

## NEW RECORDS OF ERIPHIIDAE, PILUMNIDAE AND XANTHIDAE (CRUSTACEA: DECAPODA: BRACHYURA) FROM TAIWAN

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**ABSTRACT.** - Forty-nine species of eriphiid, pilumnid and xanthid crabs representing 32 genera are recorded from Taiwan for the first time. Notable discoveries for the island include *Hypothalassia armata* (Eriphiidae), *Pilumnus murphyi*, *Lophopilumnus dilatipes* (Pilumnidae), *Demania mortenseni*, *Euryxanthops orientalis*, *Neoxanthops quadrilobatus*, *Neoxanthias michelae* and *Etisus bargibanti* (Xanthidae).

**KEY WORDS.** - New records, Brachyura, crabs, Eriphiidae, Pilumnidae, Xanthidae, Taiwan

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### INTRODUCTION

The xanthoid crabs of the families Eriphiidae, Pilumnidae and Xanthidae are very speciose in the Indo-West Pacific and are the most frequently encountered crabs in many intertidal and reef habitats. In Taiwan, 13 species of eriphiids, 11 species of pilumnids and 66 species of xanthids are currently known (Table 1). Taiwan as defined here includes the Penghu (= Pescadores), Lanyu and Lutaos Islands in addition to the main island. Kinmen and the Tungsha Islands have been excluded.

Over the last decade, extensive collections have substantially increased the number of xanthoid species known. Forty-nine species from 32 genera are now added to the eriphiid, pilumnid and xanthid fauna of Taiwan, which substantially increases the xanthoid fauna for the island, bringing the total for these three families now to 139 species. While many of the species are well known and have a wide Indo-West Pacific distribution, their confirmed presence in Taiwan is nevertheless worth recording. A number of species have previously been

regarded as Japanese endemics. Opportunity is also taken to provide colour photographs of some rare and/or interesting species.

The concept of the family Xanthidae follows that established by Guinot (1978), and excludes the Carpiliidae, Eriphiidae, Pilumnidae, Panopeidae and Trapeziidae (see Ng, 1998). The present paper reports on the many new records of Eriphiidae, Pilumnidae and Xanthidae from Taiwan. Material of all species examined are listed but comments are restricted to species for which new taxonomic or ecological information is available. No attempt has been made to include a complete synonymy for each species and the reader can refer to Serène (1984) for information on the Eriphiidae and Xanthidae; and Takeda & Miyake (1968, 1969) for the Pilumnidae. The citation of authors follows that suggested by Ng (1994).

The present paper has been in preparation for many years (since 1995) and some of the species have been cited (as personal communications from the first author) in in-house departmental reports and lists, which are not generally recognised as formal publications, and are very

Table 1. List of known Eriphiidae, Pilumnidae and Xanthidae from Taiwan.

Taxon	First record
<b>Eriphiidae</b>	
<i>Dacryopilumnus rathbunae</i> Balss, 1932	Suzuki, 1985
<i>Epixanthus corrosus</i> A. Milne Edwards, 1873	present record
<i>Epixanthus dentatus</i> (White, 1847)	Balss, 1922
<i>Epixanthus frontalis</i> (H. Milne Edwards, 1834)	Balss, 1922
<i>Eriphia scabricula</i> Dana, 1852	Sakai, 1939
<i>Eriphia sebana</i> (Shaw & Nodder, 1803) (= <i>E. laevimana</i> )	Maki & Tsuchiya, 1923
<i>Eriphia smithii</i> Macleay, 1838	Balss, 1922
<i>Globopilumnus globosus</i> (Dana, 1852)	Balss, 1922
<i>Hypothalassia armata</i> (De Haan, 1835)	present record
<i>Lydia annulipes</i> (H. Milne Edwards, 1834)	Balss, 1922
<i>Menippe rumphii</i> (Fabricius, 1798)	Ho & Hung, 1997
<i>Myomenippe hardwickii</i> (Gray, 1831)	Lai et al., 1997
<i>Ozium guttatus</i> H. Milne Edwards, 1834	Ng, 1998
<i>Ozium rugulosus</i> Stimpson, 1858	Parisi, 1916
<i>Ozium tuberculatus</i> H. Milne Edwards, 1834	Suzuki, 1985
<i>Sphaerozium nitidus</i> Stimpson, 1858	present record
<b>Pilumnidae</b>	
<i>Actumnus squamosus</i> (De Haan, 1835)	present record
<i>Benthopanope indica</i> (De Man, 1887)	present record
<i>Galene bispinosa</i> (Herbst, 1794)	Sakai, 1939
<i>Galene granulata</i> Miers, 1884	Lin, 1947
<i>Glabropilumnus laevis</i> (Dana, 1852)	Suzuki, 1985
<i>Halimede tyche</i> (Herbst, 1801) (as <i>H. fragifer</i> )	Lin, 1949
<i>Heteropanope glabra</i> Stimpson, 1858	present record
<i>Lophopilumnus dilatipes</i> (Adams & White, 1848)	present record
<i>Pilumnopeus makiana</i> (Rathbun, 1929)	Sakai, 1939
<i>Pilumnus longicornis</i> Hilgendorf, 1878	present record
<i>Pilumnus minutus</i> De Haan, 1835	Suzuki, 1985
<i>Pilumnus murphyi</i> Ng, 1988	present record
<i>Pilumnus purpureus</i> A. Milne Edwards, 1873	present record
<i>Pilumnus scabrisculus</i> Adams & White, 1848	Chang, 1963
<i>Pilumnus vespertilio</i> (Fabricius, 1793)	Chang, 1963
<i>Pseudolitochira integra</i> (as <i>Heteropilumnus integer</i> )	Jeng, 1997
<i>Tanaocheles bidentata</i> (Nobili, 1901)	Suzuki, 1985
<i>Typhlocarcinus villosus</i> Stimpson, 1858	Lin, 1949
<b>Xanthidae</b>	
Polydectinae	
<i>Lybia caestifera</i> (Alcock, 1898)	present record
<i>Lybia tessellata</i> (Latreille, 1812)	Jeng, 1994
Cymoinae	
<i>Cymo andreossyi</i> (Audouin, 1826)	Jeng, 1994
<i>Cymo quadrilobatus</i> Miers, 1884	present record
<i>Cymo melanodactylus</i> De Haan, 1833	Lin, 1949

Table 1. Continued

Taxon	First record
<b>Zalasiinae</b>	
<i>Banareia armata</i> A. Milne Edwards, 1869	Miyake, 1938
<i>Banareia odhneri</i> Sakai, 1974	present record
<i>Banareia subglobosa</i> (Stimpson, 1858)	present record
<i>Calvactaea tumida</i> Ward, 1933	Lin, 1949
<i>Zalasius dromiaeformis</i> (De Haan, 1841)	Chang, 1963
<i>Zalasius sakaii</i> Balss, 1938	Ng & Huang, 1997
<b>Liomerinae</b>	
<i>Actites erythra</i> (Lanchester, 1901)	Sakai, 1939
<i>Liomera bella</i> (Dana, 1852)	Suzuki, 1985
<i>Liomera cinctimana</i> (White, 1847)	Lin, 1949
<i>Liomera laevis</i> (A. Milne Edwards, 1873)	present record
<i>Liomera margaritata</i> (A. Milne Edwards, 1873)	Lin, 1949
<i>Liomera monticulosa</i> (A. Milne Edwards, 1873)	present record
<i>Liomera rubra</i> (A. Milne Edwards, 1865)	Horikawa, 1940
<i>Liomera rugata</i> (H. Milne Edwards, 1834)	present record
<i>Liomera venosa</i> (H. Milne Edwards, 1834)	Sato, 1936
<i>Neoliomera insularis</i> (White, 1847)	Lin, 1949
<b>Actaeinae</b>	
<i>Actaea bocki</i> Odhner (= <i>A. rüppelli</i> aut.)	Balss, 1922
<i>Actaea savignyi</i> (H. Milne Edwards, 1834)	Lin, 1949
<i>Actaeodes hirsutissimus</i> (Rüppell, 1830)	present record
<i>Actaeodes tomentosus</i> (H. Milne Edwards, 1834)	Sakai, 1939
<i>Novactaea pulchella</i> (A. Milne Edwards, 1865)	Miyake, 1938
<i>Forestia depressa</i> (White, 1847)	present record
<i>Forestia scabra</i> (Odhner, 1925)	Ng & Huang, 1997
<i>Gaillardiellus orientalis</i> (Odhner, 1925)	Sato, 1936
<i>Paractaea rufopunctata</i> (H. Milne Edwards, 1834)	Miyake, 1938
<i>Psaumis cavipes</i> (Dana, 1852)	Sakai, 1939
<i>Pseudoliomera helleri</i> (A. Milne Edwards, 1865)	present record
<i>Pseudoliomera lata</i> (Borradaile, 1902)	present record
<i>Pseudoliomera remota</i> (Rathbun, 1907)	Lin, 1949
<i>Pseudoliomera speciosa</i> (Dana, 1852)	Jeng, 1994
<b>Zosiminae</b>	
<i>Atergatis dilatatus</i> De Haan, 1835	Hwang & Yu, 1980
<i>Atergatis floridus</i> (Linnaeus, 1767)	Takeuchi, 1929
<i>Atergatis integerrimus</i> (Lamarck, 1801)	Balss, 1922
<i>Atergatis latissimus</i> (H. Milne Edwards, 1834)	Wang & Liu, 1996a
<i>Atergatis reticulatus</i> De Haan, 1835	Lin, 1949
<i>Atergatis subdentatus</i> De Haan, 1835	present record
<i>Atergatopsis amoyensis</i> De Man, 1879	present record
<i>Atergatopsis germaini</i> A. Milne Edwards, 1865	Tsai et al., 1996
<i>Atergatopsis signatus</i> (Adams & White, 1848)	Ng, 1998
<i>Lophozozymus incisus</i> H. Milne Edwards, 1834	present record
<i>Lophozozymus pictor</i> (Fabricius, 1798)	Ng & Chia, 1997
<i>Paratergatis longimanus</i> Sakai, 1965	Jeng & Ng, 1998

Table 1. Continued

Taxon	First record
<i>Platypodia granulosa</i> (Rüppell, 1830)	Lin, 1949
<i>Platypodia semigranosa</i> (Heller, 1861)	present record
<i>Pulchratis reticulatus</i> Ng & Huang, 1997	Ng & Huang, 1997
<i>Zosimus aeneus</i> (Linnaeus, 1758)	Sakai, 1939
<i>Zozymodes cavipes</i> (Dana, 1852)	present record
Euxanthinae	
<i>Euxanthus exsculptus</i> (Herbst, 1790)	present record
<i>Hypocolpus abbotti</i> (Rathbun, 1894)	present record
<i>Paramedaeus noelensis</i> (Ward, 1942)	Suzuki, 1985
Xanthinae	
<i>Demania cultripes</i> (Alcock, 1898)	Ho, 1994
<i>Demania intermedia</i> Guinot, 1969	Ho, 1994
<i>Demania japonica</i> Guinot, 1977	Chen & Ng, 1999
<i>Demania mortenseni</i> (Odhner, 1925)	present record
<i>Demania reynaudi</i> (H. Milne Edwards, 1834)	Lin, 1949
<i>Demania rotundata</i> Serène, in Guinot, 1969	Serène in Guinot, 1969
<i>Demania scaberrima</i> (Walker, 1887)	Wang & Chen, 1981
<i>Demania toxica</i> Garth, 1971	Ho, 1994
<i>Euryxanthops orientalis</i> (Sakai, 1939)	present record
<i>Lachnopodus bidentatus</i> (A. Milne Edwards, 1867)	present record
<i>Lachnopodus rodgersi</i> Stimpson, 1858	Wang & Liu, 1996a
<i>Lachnopodus subacutus</i> (Stimpson, 1858)	present record
<i>Lachnopodus tahitensis</i> De Man, 1889	present record
<i>Leptodius exaratus</i> (H. Milne Edwards, 1834)	Balss, 1922
<i>Leptodius gracilis</i> (Dana, 1852)	Chang & Chen, 1992
<i>Leptodius nudipes</i> (Dana, 1852)	present record
<i>Leptodius sanguineus</i> (H. Milne Edwards, 1834)	Parisi, 1916
<i>Macromedaeus crassimanus</i> (A. Milne Edwards, 1867)	present record
<i>Macromedaeus demani</i> (Odhner, 1925)	present record
<i>Macromedaeus distinguendus</i> (De Haan, 1835)	Sato, 1936
<i>Neoxanthias impressus</i> (Lamarck, 1818)	present record
<i>Neoxanthias michelae</i> Serène & Vadon, 1981	present record
<i>Neoxanthops lineatus</i> (A. Milne Edwards, 1867)	present record
<i>Neoxanthops quadrilobatus</i> (Sakai, 1939)	present record
<i>Paraxanthias notatus</i> (Heller, 1861)	Lin, 1949
<i>Xanthias elegans</i> (Stimpson, 1858)	Miyake, 1938
<i>Xanthias lamarcki</i> (H. Milne Edwards, 1834)	Horikawa, 1940
<i>Xanthias lividus</i> (Lamarck, 1818)	present record
<i>Xanthias tetraodon</i> (Heller, 1861)	Lin, 1949
Etisinae	
<i>Etisus anaglyptus</i> H. Milne Edwards, 1834	Miyake, 1938
<i>Etisus bargibanti</i> Crosnier, 1987	present record
<i>Etisus dentatus</i> (Herbst, 1785)	present record
<i>Etisus electra</i> (Herbst, 1801)	Sakai, 1939
<i>Etisus laevimanus</i> Randall, 1840	Sato, 1936
<i>Etisus odhneri</i> Takeda, 1971	present record
<i>Etisus rhynchophorus</i> A. Milne Edwards, 1873	present record

Table 1. Continued

Taxon	First record
<i>Etisus splendidus</i> Rathbun, 1906	Ng & Huang, 1997
Chlorodiinae	
<i>Chlorodiella crispipleopa</i> Dai, Yang, Song & Chen, 1986	present record
<i>Chlorodiella cytherea</i> (Dana, 1852)	Sakai, 1976
<i>Chlorodiella laevissima</i> (Dana, 1852)	Miyake, 1938
<i>Chlorodiella nigra</i> (Forsk., 1775)	Horikawa, 1940
<i>Phymodius granulosus</i> (De Man, 1888)	Suzuki, 1985
<i>Phymodius nitidus</i> (Dana, 1852)	Wang & Liu, 1996a
<i>Pilodius areolatus</i> (H. Milne Edwards, 1834)	present record
<i>Pilodius granulatus</i> Stimpson, 1858	present record
<i>Pilodius paumotensis</i> Rathbun, 1907	Suzuki, 1985
<i>Pilodius pilumnoides</i> (White, 1847)	Suzuki, 1985
<i>Pilodius pugil</i> Dana, 1852	Lin, 1949
Kraussiinae	
<i>Kraussia rugulosa</i> (Krauss, 1843)	Sakai, 1939
<i>Palapedia integra</i> (De Haan, 1835)	present record

difficult to obtain outside Taiwan. These publications have been excluded as they do not add any useful information. Wang and Liu (1996b) listed the crabs from the Taiwanese managed area of Kinmen on mainland China, but most of the xanthoid species listed are also present in Taiwan s. str. Only two species, *Heteropanope glabra* Stimpson, 1858 (Pilumnidae) and *Leptodius nigromaculatus* Serène, 1962 (Xanthidae) had been recorded only from Kinmen, but of these, *H. glabra* is now newly recorded in Taiwan s. str. as well.

Specimens examined are deposited in the National Taiwan Ocean University (NTOU), Keelung, Taiwan; Taiwan Museum (TMCD), Taipei, Taiwan; Institute of Zoology, Academia Sinica (ASIZ), Nankang, Taipei; and Zoological Reference Collection (ZRC) of the Raffles Museum, National University of Singapore. Measurements provided are of the carapace widths and lengths respectively.

## TAXONOMY

### FAMILY ERIPHIIDAE

This family had been better known as the Menippidae or Oziidae (see Ng, 1998). The subfamilial classification of the Eriphiidae is still in some flux, and the system proposed by Crosnier (in Serène, 1984) is far from ideal (P. K. L. Ng, unpublished data). As such, we have not adopted his system here. Unless otherwise noted, the taxonomy follows that summarised in Crosnier, in Serène

(1984). Thirteen species of eriphiids have been reported from Taiwan before and three more species are now added (Table 1).

#### *Epixanthus corrosus* A. Milne Edwards, 1873

**Material examined.** - 1 male (17.2 by 10.1 mm) (NTOU 8603-14-32), below coral rock, Wan-Li-Tung, Pingtung County, coll. 25 Mar. 1986; 2 males (14.8 by 8.8 mm, 16.2 by 9.7 mm) (NTOU 911024-6), Chia-Le-Sui, Pingtung County, coll. P.-H. Ho, 24 Oct. 1991; 1 female (13.2 by 7.7 mm) (NTOU 8603-14-32.3), Ho-Mei, Taipei County, coll. P.-H. Ho, 24 Dec. 1991.

#### *Hypothalassia armata* (De Haan, 1835)

**Material examined.** - 1 male (111.9 by 89.1 mm) (NTOU 9206-01-6), coll. 27 May. 1992; 1 female (116.0 by 101.0 mm) (ASIZ C738), Tashi, Ilan County, coll. M.-S. Jeng, 5 Apr. 1991; 1 female (81.4 by 98.1 mm) (ZRC), Tashi, Ilan County, coll. P.-H. Ho, 27 May. 1992; 1 female (149.1 by 127.4 mm) (NTOU), Tashi, Ilan County, coll. S.-H. Wu, Sep. 1998; 1 male (99.6 by 85.1 mm) (ASIZ), Tashi, Ilan County, coll. M.-S. Jeng, 1998; 1 dried female (117.9 by 103.0 mm) (TMCD), Tashi, Ilan County, 400 m, coll. S.-H. Wu, Nov. 1996; 1 dried male (164.0 by 145.0 mm) (TMCD), seas off Taiwan, coll. fishing boats, 1978/79; 1 female (88.3 by 74.5 mm) (ZRC), Nang-Fang-Ao, Shu-Ao, Ilan County, coll. P.K.L. Ng, May. 1999.

**Remarks.** - This well known species has previously been recorded from Japan, Fiji, New Caledonia and Australia. The genus *Hypothalassia* was recently revised by Koh and Ng (2000). In Taiwan, according to fishermen, the

species occurs from shallow water until depths of about 400 m. The species is rarely eaten but in recent years, dried and mounted specimens have become popular as ornaments.

***Sphaerozius nitidus* Stimpson, 1858**

**Material examined.** - 4 males, 3 females (NTOU 8603-12-14), on hanging oyster bundles, port, Kaohsiung County, coll. P.-H. Ho, 28 Mar.1986; 5 males, 6 females (TMCD 2193), under tidal rocks, Tashi, Ilan County, coll. 18 Jun.1968; 2 males, 8 females (NTOU 9203-01-23), Mazhu, Fujian Province, coll. J.-Y. Shy, 24 Feb.1992.

**Remarks.** - This species is common in intertidal habitats, and is often part of fouling communities.

**FAMILY PILUMNIDAE**

The taxonomy of the Pilumnidae (including the subfamilial classification) is still in some flux, and as such, we adopt a broad definition of the family (see Ng, 1998). Eleven species of pilumnids have been reported from Taiwan in the past and the present paper adds seven species (Table 1), the most interesting being the very rare *Lophopilumnus dilatipes*, previously only known from the Philippines and Borneo. Unless otherwise noted, the taxonomy follows Balss (1933) and Takeda and Miyake (1968, 1969).

***Actumnus squamosus* (De Haan, 1835)**

**Material examined.** - 2 males, 2 females (NTOU 9003-04-06.1), in trawl net, Tung Hai, 26°58'N 122°29'E, East China Sea, coll. 1 Jul.1989; 1 male (13.2 by 9.3 mm) (NTOU 9008-02-24), Tashi fish port, Ilan County, coll. P.-H. Ho, 1 Jul.1990; 1 female (18.0 by 12.2 mm) (NTOU 910429-1), Tashi fish port, Ilan County, coll. P.-H. Ho, 19 Apr.1991; 1 male, 2 females (ZRC 1998.405), Nang-Fang-Ao, Shu-Ao, Ilan County, coll. S.H. Tan & P.K.L. Ng, 28 May.1998.

***Benthopanope indica* (De Man, 1887)**

**Material examined.** - 1 male (10.1 by 7.6 mm) (NTOU 9005-01-27), Keelung City, Wang Hai Lane, coll. P.-H. Ho, 1 May.1990; 1 female (7.0 by 3.5 mm) (NTOU 9006-02-07), Ma-Kang, Taipei County, coll. P.-H. Ho, 7 Jun.1990; 1 ovigerous female (8.5 by 6.1 mm) (NTOU 9005-01-27.3), Ma-Kang, Taipei County, coll. P.-H. Ho, 7 Aug.1990; 1 ovigerous female (6.7 by 4.5 mm) (NTOU 9005-01-27.5), Ma-Kang, Taipei County, coll. P.-H. Ho, 31 May.1991; 3 males, 4 females (NTOU 9009-02-20), Wan-Ang, Penghu Islands, coll. P.-H. Ho, 3 Sep.1990; 2 males, 1 female (ZRC 1997.677), San-Tiao-Lun, Yuhlin County.

**Remarks.** - This species had long been known under the genus *Pilumnopus* until Davie (1989) transferred it to a new genus, *Benthopanope*. *Benthopanope indica* (type locality Mergui) has long been synonymised with *Heteropanope pearsei* Rathbun, 1932 (type locality Japan) (see Sakai, 1976) but there is evidence that the two are in fact separate species P. K. L. Ng, unpublished

data). When this is confirmed, the correct name for the Taiwanese specimens should be *B. pearsei*.

***Heteropanope glabra* Stimpson, 1858**

**Material examined.** - 1 male (16.1 by 10.9 mm) (NTOU 8910-01-35), among oysters and barnacles, Xin-Ta Point, Chin-Sui-Wan, Kaohsiung, coll. 24 Sep.1985. --- 1 female (6.7 by 4.7 mm) (NTOU 9009-07-11), in intertidal mud, Feng-Guei, Penghu County, coll. 2 Sep.1990. --- 4 males, 7 females (NTOU 8910-02-24), in intertidal mud, Wu-Chiong rivermouth, Kinmen, Fujian Province, coll. 30 Sep.1989.

**Remarks.** - Wang and Liu (1996b) reported this species from Xinmen (= Quemoy) on mainland China, but it has not been recorded before from Taiwan per se.

***Lophopilumnus dilatipes* (Adams & White, 1848)**  
(Fig. 1A)

**Material examined.** - 1 male (32.5 by 23.2 mm) (NTOU 911022-5), 1.5 m below coral reef of low tide zone, Hou-Wan, Pingtung County, coll. P.-H. Ho, 22 Oct.1991.

**Remarks.** - This rare species was until recently, only known from the types and specimens from the Philippines (Davie, 1988; Manuel & Takeda, 1990).

***Pilumnus longicornis* Hilgendorf, 1878**

**Material examined.** - 1 male (47.0 by 32.0 mm) (TMCD 00555), Hsiao-Liu-Kiu, Pingtung County, coll. 25 Jan.1973.

***Pilumnus murphyi* Ng, 1988**

**Material examined.** - 1 male (12.3 by 9.1 mm) (NTOU 9006-02-01), Ma-Kang, Taipei County, coll. P.-H. Ho, 7 Jun.1990; 1 female (10.0 by 7.3 mm) (NTOU 9006-02-01.2), coral reef, Feng-Quei, Penghu Islands, 2 Sep.1990; 3 males, 5 females (NTOU 9009-01-14), base of coral, Penghu Islands, coll. P.-H. Ho, 4 Sep.1990.

**Remarks.** - This species was previously only known from Singapore and Malaysia (Ng, 1988), the present specimens representing a substantial range extension northwards.

***Pilumnus purpureus* A. Milne Edwards, 1873**

**Material examined.** - 6 males (6.2-13.0 by 4.6-9.6 mm), 5 females (7.5-9.4 by 5.1-6.7 mm) (NTOU 9008-03-25), Ma-Kang, Taipei County, coll. P.-H. Ho, 7 Aug.1990; 2 males (9.1 by 6.7 mm, 11.6 by 9.0 mm) (NTOU 9008-03-25.3), Ma-Kang, Taipei County, coll. P.-H. Ho, 31 May.1991.

**Remarks.** - This species can be common in some sublittoral habitats, hiding among brown algae in Taiwan.

**FAMILY XANTHIDAE**

The Xanthidae is the most speciose family in the Xanthoidea. Of the 12 subfamilies now recognised

(Serène, 1984; Ng, 1993; Ng & Chia, 1994), only the deep-water Antrocarcininae is still absent from Taiwan. Sixty-six species of xanthids have been reported from Taiwan in the past and 39 species are added here (Table 1). The actaeine classification follows Guinot (1976). The chlorodiine genus *Chlorodiella* must be re-appraised (see Clark & Ng, 1999), and one species, *C. bidentata* (Nobili) has been transferred to the genus *Tanaocheles* Kropp (Ng & Clark, 1999).

**Polydectinae**

***Lybia caestifera* (Alcock, 1898)**

**Material examined.** - 1 male (6.4 by 4.9 mm) (NTOU 9201-07-23), head of branched coral, factory water outlet, Nan-Wan, Pingtung County, coll. B.-F. Hsieh, 24 Jan.1992.

**Cymoiinae**

***Cymo quadrilobatus* Miers, 1884**

**Material examined.** - 1 male (16.1 by 15.2 mm) (NTOU 920324-1), in branched corals, Wan-Li-Tung, Pingtung County, 6 m depth, coll. 24 Mar.1992; 1 male (11.2 by 10.9 mm), 1 female (16.6 by 15.5 mm) (NTOU 92034-1.1), among branched corals, Ching-Wa (Green Frog) Rock, Lanyu Island, Pingtung County, 10 m depth, coll. 20 Dec.1992.

**Zalasiinae**

***Banareia odhneri* Sakai, 1974**

**Material examined.** - 1 male (40.7 by 29.2 mm) (TMCD 568); 1 female (42.0 by 30.7 mm) (TMCD 569), Penhu County, coll. C.-Y. Wei, 15 Jan.1969.

**Remarks.** - This species is otherwise known thus far only from Japan and China.

***Banareia subglobosa* (Stimpson, 1858)**

**Material examined.** - 1 male (17.4 by 14.5 mm) (TMCD 567), Fang-Liao, Pingtung County, coll. C.-Y. Wei, 1 Aug.1970.

**Remarks.** - *Banareia subglobosa* has previously been reported from various parts of the South China Sea.

**Kraussiinae**

***Palapedia integra* (De Haan, 1835)**

**Material examined.** - 1 female (17.7 by 14.4 mm) (NTOU 800405-1), below intertidal rock, Wu-Chiu, Hsia-Chiu-Yu, Kinmen County, Fujian Province, coll. P.-H. Ho, 5 Apr.1988; 1 male (17.7 by 14.3 mm) (NTOU 920303-3), below intertidal rock, Mazhu, Fu-Rong-Wan, Kinmen County, Fujian Province, coll. 24 Feb.1992; 1 female (15.9 by 13.3 mm) (NTOU 920424-1), among subtidal algae, Kuo-Yeh, Penghu County, coll. P.-H. Ho, 24 Apr.1992.

**Remarks.** - This species has previously only been reported from Japan. This species had been classified in *Kraussia* s. lato until recently (Ng, 1993).

**Liomerinae**

***Liomera laevis* (A. Milne Edwards, 1873)**

**Material examined.** - 2 males (13.3 by 8.4 mm, 22.0 by 12.9 mm) (NTOU 8511-03-32), under intertidal rocks, San-Siun Tai, Taitung County, coll. 26 Oct.1985; 1 female (13.9 by 8.2 mm) (NTOU 9002-01-16), under intertidal rocks, Nan-Wan, Pingtung County, coll. P.-H. Ho, 14 Feb.1990.

***Liomera monticulosa* (A. Milne Edwards, 1873)**

**Material examined.** - 1 female (8.6 by 5.0 mm) (ASIZ 015), head of branched coral, factory water outlet, Nan-Wan, Pingtung County, coll. M.-S. Jeng, 22 May.1987.

**Remarks.** - This is a new record of a widely distributed Indo-West Pacific species which reaches Tahiti at the western limit of its range.

***Liomera rugata* (H. Milne Edwards, 1834)**

**Material examined.** - 1 male (11.4 by 6.7 mm) (NTOU 9311-03-01), head of coral, Tung-Liang, Penghu Islands, coll. M.-S. Jeng, 20 Jul.1986.

**Euxanthinae**

***Euxanthus exsculptus* (Herbst, 1790)**

**Material examined.** - 1 male (49.0 by 37.0 mm) (TMCD 2386), Hai-Tai Kou, Hsiao-Liu-Kiu, Pingtung County, coll. 18 May.1988; 1 male, 23.2 by 14.7 mm (NTOU 911023-4), intertidal crevices of coral, Nan-Wan, Pingtung County, coll. P.-H. Ho, 23 Oct.1991; 1 male (45.0 by 28.9 mm) (NTOU 930620-1), intertidal crevices of coral, Nan-Wan, Pingtung County, coll. 20 Jun.1993.

***Hypocolpus abbotti* (Rathbun, 1894)**

**Material examined.** - 1 male (64.1 by 43.5 mm) (NTOU 951009-1), Tawu, Taitung County, coll. P.-H. Ho, 9 Oct.1995; 1 male (36.6 by 26.3 mm) (NTOU), Tashi, Ilan County, coll. S.-H. Wu, 9 Sep.1997.

**Remarks.** - This species, known from the Indian Ocean to Japan, is distinctive in that its subhepatic cavity has two sublongitudinal median crests.

**Actaeinae**

***Actaeodes hirsutissimus* (Rüppell, 1830)**

**Material examined.** - 2 ovigerous females (24.5 by 15.1 mm, 19.2 by 12.9 mm) (NTOU 9205-05-01), between intertidal coral rocks, Wan-Li-Tung, Pingtung County, coll. P.-H. Ho, 4

May.1992.

***Forestia depressa* (White, 1847)**

**Material examined.** - 1 male (38.4 by 25.8 mm) (NTOU 8511-09-01), Peace Island, Keelung City, coll. 22 Nov.1985; 1 female (26.8 by 17.7 mm) (NTOU 8511-09-01.2), subtidal zone, Ma-Kang, Kung-Liao Village, Taipei County, 2 m depth, coll. 4 Jul.1984; 2 males (15.8 by 11.2 mm, 20.0 by 13.9 mm) (NTOU 8511-09-01.1), subtidal zone, Ma-Kang, Kung-Liao Village, Taipei County, 1 m depth, coll. 11 May.1990; 1 male (21.1 by 15.0 mm), 1 female (25.2 by 17.3 mm) (NTOU 8511-09-01.3), 1 m depth, subtidal zone, Ma-Kang, Kung-Liao Village, Taipei County, coll. 14 Jul.1991; 2 males (26.1-37.5 by 13.2-25.3 mm) (NTOU 8511-09-01.4), subtidal zone, Tashi, Ilan County, 1.5 m depth, coll. 28 Jun.1991; 1 male (33.9 by 23.1 mm) (NTOU 8511-09-01.5), Geng-Fang fish port, Ilan County, 10 m depth, coll. 20 Jul.1991.

***Pseudoliomera helleri* (A. Milne Edwards, 1865)**

**Material examined.** - 1 male (21.2 by 14.1 mm) (NTOU 921220-1), Ching-Wa (Green Frog) Rocks, Lanyu Island, Taitung County, 10 m depth, coll. B.-F. Hsieh & M.-S. Hung, 20 Dec.1992.

**Remarks.** - This species, known from the Indian Ocean to Japan, is characterised by its granular (rather than cristate) anterolateral margins.

***Pseudoliomera lata* (Borradaile, 1902)**

**Material examined.** - 1 male (11.4 by 7.8 mm) (NTOU 860326-1), between coral rocks, Nan-Wan, Pingtung County, 5 m depth, coll. 26 Mar.1986.

**Zosiminae**

***Atergatis subdentatus* De Haan, 1835**

**Material examined.** - 1 female with *Sacculina* (65.2 by 39.1 mm) (NTOU 931104-3), 1 ovigerous female (NTOU 931104-10), coll. P.-H. Ho, 4 Nov.1993; 1 male, 1 female (NTOU 930205-1), coll. P.-H. Ho, 5 Feb.1993; 1 male, 1 female (NTOU 930324-2), coll. P.-H. Ho, 24 Mar.1993; 2 ovigerous females (NTOU 930505-1), coll. 5 May.1993; 1 ovigerous female (NTOU 930527-4), coll. 27 May.1993; 2 ovigerous females (NTOU 930603-2), coll. P.-H. Ho, 3 Jun.1993; 2 ovigerous females (NTOU 930604-2), coll. P.-H. Ho, 4 Jun.1993; 1 ovigerous female (NTOU 930623-4), coll. 23 Jun.1993; 1 ovigerous female (NTOU 931029-1), coll. in cage, Peace Island, Keelung City, 29 Oct.1993. All specimens from fish traps, Peace Island, Keelung City, 20-40 m depth.

**Remarks.** - Described from Japan, *A. subdentatus* has a wide range in the western Pacific.

***Atergatopsis amoyensis* De Man, 1879**  
(Fig. 1B)

**Material examined.** - 1 ovigerous female (37.6 by 25.8 mm) (NTOU 9201-06-17), in gill net, Chi-Ching, Kaohsiung City, 5 m depth, coll. P.-H. Ho, 21 Jan.1992.

**Remarks.** - The live coloration of this species has not been previously recorded (Fig. 1B). Dai et al. (1986) and Dai & Yang (1991) place this species in the genus *Actaea* but on the basis of the available characters, we prefer to retain it in *Atergatopsis* for the time being.

***Lophozozymus incisus* (H. Milne Edwards, 1834)**

**Material examined.** - 1 male (42.9 by 25.2 mm) (NTOU 7901), coral reef, Lanyu Island, Taitung County, coll. 18 Jun.1979; 1 male (41.1 by 26.2 mm) (NTOU 920324-2), base of dead coral, Nan-Wan, Pingtung County, 10 m depth, coll. 24 Jan.1992.

***Platypodia semigranosa* (Heller, 1861)**

**Material examined.** - 1 male (13.4 by 8.7 mm) (NTOU 8501), intertidal corals, Nan-Wan, Pingtung County, coll. P.-H. Ho, 6 Dec.1985.

***Zozymodes cavipes* (Dana, 1852)**

**Material examined.** - 1 male (19.0 by 12.8 mm) (NTOU 9209-01-25.1), Hou-Wan, Pingtung County, coll. P.-H. Ho, 22 Oct.1991; 1 male (9.4 by 6.4 mm) (NTOU 9206-08-01), Wan-Li-Tung, Pingtung County, coll. 1 Jun.1992; 1 female (21.6 by 13.7 mm) (NTOU 9209-01-25), Hou-Lung, Miaoli County, coll. B.-F. Hsieh, 12 Sep.1992.

**Xanthinae**

***Demania mortenseni* (Odhner, 1925)**  
(Fig. 1C)

**Material examined.** - 1 male (15.3 by 11.5 mm) (NTOU), Nang-Fang-Ao, Shu-Ao, coll. T.-Y. Chan & P. K. L. Ng, 18 Nov. 1997.

**Remarks.** - Davie (1992) first transferred *Actaea mortenseni* Odhner, 1925, to *Demania*. *Demania mortenseni* is the smallest known species of *Demania*, averaging about 20 mm in carapace width. All other species of *Demania* are still juvenile at this size. *Demania mortenseni* has been recorded from the Kei Islands (Indonesia), Micronesia, French Polynesia, possibly Japan (Davie, 1992: 511) and now Taiwan.

***Euryxanthops orientalis* (Sakai, 1939)**

**Material examined.** - 1 male (31.8 by 21.3 mm) (NTOU 85003), Nang-Fang-Ao, Su-Ao, Ilan County, coll. T.-Y. Chan, 16 Mar.1985; 1 male (ZRC), Tashi, ca. 400-500 m depth, Ilan County, coll. P.K.L. Ng, 1997; 1 male (31.9 by 21.4 mm) (TMCD 542), 1 female (22.7 by 15.5 mm) (TMCD 543), Taitung Province, coll. 15 Dec.1960.

**Remarks.** - This species, previously regarded as a Japanese endemic, is now reported from northern Taiwan.



***Lachnopus bidentatus* (A. Milne Edwards, 1867)**

**Material examined.** - 2 males, 2 females (8.3-18.0 by 5.9-11.9 mm) (NTOU 9203-05-32), Hsiao-Liu-Kiu, Pingtung County, coll. P.-H. Ho, 20 Mar.1992; 1 male (19.0 by 12.7 mm) (NTOU 9203-05-32.3), Wan-Li-Tung, Pingtung County, coll. P.-H. Ho, 4 May.1992; 2 males, 2 females (6.5-11.8 by 4.4-7.0 mm) (NTOU 920420-15), Shan-Yuen, Taitung County, coll. P.-H. Ho, 20 Apr.1992.

***Lachnopus subacutus* (Stimpson, 1858)**

**Material examined.** - 1 male (27.8 by 17.0 mm) (NTOU 9304-09-14), Ma-Kang, Taipei County, coll. P.-H. Ho, 22 Apr.1993.

***Lachnopus tahitensis* De Man, 1889**

**Material examined.** - 1 male (65.2 by 39.0 mm) (NTOU 9305-09-23), Lanyu Island, Taitung County, coll. 22 Apr.1993.

***Leptodius nudipes* (Dana, 1852)**

**Material examined.** - 1 male (15.4 by 9.7 mm) (NTOU 9003-02-10), intertidal corals, Wan-Li-Tung, Pingtung County, coll. 12 Feb.1990; 1 male (15.8 by 10.3 mm) (NTOU 9205-05-23), intertidal corals, Wan-Li-Tung, Pingtung County, coll. 4 May.1992; 2 males (18.4 by 12.1 mm, 16.1 by 10.6 mm) (NTOU 9203-07-34), Shan-Zhu-Kou, Hsiao-Liu-Kiu, Pingtung County, coll. 20 Mar.1992; 4 males (9.8-17.6 mm by 6.7-11.5 mm) (NTOU 920420-10), Shan-Yuen, Taitung County, coll. 20 Apr.1992.

***Macromedaeus crassimanus*  
(A. Milne Edwards, 1867)**

**Material examined.** - 1 female (16.3 by 11.0 mm) (NTOU 9201-07-01), intertidal coral caves, Nan-Wan, Pingtung County, coll. 23 Jan.1992; 3 females (10.6-18.9 by 7.3-12.6 mm) (NTOU 9201-07-01.2), under coral rocks, Shan-Zhu-Kou, Pingtung County, coll. 20 Mar.1992; 1 male (18.5 by 12.4 mm) (NTOU 9201-07-01.3), Wan-Li-Tung, Pingtung County, coll. 4 May.1992.

***Macromedaeus demani* (Odhner, 1925)**

**Material examined.** - 1 male (21.6 by 13.5 mm) (NTOU 9008-02-30), below intertidal rocks, Tali, Ilan County, coll. 19 Apr.1988; 1 female (16.9 by 10.5 mm) (NTOU 9008-02-30.3), San-Sian-Tai, Taitung County, coll. B.-F. Hsieh, 27 Feb.1992; 2 males (25.4 by 16.0 mm, 25.1 by 14.2 mm) (NTOU 9008-02-30.2), Hou-Lung, Miaoli County, coll. M.-S. Hung, 12 Sep.1992.

***Neoxanthias impressus* (Lamarck, 1818)**

**Material examined.** - 1 male (42.3 by 24.5 mm) (NTOU 9103-03-12), Hsiang-Chiao (Banana) Bay, Hengchun, Pingtung County, coll. M.-S. Jeng, 13 Oct.1988.

***Neoxanthias michelae* Serène & Vadon, 1981  
(Fig. 1D)**

**Material examined.** - 1 female (24.9 by 16.6 mm) (TMCD

169), coll. C.-Y. Wei, 28 Jan.1962; 1 male, 1 female (TMCD 575, 576), Tan-Shui, Taipei, coll. C.-Y. Wei, 8 Aug.1969.

**Remarks.** - This species was described from relatively deep water in the Philippines (Serène & Vadon, 1981) and has not been reported from elsewhere. It is an interesting new record for Taiwan. Unfortunately, all the specimens on hand are dried and no trace of any colour remains. We have, however, on hand, a slide of a fresh specimen of this species collected from the Indian Ocean showing the live colours of this beautiful species (Fig. 1D).

***Neoxanthops lineatus* (A. Milne Edwards, 1867)**

**Material examined.** - 1 male (19.5 by 13.9 mm) (NTOU 84002), Ma-Kang, Taipei County, T.-Y. Chan, coll. 4 Jul.1984.

***Neoxanthops quadrilobatus* (Sakai, 1939)**

**Material examined.** - 1 female (43.2 by 27.5 mm) (ZRC 1970.3.9.2), Keelung, coll. Institute of Fisheries Research, 1963.

**Remarks.** - This species was previously known from Japan and its presence in Taiwan is not unexpected. The species is also present in mainland China (P.K.L. Ng, unpublished data).

***Xanthias lividus* (Lamarck, 1818)**

**Material examined.** - 1 male (41.1 by 25.6 mm) (NTOU 9305-09-19), Lanyu Island, Taitung County, coll. 22 Apr.1993; 1 male (49.6 by 32.7 mm) (TMCD 00537), Ma-Kong, Penghu Islands, coll. 18 Aug.1973; 1 female (TMCD 00538), Chia-Te-Sui, Pingtung County, coll. 15 Oct.1980.

**Etisinae**

***Etisus bargibanti* Crosnier, 1987  
(Fig. 1E)**

**Material examined.** - 1 male (86.4 by 56.2 mm) (NTOU 9304-08-36), coll. 26 Apr.1993; 1 female (93.8 by 60.0 mm) (NTOU 9304-08-36.2), coll. 16 Nov.1993; 1 female (9304-08-36.3), coll. 27 Apr.1994. All specimens from lobster traps, Peace Island, Keelung City.

**Remarks.** - This species was described from and previously only known from New Caledonia (Crosnier, 1987) and its presence in Taiwan is noteworthy.

***Etisus dentatus* (Herbst, 1785)**

**Material examined.** - 1 male (63.9 by 43.8 mm) (NTOU 9110-02-32), Wan-Li-Tung, Pingtung County, coll. 22 Feb.1991.

***Etisus odhneri* Takeda, 1971**

**Material examined.** - 1 female (11.1 by 8.0 mm) (NTOU

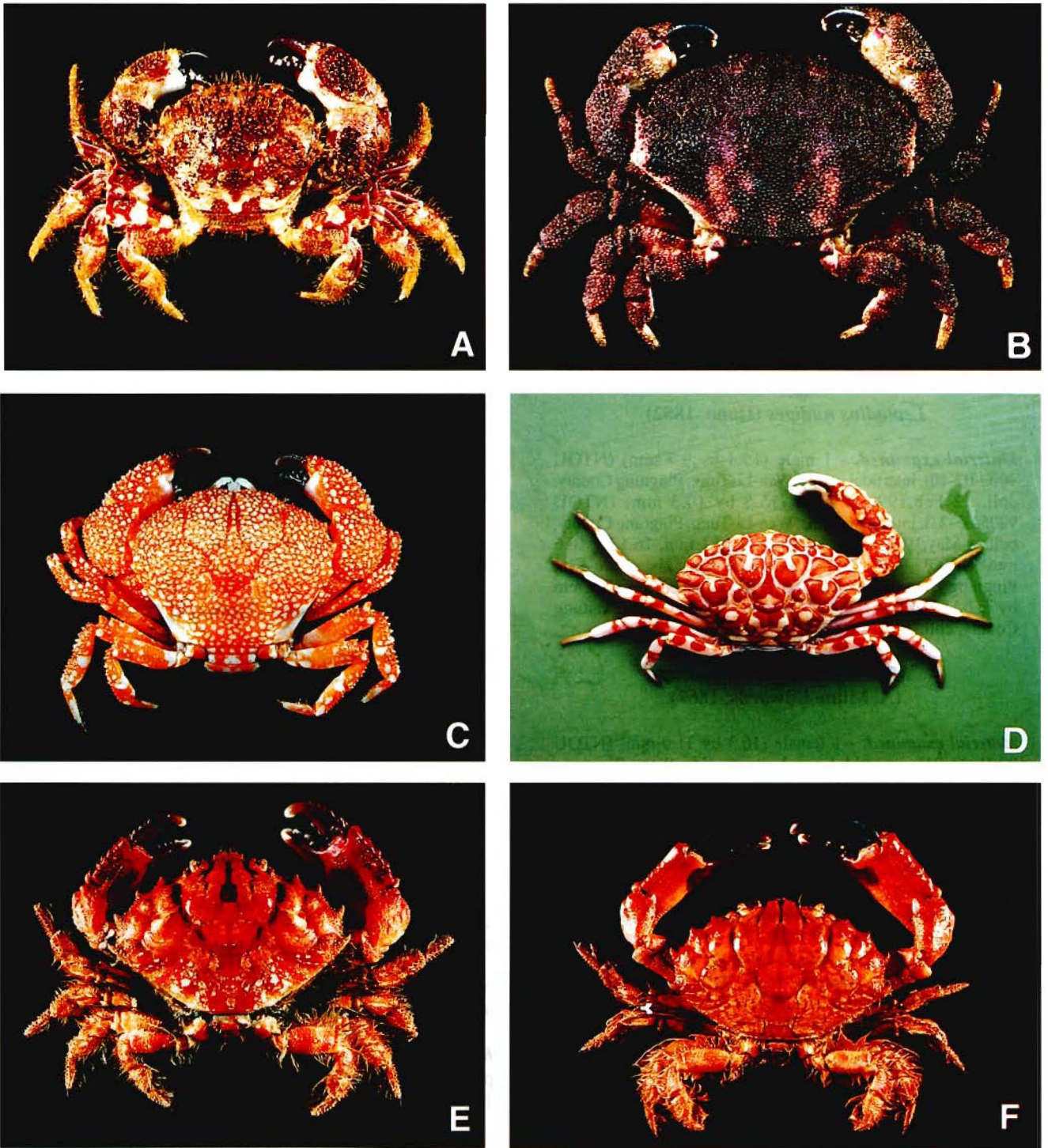


Fig. 1. A, *Lophopilumnus dilatipes*, male (32.5 by 23.2 mm) (NTOU 911022-5); B, *Atergatopsis amoyensis*, ovigerous female (37.6 by 25.8 mm) (NTOU 9201-06-17); C, *Demania mortenseni*, male (15.3 by 11.5 mm) (NTOU); D, *Neoxanthias michelae*, male (28.9 by 18.2 mm) (ZRC 1999.516), Andaman Sea; E, *Etisus bargibanti*, male (86.4 by 56.2 mm) (NTOU 9304-08-36); F, *Etisus rhynchophorus*, male (69.7 by 44.2 mm) (NTOU 931118-5).

9203-07-30), subtidal reefs, Shan-Zhu-Kou, Hsiao-Liu-Kiu, Pingtung County, coll. P.-H. Ho, 20 Mar.1992.

**Remarks.** - This species was described from Palau in the western Pacific and there is a record of it from the Indian Ocean.

***Etisus rhynchophorus* A. Milne Edwards, 1873**  
(Fig. 1F)

**Material examined.** - 1 male (69.7 by 44.2 mm) (NTOU 931118-5), in lobster trap, Peace Island, Keelung, coll. P.-H. Ho, 18 Nov.1993.

**Remarks.** - This species was previously known as a Japanese endemic. It is perhaps closest to *E. bargibanti* but can easily be distinguished by several carapace and chelipedal features (Crosnier, 1987).

**Chlorodiinae**

***Chlorodiella crispipleopa***  
**Dai, Yang, Song & Chen, 1986**

**Material examined.** - 3 males, 3 females (7.3-11.5 by 4.6-7.1 mm) (NTOU 9203-07-24), among coral branches, Hsiao-Liu-Kiu, Pingtung County, coll. 20 Mar.1992; 3 males (7.9-10.8 by 5.2-6.7 mm) (NTOU 9203-07-24.2), among coral branches, Hsiao-Liu-Kiu, Pingtung County, coll. 8 Jan.1993; 1 male (8.8 by 5.7 mm) (NTOU 9212-02-01), among coral branches, Wan-Li-Tung, Pingtung County, coll. 4 May.1992.

**Remarks.** - This species was previously known only from China. It is a new record for Taiwan.

***Pilodius areolatus* (H. Milne Edwards, 1834)**

**Material examined.** - 1 male (12.3 by 8.5 mm), 1 female (11.6 by 8.5 mm) (NTOU 911023-7), Nan-Wan, Pingtung County, coll. 23 Oct.1991; 1 ovigerous female (14.3 by 9.8 mm) (ASIZ EN 3604), Lung-Tung, Taipei County, coll. 20 Mar.1992; 1 male (13.6 by 9.4 mm), 1 female (12.7 by 8.9 mm) (NTOU 911023-7.5), Hsiao-Liu-Kiu, Pingtung County, coll. 20 Mar.1992; 1 male (16.2 by 11.4 mm) (NTOU 911023-7.8), Hsiao-Liu-Kiu, Pingtung County, coll. 8 Jan.1993.

***Pilodius granulatus* Stimpson, 1858**

**Material examined.** - 1 male (8.9 by 6.2 mm) (NTOU 9008-02-29), Ma-Kang, Taipei County, coll. 7 Jun.1990.

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