuanuraro, 1 m, *Pocillopora*, 4.1996, coll. J. POUPIN : 2 ♀ (MNHN-B 25313). — Material identified as *Trapezia cymodoce maculata* "reticulated variety" by M. J. RATHBUN : Makemo, 21.10.1899, *Albatross* : 1 ♀ (USNM 33351).

Easter Island. Anakena Bay, 9.9.1995, coll. M. RETAMAL : 1 ♂.

GEOGRAPHICAL DISTRIBUTION. — Restricted to southeastern Polynesia, having been recorded only from French Polynesia, Pitcairn Island (GALIL & LEWINSOHN, 1985), and Easter Island.

COLOR. — The carapace, chelipeds, and walking legs in live individuals (pl. 1 C) are light greenish brown (olive green). The dorsal surface of the carapace and chelipeds are ornamented with brown lines that form a honeycomb pattern of large rectangles, squares, and a few circles. The anterior portion of the carapace, both dorsally and ventrally, is brownish. The outer borders of the carapace and segments of the chelipeds are slightly lighter in color. The honeycomb pattern is darker and more defined along the dorsal portion of the cheliped propodus. The fingers are light greenish brown like the rest of the chelipeds. Small brown dots are present on the walking legs. The eyes are dark brown. Small brown dots form the honeycomb pattern on the carapace and chelipeds of small individuals. The honeycomb pattern persists for decades in preserved specimens as orange or orange-brown lines on a light-orange background.

REMARKS. — *T. areolata* has been confused with *T. septata* Dana (and its synonym *T. reticulata* Stimpson), which is known from the Indian Ocean and from Japan as far east as Samoa in the Pacific Ocean (GALIL & LEWINSOHN, 1985b ; CASTRO, 1997). They share a similar honeycomb ornamentation that may be confused in preserved specimens.

T. areolata can be easily distinguished from *T. septata*, however, by the straight anterolateral borders of its carapace in contrast to the rounded edges in *T. septata*. In *T. areolata* the posterior portion of the carapace is much narrower than the anterior border in *T. areolata*, and sparse simple and plumose setae are present along the outer border of the merus, carpus, and propodus of the chelipeds. The acute, spine-like distal edge of the inner angle of the cheliped carpus, which was contrasted with the rounded edge of *T. septata* by GALIL & LEWINSOHN (1985b), actually becomes rounded in the larger specimens of *T. areolata*. The inner suborbital teeth are very acute and curved in small specimens.

Most specimens examined were small, the largest being a male (cw 11.2 mm, cl 9.6 mm ; MNHN-B 9712).

Trapezia bella Dana, 1852

Trapezia bella Dana, 1852a : 83 (Carlschoff island = Aratika) ; 1852b : 254 ; 1855 : pl. 15, fig. 2 (color). — NOBILI, 1907 : 403 (Hao). — SEURAT, 1934 : 59 (list). — FOREST & GUINOT, 1961 : 133, figs 129, 130, 135 a, b (Hikueru) ; 1962 : 70 (list). — KROPP & BIRKELAND, 1982 : 629 (Moorea, Takapoto). — ODINETZ, 1983 : 31, 107, 114, 134, 206 (Tahiti, Takapoto). — SERÈNE, 1984 : 278 (full synonymy). — DELESALLE, 1985 : 289 (Mataiva). — GUINOT, 1985 : 452 (list). — ODINETZ-COLLART & RICHER DE FORGES, 1985 : 201 (Takapoto, Moorea ?, Tahiti ?). — POUPIN, 1996 : 58 (list).

Trapezia digitalis bella — RATHBUN, 1907 : 59 (Tahiti).

non *Trapezia bella* — SERÈNE, 1984 : fig. 187, pl. 38, fig. F. (= *Trapezia formosa* Smith)

MATERIAL EXAMINED. — **Society Islands.** Tahiti, 28.9.1899, *Albatross* : 1 ♂ (USNM 33344). — Tahiti, 1982, coll. O. ODINETZ : 2 ♂, 3 ♀ (MNHN-B 9732). — Takarua, 12.2.1929 : 2 ♂, 1 ♀ (USNM). — Moorea, Smithsonian-Bredin Expedition : Maharepa Bay, st. 116, 10.5.1957 : 1 ♂ (USNM) ; Nuarei Bay, 12.5.1957 (USNM). — Moorea, *Pocillopora elegans*, 1982, coll. O. ODINETZ : 15 ♂, 16 ♀, 1 juv. (MNHN-B 9733-9738, 25419).

Marquesas Islands. Atuona Bay, Hiva Oa, 1-5 m, *Pocillopora*, 15.2.1996, coll. J. POUPIN : 4 ♂, 3 ♀ (MNHN-B 22989).

Tuamotu Archipelago. Hao, 1905, coll. G. SEURAT : 1 ♂, 2 ♀ (MNHN-B 16788). — Hikueru, 1952, Mission RANSON : 2 ♂, 2 ♀ (MNHN-B 16787). — Pukapuka, 6.10.1967, N. G. S. - Smithsonian-Bishop Museum Marquesas Expedition : 1 ♀ (USNM). — Takapoto, 1982, coll. O. ODINETZ : 1 ♀, P5-A5 (MNHN-B 22977) ; 1 ♂, 1 ♀, P3-C1 (MNHN-B 22978) ; 2 ♂, 1 ♀, P5-A2 (MNHN-B 22979) ; 1 ♂, 1 ♀, A3-C6 (MNHN-B 22980) ; 1 ♂, 1 ♀, P4-A6 (MNHN-B 22981) ; 1 ♀, L1-B10 (MNHN-B 22982) ; 1 ♀, P3-A6 (MNHN-B 22983) ; 1 ♀, P5-C1 (MNHN-B 22984) ; 1 ♂, 1 ♀, P3-A11 (MNHN-B 22985) ; 1 ♂, 1 ♀, P5-B3 (MNHN-B 22986) ; 1 ♂, 1 ♀, P6-A5 (MNHN-B 22987) ; 1 ♂, 1 ♀,

P5-A4 (MNHN-B 22988) ; 1 juv. E4-A5 (MNHN-B 23028) ; 1 ♂, 1 ♀, P5-C4 (MNHN-B 23029) ; 1 ♂, 12 ♀ (MNHN-B 25411-25418). — Anuanuraro, *Pocillopora*, 4.1996, coll. J. POUPIN : 3 ♂, 2 ♀ (MNHN-B 25312). — Moruroa, 5 m, *Pocillopora*, 4.1996, coll. J. POUPIN : 1 ♂, 1 ♀ (MNHN-B 25314).

Kiribati. Phoenix Is., Canton (= Kanton), coll. C. P. SCHULTZ : 1 ♂, 1 ♀ (USNM).

GEOGRAPHICAL DISTRIBUTION. — Known only from French Polynesia and the Phoenix Is., Kiribati. Its listing as *T. digitalis bella* from Enewetak atoll, Marshall Is. (GARTH *et al.*, 1987) is most probably a misidentification. Specimens from Réunion, western Indian Ocean identified as *T. formosa* Smith by RIBES (1978) were considered to be identical to *T. bella* by SERÈNE (1984). The Réunion specimens (MNHN-B 8345), however, are light orange and show no trace of dots on the carapace and appendages. Although they are morphologically identical to *T. formosa*, its live color pattern is yet to be described.

COLOR. — The carapace, chelipeds, walking legs, abdomen, and third maxillipeds of live individuals are ornamented with numerous red-brown dots on a light red-brown background. Square, light-brown reticulations are present along the middle portion of the inner surface of the cheliped propodus ; the lower portion is light yellow brown. The fingers are brown ; the eyes dark brown. The red-brown dots remain visible in specimens preserved for decades.

REMARKS. — SERÈNE (1984) concluded that the specimens from French Polynesia identified by NOBILI (1907) as *T. bella* were mistaken with those of *T. speciosa* Dana from the same locality. None of the specimens in question (MNHN-B 16788) conserve any remains of their original color pattern. The two specimens identified by NOBILI as *T. bella*, however, lack the abundant tomentum on the anterior portion of the chelipeds and on the walking legs found in some *T. speciosa* and therefore still present in his *T. speciosa* specimens. Perhaps SERÈNE was confused by NOBILI's statement that in *T. bella* the crabs' color ("dessin" in the original label) harmonizes with that of the coral, which may apply to both species.

The anterolateral borders of the carapace are parallel to each other in juveniles but become rounded in adults. The epibranchial teeth becomes progressively obtuse with size until they disappear in the largest individuals.

This is a small-size species. The largest individual examined was a male (cw 8.6 mm, cl 7.1 mm ; MNHN-B 22989).

Trapezia cymodoce (Herbst, 1801)

Cancer cymodoce Herbst, 1801 : 22, pl. 51, fig. 5.

Trapezia cymodoce — ORTMANN, 1897 : 204 (Tahiti). — SEURAT, 1934 : 59 (list). — PATTON, 1966 : 285. — SAKAI, 1976 : 507, pl. 181, fig. 1 (color), pl. 184, fig. 1 (color photograph). — MIYAKE, 1983 : 139, pl. 47, fig. 1 (color photograph). — ODINETZ, 1984a : 432, figs 1 C, 2 (part). — SERÈNE, 1984 : 272, fig. 179, pl. 38, fig. B (part). — GUINOT, 1985 : 452 (list). — GALIL, 1988b : 161, fig. 1. — GALIL & CLARK, 1990 : 378 (full synonymy, part). — TAKEDA, 1994 : 212, fig. 10 (color photograph). — POUPIN, 1996 : 58 (list). — CASTRO, 1997 : 74, figs 2 A, B, pls 2 A (color photograph), 3 A (color).

Trapezia coerulea Rüppell, 1830 : 27, pl. 5, fig. 7. — ODINETZ, 1984a : 438, figs 1 C, 3 A, a, 4 A, a.

Trapezia hirtipes Jacquinot, 1846 : pl. 4, fig. 14 (color)-16. — LUCAS, 1853 : 44 (Nuku Hiva).

Trapezia dentata — DANA, 1852b : 258 (Tahiti) ; 1855 : pl. 15, figs 6 a (color) - d.

? *Trapezia dentata* var *subintegra* Dana, 1852b : 259 (Disappointment Island = Tuamako) ; 1855 : pl. 15, fig. 7 a (color), b.

Trapezia ferruginea — BOONE, 1934 : 171, pl. 88 (French Polynesia ?, part). (non *Trapezia ferruginea* Latreille).

Trapezia guttata — ODINETZ, 1983 : photograph 8. (non *Trapezia guttata* Rüppell).

non *Trapezia cymodoce* — ODINETZ, 1983 : 30, 85, 87, 96, 107, 114, 134, 205, 211, 216, photograph 2 (color). — ODINETZ - COLLART & RICHER DE FORGES, 1985 : 200, 201 (Takapoto, Moorea ?, Tahiti ?). (= *Trapezia ferruginea* Latreille). — JONES & MORGAN, 1994 : 178 (color photograph) (= *Trapezia lutea* Castro)

MATERIAL EXAMINED. — **Tuamotu Archipelago.** 1 ♀ apparent type material of *Trapezia hirtipes* Jacquinot (MNHN-B 2953). — Takapoto, 10-20 m, outer slope, *Pocillopora elegans*, 2.1982, coll. O. ODINETZ : 1 ♀ (MNHN-B 23052).

GEOGRAPHICAL DISTRIBUTION. — Present across the Indo-west Pacific region except the Hawaiian Islands (CASTRO, 1997). It is among the most common species throughout its range. An exception is French Polynesia, where it is apparently very rare.

COLOR. — Dorsal surface of the carapace of live individuals is usually purplish blue but it may vary from brownish blue to light violet (CASTRO, 1977). One row of orange-red dots crosses the upper half of the carapace, curving on each side above the epibranchial tooth (figs 2a, pls 2 A & 3 A in CASTRO, 1997). Chelipeds and walking legs are orange. The anterior portion of the carapace tends to be slightly brownish in preserved specimens. Some of the orange-red dots may remain visible after many decades of preservation in alcohol and in dry specimens.

REMARKS. — Many of the earlier records from southeastern Polynesia that were attributed to *T. cymodoce* actually belong to *T. ferruginea* (see synonymy for this species below) or other species. *T. cymodoce* has long been confused with *T. ferruginea* Latreille. Although both species have even been considered synonyms (ODINETZ, 1984a), they can be easily distinguished by color and morphology (CASTRO, 1997). *T. cymodoce* shows a well developed tomentum along the outer border of the propodus of the chelipeds. In addition, there is always a suture between the second and third thoracic sternites, and, except in the largest individuals, the epibranchial teeth are acute.

The French Polynesia specimens identified as *T. cymodoce dentata* by RATHBUN (1907), which is considered a synonym of *T. cymodoce* (GALIL & CLARK, 1990) actually belong to three species: *T. ferruginea*, *T. guttata*, and *T. serenei*.

Additional material from French Polynesia was also identified as *T. dentata* by DANA (1852b). DANA's specimens are thought to be lost but his color description ("dark ochreous, also brownish, also deep vermilion, also dull purplish blue") and the acute epibranchial teeth shown in his illustration (DANA, 1855) indicate that at least part of the material most probably belonged to *T. cymodoce*. The light - to dark-orange colors used in the illustration, however, are not those given in the description. DANA (1852b) also described from French Polynesia another color variety ("light orange, bordering on flesh-red") as *T. cymodoce* var. *subintegra*. From the illustration, however, it appears close if not identical to *T. cymodoce*.

Photographs given by BOONE (1934) of two specimens attributed to *T. ferruginea* are clearly *T. cymodoce*. The specimens have acute epibranchial teeth, dried tomentum on the chelipeds, and one still shows a row of dots on the dorsal surface of the carapace. BOONE had recorded *T. ferruginea* from French Polynesia and Indonesia but the locality of the specimens was not indicated.

The identities of "*T. cymodoce* sp. 1" and "sp. 2" of ODINETZ (1984b) were never explained. Judging from its color ("jaune orangé"), "*T. cymodoce* sp. 1" is most probably *T. ferruginea*; "*T. cymodoce* sp. 2" ("rose claire") is *T. serenei* Odinetz. The first species was reported as more common on the outer reef slope, as in the case of *T. ferruginea* (but referred to as *T. cymodoce*); the second as more common in the lagoon, as in *T. serenei* (ODINETZ, 1984a).

T. cymodoce was not found in the poorly preserved collection of KROPP & BIRKELAND (1982). These authors also refer to "*T. cymodoce* sp. 1" and "sp. 2." Although they list *T. ferruginea* separately, it is possible this name was used for another species and that the more common "*T. cymodoce* sp. 1" was *T. ferruginea*.

Only two specimens belonging to material supposedly collected from French Polynesia have been identified as *T. cymodoce*. The apparent type specimen of *T. hirtipes* Jacquinet, a species described from French Polynesia (LUCAS, 1853) and long considered a synonym of *T. cymodoce* (SERÈNE, 1984; GALIL & CLARK, 1990) is certainly *T. cymodoce*. Remains of the characteristic tomentum can still be seen on the only surviving cheliped of the dry specimen. The tomentum is also shown in the figure given by HOMBRON & JACQUINOT (1842-53).

The second specimen, a large ovigerous female (MNHN-B 23052) collected and identified as "*T. cymodoce* aff. *ferruginea*" by O. ODINETZ is undoubtedly *T. cymodoce*. *T. coerulea* Rüppell, which is the name used by ODINETZ (1984a) to refer to *T. cymodoce*, however, was never mentioned as occurring in French Polynesia.

Trapezia digitalis Latreille, 1828

Trapezia digitalis Latreille, 1828 : 696. — SENDLER, 1923 : 40 (Makatea). — SERÈNE, 1959 : 129, figs 1, 2 A, pl. 1. — FOREST & GUINOT, 1962 : 70 (list). — PATTON, 1966 : 286. — SAKAI, 1976 : 510, pl. 182, fig. 3 (color). — ODINETZ, 1983 : 31, 197, 199, 206 (Takapoto). — SERÈNE, 1984 : 277 (full synonymy), fig. 185, pl. 38, fig. D. — GUINOT, 1985 : 452 (list). — GALIL, 1988b : 163, fig. 2. — CASTRO, 1996 : 536, fig. 2. — POUPIN, 1996 : 59 (list). — CASTRO, 1997 : 78, pl. 3 B (color).

Trapezia fusca Jacquinet, 1846 : pl. 4, figs 17 (color)-19. — LUCAS, 1853 : 45 (Nuku Hiva).

MATERIAL EXAMINED. — **Marquesas Islands.** Nuku Hiva, *Zélée* : 1 ♂, 1 ♀ (MNHN-B 2951), 1 ♂, 1 ♀ (MNHN-B 2952) type material of *Trapezia fusca* Jacquinet. — Hiva Oa, Puamau Bay, *Pocillopora*, 14.2.1996, coll. J. POUPIN : 1 ♂, 1 ♀ (MNHN-B 23030) ; 15.2.1996 : 3 ♂ (MNHN-B 23032). — Fatu Hiva, *Pocillopora*, 16.2.1996, coll. J. POUPIN : 1 ♂, 1 ♀ (MNHN-B23031).

Society Islands. Moorea, 1982, coll. O. ODINETZ : 1 ♀ (MNHN-B 23035).

GEOGRAPHICAL DISTRIBUTION. — Widely distributed throughout the Indo-west Pacific and eastern Pacific regions (SERÈNE, 1984 ; CASTRO, 1996).

COLOR. — The carapace is dark brown. The cheliped propodus is dark brown dorsally (with light-brown reticulations in many individuals) and light brown to dark orange-white (cream) ventrally. The conspicuous tubercle at the base of the dactylus is orange white.

Trapezia ferruginea Latreille, 1828

Trapezia ferruginea Latreille, 1828 : 695. — BOONE, 1934 : 171 (Bora-Bora, Nuku Hiva, Raiatea, Tahiti ; part). — SEURAT, 1934 : 59 (list). — SAKAI, 1976 : 507, pl. 182, fig. 2 (color). — KROPP & BIRKELAND, 1982 : 629 (Moorea). — SERÈNE, 1984 : 273 (full synonymy), fig. 180, pl. 38, fig. C. — GUINOT, 1985 : 452 (list). — GALIL, 1987 : fig. 1 ; 1988b : 164, fig. 3. — PEYROT-CLAUSADE, 1989 : 115 (Moorea). — CASTRO, 1996 : 539, fig. 3. — POUPIN, 1996 : 59 (list). — CASTRO, 1997 : 79, figs 2 E, F.

Trapezia miniata Jacquinet, 1846 : pl. 4, figs 10 (color) - 13. — LUCAS, 1853 : 43 (Nuku Hiva).

Trapezia cymodoce — DANA, 1852b : 257 (Tahiti) ; 1855 : pl. 15, figs 5 a (color)-i. — SENDLER, 1923 : 39 (Tahiti). — ODINETZ, 1983 : 30, 85, 87, 96, 107, 114, 134, 205, 211, 216, photograph 2 (color) (Moorea, Tahiti, Takapoto) ; 1984a : 432, figs 1 A, 1 B, 2 (Moorea, Tahiti, Takapoto ; part). — ODINETZ-COLLART & RICHER DE FORGES, 1985 : 200, 201 (Takapoto, Moorea ?, Tahiti ?) non *Trapezia cymodoce* (Herbst)

Trapezia cymodoce dentata — RATHBUN, 1907 : 58 (Bora-Bora, Makemo ; part).

Trapezia cymodoce ferruginea — RATHBUN, 1907 : 58 (Bora-Bora, Fakarava ?, Makemo ; part).

Trapezia ferruginea dentata — SEURAT, 1934 : 59 (list).

? *Trapezia cymodoce* sp. 1 — KROPP & BIRKELAND, 1982 : 629 (Moorea, Takapoto). — ODINETZ, 1984b : 124 (Moorea, Tahiti, Takapoto).

non *Trapezia ferruginea* — DANA, 1852b : 260 (Tahiti, part) ; 1855 : pl. 16, figs 1 a (color), b. — FOREST & GUINOT, 1961 : 136, figs 137 a, b (Tahiti). — JONES & MORGAN, 1994 : 178 (= *Trapezia serenei* Odinetz)

non *Trapezia ferruginea* — BOONE, 1934 : pl. 88 (French Polynesia ?) = *Trapezia cymodoce* (Herbst).

MATERIAL EXAMINED. — **Marquesas Islands.** Nuku Hiva : 1 ♂, 1 ♀ (MNHN-B 2956) ; 2 ♂ (MNHN-B 2959) apparent type material of *Trapezia miniata* Jacquinet. — Ua Huka, Hane Bay, *Pocillopora*, 14.2.1996, coll. J. POUPIN : 2 ♂, 1 ♀ (MNHN-B 22990). — Hiva Oa, Puamau Bay, *Pocillopora*, 14.2.1996, coll. J. POUPIN : 3 ♂, 2 ♀ (MNHN-B 22991) ; 15.2.1996 : 8 ♂, 3 ♀ (MNHN-B 22992). — Fatu Hiva, 7 m, 25.9.1967, N. G. S.- Smithsonian-Bishop Museum Marquesas Expedition : 1 ♂, 2 ♀ (USNM). — Fatu Hiva, *Pocillopora*, 16.2.1996, coll. J. POUPIN : 1 ♂, 1 ♀ (MNHN-B 22993).

Society Islands. Coll. G. GARRETT : 2 ♂, 2 ♀ (USNM 84383). — Bora-Bora, fringing reef, 17.11.1899, *Albatross* : 1 ♂ (USNM 33363). — Tahiti, coll. DUBOIS : 1 ♂ (MNHN-B 2929) ; 1 ♀ (MNHN-B 2942). Tahiti, 21-27 m, 7.9.1967, N. G. S.- Smithsonian-Bishop Museum Marquesas Expedition : 1 ♂, 1 ♀ (USNM). — Tahiti, 3.1982, coll. O. ODINETZ : 1 ♂, 1 ♀ (MNHN-B 9671) ; 2 ♂, 1 ♀ (MNHN-B 9673) ; 6 ♂, 7 ♀ (MNHN-B 25536-25540). — Moorea, *Pocillopora elegans*, 2.6.1980, coll. R. KROPP & C. BIRKELAND : 1 ♂, 1 ♀ (USNM 277763) ; 1.7.1980 : 1 ♂, 1 ♀ (USNM

277764). — Moorea, 1982, coll. O. ODINETZ : 3 ♂, 3 ♀ (MNHN-B 23034) ; *P. elegans*, 4.1982 : 1 ♂, 1 ♀ (MNHN-B 9670) ; 1 ♂, 1 ♀ (MNHN-B 9672) ; 4 ♂, 2 ♀ (MNHN-B 25541-25542). — Raiatea, Uturoa, st. 75, 28.4.1957, Smithsonian-Bredin Expedition : 1 ♂ (USNM). — Bora-Bora, 1957, Smithsonian-Bredin Expedition : 1 ♀ (USNM). — Material identified as *Trapezia cymodoce dentata* by M. J. RATHBUN : Bora-Bora, fringing reef, 17.11.1899, *Albatross* : 1 ♀ (USNM 33357).

Tuamotu Archipelago. Makemo, 21.10.1899, *Albatross* : 1 ♂, 1 ♀ (USNM 33338). — Tikehau, lagoon, st. 10a, 11.4.1957, Smithsonian-Bredin Expedition : 1 ♂, 1 ♀ (USNM). — Pukapuka, 6.10.1967, N.G.S.-Smithsonian-Bishop Museum Marquesas Expedition : 1 ♂, 1 ♀ (USNM). — Takapoto, 20 m, *P. elegans*, 2.1982, coll. O. ODINETZ : 1 ♂, 1 ♀ (MNHN-B 9674) ; 1 ♂, 1 ♀ (MNHN-B 9675) ; 1982 : 1 ♂, 1 ♀, P5-A3 (MNHN-B 22943) ; 1 ♂, 1 ♀, E4-A3 (MNHN-B 22944) ; 1 ♀, L1-C2, G4 (MNHN-B 22945) ; 20 m : 1 ♂, 1 ♀, E3-A2 (MNHN-B 22946) ; 1 ♂, 1 ♀, P3-C1 (MNHN-B 22947) ; 1 ♂, 1 ♀, A3-C6 (MNHN-B 22948) ; 1 ♂, 1 ♀, L1-B3 (MNHN-B 22949) ; 1 ♂, 1 ♀, P3-A6 (MNHN-B 22950) ; 1 ♂, 1 ♀, P6-A5 (MNHN-B 22951) ; 10 m : 1 ♂, E2-C2 (MNHN-B 22952) ; 1 ♂, P5-C1 (MNHN-B 22953) ; 1 ♂, P4-A2 (MNHN-B 22945) ; 22 ♂, 18 ♀, 2 juv. (MNHN-B 25513-25535). — Material identified as *Trapezia cymodoce dentata* by M. J. RATHBUN : Makemo, 21.10.1899, *Albatross* : 1 ♀ (USNM 33354).

GEOGRAPHICAL DISTRIBUTION. — Common across the Indo-west Pacific and eastern Pacific regions (CASTRO, 1996; 1997).

COLOR. — Live individuals have a brownish orange carapace and walking legs. A thin, light-orange band is present along the anterior border of the carapace and the anterior, distal borders of the merus and carpus of the chelipeds. Preserved specimens turn light orange, often with the anterior borders of the carapace and merus of the chelipeds dark orange. A characteristic color feature is the presence of an orange-red spot at the distal end of the propodus of the walking legs, which remains visible for many decades. The color pattern is identical to that described for specimens from the eastern Pacific (CASTRO, 1996) and Coral Sea (CASTRO, 1997) regions.

REMARKS. — Some workers have confused *T. ferruginea* with *T. cymodoce* (Herbst) although there are clear morphological and color differences between them (CASTRO, 1997). *T. ferruginea* lacks a conspicuous tomentum along the complete outer border of the propodus of the chelipeds and, except in juveniles and very small adults, the suture between the second and third thoracic sternites is incomplete or absent and the epibranchial teeth are obtuse, not acute as in *T. cymodoce*. Although BOONE (1934) was aware of these morphological differences, photographs of two specimens identified as *T. ferruginea* are actually *T. cymodoce*. Most if not all specimens from French Polynesia that were identified as *T. cymodoce* by ODINETZ (1983) were also *T. ferruginea*.

Trapezia flavopunctata Eydoux & Souleyet, 1842

Trapezia flavopunctata Eydoux & Souleyet, 1842 : 230, pl. 2, fig. 3. — ORTMANN, 1893 : 485 (Tahiti). — FOREST & GUINOT, 1961 : 136, figs 138 a, b (Hikueru). — SAKAI, 1976 : 510, pl. 182, fig. 4 (color). — ODINETZ, 1983 : 34, 205 (as "*T. flavomaculata*") (Tahiti). — SERÈNE, 1984 : 276 (full synonymy), fig. 183, pl. 42, fig. A. — GALIL & LEWINSOHN, 1985a : 210 (full synonymy ; Moorea, Tahiti). — GUINOT, 1985 : 452 (list). — POUPIN, 1996 : 59 (list).

Trapezia rufopunctata flavopunctata — SEURAT, 1934 : 59 (list).

Trapezia areolata — FOREST & GUINOT, 1961 : 135, fig. 133 (Hikueru, part). (non *Trapezia areolata* Dana).

Trapezia latifrons A. Milne Edwards, 1867 : 281.

MATERIAL EXAMINED. — **Hawaiian Islands.** 1838, coll. F. EYDOUX & F. A. SOULEYET : 1 ♀ type (MNHN-B 2968).

Tuamotu Archipelago. Hikueru, 1952, Mission RANSON : 1 ♀ (MNHN-B 16827).

Society Islands. Moorea, pass to Papetoai Bay, outer barrier reef, 21 m, 15.5.1957, coll. J. E. RANDALL, Smithsonian-Bredin Expedition : 2 ♂ (USNM). — Moorea, 1982, coll. O. ODINETZ : 2 ♂ (MNHN-B 23038). — Tahiti : 4 ♂, 1 ♀ (RMNH D 1337) ; *Pocillopora elegans* & *P. eydouxii*, 1982, coll. O. ODINETZ : 2 ♂, 5 ♀ (MNHN-B 9745).

GEOGRAPHICAL DISTRIBUTION. — Found throughout the Indo-west Pacific region (CASTRO, 1997).

COLOR. — Large yellow spots on a red background. Orange-red markings remain visible for decades at the base of each of the epibranchial teeth and along the anterior border of the carapace and segments of the chelipeds.

REMARKS. — This species is characterized by large individuals. A carapace width of 26.0 mm was measured in a female from Mauritius, western Indian Ocean (MNHN-B 16539). In contrast to *T. rufopunctata* (Herbst), another large-size species with spots, the frontal teeth are not acute but rounded (see GALIL & LEWINSOHN, 1985a).

Trapezia globosa sp. nov.

Fig. 2 A-D ; Pl. 1 D

Trapezia formosa — KROPP & BIRKELAND, 1982 : 629 (Takapoto). — ODINETZ, 1983 : 31, 85, 107, 114, 134, 206, 214, photograph 4 (Moorea, Tahiti, Takapoto). — DELESALLE, 1985 : 289 (Mataiva). — GUINOT, 1985 : 452 (list). — ODINETZ-COLLART & RICHER DE FORGES, 1985 : 201 (Takapoto, Moorea ?, Tahiti ?). — POUPIN, 1996 : 59 (list). (non *Trapezia formosa* Smith)

MATERIAL EXAMINED AND TYPES. — **Marquesas Islands.** Hiva Oa, Atuona Bay, 9°45'S, 139°00'W, 1-5 m, *Pocillopora*, 15.2.1996, coll. J. POUPIN : 1 ♂ holotype, cw 7.0 mm, cl 5.7 mm (MNHN-B 25293) ; 1 ♀ allotype, cw. 6.6 mm, cl. 5.0 mm (MNHN-B 25294).

Tuamotu Archipelago. Anuanuraro, 20°25'S, 143°30'W, 1 m, *Pocillopora*, 4.1996, coll. J. POUPIN : 1 ♂ paratype, cw 5.0 mm, cl 4.1 mm ; 2 ovigerous ♀ paratypes, cw 5.4, 6.5 mm, cl 3.9, 4.9 mm (MNHN-B 25295) ; 2 ♂ paratypes, cw 3.8, 4.0 mm, cl 3.2, 3.3 mm ; 1 ovigerous ♀ paratype, cw 5.3 mm, cl 4.2 mm (USNM 282636).

Marquesas Islands. Hiva Oa, Atuona Bay, 9°45'S, 139°00'W, 1-5 m, *Pocillopora*, 15.2.1996, coll. J. POUPIN : 3 ♂, cw 5.7-6.2 mm, cl 4.8-4.9 mm, 3 ♀, cw 5.1 mm, cl 3.9-6.4 mm (width distorted by bopyrid parasite in two largest females) (MNHN-B 25321).

Society Islands. Tahiti, 17°32'S, 149°34'W, 1982, coll. O. ODINETZ : 1 ♂, cw 4.3 mm, cl 3.4 mm, 3 ovigerous ♀, cw 4.5-7.2 mm, cl 3.4-5.3 mm (MNHN-B 9744) ; 1 ♀, cw 3.7 mm, cl 3.1 mm (MNHN-B 25543) ; 1 ♀, cw 4.1 mm, cl 3.3 mm (MNHN-B 25544) ; 1 ♀, cw 2.8 mm, cl 2.2 mm (MNHN-B 25545).

Tuamotu Archipelago. Takapoto, 14°35'S, 145°13'W, *P. bulbosa*, 1982, coll. O. ODINETZ : 3 ♂, cw 2.3-6.7 mm, cl 1.9-5.5 mm, 3 ovigerous ♀, cw 3.2-7.4 mm, cl 2.5-5.5 mm (MNHN-B 9739) ; 2 ♂, cw 4.1, 5.5 mm, cl 3.5, 4.4 mm, 1 ovigerous ♀, cw 6.7 mm, cl 4.4 mm (MNHN-B 9740) ; 1 ♂, cw 5.3 mm, cl 4.3 mm, 2 ovigerous ♀, cw 5.3, 5.7 mm, cl 4.2, 4.4 mm (MNHN-B 9741) ; 6 ♂, cw 3.6-5.3 mm, cl 2.9-4.4 mm, 6 ♀ (4 ovigerous), cw 2.0-5.0 mm, cl 1.7-3.7 mm (MNHN-B 9742) ; 5 ♂, cw 4.2-5.0 mm, cl. 3.5-4.1 mm, 6 ♀ (3 ovigerous), cw 3.7-5.3 mm, cl 2.9-4.1 mm (MNHN-B 9743) ; 1 ovigerous ♀, cw 4.0 mm, cl 3.3 mm (MNHN-B 25296) ; 2 ♂, cw 3.4, 4.0 mm, cl 2.8, 3.3 mm (MNHN-B 25297) ; 1 ♂, cw 3.6 mm, cl. 3.0 mm, 1 ovigerous ♀, cw. 4.0 mm, cl. 3.2 mm (MNHN-B 25298) ; 1 ♂, cw 2.5 mm, cl 2.0 mm, 1 ovigerous ♀, cw 2.4 mm, cl 2.0 mm, 1 juv., cw 1.5 mm, cl 1.8 mm (MNHN-B 25299). 1 ovigerous ♀, cw 5.2 mm, cl 4.2 mm (MNHN-B 25546) ; 1 ♂, cw 3.5 mm, cl 3.0 mm (MNHN-B 25547) ; 3 ♂, cw 2.3-4.1 mm, cl 1.8-3.2 mm, 2 ovigerous ♀, cw 2.0, 4.1 mm, cl 2.1, 3.3 mm (MNHN-B 25548). — Anuanuraro, 1 m, *Pocillopora*, 4.1996, coll. J. POUPIN : 2 ♂, cw 5.0, 5.6 mm, cl 4.2, 4.8 mm, 1 ovigerous ♀, cw 4.1 mm, cl 3.3 mm (MNHN-B 25315).

ETYMOLOGY. — From the Latin *globus* meaning ball or sphere, in reference to the conspicuously spherical carapace.

DESCRIPTION OF HOLOTYPE. — Carapace (fig. 2a) smooth, shiny, and slightly convex dorsally. Anterolateral borders of carapace markedly curved and smooth, without epibranchial tooth or notch. Postorbital angles and inner suborbital teeth obtuse. Frontal border wide, very slightly arched, and cut into two barely demarcated supraorbital angles and two nearly straight lobes separated from each other by shallow central depression. Supraorbital angles with few microscopic teeth; median lobes with small teeth.

No suture or scar between second and third thoracic sternites (fig. 2b). Third maxillipeds subrectangular. Ischium of endopod with scattered punctae but no granules. Abdomen with five complete segments.

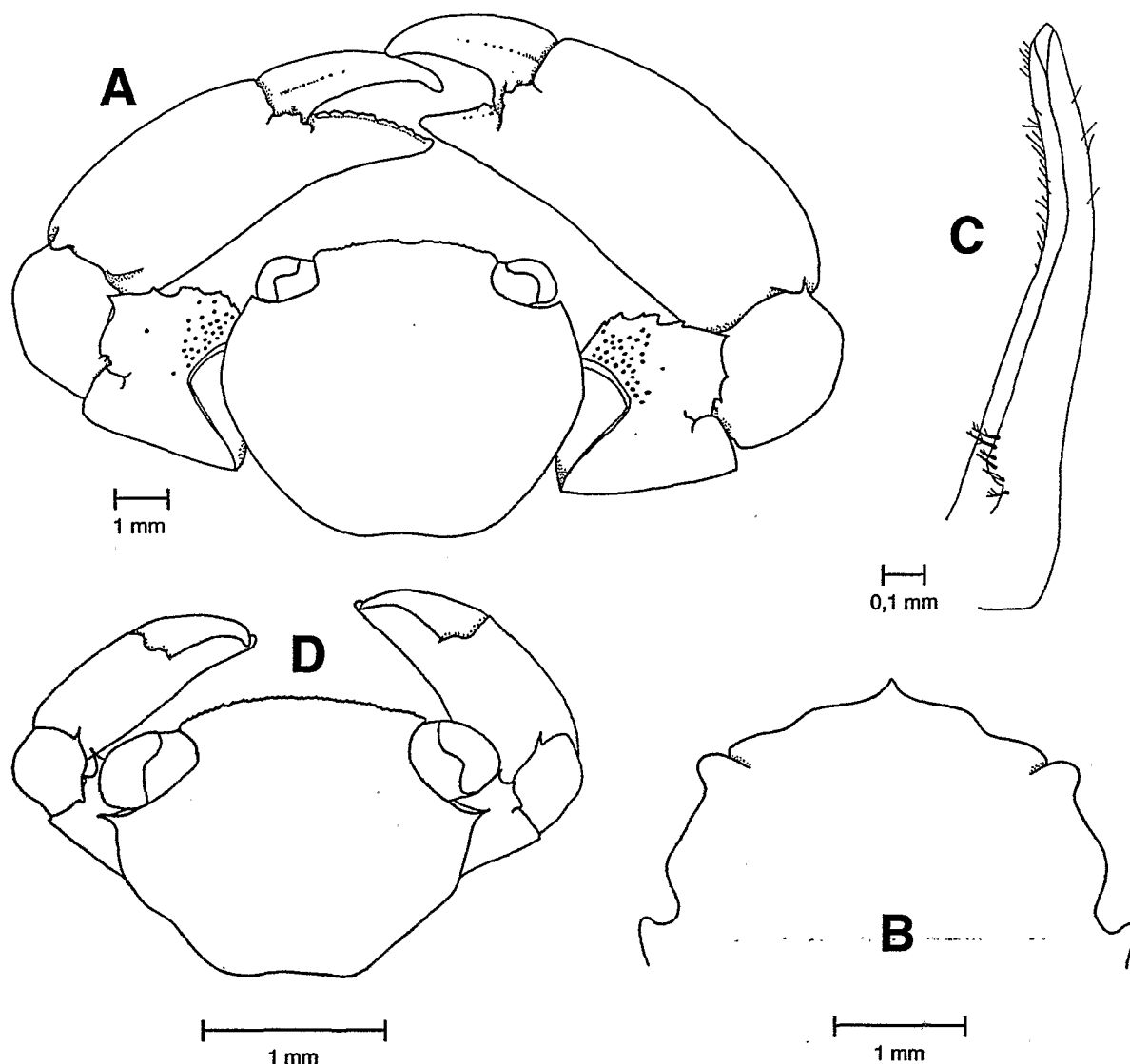


Fig. 2. — *Trapezia globosa* sp. nov., ♂ holotype, Marquesas Islands, French Polynesia (MNHN-B 25293) : A. dorsal aspect of the carapace, B. anterior sternal region, C. first pleopod. Juvenile, Takapoto, French Polynesia (MNHN-B 25299) : D. dorsal aspect of the carapace.

Chelipeds unequal and conspicuously thick. Both meri armed with six to seven unequal teeth. Dorsal surface of merus with numerous round, shallow granules along anterior, proximal region. Proximal angle on anterior border of carpus smooth, without tooth. No setae along outer border of chelipeds. Upper border of propodus rounded ; lower border cristate and smooth. Fingers thick and slightly curved. Dactylus and immovable finger of largest (right) cheliped each armed with rounded tooth ; dactylus of smallest cheliped with several small teeth and cutting edge, immovable finger with cutting edge.

Merus of walking legs laterally flattened with cristate dorsal border. Lower border of propodus with few short setae distally. Upper border of dactylus with numerous short setae. Distal end of dactylus curved with horny ridges at tip ; inner (posterior) border of fourth walking leg with several thick, horny setae and, proximally, four horizontal rows of simple setae.

First pleopod (fig. 2 C) short, tapered distally, and with rounded, slightly asymmetrical apex. Short, thin setae distally ; thicker, plumose setae with few setules proximally.

GEOGRAPHICAL DISTRIBUTION. — Known only from French Polynesia.

COLOR. — Live individuals (pl. 1 D) have a red-brown carapace. A thin, slightly lighter red-brown line borders the margin of the carapace. The line is particularly obvious along the anterior and posterior borders. The anterior portion of the carapace may be slightly darker; the central (metagastric) region lighter, almost tan, in some of the smaller individuals. There are otherwise no distinctive dots or spots. The ventral portion of the carapace is red brown, the thoracic sternites yellowish tan, and the abdomen red brown. The inner surface of the cheliped propodus is dark red-brown dorsally, gradually turning light yellowish-brown along the ventral border. Dark red-brown irregular reticulations may be present on the outer and inner surface of the propodus. The fingers are dark red brown; the inner portion of the fixed finger is usually light tan. The walking legs are red brown. Preserved specimens gradually become light orange-brown but some turn grayish brown.

MORPHOLOGICAL VARIATION. — Juveniles (fig. 2 D) and very small adults have an acute postorbital angle and an acute tooth on the distal angle of the anterior border of the cheliped carpus. The postorbital angle becomes obtuse with increasing size. The acute tooth on the carpus disappears but an obtuse, often conspicuous tooth develops at the proximal angle. The teeth on the cheliped merus are much more acute in juveniles as in other species of *Trapezia*.

Maximum size among the 74 specimens that were measured was recorded in a female (cl. 6.4 mm; MNHN-B 25321). The width of its carapace, however, was distorted by a bopyrid parasite (pl. 1 D). Largest male examined was the holotype (cw 7.0 mm, cl 5.7 mm; MNHN-B 25293). As in other species of *Trapezia*, most females were ovigerous. Exceptional in *T. globosa* is that females become ovigerous at a very small size. The smallest ovigerous female among the specimens examined had a carapace width of only 2.0 mm (MNHN-B 25548).

REMARKS. — *T. globosa* is unique in the genus *Trapezia* for having a carapace that lacks epibranchial teeth or notches in adults as well as in juveniles (figs 1 A & 1 C). There was no evidence of even a notch in the smallest specimen examined, a juvenile with a carapace width of only 1.5 mm (MNHN-B 25299).

T. globosa is close to six other species characterized by a small size, carapace with rounded edges, reduced or absent epibranchial teeth, and thick, bulky chelipeds. All of these species can be best differentiated by their color pattern.

T. formosa Smith, 1869, from the eastern Pacific (CASTRO, 1982, 1996) and the Coral Sea (CASTRO, 1997), is bright reddish orange, with the inner surface of the propodus of the chelipeds reddish orange dorsally and orange-yellow ventrally. Dark-orange reticulations are also present on the inner surface of the chelipeds in many individuals. *T. formosa* also differs from *T. globosa* in the presence of epibranchial teeth in juveniles and small adults, and notches that are visible in all but the largest individuals. The frontal border of the carapace is divided into two clearly demarcated supraorbital angles and four rounded median lobes in *T. formosa* (figs 4 A & 4 B in CASTRO, 1996), whereas it is almost straight in *T. globosa*. The anterolateral edges of the carapace are less rounded in large adults of *T. formosa* than those of *T. globosa*. Fully-grown individuals of *T. formosa* are slightly larger than *T. globosa*, the largest recorded specimen had a carapace width of 12.4 mm (CASTRO, 1996). *T. formosa* is also found in the western Indian Ocean (RIBES, 1978; SERÈNE, 1984 as *T. bella*). Its color has only been described as bright orange (RIBES, 1978).

Three other small-size species, *T. areolata*, *T. bella*, and *T. speciosa*, are also present in French Polynesia. The carapace, chelipeds, and walking legs of *T. bella* are light red-brown with numerous, small red-brown dots. Juveniles show an epibranchial tooth on each side of the carapace, becoming obtuse within creasing size. A notch remains in most of the largest specimens. The notch is barely noticeable in some, however, so that the carapace may resemble that of *T. globosa*. One morphological difference is that the anterior border of the carapace of *T. bella* is divided into four shallow but identifiable lobes.

The carapace and chelipeds of *T. speciosa* are ornamented with a characteristic pattern of irregular dark-red lines. Also diagnostic is the tomentum on the walking legs and the proximal portion of the chelipeds that is present in many individuals.

Also present in southeastern Polynesia are *T. areolata* and *T. digitalis*. Members of these species are of a relatively small size but, in contrast to *T. globosa*, both have anterolateral sides that are straight, almost parallel to

each other. In *T. areolata* the epibranchial tooth is always present (always acute except in the largest individuals), whereas it is present as an acute tooth in the juveniles and small adults (obtuse tooth or notch in most large adults) in *T. digitalis* (see figs 2 & 5 in SERÈNE, 1959 and fig. 2 in CASTRO, 1996). The carapace of *T. digitalis* is uniformly dark brown and in *T. areolata* light greenish brown ornamented with a honeycomb-like network of dark-brown lines.

Two other small-size species are not known from southeastern Polynesia. *T. cheni* Galil, described from Taiwan, is orange yellow with the anterior and lateral portions of the carapace brownish red (GALIL, 1983). The chelipeds are deep red, with a white tubercle on the upper proximal portion of the dactylus. As in *T. globosa*, there is no tooth or notch on each side of the carapace and the anterior border of the carapace is nearly straight. It is not known if there are epibranchial teeth in juveniles. The anterolateral sides of the carapace, however, are markedly less rounded in *T. cheni* than in *T. globosa*.

The carapace of *T. garthi* Galil, also from Taiwan, has "irregular rounded areolae enclosed in thick net of magenta" on the dorsal surface of the carapace (GALIL, 1983). The sides of the carapace, which is less rounded than in *T. globosa*, are marked by a notch.

T. globosa is known only from French Polynesia. It may occur in other locations, however, but overlooked because of its small size and the possibility that, like *T. formosa* in the eastern Pacific (CASTRO, 1996), an inhabitant of areas deep in coral colonies, very small colonies, and live coral fragments that are rarely sampled. *T. globosa* has been found in *Pocillopora verrucosa* colonies taken from the lagoon at Takapoto atoll (KROPP & BIRKELAND, 1982) and from *P. verrucosa* and *P. elegans* colonies exposed to heavy wave action at the barrier reef outer slope and reef flat of Takapoto atoll and the islands of Moorea and Tahiti (ODINETZ, 1983 ; ODINETZ - COLLART & RICHER DE FORGES, 1985).

Trapezia guttata Rüppell, 1830

Trapezia guttata Rüppell, 1830 : 27. — HELLER, 1865 : 25 (Tahiti). — FOREST & GUINOT, 1961 : 136, figs 134, 139 a, b (Hikueru, Tahiti) ; 1962 : 70 (list). — SAKAI, 1976 : 508, fig. 270, pl. 183, fig. 3 (color). — MIYAKE, 1983 : 139, pl. 47, fig. 2 (color photograph). — ODINETZ, 1983 : 30, 65, 85, 87, 96, 134, 197, 199, 205, 211 (Moorea, Tahiti, Takapoto) ; 1984a : 442 (Moorea, Tahiti). — SERÈNE, 1984 : 271 (full synonymy), fig. 178, pl. 38, fig. A. — GUINOT, 1985 : 452 (list). — ODINETZ-COLLART & RICHER DE FORGES, 1985 : 200, 201 (Moorea ?, Tahiti ?). — GALIL, 1988b : 166, fig. 4. — PEYROT-CLAUSADE, 1989 : 111, 113 (Tikehau). — GALIL & CLARK, 1990 : 381 (full synonymy). — JENG, 1994 : 317, fig. 6 B (color photograph). — TAKEDA, 1994 : 212, fig. 4 (color photograph). — POUPIN, 1996 : 59 (list). — CASTRO, 1997 : 82, pls. 2 B (color photograph) & 4 (color).

Trapezia davaoensis Ward, 1941 : 14, fig. 27. — KROPP & BIRKELAND, 1982 : 629 (Moorea). — GUINOT, 1985 : 452 (list).

Trapezia ferruginea — DANA, 1852b : 260 (part) ; 1855 : pl. 16, fig. 1b (color). (non *Trapezia ferruginea* Latreille).

Trapezia cymodoce dentata — RATHBUN, 1907 : 58 (Fakarava, Rangiroa ; part).

Trapezia cymodoce ferruginea — RATHBUN, 1907 : 58 (Bora-Bora, Rangiroa ; part).

Trapezia ferruginea forma *guttata* — SEURAT, 1934 : 59 (list). — PATTON, 1966 : 285.

Trapezia sp. — COLIN & ARNESON, 1995 : 214, fig. 1009 (color photograph).

non *Trapezia guttata* — ODINETZ, 1983 : photograph 8 (color) = *Trapezia cymodoce* (Herbst).

MATERIAL EXAMINED. — **Philippine Islands.** Mindanao : 1 ♂, 1 ♀ paratypes of *Trapezia davaoensis* Ward (MNHN-B 16783).

Society Islands. Tahiti, 1952. Mission RANSON : 1 ♀ (MNHN-B16912). — Tahiti, *Pocillopora damicornis*, 1982, coll. O. ODINETZ : 1 ♂, 1 ♀ (MNHN-B 9707) ; 1 ♂, 1 ♀, 8-BB5 (0604) (MNHN-B 23001) ; 1 ♂, 1 ♀, 8-A3 (0604) (MNHN-B 23002) ; 1 ♂, 1 ♀, 2-D4 (0804) (MNHN-B 23003) ; 1 ♀, beach B5 (9.4) (MNHN-B 23004) ; 1 ♀, L1-C2 (G4) (MNHN-B 23005) ; 19 ♂, 17 ♀, 2 juv. (MNHN-B 25437-25450). — Arue, Tahiti, 1993, coll. C. HILY : 1 ♂ (MNHN-B 25320). Moorea, Hauru Point, st. 105, 8.5.1957, Smithsonian-Bredin Expedition : 1 ♂, 1 ♀ (USNM). — Moorea, 30.6.1980, coll. R. KROPP & C. BIRKELAND : 1 ♂, 1 ♀ (USNM 277765) ; *P. elegans*, 3.7.1980 : 1 ♂, 1 ♀ (USNM 277761) ; *P. damicornis* 3.7.1980 : 1 ♂, 1 ♀ (USNM 277771) ; 4.7.1980 : 1 ♂, 1 ♀ (USNM 277768). — Moorea, 1982, coll. O. ODINETZ : 1 ♂, 1 ♀, MV-A1 (MNHN-B 22995) ; 1 ♂, 1 ♀, OPU-E5(1) (MNHN-B 22996) ; 4 ♂, 1 ♀, OPU-D3-5 (MNHN-B 22997) ; 1 ♂, 1 ♀, MV-A8 (MNHN-B 22998) ; 1 ♀, OPU-E1 (1) (MNHN-B 22999) ; 2 ♀, OPU-F1 (1)

(MNHN-B 23000) ; 6 ♂, 9 ♀ (MNHN-B 25451-25455, 25549). — Smithsonian-Bredin Expedition : Bora-Bora, Motu Tapu I., st. 62, 25.4.1957 : 1 ♂ (USNM) ; Raiatea, Uturoa, st. 75, 28.4.1957 : 10 ♂, 12 ♀ (USNM) ; Huahine, Bourayne Bay, st. 88, 1.5.1957 : 1 ♂, 1 ♀ (USNM). — Bora-Bora, 28.8.1978, coll. E. TARVYD : 1 ♂ (LACM).

Tuamotu Archipelago. Hikueru, 1952, Mission RANSON : 1 ♂, 2 ♀, 1 juv. (MNHN-B 16913). — Tikehau, Maiai L., st. 26 c, Smithsonian-Bredin Expedition : 1 ♂ (USNM). — Material identified as *Trapezia cymodoce dentata* by M. J. RATHBUN : Rangiroa, beach, 23.9.1899, *Albatross* : 1 ♂ (USNM 33356) ; Fakarava, outer reef, 12.10.1899, *Albatross* : 1 ♂ (USNM 33355). — Material identified as *Trapezia cymodoce ferruginea* by M. J. RATHBUN : Rangiroa, Mohican reef, 23.9.1899, *Albatross* : 1 ♂, 1 ♀ (USNM 33361).

French Polynesia (unspecified location). *P. damicornis*, 1982, coll. O. ODINETZ : 1 ♂, 1 ♀ (MNHN-B 9706).

GEOGRAPHICAL DISTRIBUTION. — Known from numerous locations across the Indo-west Pacific region except the Hawaiian Islands.

COLOR. — The carapace is white to orange white (cream) with a thin red-brown line across the anterior border. The tips of the postorbital angles and epibranchial teeth are red brown to brown. The walking legs are light brown with red-brown spots. Some of the color features remain for some time in preserved specimens (see CASTRO, 1997).

Trapezia lutea Castro, 1997

Trapezia lutea Castro, 1997 : 84, figs 2 C, 2 D, 3, pls 2 C (color photograph) & 5 A (color).

Trapezia cymodoce – BOONE, 1934 : 168, pl. 87. — JENG, 1994 : 315, fig. 5 (color photograph). — JONES & MORGAN, 1994 : 178 (color photograph). Non *Trapezia cymodoce* (Herbst)

MATERIAL EXAMINED. — **Society Islands.** Moorea, 1982, coll. O. ODINETZ : 1 ♂ (cw 4.4 mm, cl 3.5 mm), 1 ♀ (cw 6.5 mm, cl 5.2 mm) (MNHN-B 25332).

GEOGRAPHICAL DISTRIBUTION. — It has so far been reported from locations across the Indian Ocean and from Japan to the Coral Sea (CASTRO, 1997).

COLOR. — The carapace, chelipeds, and walking legs are orange in live individuals, orange to yellow-orange in preserved specimens (CASTRO, 1997).

REMARKS. — *T. lutea* can be best described as intermediate between *T. cymodoce* and *T. ferruginea*. It has a conspicuous tomentum along the entire outer surface of the propodus of the chelipeds as in *T. cymodoce*, while fully-grown individuals share the rounded anterolateral borders of the carapace, obtuse epibranchial teeth, and incomplete or absent thoracic suture of *T. ferruginea* (CASTRO, 1997).

Only two small specimens, a male and an ovigerous female, were supposedly collected in southeastern Polynesia. Thick setae, many of which are plumose, cover not only the outer surface of the chelipeds but the inner border of the propodus and the walking legs as well. Both specimens are orange but dark-brown granules are present along the anterior and lateral borders of the carapace, eyestalks, and chelipeds of the male. The distal edge of the propodus of the walking legs is darker orange.

Trapezia punctimanus Odnietz, 1984

Pl. 1 E

Trapezia punctimanus Odnietz, 1983 : 35, 107, 114, 134, 206, 214, photograph 7 (Tahiti, Takapoto) ; 1984a : 445, figs 3 E, 3 e, 4 E (Tahiti, Takapoto). — GUINOT, 1985 : 452 (list). — ODINETZ-COLLART & RICHER DE FORGES, 1985 : 201 (Takapoto, Moorea ?, Tahiti ?). — POUPIN, 1996 : 60 (list).

Trapezia cymodoce ferruginea – RATHBUN, 1907 : 58 (Rangiroa, Easter Island ; part).

Trapezia cymodoce – GARTH, 1973 : 321 (Easter Island). non *Trapezia cymodoce* (Herbst).

Trapezia ferruginea – GARTH, 1973 : 322 (Easter Island). (non *Trapezia ferruginea* Latreille).

MATERIAL EXAMINED. — **Tuamotu Archipelago.** Takapoto, 30 m, *Pocillopora elegans*, 1982, coll. O. ODINETZ : 1 ♂ holotype (MNHN-B 9717). — Takapoto, 1982, coll. O. ODINETZ : 8 ♂, 8 ♀ (MNHN-B 9718-9724) ; 1 ♂, 1 ♀, E2-C2 (MNHN-B 22966) ; 1 ♂, 1 ♀, E3-A6 (MNHN-B 22967) ; 2 ♂, 2 ♀ (MNHN-B 25456-25457). — Fangataufa, 10 m, *Acropora* ?, 2.1996, coll. SMSRB divers : 2 ♂, 2 ♀ (MNHN-B 22994). — Moruroa, *Pocillopora*, 4.1996, coll. J. POUPIN : 1 ♂, 2 ♀ (MNHN-B 25317). — Material identified as *Trapezia cymodoce ferruginea* by M. J. RATHBUN : Rangiroa, Mohican reef, 23.9.1899, *Albatross* : 1 ♂ (USNM 33358). — Material identified as *Trapezia ferruginea* by J. S. GARTH : Raraoia, coll. J. P. E. MORRISON : 1 ♂, 1 ♀ (USNM).

Society Islands. Material identified as *Trapezia ferruginea* by J. S. GARTH : Tahiti, Papeete Harbor, Motu-Uta I., st. 42, 20.4.1957, Smithsonian-Bredin Expedition : 2 ♀ (USNM).

Gambier Islands. Aukena, 12.10.1967, coll. D. M. DEVANEY & B. R. WILSON, N. G. S. - Smithsonian-Bishop Museum Marquesas Expedition : 1 ♂, 1 ♀ (USNM).

“**Micronésie, Polynésie**” (no specified location). Coll. O. ODINETZ : 4 ♂, 4 ♀ (MNHN-B 9828-9829).

Easter Island. Anakena Bay, 9.9.1995, coll. M. RETAMAL : 2 ♂, 3 ♀. — Material identified as *Trapezia cymodoce ferruginea* by M. J. RATHBUN : shore station, 20.12.1904, *Albatross* : 1 ♂, 1 ♀ (USNM 33359). — Material identified as *Trapezia ferruginea* by J. S. GARTH : from stomach of starfish (*Leiaster leachii*), coll. I. A. EFFORD & J. A. MATHIAS : 3 ♂, 1 ♀ (LACM). — Material identified as *Trapezia cymodoce* by J. S. GARTH : Hanga-piko, METEI, 2.2.1965 : 1 ♀ (LACM).

GEOGRAPHICAL DISTRIBUTION. — *T. punctimanus* appears to be endemic to southeastern Polynesia, having been recorded only from French Polynesia and Easter Island. Some of the specimens collected by O. ODINETZ, however, are listed as “Micronésie, Polynésie” without giving a specific location.

COLOR. — Live individuals (pl. 1 E) have an orange to purplish-orange carapace and chelipeds. The outer edges of the carapace and the segments of the chelipeds are orange. The chelipeds are ornamented with small red-brown dots, particularly on the dorsal surface. Dots are also found on the third maxillipeds as well as on the abdomen of some females. The fingers are light brown. The walking legs are purplish orange but the edges of the segments are orange, giving them a distinctive banded appearance. The eyes are light orange-brown. Preserved specimens are uniformly orange except the red-brown dots on the chelipeds, which remain for years.

REMARKS. — One diagnostic morphological feature is the relatively narrow and long chelipeds, a characteristic that is unfortunately not shown in the figure given by ODINETZ (1994). The fingers are particularly slender, the dactylus crossing and extending well over the immovable finger. The anterior border of the merus is armed with distinctively slender teeth that in many specimens are absent along the distal end of the border.

The characterization of the species by ODINETZ (1983) is invalid since it was published in a thesis of limited distribution. It was formally described and the type material designated in a later publication (ODINETZ, 1984a).

Trapezia rufopunctata (Herbst, 1799)

Cancer rufopunctatus Herbst, 1799 : 54, pl. 47, fig. 6 (color).

Trapezia rufopunctata – LATREILLE, 1828 : 695. — DANA, 1852b : 255 (Tahiti) ; 1855 : pl. 15, figs 3 a (color), b. — JACQUINOT, 1846 : pl. 8 (color), 9. — LUCAS, 1853 : 41 (Nuku Hiva, part). — RATHBUN, 1907 : 57 (Makemo). — BOONE, 1934 : 166, pl. 86 (Raiatea). — SEURAT, 1934 : 59 (list). — PATTON, 1966 : 285. — SAKAI, 1976 : 509, pl. 182, fig. 1 (color). — ODINETZ, 1983 : 34, 205 (Tahiti). — SERÈNE, 1984 : 276 (full synonymy), fig. 184, pl. 39, fig. A. — GALIL & LEWINSOHN, 1985a : 209 (full synonymy), figs 1-6. — GUINOT, 1985 : 452 (list). — PEYROT-CLAUSADE, 1989 : 112, 113 (Tikehau). — ALLEN & STEENE, 1994 : 159 (color photograph). — JENG, 1994 : 317, fig. 7 (color photograph). — JONES & MORGAN, 1994 : 179 (color photograph). — COLIN & ARNESON, 1995 : 214, fig. 1008 (color photograph). — POUPIN, 1996 : 60 (list). CASTRO, 1997 : 89, pl. 5 B (color).

Trapezia ferruginea maculata – SEURAT, 1934 : 59 (list).

MATERIAL EXAMINED. — **Marquesas Islands.** Nuku Hiva : 1 ♀ (RMNH D 543). — Hiva Oa, Atuona Bay, 1-5 m,

Pocillopora, 15.2.1996, coll. J. POUPIN : 1 ♂, 2 ♀ (MNHN-B 23033).

Tuamotu Archipelago. Tikehau, lagoon, st. 10, 11.4.1957, Smithsonian-Bredin Expedition : 2 ♂ (USNM).
Society Islands. Tahiti : 1 ♂ (RMNH D 2797).

GEOGRAPHICAL DISTRIBUTION. — Throughout the Indo-west Pacific region but apparently never recorded from the Red Sea or Easter Island. Specimens from the Red Sea at the Muséum national d'Histoire naturelle, Paris that were previously identified as *T. rufopunctata* belong to *T. tigrina* Eydoux & Souleyet.

COLOR. — Carapace, chelipeds, and walking legs show distinctive red spots on a cream or very light orange background. GALIL and LEWINSOHN (1985a) report on the variation in the size and distribution of spots.

REMARKS. — *T. rufopunctata* can be confused with *T. tigrina*, which shows a similar color pattern. Diagnostic to *T. rufopunctata* are the triangular teeth along the anterior border of the carapace (rounded in *T. tigrina*) and the two rows of thick, teeth-like tubercles along the inner border of the cheliped propodus (very small tubercles in *T. tigrina*).

Trapezia serenei Odinetz, 1984

Trapezia serenei Odinetz, 1983 : 34, 65, 85, 87, 96, 107, 114, 134, 197, 199, 206, 211, 214, 216, photograph 6 (color) (Moorea, Tahiti, Takapoto) ; 1984a : 440, figs 3 B, 4 B (Mataiva, Moorea, Tahiti, Takapoto). — SALVAT & RICHARD, 1985 : 344 (Takapoto). — GUINOT, 1985 : 452 (list). — ODINETZ-COLLART & RICHER DE FORGES, 1985 : 200, 201 (Takapoto, Moorea ?, Tahiti ?). — ALLEN & STEENE, 1994 : 159 (color photograph). — POUPIN, 1996 : 60 (list). — CASTRO, 1997 : 92, pl. 2 F (color photograph ; Tahiti).

Trapezia ferruginea — DANA, 1852b : 260 (Tahiti, part) ; 1855 : pl. 16, fig. 1a (color). — FOREST & GUINOT, 1961 : 136, figs 137 a, b (Tahiti). — JONES & MORGAN, 1994 : 178 (color photograph). (non *Trapezia ferruginea* Latreille).

Trapezia cymodoce dentata — RATHBUN, 1907 : 58 (Makemo, part).

Trapezia cymodoce ferruginea — RATHBUN, 1907 : 58 (Makemo, part).

Trapezia cymodoce sp. 2 — KROPP & BIRKELAND, 1982 : 629 (Moorea, Takapoto). — ODINETZ, 1984b : 124 (Moorea, Tahiti, Takapoto).

MATERIAL EXAMINED. — **Guam.** *Pocillopora damicornis*, 4.1981, coll. O. ODINETZ : 1 ♂ holotype (MNHN-B 9681).

Society Islands. Tahiti, 1952, Mission RANSON : 1 ♂, 1 ♀ (MNHN-B 16543). — Tahiti, *P. elegans*, 1982, coll. O. ODINETZ : 1 ♂, 1 ♀ (MNHN-B 9690) ; 10 ♂, 8 ♀, 1 juv. (MNHN-B 25494-25504). — Moorea, 1.7.1980, coll. R. KROPP & C. BIRKELAND : 1 ♂, 1 ♀ (USNM 277762) ; *P. elegans*, 3.7.1980 : 1 ♂, 1 ♀ (USNM 277769). — Moorea, *P. damicornis*, 1982, coll. O. ODINETZ : 2 ♂, 2 ♀ (MNHN-B 9688-9689) ; *P. elegans* : 1 ♂, 1 ♀ (MNHN-B 9753) ; 1 ♂, 1 ♀, P4-A2 (MNHN-B 22955) ; 1 ♂, 1 ♀, P5-C1 (MNHN-B 22956) ; 1 ♂, P5-A4 (MNHN-B 22957) ; 1 ♂, 1 ♀, P5-C4 (MNHN-B 22958) ; 1 ♂, 1 ♀, L1-B11 (MNHN-B 22959) ; 1 ♂, 1 ♀, P5-A5 (MNHN-B 22960) ; 1 ♀, P5-B3 (MNHN-B 22961) ; 1 ♂, 1 ♀, L1-C3 (MNHN-B 22962) ; 3 ♂, 3 ♀, 1 juv. (MNHN-B 25505-25507, 25511). — Material identified as *Trapezia ferruginea* by J. S. GARTH : Tahiti, Taapuna Pass, st. 46, 21.4.1957, Smithsonian-Bredin Expedition : 1 ♀ (USNM) ; Bora-Bora, st. 72, 27.4.1957, Smithsonian-Bredin Expedition : 1 ♂, 2 ♀ (USNM) ; Raiatea, Uturoa, st. 75, 28.4.1957, Smithsonian-Bredin Expedition : 6 ♂, 4 ♀ (USNM) ; Huahine, Bourayne Bay, st. 88, 1.5.1957, Smithsonian-Bredin Expedition : 2 ♂, 5 ♀ (USNM) ; Moorea, Nuarei Bay, st. 126, 12.5.1957, Smithsonian-Bredin Expedition : 1 ♀ (USNM). — Material identified as *Trapezia dentata* by J. S. GARTH : Bora-Bora, 28.8.1978, coll. E. TARVYD : 1 ♂, 1 ♀ (LACM).

Tuamotu Archipelago. Takapoto, *P. elegans*, 1982, coll. O. ODINETZ : 3 ♂, 3 ♀ (MNHN-B 9694, 9695, 9752) ; 1 ♂, 1 ♀ (MNHN-B9693) ; 1 ♂, 1 ♀, OPU-F1 (1) (MNHN-B 22963) ; 1 ♂, OPU-E1 (1) (MNHN-B22964) ; 1 ♂, 1 ♀, OPU-E5 (1) (MNHN-B 22965) ; 4 ♂, 4 ♀ (MNHN-B 25508-25510, 25512). — Material identified by M. J. RATHBUN as *Trapezia cymodoce dentata* : Makemo, 21.10.1899, *Albatross* : 2 ♂, 2 ♀ (USNM 33354). Material identified by M. J. RATHBUN as *Trapezia cymodoce ferruginea* : Makemo, 21.10.1899, *Albatross* : 1 ♂ (USNM 33358). — Material identified as *Trapezia ferruginea* by J. S. GARTH : Tikehau, lagoon, st. 10a, 11.4.1957, Smithsonian-Bredin Expedition : 4 ♂, 2 ♀

(USNM) ; Rangiroa, 8. 10. 1975, coll. A. FIELDING : 2 ♂, 1 ♀ (LACM).

GEOGRAPHICAL DISTRIBUTION. — Known from Okinawa, southern Japan to French Polynesia and Western Australia (CASTRO, 1997). Its distribution is probably wider as it has been confused with *T. ferruginea*.

COLOR. — Carapace and chelipeds are orange pink with pink to purplish borders. The walking legs are pink. Preserved specimens are light orange with the borders of the carapace and the merus and carpus of the chelipeds pink to light purple (CASTRO, 1997).

REMARKS. — The specimens of *T. ferruginea* Latreille described by DANA (1852b) as having borders of the carapace carmine in color and therefore belonging to *T. serenei* were collected in Tahiti, not in Samoa as stated by ODINETZ (1984a, 1984b). This diagnostic coloration is depicted in the original color illustration of DANA (1855).

T. serenei is almost morphologically identical to *T. ferruginea* (CASTRO, 1997). The only reliable way to distinguish between them is their color pattern : pink to purplish borders in *T. serenei* and an orange-red spot on the distal end of the propodus of the walking legs of *T. ferruginea*.

The original characterization of *T. serenei* by ODINETZ (1983), like that of *T. punctimanus*, was published in a thesis of limited distribution. The more detailed characterization (ODINETZ, 1984a) is the valid description.

Trapezia speciosa Dana, 1852

Pl. 1 F

Trapezia speciosa Dana, 1852a : 83 (Carlshoff island = Aratika) ; 1852b : 253 ; 1855 : pl. 15, fig. 1 (color). — NOBILI, 1907 : 403 (Marutea). — SEURAT, 1934 : 59 (list). — SERÈNE, 1959 : 140, figs 3, 4, 5 B, 6 A, pl. 2. — FOREST & GUINOT, 1961 : 133, figs 131, 132, 136 a, b (Hikueru) ; 1962 : 70 (list). — KROPP & BIRKELAND, 1982 : 629 (Moorea, Takapoto). — GALIL, 1983 : fig. 9 C. — ODINETZ, 1983 : 31, 107, 114, 134, 205, 214 (Moorea, Tahiti, Takapoto). — SERÈNE, 1984 : 278 (full synonymy), fig. 186, pl. 38, fig. E. — DELESALLE, 1985 : 289 (Mataiva). — GUINOT, 1985 : 452 (list). — ODINETZ-COLLART & RICHER DE FORGES, 1985 : 201 (Takapoto, Moorea ?, Tahiti ?). — POUPIN, 1996 : 60 (list).

Trapezia digitalis speciosa — RATHBUN, 1907 : 59 (Fakarava, Makemo, Tahiti).

MATERIAL EXAMINED. — Society Islands. Tahiti, Papeete, 28.10.1899, *Albatross* : 1 ♂, 1 ♀ (USNM 33347). — Bora-Bora, Motu Tapu I., st. 62, 25.4.1957, Smithsonian-Bredin Expedition : 1 ♂ (USNM). — Moorea, Nuarei Bay, st. 129, 12.5.1957, Smithsonian-Bredin Expedition : 1 ♂ (USNM). — Moorea, *Pocillopora damicornis*, 1982, coll. O. ODINETZ : 2 ♂, 2 ♀ (MNHN-B 9749) ; 1 ♂, 5 ♀, TIA-M4 (MNHN-B 16823). — Tahiti, 1982, coll. O. ODINETZ : 4 ♂, 5 ♀ (MNHN-B 25464-25467).

Tuamotu Archipelago. Fakarava, outer reef, 12.10.1899, *Albatross* : 5 ♂, 5 ♀ (USNM 33345). — Fakarava, *Albatross* ? : 2 ♂, 1 ♀ (USNM). — Makemo, 21.10.1899, *Albatross* : 1 ♂, 1 ♀ (USNM 33346). — Marutea, 1905, coll. G. SEURAT : 1 ♂ (MNHN-B 16922). — Hikueru, 1952, Mission RANSON : 1 ♀ (MNHN-B16921). — Tikehau, lagoon, st. 10, 11.4.1957, Smithsonian-Bredin Expedition : 1 ♂ (USNM). — Pukapuka, 6.10.1967, N. G. S. - Smithsonian-Bishop Museum Marquesas Expedition : 2 ♂, 1 ♀ (USNM). — Raroia, coll. J. P. E. MORRISON : 1 ♂, 1 ♀ (USNM). — Takapoto, *P. damicornis*, 1982, coll. O. ODINETZ : 6 ♂, 8 ♀ (MNHN-B 9750-51) ; 1 ♂, 1 ♀, P3-A11 (MNHN-B 23006) ; 2 ♂, 2 ♀, L1-B10 (MNHN-B 23007) ; 1 ♀, P5-B3 (MNHN-B 23008) ; 1 ♂, 1 ♀, P5-B2 (MNHN-B 23009) ; 1 ♂, 2 ♀, P5-A2 (MNHN-B 23010) ; 1 ♂, 1 ♀, P6-A5 (MNHN-B 23011) ; 4 ♂, 3 ♀, P5-C4 (MNHN-B 23012) ; 1 ♂, L1-B11 (MNHN-B 23013) ; 1 ♂, 1 ♀, P5-A4 (MNHN-B 23014) ; 1 ♂, 1 ♀, P3-C1 (MNHN-B 23015) ; 2 ♀, P4-A2 (MNHN-B 23016) ; 12 ♂, 15 ♀, 2 juv. (MNHN-B 25458-25463). — Anuanuraro, 3 m, *Pocillopora*, 4.1996, coll. J. POUPIN : 5 ♂, 4 ♀ (MNHN-B 25318). — Moruroa, 5-10 m, *Pocillopora*, 4.1996, coll. J. POUPIN : 4 ♂, 4 ♀ (MNHN-B 25319).

Réunion, Indian Ocean. *Pocillopora* & *Stylophora*, 1976-77, coll. S. RIBES : 14 ♂, 12 ♀ (MNHN-B 8326-8328, B 16093, B 25302-25311) ; coll. M. PEYROT-CLAUSADE : 1 ♀ (MNHN-B 25301).

Seychelles Is., Indian Ocean. 17.2.1972, coll. A. J. BRUCE : 2 ♂, 1 ♀ (MNHN-B 23048).

GEOGRAPHICAL DISTRIBUTION. — *T. speciosa* is known from southeastern Polynesia, Wake and Johnston islands (EDMONDSON, 1925), the Marshall Islands (GARTH, 1964, 1989 ; GARTH *et al.*, 1987), Ifalik atoll (GARTH, 1989), Tuvalu and Fiji (BORRADAILE, 1900), the Paracel Islands (DAI & LAN, 1981), Viet Nam (SERÈNE, 1959), and the western Indian Ocean (SERÈNE, 1984).

COLOR. — The dorsal surfaces of the carapace and chelipeds of live individuals (pl. 1 F) are ornamented with sinuous, interconnected red lines over a light-orange or pinkish (in largest individuals) background. In some the pattern is more regular and form rectangles along the anterior edge of the carapace. The pattern is similarly more regular and honeycomb-like on the dorsal surface of the cheliped propodus. The sinuous pattern is repeated on the ventral surface of the anterior portion of the carapace, third maxillipeds, and abdomen. The ventral portion of the cheliped propodus is orange. A flat tubercle at the base of the dactylus is red. The dactylus is light brown and the immovable finger orange ventrally, light brown dorsally. The walking legs are light orange with very small red dots. The eyes are dark brown. The ornamentation on the carapace and chelipeds of preserved specimens remains as dark-orange lines on a light-orange background.

REMARKS. — *T. speciosa* is best characterized by its very distinctive color pattern. As in *T. bella*, the straight anterolateral borders of the carapace and acute epibranchial spines of juveniles develop into fully grown adults with rounded anterolateral borders and notches instead of epibranchial teeth. A characteristic tomentum that consists of very thin and long setae is present on the walking legs and along the posterior border of the merus, carpus, and proximal portion of the cheliped propodus. The development of a tomentum is a variable character, however. It is more common in the larger specimens from southeastern Polynesia, very rare in those from the western Indian Ocean.

T. speciosa, like *T. areolata*, *T. bella*, and *T. globosa*, is distinguished by small individuals. The largest specimen examined was a female from Réunion, western Indian Ocean (cw 12.8 mm, cl 9.5 mm ; MNHN-B 8328).

Trapezia tigrina Eydoux & Souleyet, 1842

Trapezia tigrina Eydoux & Souleyet, 1842 : 232, pl. 2, fig. 4. — WARD, 1939 : 13, figs 15, 16. — ODINETZ, 1983 : 34, 85, 87, 96, 107, 114, 134, 197, 199, 205, 211, 214, 216, photograph 5 (Moorea, Tahiti, Takapoto). — GALIL & LEWINSOHN, 1984 : 166 (full synonymy), fig. 1 (Society Is, Anaa, Tikehau, Pitcairn Island). — SERÈNE, 1984 : 275 (full synonymy), fig. 182, pl. 39, fig. C, D. — GALIL & LEWINSOHN, 1985a : fig. 7. — GUINOT, 1985 : 452 (list). — ODINETZ-COLLART & RICHER DE FORGES, 1985 : 201 (Takapoto, Moorea ?, Tahiti ?). — CASTRO & HUBER, 1997 : fig. 6.1 (color photograph). — POUPIN, 1996 : 60 (list).

Trapezia maculata — DANA, 1852b : 256 (Tahiti) ; 1855, pl. 15, figs 4 a (color)- d.

Trapezia danae Ward, 1939 : 13, figs 17, 18.

Trapezia wardi Serène, 1971 : 140. — KROPP & BIRKELAND, 1982 : 629 (Moorea, Takapoto). — GUINOT, 1985 : 452 (list).

Trapezia rufopunctata — LUCAS, 1853 : 41 (Nuku Hiva, part) not *Trapezia rufopunctata* (Herbst)

? *Trapezia rufopunctata* var. *maculata* — ORTMANN, 1893 : 484 (Tahiti).

Trapezia cymodoce maculata — RATHBUN, 1907 : 59 (Makemo, part).

MATERIAL EXAMINED. — **Hawaiian Islands.** 1838, coll. F. EYDOUX & F. A. SOULEYET : 1 ♀ type (MNHN-B 2950).

Society Islands. Coll. A. GARRETT : 1 ♂, 1 ♀ (USNM 15893). — Tahiti : 1 ♂, 1 ♀ (RMNH D 540). — Tahiti, 7.9.1967, coll. B. R. WILSON, N. G. S. - Smithsonian-Bishop Museum Marquesas Expedition : 1 ♀ (USNM). — Tahiti, *Pocillopora elegans*, 1982, coll. O. ODINETZ : 3 ♂, 3 ♀ (MNHN-B 9729-9731) ; 2 ♂, 1 ♀ (MNHN-B 25492-25493). — Moorea, pass to Papetoai Bay, outer barrier reef, 15.5.1957, coll. J. E. RANDALL, Smithsonian-Bredin Expedition : 1 ♀ (USNM). — Moorea, 1982, coll. O. ODINETZ : 1 ♀ (MNHN-B 23036) ; *P. elegans* : 4 ♂, 4 ♀ (MNHN-B 9726-9728) ; 1 ♂, 1 ♀, OPU-D7 (MNHN-B 23020) ; 5 ♂, 3 ♀ (MNHN-B 25488-25491).

Tuamotu Archipelago. Makemo, 21.10.1899, *Albatross* : 1 ♀ (USNM 33350). — Takaroa, 12.2.1929, coll. A. W. HERRE : 2 ♂, 1 ♀ (USNM). — Tikehau, lagoon, st. 10a, 11.4.1957, Smithsonian-Bredin Expedition : 1 ♂, 1 ♀ (USNM).

— Anaa, 18-19 m, 27.10.1967, N. G. S. - Smithsonian-Bishop Museum Marquesas Expedition : 1 ♂ (USNM). — Takapoto, *P. elegans*, 1982, coll. O. ODINETZ : 1 ♂, 1 ♀ (MNHN-B 9725) ; 10 m : 1 ♂, 1 ♀, E2-C3 (MNHN-B 23021) ; 30 m : 2 ♂, 2 ♀, E4-A5 (MNHN-B 23022) ; 10 m : 2 ♂, 2 ♀, E4-C4 (MNHN-B 23023) ; 10 m : 1 ♂, 1 ♀, E4-C5 (MNHN-B 23024) ; 1 ♀, P5-C4 (MNHN-B 23025) ; 30 m : 1 juv., E4-A3 (MNHN-B 23026) ; 20 m : 1 ♂, 1 ♀, 1 juv., E3-B2 (MNHN-B 23027) ; 16 ♂, 18 ♀, 9 juv. (MNHN-B 25468-25487). — Fangataufa, 10 m, *Acropora* ?, 2.1996, coll. SMSRB divers : 1 ♂ (MNHN-B23018). — Moruroa, *Pocillopora*, 10.1995, coll. J. POUPIN : 2 ♂, 2 ♀ (MNHN-B 23019) ; 5 m, 4.1996 : 2 ♂, 1 ♀ (MNHN-B 25316).

Pitcairn Island. Off south coast, 40-45 m, 20.10.1967, N. G. S. - Smithsonian-Bishop Museum Expedition : 2 ♂, 1 ♀ (USNM).

GEOGRAPHICAL DISTRIBUTION. — Present across the Indo-west Pacific region, including the Hawaiian Islands. It seems to be absent, however, from the Coral Sea.

COLOR. — Live specimens are light orange or cream with red spots distributed throughout the carapace and appendages. The size and distribution of spots varies widely (GALIL & LEWINSOHN, 1984). The fingers show the same cream color of the rest of the body. The eyes are light gray.

REMARKS. — GALIL & LEWINSOHN (1984) clarified the status of *T. tigrina* and explained the confusion that resulted from the exchange of its type material with that of *T. flavopunctata*. This exchange, which had previously been recorded in a handwritten note by R. SERÈNE in 1976, is now confirmed. Both species were described and illustrated by EYDOUX & SOULEYET (1842).

Differences between *T. tigrina* and a similar species, *T. richtersi* Galil & Lewinsohn, however, have never been outlined. Both species occur together in the western Indian Ocean. *T. richtersi* is not recorded from elsewhere, whereas *T. tigrina* is found throughout the Indo-west Pacific. Both species feature red dots on the carapace. The dots, however, are typically larger and less numerous in *T. tigrina* (see photographs in GALIL & LEWINSOHN, 1984). The chelipeds also have red dots in *T. tigrina* but typically red reticulations, not distinct dots, in the propodus of *T. richtersi* (see photographs in GALIL & LEWINSOHN, 1983 and SERÈNE, 1984). The epibranchial teeth are conspicuous and acute in *T. tigrina* and the anterolateral borders of the carapace almost parallel to each other, although slightly rounded in the largest specimens. In *T. richtersi* the epibranchial teeth become obtuse and the anterolateral borders distinctively rounded with increasing size. *T. richtersi* is smaller (maximum cw 10-12 mm, 13-14 mm in exceptional cases) than *T. tigrina* (largest specimen examined was a female from the Maldiv Islands, cw 19.7 mm ; MNHN-B 16535) so that differences in the morphology of the carapace are clear when adults of similar size are compared.

Juveniles and very small adults of *T. tigrina* can be differentiated from those of *T. bella*, which is also ornamented with red dots, by the larger dots and the more pronounced and projecting epibranchial teeth and postorbital angles.

ZOOGEOGRAPHICAL CONSIDERATIONS

The number of species of *Trapezia* is unexpectedly high in southeastern Polynesia, the region that extends from French Polynesia to Easter Island. Fourteen species are reported here, including the rare presence of *T. cymodoce* and *T. lutea*. Of these fourteen species, three seem to be endemic to the region : *T. areolata*, *T. globosa*, and *T. punctimanus*. The first two are small-size species. Three species that so far seem relatively rare in other Indo-west Pacific locations, *T. bella*, *T. serenei* and *T. speciosa*, are common in French Polynesia. *T. cymodoce*, very common in the southwestern Pacific, is rare.

The decrease in species diversity that is expected as one moves eastward from areas of high diversity in the western Pacific is not observed in trapeziids. Eleven species of *Trapezia* are found in the Coral Sea region (CASTRO, 1997) against fourteen in southeastern Polynesia. Eight species are found in both regions.

This study confirms earlier work on the eastern Pacific (CASTRO, 1996) and the Coral Sea (CASTRO, 1997) species that suggests that while some species of *Trapezia* are widely distributed, others appear to have evolved in relatively isolated areas such as the eastern Pacific. Only six species of *Trapezia* inhabit the Hawaiian Islands,

which at the extreme northeastern edge of the Indo-west Pacific region are more isolated than the islands of southeastern Polynesia. Only four species occur in the more isolated eastern Pacific. None of the Hawaiian species appears to be endemic ; one (*T. corallina* Gerstaecker) is endemic to the eastern Pacific. Five of the six Hawaiian species and two of the eastern Pacific species are also found in eastern Polynesia. All of them are widely distributed, or eurytopic, species.

Some less isolated regions like the Coral Sea and Taiwan (GALIL, 1983), however, also have species of *Trapezia* not known elsewhere. The careful collection and identification of material from other regions may reveal a wider distribution of what appear to be endemic species of limited distribution. It might probably reveal, however, new endemic species.

Six species of *Tetralia* and *Tetraloides*, are known from French Polynesia. This figure is similar to the six present in the Coral Sea. Both genera are absent in the Hawaiian Islands, Easter Island, and the eastern Pacific, areas where *Acropora*, their coral host, is absent or has a very limited distribution.

Although it is too early to speculate, differences in the geographical distribution among the species of *Trapezia*, *Tetralia* and *Tetraloides* may be explained, at least in part, by differences in the dispersal abilities of their larvae. Unfortunately, nothing is known about the life history of the larvae. Host specificity and the species diversity of the coral hosts may also influence geographical distribution although there is yet no evidence to support this. Species with a more limited distribution have evolved mostly but not exclusively in the more isolated regions such as southeastern Polynesia. Some of these species, like two of the three southeastern Polynesian species and the two Taiwanese species, are characterized by their small size.

The rare occurrence in isolated regions of widely distributed species may be the result of infrequent long-distance dispersal of larvae. This may explain, if the locality of the few specimens in question is actually correct, the unusually rare frequency of *T. cymodoce* and *T. lutea* in French Polynesia and of *T. tigrina* (not *T. rufopunctata* as reported by CASTRO, 1996) in the Revillagigedo Islands off the west coast of Mexico. Infrequent long-distance dispersal can be explained by post-larvae that conceivably survive on small *Pocillopora* colonies living on floating pumice (JOKIEL, 1984) or carried by unusually-warm El Niño currents.

Species diversity among obligate symbionts of corals, many of which are trapeziids, were found not to vary between high and low islands in French Polynesia (KROPP & BIRKELAND, 1982 ; ODINETZ-COLLART & RICHER DE FORGES, 1985). Additional collections reported here confirm this observation.

KEY TO THE SOUTHEASTERN POLYNESIA TRAPEZIIDS

1. Anterior border of carapace with conspicuous, triangular, teeth-like lobes ; carapace with distinctly hexagonal outline, its posterior border slightly wider or as wide as anterior border. On gorgonians, antipatharians, or alcyonaceans *Quadrella* 2
- Anterior border of carapace with relatively small lobes or no lobes at all (if triangular, tip is obtuse, not acute). Carapace trapezoidal or oval, its posterior border shorter than anterior border. On hermatypic corals 3
2. Anterior border of carpus of cheliped with two well-developed spines or tubercles *Quadrella maculosa*
- Anterior border of carpus of chelipeds without spines *Quadrella lewinoehni*
3. Chelipeds very dissimilar in size. Male abdomen with seven segments. In acroporid corals. . 4
- Both chelipeds massive and only slightly dissimilar in size. Male abdomen with five segments. In pocilloporid corals *Trapezia* 9
4. Largest cheliped with setae-filled depression on dorsal, proximal surface. Thoracic sternum with median suture *Tetralia* 5
- Largest cheliped without setae-filled depression on dorsal surface. Thoracic sternum without median suture *Tetraloides* 8

5. Anterior border of cheliped merus with prominent, salient crest provided with teeth. Dorsal surface of finger of cheliped with large orange-red spot *Tetralia rubridactyla*
- Anterior border of cheliped merus dentate but without prominent, salient crest. Entire finger of cheliped brown or orange red 6
6. Chelipeds smooth or with microscopic granules and no dark spots or markings. Endopod of first maxillipeds straight or with slightly convex border *Tetralia fulva*
- Chelipeds with tubercles and brown spots or irregular markings. Endopod of first maxillipeds with slightly concave border 7
7. Fingers of chelipeds light brown. Walking legs banded with dark brown ... *Tetralia cincipies*
- Fingers of chelipeds orange red. Walking legs not banded *Tetralia vanninii*
8. Small cheliped with triangular, teeth-like tubercles along lower border. Carapace light brown ; walking legs light brown with dark-brown to black spots *Tetraloides heterodactyla*
- Small cheliped with rounded tubercles along lower border. Carapace white or cream with dark-brown anterior border ; walking legs dark brown with cream spots
..... *Tetraloides nigrifrons*
9. Honeycomb-like pattern of lines on carapace and chelipeds 10
- Carapace uniformly colored, with spots, or with color band along anterior border. 11
10. Anterolateral borders of carapace parallel to each other. Honeycomb pattern of brown lines on greenish-brown background *Trapezia areolata*
- Anterolateral borders of carapace rounded except in very small individuals and juveniles. Honeycomb pattern of red lines on light-orange or pinkish background ... *Trapezia speciosa*
11. Chelipeds and dorsal surface of carapace with distinctive spots or dots throughout surface that very often remain inpreserved specimens 12
- Dorsal surface of carapace not covered with spots or dots, although small dots may be present on chelipeds or as a row across carapace 15
12. Inner border of carpus of chelipeds with thick, teeth-like tubercles 13
- Inner border of carpus of chelipeds smooth or with very small tubercles 14
13. Teeth along anterior border of carapace rounded. Carapace and chelipeds with large yellow spots *Trapezia flavopunctata*
- Teeth along anterior border of carapace triangular. Carapace and chelipeds with large red spots *Trapezia rufopunctata*
14. Anterolateral borders of carapace rounded and epibranchial teeth obtuse or absent except in juveniles. Carapace and chelipeds with small red-brown dots on a light red-brown background *Trapezia bella*
- Anterolateral borders of carapace almost parallel to each other except in large adults. Epibranchial teeth acute. Carapace and chelipeds with red spots on a light-orange or cream background *Trapezia tigrina*
15. Upper border of carpus and propodus of chelipeds with conspicuous tomentum that consists of numerous setae 16
- Upper border of propodus of cheliped without a tomentum 17
16. Conspicuous suture between second and third thoracic sternites always present. Carapace with almost straight anterolateral borders ; epibranchial teeth acute except in largest

- individuals. Carapace purplish to brownish blue, with a row of small orange-red spots across dorsal surface *Trapezia cymodoce*
- Suture between second and third thoracic sternites only in smaller individuals, partially or completely fused in fully-grown ones. Carapace with rounded anterolateral borders ; epibranchial teeth obtuse except in smallest individuals. Carapace orange to yellow-orange without a row of orange-red spots on dorsal surface *Trapezia lutea*
17. Anterior border of carapace with minute teeth ; almost straight or only with slight emarginations. Carapace uniformly dark brown or red brown 18
- Anterior border of carapace emarginated into distinct lobes that may only have microscopic teeth. Carapace not uniformly brown or red brown 19
18. Anterolateral borders of carapace parallel to each other *Trapezia digitalis*
- Anterolateral borders of carapace rounded *Trapezia globosa*
19. Dorsal surface of carapace white to cream with a red-brown band across frontal border. Walking legs with red-brown spots *Trapezia guttata*
- Dorsal surface of carapace not white and without a dark-color band across anterior border. Walking legs not spotted 20
20. Chelipeds with red dots throughout inner dorsal surface *Trapezia punctimanus*
- Chelipeds without color dots 21
21. Carapace brown orange with thin, lighter orange edges. Orange-red spot on distal end of propodus of walking legs *Trapezia ferruginea*
- Carapace orange pink with pink to purplish edges. No color spots on walking legs
..... *Trapezia serenei*

ACKNOWLEDGEMENTS

Most of this work was undertaken while I was invited professor at the Muséum national d'Histoire naturelle, Paris. I am most grateful to D. GUINOT for her support. My most sincere thanks to J. POUPIN, who provided a valuable collection of specimens and photographs. His bibliographic list of crabs from French Polynesia also made my task much easier. The remaining material was generously made available by P. CLARK (BMNH), A. CROSNIER (ORSTOM, Paris), C. FRANSEN (RMNH), R. KROPP (Battelle Ocean Sciences, Massachusetts, USA), R. LEMAITRE & R. MANNING (USNM), J. W. MARTIN (LACM), and M. RETAMAL (Universidad de Concepción, Chile). R. KROPP and W. PATTON (Ohio Wesleyan University) made valuable comments to the manuscript.

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Pl. 1. — **A.** *Tetralia cincipes* Paulson, 1875. Live ♂, Tuamotu Archipelago, French Polynesia (MNHN-B 25326). **B.** *Tetraloides heterodactyla* (Heller, 1861). Live ♂, Tuamotu Archipelago, French Polynesia (MNHN-B 25325). **C.** *Trapezia areolata* Dana, 1852. Live ♀, Tuamotu Archipelago, French Polynesia (MNHN-B 25313). **D.** *Trapezia globosa* sp. nov. Live ♀ infected with bopyrid parasite, Marquesas Islands, French Polynesia (MHNN-B 25321). **E.** *Trapezia punctimanus* Odinetz, 1984. Live, Tuamotu Archipelago, French Polynesia (MNHN-B 22994). **F.** *Trapezia speciosa* Dana, 1852. Live ♀, Tuamotu Archipelago, French Polynesia (MNHN-B 25319). Photographs by J. POUPIN.