

THE OCCURRENCE OF *OCYPODE PALLIDULA* JACQUINOT
(DECAPODA, BRACHYURA) IN AUSTRALIA AND THE CORAL SEA

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RÉSUMÉ

Quatre espèces d'*Ocypode* sont généralement reconnues comme vivant en Australie, alors que sept espèces sont présentes dans la région australienne. *O. pallidula* Jacquinot n'a généralement pas été considéré comme une espèce d'Australie, bien qu'il existe sur les îles au large du Queensland et dans la mer de Corail. *O. pallidula* a été mis en synonymie avec *O. laevis* Dana et *O. urvillei* auct. sensu Ortmann, 1897; il est probable que des spécimens soient conservés dans des collections sous l'un de ces noms synonymes. En raison de leur taille qui est moyenne, des *O. pallidula* peuvent aussi être mal identifiés dans des collections, comme juvéniles d'espèces plus grandes d'*Ocypode*. Une brève description d'*O. pallidula* est fournie afin de faciliter son identification dans les collections, et les différences entre les sept espèces d'*Ocypode* de la région australienne sont présentées dans un tableau.

INTRODUCTION

Recently the Western Australian Museum acquired four specimens, referable to the genus *Ocypode* Weber, 1795, from N.E. Herald Cay, (3 ♂♂) and Juliette Cay, Lihou Reef (1 ♂) in the Coral Sea. On examination the specimens were found to differ from *O. ceratophthalmus* (Pallas, 1772) and *O. cordimana* Latreille, 1818, two species with widespread Indo-West Pacific distributions which would be expected to occur in the area. They also differed from the other two species of *Ocypode* known to occur in Australia – namely *O. fabricii* H. Milne Edwards, 1837, found on the northern and western coasts of the continent, and *O. convexa* Quoy & Gaimard, 1824, known only from Western Australia. Neither were the specimens referable to *O. kuhlii* De Haan, 1835, which occurs in Indonesia, New Guinea and Bougainville, nor to *O. nobilii* De Man, 1902, known from Kalimantan (Borneo) and Brunei.

The specimens were identified as *O. pallidula* Jacquinot, 1842-47, a species which has been recorded sporadically on offshore and oceanic islands throughout the Indo-West Pacific but which has not been generally recognized as part of the Australian ocypodid fauna. Sakai & Türkay (1976: 87) recorded *O. pallidula* in the Coral Sea and eastern Australia but were able to locate only one specimen lot (3 ♂♂, 3 ♀♀) in Australian collections (AM P16894). These

authors synonymized *O. laevis* Dana, 1852, and *O. urvillei* auct. sensu Ortmann 1897 (non Guérin, 1829) with *O. pallidula* (see Sakai & Türkay, 1976: 87, 95). It is possible that specimens of *O. pallidula* are housed in museum collections under one or other of these synonyms. It is also possible, since *O. pallidula* only attains a medium size (Ortmann, 1897), that specimens could be easily misidentified in collections and referred to as the juveniles of larger *Ocypode* species. Conversely, it is possible that specimens referred to as *O. pallidula* or one or other of its synonyms, may in fact be the juveniles of a larger *Ocypode* species.

The following brief description should aid in the identification of *O. pallidula* in museum collections. The differences between adult specimens of the seven *Ocypode* species known from the Australian region are recorded in table I, using comparative material housed in the WAM. Only tentative identifications may be possible for juvenile specimens since some characters, particularly the length of the ocular stylet and the shape of the anteriolateral angle, are known to vary with size (Von Hagen, 1970: 13). A more detailed analysis of the *Ocypode* species found in the Indo-West Pacific is in preparation (Jones, in prep.).

The following abbreviations are used in the text: c.l., carapace length in millimetres, measured from mid frontal to mid posterior margin; c.w., carapace width in millimetres measured at the widest part of the carapace; AM, Australian Museum, Sydney; BMNH, British Museum (Natural History), London; SMF, Senckenberg Museum, Frankfurt; WAM, Western Australian Museum, Perth.

Ocypode pallidula Jacquinot, 1842-47

Ocypode rhombea - Randall, 1840: 123 (non Fabricius, 1798: 348).

Ocypoda pallidula Jacquinot, 1842-47: pl. 6 fig. 1; Dana, 1852: 324; Dana, 1855: pl. 20 figs. 1a-c.

Ocypoda laevis Dana, 1852: 325; Dana, 1855: pl. 20 fig. 2.

Ocypoda cordimana (Junior) - Jacquinot & Lucas, 1853: 65; Kingsley, 1880: 185 (non Latreille, 1818: 198, pl. 15).

Ocypoda urvillei - Ortmann, 1897: 258, pl. 17 fig. 10 (non Guérin, 1829: pl. 1 fig. 1 = *O. ceratophthalmus* (Pallas, 1772: 83, pl. 5 fig. 17)).

Ocypode laevis - Rathbun, 1906: 834, pl. 7 fig. 2; Edmondson, 1962: 16, pl. 76; Crosnier, 1965: 105, figs. 182-184, pl. 11 fig. 3.

Ocypode pallidula - Sakai & Türkay, 1976: 87, figs. 14-15, map 2.

Type locality. — Tuamotu Archipelago.

Distribution. — Madagascar; Mauritius; S.E. Sulawesi (Celebes); Wetar (near Timor); New Guinea; eastern Australia; Coral Sea; Norfolk I., Cook Is., Tuamotu Arch., Hawaiian Is.

Material examined. — Coral Sea-NE Herald Cay, 3 ♂♂ c.l. 18.4, 19.3, 21.8, c.w. 20.9, 21.9, 23.8 (WAM 627-85); Juliette Cay, Lihou Reef, 1 ♂ c.l. 19.4, c.w. 21.6 (WAM 630-85); Paget I., Marion Reef, 1 ♂ c.l. 20.1, c.w. 21.7 (WAM 905-85); 1 ♀ c.l. 23.1, c.w. 26.8 (WAM 913-85). Queensland - Heron I., 1 ♀ (juv.) c.l. 13.5, c.w. 15.8 (WAM 906-85). Hawaiian Is - Fort Kamehameha, Oahu, 1 ♂ c.l. 17.3, c.w. 20.0 (WAM 904-85).

Diagnostic characters. — Stridulating ridge on palm of major chela composed of 25 to 40 fine, evenly spaced striae; major and minor chelae very broad and short, fingers pointed, chela and carpus finely and evenly granulated on outer surface, large granules or spikes absent. Lower orbital margin with lateral notch absent, median notch weak to absent. Ocular stylet absent. Anterolateral angles acute and produced forwards. Anterior upper border of propodus of second and third pereopod in male with double hairbrushes, in female single hairbrush on second and third pereopods. Inner dorsal margin of merus of major cheliped with toothed flange, five to six main teeth. Inner margin of carpus of major cheliped with two central teeth, outer distal margin of carpus denticulate. Terminal segment of male abdomen small, equilaterally triangular. Size moderate, c.l. to 23.1, c.w. to 26.8.

Remarks. — The WAM holds eight specimens of *O. pallidula* (6 ♂♂, 1 ♀, 1 juv. ♀) in its collections. Four of these specimens are originally identified as *O. pallidula* (WAM 627-85, 630-85), three had been previously identified as *O. urvillei* (WAM 905-85, 906-85, 913-85) and one previously identified as *O. laevis* (WAM 904-85). The latter specimen was contained in an unregistered specimen lot of four individuals, all identified as *O. laevis*. The three other individuals proved to be *O. ceratophthalmus* (1 juv. ♂ c.l. 15.2, c.w. 18.8, 1 juv. ♀ c.l. 19.4, c.w. 21.5, 1 subadult ♀ c.l. 23.0 c.w. 25.5) and have been registered as a separate lot (WAM 903-85). Juveniles of *O. ceratophthalmus* lack the long ocular stylet which is characteristic of adults of this species, and superficially resemble adult *O. pallidula*. Specimens of *O. ceratophthalmus* over 24 mm c.l. have been reported with distinct ocular stylets, the length of the stylet being in proportion with the length of the carapace, whilst specimens of less than 24 mm c.l. had either rudimentary or no ocular stylets (George & Knott, 1965: 17). However, the nature of the stridulating ridge easily separates juvenile *O. ceratophthalmus* from adult *O. pallidula*, as it is obviously composed of two different types of structure (tubercles and striae) in juvenile *O. ceratophthalmus* whereas in *O. pallidula* it is composed of only one type of structure (striae).

The very broad and short nature of the major chela, and the structure of the stridulating ridge easily distinguish *O. pallidula* from the other *Ocypode* species found in the Australian region (table I). *O. nobilii* is closest in size to *O. pallidula* but the two species may be easily separated on the nature of the fingers of the small chela—pointed in *O. pallidula*, truncated and rounded in *O. nobilii*—and on the number of striae forming the stridulating ridge—25 to 40 in *O. pallidula*, 115 to 120 in *O. nobilii*.

Australian and Coral Sea distribution records of *O. pallidula*:

Queensland: Lady Musgrave I. (23°54'S 152°23'E) 4 ♂♂, 2 ♀♀ BMNH; Heron I. (23°26'S 151°55'E) 1 ♀ (juv.) WAM 906-85; N.W. end of Gillet Cay (21°43'S 152°25'E) 3 ♂♂, 3 ♀♀ AM P16894.

Coral Sea: Paget I., Marion Reef (19°18'S 151°55'E) 1 ♂ WAM 905-85, 1 ♀ WAM 913-85; Juliette Cay, Lihou Reef (17°25'S 151°44'E) 1 ♂ WAM

TABLE I
Characters used to distinguish adults of *Ocyropsis* species found in the Australian region

	Carapace c.l. of largest specimen	Ocular stylets	Stridulating ridge	Notches of lower orbital margin	Fingers of small chela	Hairbrushes on peritopods
<i>O. ceratophthalmus</i> WAM 33-63, 93-63, 98-63, 908-85, 911-85, 912-85	40.0 45.0	Very long and slender	A few round tubercles above, 14-30 striae below	Median indistinct lateral absent	Acute	♂ triple brushes on II & III ♀ single brush on II
<i>O. cordimana</i> WAM 27-63, 28-63, 74-63, 75-63, 76-63, 140-63	35.0 40.0	Absent	Absent	Median very slightly, lateral broad key-hole shaped	Acute	♂ single brushes on II & III ♀ single brush on II
<i>O. fabricii</i> WAM 30-63, 100-63, 104-63, 4-64, 18-64, 200-73	38.5 41.0	Very short	Many very fine striae	Median slight, lateral U-shaped	Rounded and truncate	♂ triple or double brush on II ♀ single brush on II
<i>O. conuxa</i> WAM 77-63, 106-63, 107-63, 137-63, 13-64, 109-74	40.5 47.2	Absent	10-25 rounded tubercles	Median deep, lateral deep	Acute	♂ & ♀ single brush on II & III
<i>O. kuhlii</i> WAM 112-74	38.0 45.0	Absent	7-17 round or ovoid tubercles	Median weak, lateral deep	Acute	♂ & ♀ absent from II & III
<i>O. nobiliti</i> WAM 7-81	23.7 27.0	Short	Many fine striae, 115-120	Median slight, lateral shallow	Rounded and truncate	♂ single or double on II, double or triple on III ♀ single on II, single or double on III
<i>O. pallidula</i> WAM 627-85, 630-85, 904-85, 905-85, 906-85, 913-85	21.8 23.8	Absent	25-40 evenly spaced fine striae	Median weak to absent, lateral absent	Acute	♂ double on II & III ♀ single on II & III

630-85; West Cay, Diamond Islet (17°25'S 150°58'E) 2 ♂♂, 1 ♀ SMF 6870; NE Cay, Herald Cay (16°58'S 149°9'E) 1 ♂, 1 ♀ SMF 6871, 3 ♂♂ WAM 627-85.

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