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ANNOTATED CHECKLIST OF THE WORLD'S MARINE LOBSTERS (CRUSTACEA: DECAPODA: ASTACIDEA, GLYPHEIDEA, ACHELATA, POLYCHELIDA)

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***ABSTRACT.* –** Marine lobsters are defined as consisting of four infraorders of decapod crustaceans: Astacidea, Glypheidea, Achelata and Polychelida. Together they form the suborder Macrura Reptantia. A checklist of the currently recognized six families, 55 genera and 248 species (with four subspecies) of living marine lobsters is provided, together with their synonyms in recent literature and information on the type locality of the valid taxa. Notes on alternative taxonomies and justifications for the choice of taxonomy are given. Although Caroli Linnaeus himself described the first marine lobster in 1758, the discovery rate of marine lobsters remains high to this day.

***KEY WORDS.* –** Crustacea, Decapoda, lobsters, marine, checklist, taxonomy.

INTRODUCTION

Commercialy, lobsters are generally the most highly prized crustaceans in all parts of the world. The taxonomy of marine lobsters has remained fairly stable over many years and some recent authors, such as Burukovsky (1983) and Phillips et al. (1980) had complied lists of all the valid species of extant marine lobsters known in the world, at that time. In the monumental work of Holthuis (1991), a detailed account was provided for almost all the living marine lobster species up to 1991. The traditional concept of marine lobsters includes the superfamilies Nephropoidea (clawed lobsters), Palinuroidea (spiny and slipper lobsters), Eryonoidea (blind lobsters) and the living fossil Glypheoidea contained within the suborder Macrura Reptantia. The above three works did not provide any listing for Polychelidae (the only living family of blind lobsters) because of the extremely confusing taxonomy of this group. Furthermore, the reef lobsters genus *Enoplometopus* was not considered to be lobsters by Phillips et al. (1980). Holthuis (1983) considered *Enoplometopus* to be axiids (Infraorder Thalassinidea or now Axiidea, see De Grave et al., 2009) rather than nephropoids. Holthuis's (1991) world marine lobster catalog included Thalassinidea among the lobsters but no account was given to *Enoplometopus*.

Recent advances in morphological and molecular phylogeny studies have impacted fundamentally on our understanding of the evolutionary relationships of marine lobsters and other Decapoda. Most recent analyses suggest that marine lobsters do not comprise a monophyletic group (Scholtz & Richter, 1995; Schram, 2001; Dixon et al., 2003; Amati et al., 2004; Schram & Dixon, 2004; Ahyong & O'Meally, 2004; Porter et al., 2005). These results also showed that the relationships of the superfamilies and families of marine lobsters are mostly different from the previously well-established scheme of Holthuis (1991). However, these phylogenetic studies have yielded significantly contrasting results (see Patek et al., 2006, Tsang et al., 2008; Bracken et al., 2009; Toon et al., 2009). The latest and by far the most robust phylogenetic analysis (Tsang et al., 2008) utilises newly developed molecular markers, concluding that lobsters are indeed a monophyletic group, if the thalassinideans (or some of the thalassinideans) are excluded. Whilst Scholtz & Richter (1995) argued that thalassinideans (as Thalassinida) may be more closely allied to the freshwater crayfishes than the clawed lobsters (homarids), recent work has clearly demonstrated a sister relationship between the clawed lobsters and the freshwater crayfishes (Crandall et al., 2000; Porter et al., 2005; Tsang et al., 2008; Toon et al., 2009). Thus, the suborder Macrura Reptantia is revived containing the lobsters and freshwater crayfishes (see Tsang et al., 2008). Thalassinidea (or now Axiidea and Gebiidea, see De Grave et al., 2009) is excluded from this suborder, partly because they are traditionally not considered as true lobsters (e.g. the squat lobsters Galatheidae and Chirostylidae are always not considered as true lobsters), and partly because the most robust phylogeny study (Tsang et al., 2008) strongly suggested that only some clades of thalassinideans are allied to the "traditional" lobsters (i.e. Thalassinidea is a polyphyletic group, also see Robles et al., 2009).

This work presents an updated list of all currently considered valid species of living marine lobsters known in the world. The diversity of marine lobsters is not high as compared

to other decapod crustacean groups (e.g. 3,268 species in caridean shrimps and 6,559 species in crabs, see De Grave et al., 2009). Although the catalog of marine lobsters of the world by Holthuis (1991) had encompassed almost all the species known at that time, there have been many new discoveries in the last two decades. Moreover, Galil (2000) made a worldwide revision of Polychelidae and clarified most of the taxonomic problems of this difficult group. The higher classification used here follows the results of the latest phylogenetic analyses of lobsters (Chan & Ng, 2008; Tsang et al., 2008, 2009; Palero et al., 2009; Bracken et al., 2009; Tshudy et al., 2009; Ahyong, 2009) instead of that presented in Martin & Davis (2001). Such a scheme has been presented in the recently published classification of living and fossil genera of decapod crustaceans in De Grave et al. (2009), except here the suborder Macrura Reptantia is recognized. Reasons for the present classification scheme are given under the remarks in the corresponding higher taxon.

The spelling of author's names follows Ng et al. (2008) for the world brachyuran crabs list. An "*" refers to the type species of the genus. As nearly all groups of marine lobsters have been recently revised, and full synonymies of most species can be found for *Arctides* (Holthuis, 2006), Indo-Pacific Scyllarinae (Holthuis, 2002), Polychelidae (Galil, 2000), *Enoplometopus* (Holthuis, 1983; Poupin, 2003) and the rest of the marine lobsters (Holthuis, 1991), only synonyms still used in taxonomic literature after 1960 are given. Taxonomic decisions for synonymy after the major works of Holthuis (1983, 1991, 2002, 2006) and Galil (2000) are explained in the remarks of the corresponding higher taxon. If the original name given for a taxon is different from its current generic allocation and/or usage (or recent usage for synonyms), the original name is provided at the end of the name in square brackets. Synonyms with spelling as or similar to the original name are not repeated in the synonymy. For example in the species *Stereomastis nana* (Smith, 1884), it was originally described as *Pentacheles nanus*. The generic assignment of this species has been in flux and sometimes the genus *Pentacheles* was used again for this species. However, the synonym *Pentacheles nanus* is not repeated in the synonymy because such a comination of names is already given as the original name in square brackets next to the name currently in use. Sometimes a different suffix was used for this species such as *Stereomastis nanus*, and this slight change in the spelling of the original name is also not repeated in the synonymy. Synonyms of misidentifications and spelling errors are not listed. Type locality is given only for valid specific and subspecific names. It is important to point out that some species still have unsettled taxonomic and nomenclatural issues. For example, *Phyllamphion cassideus* (Forster, 1782) may be the larva of *Palinurellus wieneckii* (De Man, 1881). If this is confirmed, the genus and species names of *Palinurellus wieneckii* may need to be changed as has been discussed by Holthuis (1991). Similarly, *Enoplometopos longirostris* De Man, 1888 may be the larva of one of the described species in the genus (see Holthuis, 1946, 1983). On the other hand, *Scyllarus australis* Fabricius, 1781, may be conspecific with *Scyllarides squammosus* (H. Milne Edwards, 1837) but with the type lost and original description inadequate to determine its identity, no taxonomic resolution at present is possible (see Holthuis, 1991). These issues are discussed in Holthuis (1983, 1991, 2002). The present work makes no attempt to settle them and the most widely used names are adopted.

The present list recognizes 248 valid species (with four valid subspecies) of marine lobsters in 6 families and 55 genera. Marine lobsters were first described by Linnaeus in 1758. There was a gradual increase in species only after 1800 (Fig. 1). At the end of the nineteen century during the age of great exploration, the lobsters also had a rapid increase in their discovery rate similar to that of many other decapod groups (Dworschak, 2000; Yeo et. al., 2008; De Grave et. al., 2008; Baba et al., 2008). The discovery rate significantly slowed down between the Two World Wars but after 1950 quickly returned to its pre-war rate. Surprisingly, for a group of generally large sized animals with high economic value, the number of new species discovered in marine lobsters since then has remained high, even very recently. For example, nearly 11.7% (29 species) of marine lobsters were only described in the last decade (i.e. since 2000). From the still very steep discovery curve shown in Fig. 1, no extrapolation for total number of marine lobster seems possible. Even to the most common and commercially important genera such as *Palinurus* and *Panulirus*, new species have been added in the last few years (Sekiguchi & George, 2005; Groeneveld et al., 2006). The discovery curve of marine lobsters is very similar to that of the squat lobsters (see Baba et al., 2008). However, squat lobsters are generally small and of no commercial importance. Recent employment of molecular tools in separating cryptic and very similar species has contributed to the discovery of more lobster species as in other decapod crustaceans under this modern trend. Nevertheless, the high discovery rate of lobsters is no doubt more related to the revived large scale expeditions in the Indo-West Pacific (see Richer de Forges & Justine, 2006; Bouchet et al., 2008). It is believed that many more marine lobsters with novel morphological diversity (e.g. the new genus living fossil *Laurentaeglyphea neocaledonica* (Richer de Forges, 2006) discovered in

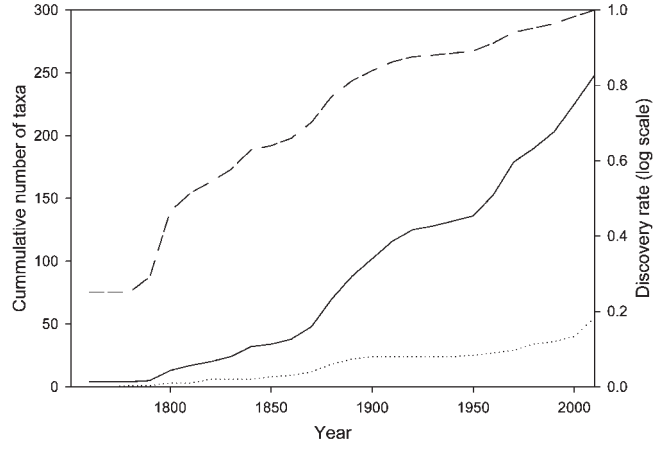

Fig. 1. Cumulative number of genus (dotted) and species (solid) described in marine lobsters by decade (from year 1 to 10), and their discovery rate (dash line, expressed as a fraction of those known to date on a logarithmic scale, see De Grave, 2003).

2006) are still awaiting discovery. Webber & Booth (2007) mentioned that two new species of Scyllarinae are known from New Zealand and the Tasman Sea. The collection of the author includes material from various localities in the Indo-Pacific representing at least 9 new species and subspecies awaiting formal description. It is hoped that this checklist will enhance the discovery of marine lobsters and eventually contribute to a better understanding of the exact diversity of this group.

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CHECKLIST OF MARINE LOBSTERS

SUBORDER MACRURA REPTANTIA BOUVIER, 1917

INFRAORDER ASTACIDEA LATREILLE, 1802

The reef lobsters of the genus *Enoplometopus* have been treated under Axiidae Huxley, 1879 (a thalassinidean family), Nephropoidea or its own superfamily (see Chan & Yu, 1998; Ahyong & O'Meally, 2004; Ahyong, 2006). *Enoplometopus* is here recognized in its own superfamily within the Astacidea by following the most robust phylogenetic analysis of decapod crustaceans by Tsang et al. (2008).

SUPERFAMILY ENOPLOMETOPOIDEA SAINT LAURENT, 1988

Family Enoplometopidae Saint Laurent, 1988

Two genera or subgenera have been proposed for this family, but only one is herein recognized, following Chan & Yu (1998), Poupin (2003) and Chan & Ng (2008).

Enoplometopus A. Milne-Edwards, 1862

E. antillensis Lüken, 1865.— type locality: West Indies.
Hoplometopus antillensis (Lüken, 1865) [different generic combination]
Enoplometopus dentatus Miers, 1880

E. callistus Intès & Le Loeuff, 1970.— type locality: Ghana.
Hoplometopus callistus (Intès & Le Loeuff, 1970) [different generic combination]
Enoplometopus biafri Burukovsky, 1972

E. chacei Kensley & Child, 1986.— type locality: Philippines.

E. crosnieri Chan & Yu, 1998.— type locality: Taiwan.

E. daumi Holthuis, 1983 [*Enoplometopus* (*Enoplometopus*) *daumi*].— type locality: Moluccas, Indonesia.

E. debelius Holthuis, 1983 [*Enoplometopus* (*Enoplometopus*) *debelius*].— type locality: Hawaii.

E. gracilipes (Saint Laurent, 1988) [*Hoplometopus gracilipes*].— type locality: Tuamotu, French Polynesia.

E. holthuisi Gordon, 1968.— type locality: Moluccas, Indonesia.
Enoplometopus (*Hoplometopus*) *holthuisi* Gordon, 1968 [combination using subgenus]
Hoplometopus holthuisi (Gordon, 1968) [different generic combination]

E. macrodontus Chan & Ng, 2008.— type locality: Philippines.

E. occidentalis (Randall, 1840) [*Nephrops occidentalis*].— type locality: West coast of North America, probably an error, should be Hawaii (see Holthuis, 1983).
Enoplometopus (*Enoplometopus*) *occidentalis* (Randall, 1840) [combination using subgenus]

**E. pictus* A. Milne-Edwards, 1862.— type locality: Reunion.

E. voigtmanni Türkay, 1989 [*Enoplometopus* (*Hoplometopus*) *voigtmanni*].— type locality: Maldives.

SUPERFAMILY NEPHROPOIDEA DANA, 1852

Family status of Thaumastochelidae Bate, 1888, was supported by many recent morphological phylogenetic analyses (Tshudy & Sorhannus, 2000a, b; Dixon et al., 2003; Schram & Dixon, 2004; Ahyong & O'Meally, 2004; Ahyong, 2006) as well as a molecular analysis (Ahyong & O'Meally, 2004). In contrast, the recent and most extensive molecular phylogeny analysis of clawed lobsters by Tshudy et al. (2009) found that thaumastochelids are nested within the family Nephropidae (also see Tsang et al., 2008). Therefore, the family Thaumastochelidae is not recognized; its species are included under Nephropidae.

Family Nephropidae Dana, 1852 [Nephropinae]

The most extensive molecular phylogenetic analysis of Nephropidae (Tshudy et al., 2009), as well as another molecular work (Tam & Kornfield, 1998), rejected two of the three subfamilies (i.e. Thymopinae Holthuis, 1974, and Nephropinae Dana, 1852) used in Holthuis (1974, 1991). The other subfamily Neophoberinae Glaessner, 1969 is monotypic. Therefore, all the subfamilies are here abandoned in Nephropidae. *Nephropsis hamadai* Watabe & Ikeda, 1994, is extremely similar to *N. serrata* Macpherson, 1993 (see

Chan, 1997) and are considered here to be conspecific. A similar situation applies to *N. macphersoni* Watabe & Iizuka, 1999 and *N. holthuisi* Macpherson, 1993, both being very similar to *N. rosea* Bate, 1888, from the Atlantic (see Chan, 1997, Watabe & Iizuka, 1999). *Nephropisis holthuisi* and *N. rosea* are considered to be distinct, but *N. macphersoni* is treated herein as a synonym of *N. holthuisi*. The status of the four *Nephropsis* species recently described by Zarenkov (2006) is ambiguous. *Nephropsis grandis* Zarenkov, 2006 is extremely similar to *N. stewarti* Wood-Mason, 1872; *Nephropsis lyra* Zarenkov, 2006 and *N. pseudoserrata* Zarenkov, 2006 are both very close to *N. serrata*; *Nephropsis meteor* Zarenkov, 2006 is similar to *N. suhmi* Bate, 1888. The descriptions were all based on one or two specimens and the characters used by Zarenkov (2006) to distingulish these four species from their allies all appear to be of intraspecific variations. Thus, these four species are not considered as vaild until there is stronger evidence to support their specific status. Chan et al. (2009) recently showed that the banded and non-banded forms of *Metanephrops thomsoni* (Bate, 1888) discussed in Chan (1998) and Tshudy et al., (2007) are genetically widely divergent. The banded form should be treated as a distinct species, and as discussed in Tshudy et al. (2007) and Chan et al. (2009) the name of the Recent fossil species *Wongastacia taiwanica* Hu, 1983 should be used for this species. Burukovsky (2005) recently described *Thaumastochelopsis plantei* based on a juvenile specimen, which is demonstrably not a lobster but a thalassinidean (or now Axiidea Saint Laurent, 1979, see De Grave et al., 2009), probably in the genus *Ctenocheles* Kishinouye, 1926.

Acanthacaris Bate, 1888

A. caeca A. Milne-Edwards, 1881 [*Phoberus caecus*].— type locality: Grenada, West Indies.
Neophoberus caecus (A. Milne-Edwards, 1881) [different generic combination]

**A. tenuimana* Bate, 1888.— type locality: south of New Guinea.
Acanthacaris opipara Burukovsky & Musij, 1976
Phoberus brevirostris Tung, Wang & Li, 1985

Dinochelus Ahyong, Chan & Bouchet, 2010

**D. ausubeli* Ahyong, Chan & Bouchet, 2010.— type locality: Philippines.

Eunephrops Smith, 1885

**E. bairdii* Smith, 1885.— type locality: Gulf of Darien, Colombia.

E. cadenasi Chace, 1939.— type locality: south of Cay Sal Bank, Caribbean Sea.

E. manningi Holthuis, 1974.— type locality: Florida, USA.

E. luckhursti Manning, 1997.— type locality: Bermuda.

Homarinus Kornfield, Williams & Steneck, 1995

**H. capensis* (Herbst, 1792) [*Cancer* (*Astacus*) *capensis*].— type locality: Cape of Good Hope, S. Africa.
Homarus capensis (Herbst, 1792) [different generic combination]

Homarus Weber, 1795

H. americanus H. Milne Edwards, 1837.— type locality: New Jersey, USA.

**H. gammarus* (Linnaeus, 1758) [*Cancer gammarus*].— type locality: Marstrand, Sweden.
Homarus vulgaris H. Milne Edwards, 1837

Metanephrops Jenkins, 1972

M. andamanicus (Wood-Mason, 1892) [*Nephrops andamanicus*].— type locality: Andaman Sea.

M. arafurensis (De Man, 1905) [*Nephrops arafurensis*].— type locality: Arafura Sea, Indonesia.

M. armatus Chan & Yu, 1991.— type locality: Taiwan.

M. australiensis (Bruce, 1966) [*Nephrops australiensis*].— type locality: northwest Australia.

M. binghami (Boone, 1927) [*Nephrops binghami*].— type locality: north of Glover Reef, west Caribbean Sea.

M. boschmai (Holthuis, 1964) [*Nephrops boschmai*].— type locality: Great Australian Bight.

M. challengeri (Balss, 1914) [*Nephrops challengeri*].— type locality: New Zealand.

M. formosanus Chan & Yu, 1987.— type locality: Taiwan.

**M. japonicus* (Tapparone-Canefri, 1873) [*Nephrops japonicus*].— type locality: Japan.

M. mozambicus Macpherson, 1990.— type locality: Madagascar.

M. neptunus (Bruce, 1965) [*Nephrops neptunus*].— type locality: south of Hong Kong, South China Sea.

M. rubellus (Moreira, 1903) [*Nephrops rubellus*].— type locality: Brazil.

M. sagamiensis (Parisi, 1917) [*Nephrops sagamiensis*].— type locality: Sagami Bay, Japan.
Nephrops intermedius Balss, 1921

M. sibogae (De Man, 1916) [*Nephrops sibogae*].— type locality: Kai Isands, Indonesia.

M. sinensis (Bruce, 1966) [*Nephrops sinensis*].— type locality: south of Hainan, South China Sea.

M. taiwanicus (Hu, 1983) [*Wongastacia taiwanica*].— type locality: Taiwan. (see Tshudy et al., 2007; Chan et al., 2009).

M. thomsoni (Bate, 1888) [*Nephrops thomsoni*].— type locality: Philippines.

M. velutinus Chan & Yu, 1991.— type locality: Philippines.

Nephropides Manning, 1969

**N. caribaeus* Manning, 1969.— type locality: Nicaragua, Caribbean Sea.

Nephrops Leach, 1814

**N. norvegicus* (Linnaeus, 1758) [*Cancer norvegicus*].— type locality: Kullen Peninsula, Sweden.

Nephropsis Wood-Mason, 1872

N. acanthura Macpherson, 1990.— type locality: Philippines.

N. aculeata Smith, 1881 [*Nephropsis aculeatus*].— type locality: Massachusetts, USA.

N. agassizii A. Milne-Edwards, 1880.— type locality: Florida,

USA but likely wrong and should be north of Yucatan Bank, Mexico (see Holthuis, 1974).
N. atlantica Norman, 1882.— type locality: Faeroe Channel, Scotland (see also Holthuis, 1991).
N. carpenteri Wood-Mason, 1885.— type locality: Bay of Bengal.
N. ensirostris Alcock, 1901.— type locality: north of the Laccadives, Arabian Sea.
N. holthuisi Macpherson, 1993.— type locality: Ashmore Reef, northwest Australia.
Nephropsis macphersoni Watabe & Iizuka, 1999
N. malhaensis Borradaile, 1910.— type locality: off Saya de Malha, Western Indian Ocean.
N. neglecta Holthuis, 1974.— type locality: Florida, USA.
N. occidentalis Faxon, 1893.— type locality: west of Mexico.
N. rosea Bate, 1888.— type locality: Bermuda.
N. serrata Macpherson, 1993.— type locality: northwest Australia.
Nephropsis hamadai Watabe & Ikeda, 1994
Nephropsis lyra Zarenkov, 2006
Nephropsis pseudoserrata Zarenkov, 2006
**N. stewarti* Wood-Mason, 1872.— type locality: Ross Island, Andaman Sea.
Nephropsis grandis Zarenkov, 2006
N. suhmi Bate, 1888.—type locality: Aru Islands, Indonesia.
Nephropsis meteor Zarenkov, 2006
N. sulcata Macpherson, 1990.— type locality: Philippines

Thaumastocheles Wood-Mason, 1874
T. dochmiodon Chan & Saint Laurent, 1999.— type locality: Taiwan.
T. japonicus Calman, 1913.— type locality: Sagami Bay, Japan.
**T. zaleucus* (Thomson, 1873) [*Astacus Zaleucus*]. — type locality: off Sombrero Island, West Indies.

Thaumastochelopsis Bruce, 1988
T. brucei Ahyong, Chu & Chan, 2007.— type locality: Queensland, Australia.
**T. wardi* Bruce, 1988.— type locality: Queensland, Australia.

Thymopides Burukovsky & Averin, 1977
**T. grobovi* (Burukovsky & Averin, 1976) [*Bellator grobovi*].— type locality: between Heard Island and Kerguelen Islands, south Indian Ocean.
T. laurentae Segonzac & Macpherson, 2003.— type locality: Snake Pit, Mid-Atlantic Ridge.

Thymops Holthuis, 1974
**T. birsteini* (Zarenkov & Semenov, 1972) [*Nephropides birsteini*].— type locality: north of Falkland Islands.

Thymopsis Holthuis, 1974
**T. nilenta* Holthuis, 1974.— type locality: south of South Georgia.

INFRAORDER GLYPHEIDEA WINKLER, 1882

The living fossil family Glypheidae and superfamily Glypheoidea has long been treated under Palinuridea (= Palinura), but recent studies consider glypheoids to be the sister taxon to Astacidea (Martin & Davis, 2001; Dixon et al., 2003; Amati et al., 2004; Schram & Dixon, 2004; Ahyong & O'Meally, 2004; Patek et al., 2006; Forest, 2006a, b, c). However, the exact position of glypheoids remains uncertain (see Bracken et al., 2009; Boisselier-Dubayle et al., 2010) and for the time being it is more appropriate to treat them as a separate infraorder pending further study (also see De Grave et al., 2009; Boisselier-Dubayle et al., 2010). For the original author and date of Glypheidae (and hence Glypheoidea and Glypheidea), according to Article 11.7 of the International Code of Zoological Nomenclature it should be Winkler, 1882 instead of von Zittel, 1885 as stated by Holthuis (1991). There is also some confusion in what constitutes the original description of the genus *Laurentaeglyphea* by Forest (2006a, b, c) as pointed out by Boyko (2008), the correct one being Forest (2006c).

SUPERFAMILY GLYPHEOIDEA WINKLER, 1882
[Glyphaeidae]

Family Glypheidae Winkler, 1882 [Glyphaeidae]

Laurentaeglyphea Forest, 2006
**L. neocaledonica* (Richer de Forges, 2006) [*Neoglyphea neocaledonica*].— type locality: New Caledonia.

Neoglyphea Forest & Saint Laurent, 1975
**N. inopinata* Forest & Saint Laurent, 1975.— type locality: Philippines.

INFRAORDER ACHELATA SCHOLTZ & RICHTER, 1995

Although the most robust molecular phylogenetic analysis of Tsang et al. (2008) tentatively revived the suborder Macrura Reptantia, Polychelidae is separated from the other Palinuridea (= Palinura) and treated as a separate infraorder Polychelida (also see Scholtz & Richter, 1995; Ahyong & O'Meally, 2004; Bracken et al., 2009; Toon et al., 2009; Ahyong, 2009). Thus, the infraorder Palinuridea Latreille, 1802 is abandoned and the infraorder Achelata is used for those species of the superfamily Palinuroidea Latreille, 1802, which now becomes superfluous and is thus also abandoned. In the two most recent molecular phylogenetic analyses of Achelata and Palinuridae (Palero et al., 2009; Tsang et al., 2009), the family Synaxidae Bate, 1881 is proven to be polyphyletic and should be treated as a junior synonym of Palinuridae.

Family Palinuridae Latreille, 1802 [Palinurini]

Booth et al. (1990) synonymized *Jasus novaehollandiae* Holthuis, 1963 with *J. edwardsii* (Hutton, 1875), supported

by further molecular analysis (Ovenden et al., 1992). The subgenus *Sagmariasus* proposed by Holthuis (1991) has often been used at generic level by many recent authors (e.g. Booth et al. 2002; Booth, 2006; George, 2006). As the most recent molecular analysis of Palinuridae (Tsang et al., 2009) provides strong support for a distinct generic status of *Sagmariasus*, its generic level status is herein followed. *Nupalirus*, previously considered a synonym of *Justitia*, is also herein accorded generic status following the analysis of Tsang et al. (2009). The synonymizing of the Indo-West Pacific *Justitia mauritiana* (Miers, 1882) with the Atlantic *J. longimanus* (H. Milne Edwards, 1837) is by following the work of Poupin (1994). In a genetic study, Sarver et al. (1998) argued that there were two distinct populations of *Panulirus argus* (Latreille, 1804) in the Americas. Only towards the end of their article was a new name proposed: "we suggest provisional recognition of two subspecies of *P. argus*, *P. argus argus* representing populations from Venezuela to Bermuda, and *P. argus westonii*, new subspecies, representing populations of *P. argus* from Brazil." (Sarver et al., 1998: 185). According to the International Code of Zoological Nomenclature (1999, Article 15.1), any name proposed conditionally after 1961 is not available. *Panulirus argus westonii* Sarver, Silberman & Walsh, 1998, is therefore not an available name and cannot be used. No type specimen was designated by Sarver et al. (1998), nor was a description or illustration of the subspecies given, except for a note that some color differences are present between the two subspecies. Sarver et al. (2000) used the new name again when they identified two specimens from Florida as "*Panulirus argus westonii*". They again stated clearly that the name was a provisional one (even in the title of the paper) so it remains unavailable. Although Sarver et al. (1998: 185) commented that the type locality of *P. argus* s. str. was from the Caribbean, Holthuis (1991) had clearly indicated that the type locality of *P. argus* is uncertain and only listed as "Je la soupçonne des Grandes-Indes" by Latreille (1804: 393). Possible syntypic material from the Antilles is still extant, but their type status has not been ascertained yet (see Holthuis, 1991: 133). More complicated is that the type locality of *P. argus* was actually later corrected by Lamarck (1818: 210) to "L'Océan du Bresil", the supposed type locality of "*P. argus westonii*". In addition, there are two other synonyms for *P. argus*, namely *Palinurus ricordi* Guérin-Méneville, 1836, and *Palinurus americanus* H. Milne Edwards, 1837, both with type localities in the Antilles, which have not been considered. The discovery of "*P. argus westonii*" in Florida (Sarver et al., 2000) complicates matters further as it indicates the two subspecies may not be completely geographically segregated. This makes the identity of the old material and types of the various old names even more difficult to ascertain. It is possible that the real *P. argus* is what Sarver et al. (1998) call "*P. argus westonii*", and/or the latter name is a junior synonym of *P. ricordi* or *P. americanus*. As such, it is premature to validate the name "*P. argus westonii*" to make it available. Clearly, a detailed taxonomic study of the taxa in the "*P. argus*" complex needs to be done before any action should be taken. The nomenclatural issues and taxonomic decisions for synonymy for *Panulirus longipes* (A. Milne Edwards, 1868), *P. longipes bispinosus* Borradaile, 1899, *P. femoristriga* (von Martens, 1872) and *P. albiflagellum* Chan & Chu, 1996 were discussed by Chan & Ng (2001).

Jasus Parker, 1883

J. caveorum Webber & Booth, 1995.— type locality: southeast of Pitcairn Island.

J. edwardsii (Hutton, 1875) [*Palinurus edwardsii*].— type locality: New Zealand.
Jasus (*Jasus*) *edwardsii* (Hutton, 1875) [combination using subgenus]
Jasus novaehollandiae Holthuis, 1963
Jasus (*Jasus*) *novaehollandiae* Holthuis, 1963 [combination using subgenus]

J. frontalis (H. Milne Edwards, 1837) [*Palinurus frontalis*].— type locality: Chile and restricted to Juan Fernandez Archipelago (see Holthuis, 1991).
Jasus (*Jasus*) *frontalis* (H. Milne Edwards, 1837) [combination using subgenus]

**J. lalandii* (H. Milne Edwards, 1837) [*Palinurus lalandii*].— type locality: Cape of Good Hope, South Africa.
Jasus (*Jasus*) *lalandii* (H. Milne Edwards, 1837) [combination using subgenus]

J. paulensis (Heller, 1862) [*Palinurus paulensis*].— type locality: St. Paul Island, south Indian Ocean.
Jasus (*Jasus*) *paulensis* (Heller, 1862) [combination using subgenus]

J. tristani Holthuis, 1963.— type locality: Tristan da Cunha, south Atlantic Ocean.
Jasus (*Jasus*) *tristani* Holthuis, 1963 [combination using subgenus]

Justitia Holthuis, 1946

**J. longimanus* (H. Milne Edwards, 1837) [*Palinurus longimanus*].— type locality: Antilles.
J. longimana mauritania (Miers, 1882) [*Palinurus longimanus mauritianus*]
J. mauritiana (Miers, 1882) [combination recognizing the form as distinct species]

Linuparus White, 1847

L. somniosus Berry and George, 1972.— type locality: Natal, South Africa.

L. sordidus Bruce, 1965.— type locality: south of Hong Kong, South China Sea.

**L. trigonus* (von Siebold, 1824) [*Palinurus trigonus*].— type locality: Japan.

Nupalirus Kubo, 1955

N. chani (Poupin, 1994) [*Justitia chani*].— type locality: Loyalty Islands.

**N. japonicus* Kubo, 1955.— type locality: Kochi, Japan.
Justitia japonica (Kubo, 1955) [different generic combination]

N. vericeli (Poupin, 1994) [*Justitia vericeli*].— type locality: Tuamotu, French Polynesia.

Palibythus Davie, 1990

**P. magnificus* Davie, 1990.— type locality: Western Samoa.

Palinurellus von Martens, 1878
**P. gundlachi* von Martens, 1878.— type locality: Cuba.
P. wieneckii (De Man, 1881) [*Araeosternus wieneckii*].— type locality: Sumatra, Indonesia.
Palinurellus gundlachi wieneckii (De Man, 1881) [combination using subspecies]

Palinurus Weber, 1795
P. barbarae Groeneveld, Griffiths & Van Dalsen, 2006.— type locality: Walters Shoals, south of Madagascar.
P. charlestoni Forest & Postel, 1964.— type locality: Cape Verde Islands.
**P. delagoae* Barnard, 1926 [*Palinurus gilchristi delagoae*].— type locality: Natal, South Africa.
P. elephas (Fabricius, 1787) [*Astacus elephas*].— type locality: "Americae meridionalis Insulis", likely wrong and should be Italy (see Holthuis, 1991).
P. gilchristi Stebbing, 1900.— type locality: Cape Province, South Africa.
P. mauritanicus Gruvel, 1911 [*Palinurus vulgaris mauritanicus*].— type locality: Mauritania, Cabo Barbas of Western Sahara and St. Louis of Senegal.

Palinustus A. Milne-Edwards, 1880
P. mossamicus Barnard, 1926.— type locality: Mozambique.
**P. truncatus* A. Milne-Edwards, 1880.— type locality: Grenadines.
P. unicornutus Berry, 1979.— type locality: Natal, South Africa.
P. waguensis Kubo, 1963.— type locality: Mie, Japan.
P. holthuisi Chan & Yu, 1995.— type locality: Taiwan.

Panulirus White, 1847
P. argus (Latreille, 1804) [*Palinurus argus*].— type locality: "Je la soupçonne des Grandes-Indes", possibly Antilles (see Holthuis, 1991).
Panulirus argus westonii Sarver, Silberman & Walsh, 1998 (unavailable name, see remarks under Palinuridae)
P. brunneiflagellum Sekiguchi & George, 2005.— type locality: Ogasawara (Bonin Islands), Japan.
P. cygnus George, 1962.— type locality: Rottnest Isand, Western Australia.
Panulirus longipes cygnus George, 1962 [combination using subspecies]
P. echinatus Smith, 1869.— type locality: Brazil.
P. femoristriga (von Martens, 1872) [*Palinurus femoristriga*].— type locality: Ambonia, Indonesia.
Panulirus longipes femoristriga (von Martens, 1872) [combination using subspecies]
Panulirus albiflagellum Chan & Chu, 1996
P. gracilis Streets, 1871.— type locality: Gulf of Tehuantepec, Mexico.
P. guttatus (Latreille, 1804) [*Palinurus guttatus*].— type locality: Suriname.
P. homarus homarus (Linnaeus, 1758) [*Cancer homarus*].— type locality: Amboina, Indonesia.
Panulirus dasypus (H. Milne Edwards, 1837) [*Palinurus dasypus*]
Panulirus burgeri (De Haan, 1841) [*Palinurus burgeri*]
P. homarus megasculpta Pesta, 1915 [*Panulirus burgeri megasculpta*].— type locality: South Yemen.
P. homarus rubellus Berry, 1974.— type locality: southeast coast of Africa (Natal, South Africa; S. Mozambique, S.E. Madagascar).
P. inflatus (Bouvier, 1895) [*Palinurus inflatus*].— type locality: Baja California, Mexico.
P. interruptus (Randall, 1840) [*Palinurus interruptus*].— type locality: California, USA.
**P. japonicus* (von Siebold, 1824) [*Palinurus japonicus*].— type locality: Japan.
P. laevicauda (Latrielle, 1817) [*Palinurus laevicauda*].— type locality: Brazil.
P. longipes longipes (A. Milne-Edwards, 1868) [*Palinurus longipes*].— type locality: Zanzibar.
P. longipes bispinosus Borradaile, 1899 [*Panulirus bispinosus*].— type locality: Loyalty Islands.
P. marginatus (Quoy & Gaimard, 1825) [*Palinurus marginatus*].— type locality: Hawaii.
P. ornatus (Fabricius, 1798) [*Palinurus ornatus*].— type locality: Indian Ocean, possibly Tranquebar, India (see Holthuis, 1991).
P. pascuensis Reed, 1954.— type locality: Easter Islands.
P. penicillatus (Olivier, 1791) [*Astacus penicillatus*].— type locality: unknown (see Holthuis, 1991).
P. polyphagus (Herbst, 1793) [*Cancer* (*Astacus*) *polyphagus*].— type locality: East Indies.
Panulirus fasciatus (Fabricius, 1798) [*Palinurus fasciatus*]
Panulirus orientalis Doflein, 1900
P. regius De Brito Capello, 1864.— type locality: Cape Verde Islands.
Panulirus rissonii (Desmarest, 1825) [*Palinurus rissonii*]
P. stimpsoni Holthuis, 1963.— type locality: Hong Kong.
P. versicolor (Latreille, 1804) [*Palinurus versicolor*].— type locality: "Cette jolie espèce nous est arrivèe par la frègate le Naturaliste", probably Mauritius and/or Timor (see Holthuis, 1991).

Projasus George & Grindley, 1964
P. bahamondei George, 1976.— type locality: San Ambrosio Island, southeast Pacific.
**P. parkeri* (Stebbing, 1902) [*Jasus parkeri*].— type locality: Natal, South Africa.

Puerulus Ortmann, 1897
**P. angulatus* (Bate, 1888) [*Panulirus angulatus*].— type locality: north of New Guinea.
P. carinatus Borradaile, 1910.— type locality: Mozambique.
P. sewelli Ramadan, 1938.— type locality: Gulf of Aden.
P. velutinus Holthuis, 1963.— type locality: Lesser Sunda Islands, Indonesia.

Sagmariasus Holthuis, 1991
**S. verreauxi* (H. Milne Edwards, 1851) [*Palinurus verreauxi*].— type locality: New South Wales, Australia.
Jasus verrreauxi (H. Milne Edwards, 1851) [different generic combination]

Jasus (*Sagmariasus*) *verreauxi* (H. Milne Edwards, 1851) [combination using subgenus]

Family Scyllaridae Latreille, 1825

Subfamily Arctidinae Holthuis, 1985

Arctides Holthuis, 1960
A. antipodarum Holthuis, 1960.— type locality: New South Wales, Australia.
**A. guineensis* (Spengler, 1799) [*Scyllarus Guineensis*].— type locality: Guinea but very likely wrong (see Holthuis, 1991, 2006).
A. regalis Holthuis, 1963.— type locality: Hawaii.

Scyllarides Gill, 1898
**S. aequinoctialis* (Lund, 1793) [*Scyllarus aequinoctialis*].— type locality: Jamaica.
S. astori Holthuis, 1960.— type locality: Galápagos Islands.
S. brasiliensis Rathbun, 1906.— type locality: Brazil.
S. deceptor Holthuis, 1963.— type locality: Brazil.
S. delfosi Holthuis, 1960.— type locality: Suriname.
S. elisabethae (Ortmann, 1894) [*Scyllarus elisabethae*].— type locality: Port Elizabeth, South Africa.
S. haanii (De Haan, 1841) [*Scyllarus haanii*].— type locality: Japan.
S. herklotsii (Herklots, 1851) [*Scyllarus herklotsii*].— type locality: Ghana.
S. latus (Latreille, 1803) [*Scyllarus latus*].— type locality: near Rome, Italy.
S. nodifer (Stimpson, 1866) [*Scyllarus nodifer*].— type locality: Florida, USA.
S. obtusus Holthuis, 1993.— type locality: Saint Helena.
S. roggeveeni Holthuis, 1967.— type locality: Easter Islands.
S. squammosus (H. Milne Edwards, 1837) [*Scyllarus squammosus*].— type locality: Mauritius.
Scyllarides sieboldi (De Haan, 1841) [*Scyllarus sieboldi*]
S. tridacnophaga Holthuis, 1967.— type locality: Gulf of Aqaba, Israel.

Subfamily Ibacinae Holthuis, 1985

Chan (1997) raised *Ibacus ciliatus pubescens* Holthuis, 1960 to species status, supported by Brown & Holthuis (1998).

Evibacus Smith, 1869
**E. princeps* Smith, 1869.— type locality: Baja California, Mexico.

Ibacus Leach, 1815
I. alticrenatus Bate, 1888.— type locality: New Zealand.
I. brevipes Bate, 1888.— type locality: Kai Islands, Indonesia.
Ibacus verdi Bate, 1888
I. brucei Holthuis, 1977.— type locality: Queensland, Australia.
I. chacei Brown & Holthuis, 1998.— type locality: New South Wales, Australia.
I. ciliatus (von Siebold, 1824) [*Scyllarus ciliatus*].— type locality: Japan.
I. novemdentatus Gibbes, 1850.— type locality: unknown (see Holthuis, 1985, 1991).
**I. peronii* Leach, 1815.— type locality: Tasmania, Australia.
I. pubescens Holthuis, 1960 [*Ibacus ciliatus pubescens*].— type locality: Philippines.

Parribacus Dana, 1852
**P. antarcticus* (Lund, 1793) [*Scyllarus antarcticus*].— type locality: Amboina, Indonesia.
P. caledonicus Holthuis, 1960.— type locality: New Caledonia.
P. holthuisi Forest, 1954.— type locality: Tuamotu Archipelago, French Polynesia.
P. japonicus Holthuis, 1960.— type locality: Tokyo Bay, Japan.
P. perlatus Holthuis, 1967.— type locality: Easter Island.
P. scarlatinus Holthuis, 1960.— type locality: Phoenix Archipelago.

Subfamily Scyllarinae Latreille, 1825

Acantharctus Holthuis, 2002
A. delfini (Bouvier, 1909) [*Arctus Delfini*].— type locality: Juan Fernandez Island, Chile.
Scyllarus delfini (Bouvier, 1909) [different generic combination]
**A. ornatus* (Holthuis, 1960) [*Scyllarus ornatus*].— type locality: Arabian Peninsula, Oman.
A. posteli (Forest, 1963) [*Scyllarus posteli*].— type locality: Pointe Noire, Congo.

Antarctus Holthuis, 2002
**A. mawsoni* (Bage, 1938) [*Arctus mawsoni*].— type locality: Tasmania.
Scyllarus mawsoni (Bage, 1938) [different generic combination]

Antipodarctus Holthuis, 2002
**A. aoteanus* (Powell, 1949) [*Scyllarus aoteanus*].— type locality: New Zealand.

Bathyarctus Holthuis, 2002
B. chani Holthuis, 2002.— type locality: New Caledonia.
B. faxoni (Bouvier, 1917) [*Scyllarus faxoni*].— type locality: Guadeloupe, West Indies.
B. formosanus (Chan & Yu, 1992) [*Scyllarus formosanus*].— type locality: Taiwan.
B. ramosae (Tavares, 1997) [*Scyllarus ramosae*].— type locality: Brazil.
**B. rubens* (Alcock & Anderson, 1894) [*Arctus rubens*].— type locality: Sri Lanka.
Scyllarus rubens (Alcock and Anderson, 1894) [different generic combination]
B. steatopygus Holthuis, 2002.— type locality: Kenya.

Biarctus Holthuis, 2002

B. dubius (Holthuis, 1963) [*Scyllarus dubius*].— type locality: Japan, but likely wrong (see Holthuis, 2002).

B. pumilus (Nobili, 1906) [*Scyllarus pumilus*].— type locality: Dahlak Archipelago, Red Sea.
Scyllarus Thiriouxi Bouvier, 1914

**B. sordidus* (Stimpson, 1860) [*Arctus sordidus]*.— type locality: Hong Kong.
Scyllarus sordidus (Stimspon, 1860) [different generic combination]
Scyllarus tutiensis Srikrishnadhas, Rahman & Anandasekaran, 1991

B. vitiensis (Dana, 1852) [*Arctus vitiensis*].— type locality: Fiji.
Scyllarus vitiensis (Dana, 1852) [different generic combination]
Scyllarus longidactylus Harada, 1962
Scyllarus amabilis Holthuis, 1963

Chelarctus Holthuis, 2002

C. aureus (Holthuis, 1963) [*Scyllarus aureus*].— type locality: Philippines.

C. crosnieri Holthuis, 2002.— type locality: Tonga.

**C. cultrifer* (Ortmann, 1897) [*Arctus cultrifer*].— type locality: Kai Islands , Indonesia.
Scyllarus cultrifer (Ortmann, 1897) [different generic combination]
Scyllarus cultrifer meridionalis Holthuis, 1960

Crenarctus Holthuis, 2002

**C. bicuspidatus* (De Man, 1905) [*Arctus bicuspidatus*].— type locality: Flores Sea, Indonesia.
Scyllarus bicuspidatus (De Man, 1905) [different generic combination]

C. crenatus (Whitelegge, 1900) [*Arctus crenatus*].— type locality: New South Wales, Australia.
Scyllarus crenatus (Whitelegge, 1900) [different generic combination]

Eduarctus Holthuis, 2002

E. aesopius (Holthuis, 1960) [*Scyllarus aesopius*].— type locality: Philippines.

E. lewinsohni (Holthuis, 1967) [*Scyllarus lewinsohni*].— type locality: Gulf of Aqaba, Red Sea.

E. marginatus Holthuis, 2002.— type locality: Fiji.

**E. martensii* (Pfeffer, 1881) [*Scyllarus Martensii*].— type locality: Amur, Heilongjiang, China, but highly likely wrong (see Holthuis, 1991, 2002).

E. modestus (Holthuis, 1960) [*Scyllarus modestus*].— type locality: Hawaii.

E. perspicillatus Holthuis, 2002.— type locality: Mozambique.

E. pyrrhonotus Holthuis, 2002.— type locality: Seychelles.

E. reticulatus Holthuis, 2002.— type locality: Macclesfield Bank, South China Sea.

Galearctus Holthuis, 2002

G. aurora (Holthuis, 1982) [*Scyllarus aurora*].— type locality: Hawaii.

G. kitanoviriosus (Harada, 1962) [*Scyllarus kitanoviriosus*].— type locality: Osaka Bay, Japan.

G. rapanus (Holthuis, 1993) [*Scyllarus rapanus*].— type locality: Tubuai Archipelago, French Polynesia.

**G. timidus* (Holthuis, 1960) [*Scyllarus timidus*].— type locality: Philippines.

G. umbilicatus (Holthuis, 1977) [*Scyllarus umbilicatus*].— type locality: New South Wales, Australia.

Gibbularctus Holthuis, 2002

**G. gibberosus* (De Man, 1905) [*Arctus gibberosus*].— type locality: Philippines and Indonesia.
Scyllarus gibberosus (De Man, 1905) [different generic combination]
Scyllarus nobilii (De Man, 1905) [*Arctus Nobilii*]
Scyllarus Paulsoni Nobili, 1906

Petrarctus Holthuis, 2002

P. brevicornis (Holthuis, 1946) [*Scyllarus brevicornis*].— type locality: Southern Bungo Strait, Japan.

P. demani (Holthuis, 1946) [*Scyllarus demani*].— type locality: Sumatra, Indonesia.

P. holthuisi Yang, Chen & Chan, 2008.— type locality: Philippines.

**P. rugosus* (H. Milne Edwards, 1837) [*Scyllarus rugosus*].— type locality: Pondichery, India.
Scyllarus tuberculatus (Bate, 1888) [*Arctus tuberculatus*]

P. veliger Holthuis, 2002.— type locality: Andaman Sea, south Burma.

Remiarctus Holthuis, 2002

**R. bertholdii* (Paul'son, 1875) [*Scyllarus Bertholdii*].— type locality: China.

Scammarctus Holthuis, 2002

**S. batei batei* (Holthuis, 1946) [*Scyllarus batei*].— type locality: Philippines.

S. batei arabicus Holthuis, 1960 [*Scyllarus batei arabicus*].— type locality: Gulf of Aden.

Scyllarus Fabricius, 1775

S. americanus (Smith, 1869) [*Arctus americanus*].— type locality: Florida, USA.

**S. arctus* (Linnaeus, 1758) [*Cancer arctus*].— type locality: highly likely near Rome, Italy (see Holthuis, 1991).

S. caparti Holthuis, 1952.— type locality: Angola.

S. chacei Holthuis, 1960.— type locality: Suriname.

S. depressus (Smith, 1881) [*Arctus depressus*].— type locality: Massachusetts, USA.
Scyllarus nearctus Holthuis, 1960

S. paradoxus Miers, 1881 [*Scyllarus* (*Arctus*) *arctus*, var. *paradoxus*].— type locality: Senegal.

S. planorbis Holthuis, 1969.— type locality: Caribbean Sea, off Colombia.

S. pygmaeus (Bate, 1888) [*Arctus pygmaeus*].— type locality: Canary Islands.

S. subarctus Crosnier, 1970.— type locality: Angola.

Subfamily Theninae Holthuis, 1985

This monotypic subfamily was recently revised by Burton & Davie (2007), and the name *Thenus indicus* Leach, 1816 revived.

Thenus Leach, 1816
T. australiensis Burton & Davie, 2007.— type locality: Torres Strait, Australia.
**T. indicus* Leach, 1816.— type locality: Indian Ocean (see Burton & Davie, 2007).
T. orientalis (Lund, 1793) [*Scyllarus orientalis*].— type locality: Sumatera, Indonesia (see Burton & Davie, 2007).
T. parindicus Burton & Davie, 2007.— type locality: Moreton Bay, Queensland, Australia.
T. unimaculatus Burton & Davie, 2007.— type locality: Phuket, Thailand.

INFRAORDER POLYCHELIDA SCHOLTZ & RICHTER, 1995

As discussed in Bracken et al. (2009) and Ahyong (2009), all recent phylogenetic analyses recognize a separate infraordinal status for the polychelidans. The recent morphological analysis on all living and many fossil polychelidans by Ahyong (2009) also revived the genus *Stereomastis* and abandoned the use of superfamilies (e.g. Eryonoidea De Haan, 1841) in the infraorder. Many probable larval polychelidans have been described under the generic name *Eryoneicus* Bate, 1882, but this name is suppressed by the ICZN (Opinion 702).

Family Polychelidae Wood-Mason, 1875

Polycheles kermadecensis (Sund, 1920) and *Polycheles amemiyai* Yokoya, 1933 were removed from the synonymy of *P. enthrix* (Bate, 1878) by Ahyong & Brown (2002) and Ahyong & Chan (2004), respectively.

Cardus Galil, 2000
**C. crucifer* (Thomson, 1873) [*Deidamia crucifer*].— type locality: West Indies.
Polycheles crucifer (Thomson, 1873) [different generic combination]

Homeryon Galil, 2000
**H. armarium* Galil, 2000.— type locality: Japan.
H. asper (Rathbun, 1906) [*Polycheles asper*].— type locality: Hawaii.

Pentacheles Bate, 1878
P. gibbus Alcock, 1894 [*Pentacheles gibba*].— type locality: Andaman Sea.
Polycheles gibbus (Alcock, 1894) [different generic combination]
**P. laevis* Bate, 1878.— type locality: Moluccas, Indonesia.
Polycheles laevis (Bate, 1878) [different generic combination]
Polycheles gracilis (Bate, 1878) [*Pentacheles gracilis*]
Polycheles granulatus Faxon, 1893
Polycheles beaumontii (Alcock, 1894) [*Pentacheles beaumontii*]
P. obscurus Bate, 1878 [*Pentacheles obscura*].— type locality: New Guinea.
Polycheles obscurus (Bate, 1878) [different generic combination]
Polycheles carpenteri (Alcock, 1894) [*Pentacheles carpenteri*]
P. snyderi (Rathbun, 1906) [*Polycheles snyderi*].— type locality: Hawaii.
P. validus A. Milne-Edwards, 1880.— type locality: Antilles.
Polycheles validus (A. Milne-Edwards, 1880) [different generic combination]
Polycheles demani Stebbing, 1917
Polycheles chilensis Sund, 1920

Polycheles Heller, 1862
P. amemiyai Yokoya, 1933.— type locality: Bungo Strait, Japan.
P. baccatus Bate, 1878.— type locality: Fiji.
P. coccifer Galil, 2000.— type locality: Philippines.
P. enthrix (Bate, 1878) [*Pentacheles enthrix*].— type locality: Fiji.
P. kermadecensis (Sund, 1920) [*Stereomastis kermadecensis*].— type locality: Kermadec Islands.
P. martini Ahyong & Brown, 2002.— type locality: New South Wales, Australia.
P. perarmatus Holthuis, 1952 [*Polycheles typhlops perarmatus*].— type locality: Angola.
P. tanneri Faxon, 1893.— type locality: Galápagos Islands.
**P. typhlops* Heller, 1862.— type locality: Sicily.
Polycheles hextii (Alcock, 1894) [*Pentacheles hextii*]

Stereomastis Bate, 1888
S. aculeata (Galil, 2000) [*Polycheles aculeatus*].— type locality: New Caledonia.
S. alis (Ahyong & Galil, 2006) [*Polycheles alis*].— type locality: Austral Islands.
S. auriculata (Bate, 1878) [*Pentacheles auriculatus*].— type locality: Fiji.
Polycheles auriculatus (Bate, 1878) [different generic combination]
S. cerata (Alcock, 1894) [*Pentacheles cerata*].— type locality: Andaman Sea.
Polycheles ceratus (Alcock, 1894) [different generic combination]
S. evexa (Galil, 2000) [*Polycheles evexus*].— type locality: Chile.
S. galil (Ahyong & Brown, 2002) [*Polycheles galil*].— type locality: northwest Australia.
S. helleri (Bate, 1878) [*Polycheles helleri*].— type locality: New Guinea.
S. nana (Smith, 1884) [*Pentacheles nanus*].— type locality: southeast of New York, USA.

Polycheles nanus (Smith, 1884) [different generic combination]
Polycheles andamanensis (Alcock, 1894) [*Pentacheles andamanensis*]
Stereomastis andamanesis (Alcock, 1894) [*Pentacheles andamanensis*]
Stereomastis grimaldii (Bouvier, 1905) [*Polycheles grimaldii*]

S. pacifica (Faxon, 1893) [*Polycheles sculptus pacificus*].— type locality: Gulf of Panama.
Stereomastis sculpta pacifica (Faxon, 1893) [combination using subspecies]
Polycheles pacificus (Faxon, 1893) [different generic combination]

S. panglao Ahyong & Chan, 2008.— type locality: Philippines.

S. phosphorus (Alcock, 1894) [*Pentacheles phosphorus*].— type locality: Bay of Bengal.
Polycheles phosphorus (Alcock, 1894) [different generic combination]

S. polita (Galil, 2000) [*Polycheles politus*].— type locality: Philippines.

S. sculpta (Smith, 1880) [*Polycheles sculptus*].— type locality: Nova Scotia, Canada.

**S. suhmi* (Bate, 1878) [*Pentacheles suhmi*].— type locality: Gulf of Penas, Chile.
Polycheles suhmi (Bate, 1878) [different generic combination]

S. surda (Galil, 2000) [*Polycheles surdus*].— type locality: Mozambique.

S. talismani (Bouvier, 1917) [*Polycheles sculptus* var. *talismani*].— type locality: Western Sahara.
Stereomastis sculpta talismani (Bouvier, 1917) [combination using subspecies]
Polycheles talismani (Bouvier, 1917) [different generic combination]

S. trispinosa (De Man, 1905) [*Pentacheles trispinosus*].— type locality: Bali Sea, Indonesia.
Polycheles trispinosus (De Man, 1905) [different generic combination]

Willemoesia Grote, 1873

W. forceps A. Milne-Edwards, 1880.— type locality: Cuba.

W. inornata Faxon, 1893.— type locality: south of Panama.
Willemoesia challengeri Sund, 1920

**W. leptodactyla* (Thomson, 1873) [*Deidamia leptodactyla*].— type locality: mid-Atlantic, 21°38'N, 44 °39'W.
Willemoesia indica Alcock, 1901
Willemoesia secunda Sund, 1920

W. pacifica Sund, 1920.— type locality: Juan Fernandez Island, Chile.
Willemoesia bonaspei Kensley, 1968

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Fig. 2. A, *Enoplometopus voigtmanni* (Enoplometopidae), Okinawa; B, *Acanthacaris tenuimana* (Nephropidae), Philippines; C, *Dinochelus ausubeli* (Nephropidae), Philippines; D, *Eunephrops cadenasi* (Nephropidae), French Antilles; E, *Homarus americanus* (Nephropidae), probably Canada (market in Taiwan); F, *Metanephrops neptunus* (Nephropidae), Philippines; G, *Nephropides caribaeus* (Nephropidae), French Antilles; H, *Nephropsis stewarti* (Nephropidae), Mozambique. (Photo credits: D, G: J. Poupin)

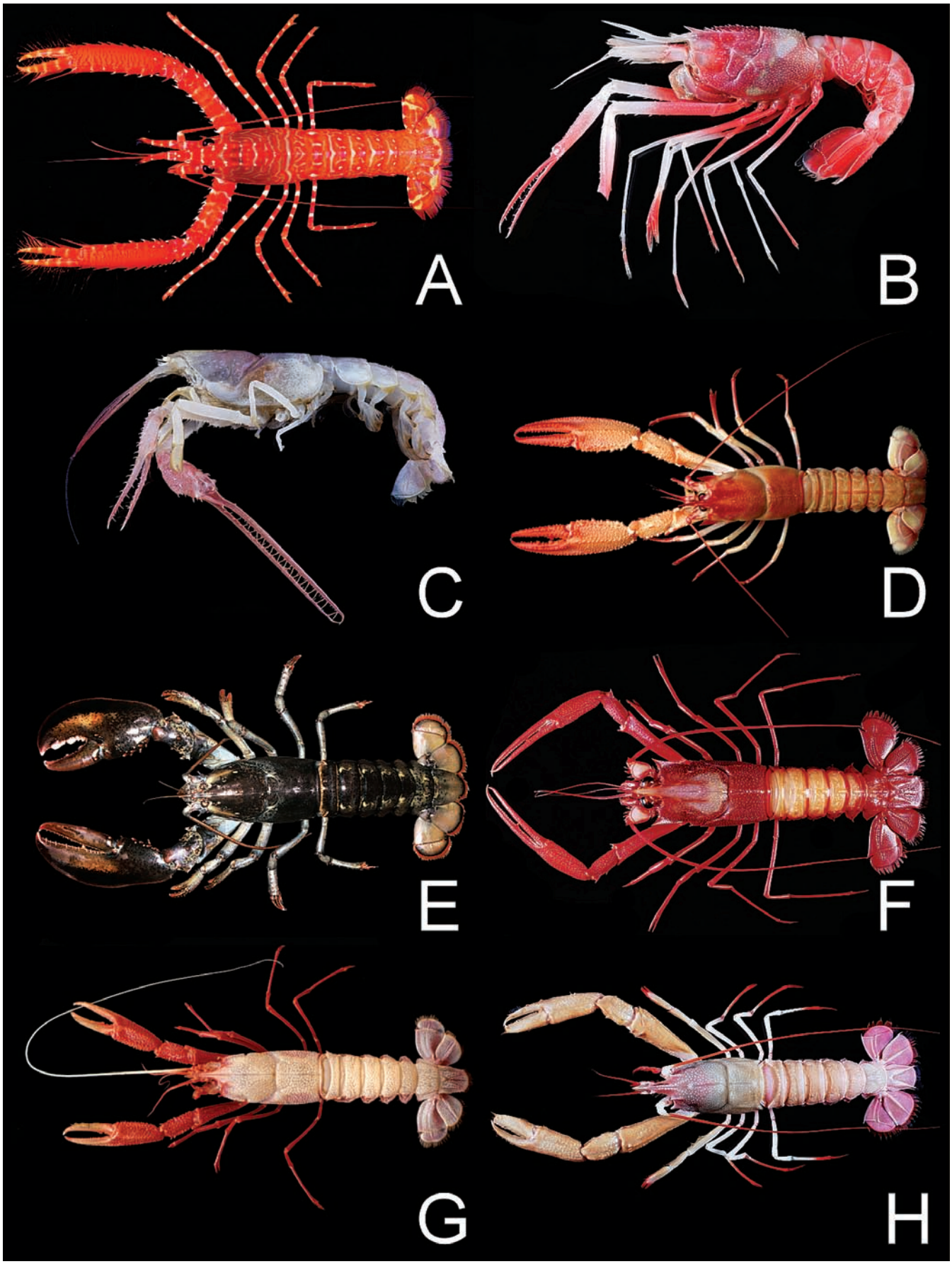
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Fig. 3. A, *Thaumastocheles japonicus* (Nephropidae), Philippines; B, *Thymopides laurentae* (Nephropidae), Mid-Atlantic Ridge; C, *Laurentaeglyphea neocaledonica* (Glyphaediae), New Caledonia; D, *Jasus edwardsii* (Palinuridae), Australia; E, *Justitia longimanus* (Palinuridae), Taiwan; F, *Linuparus trigonus* (Palinuridae), Philippines; G, *Nupalirus japonicus* (Palinuridae), Taiwan; H, *Palibythus magnificus* (Palinuridae), French Polynesia; (Photo credits: B: M. Segonzac; C: J.C.Y. Lai; H: J. Poupin)

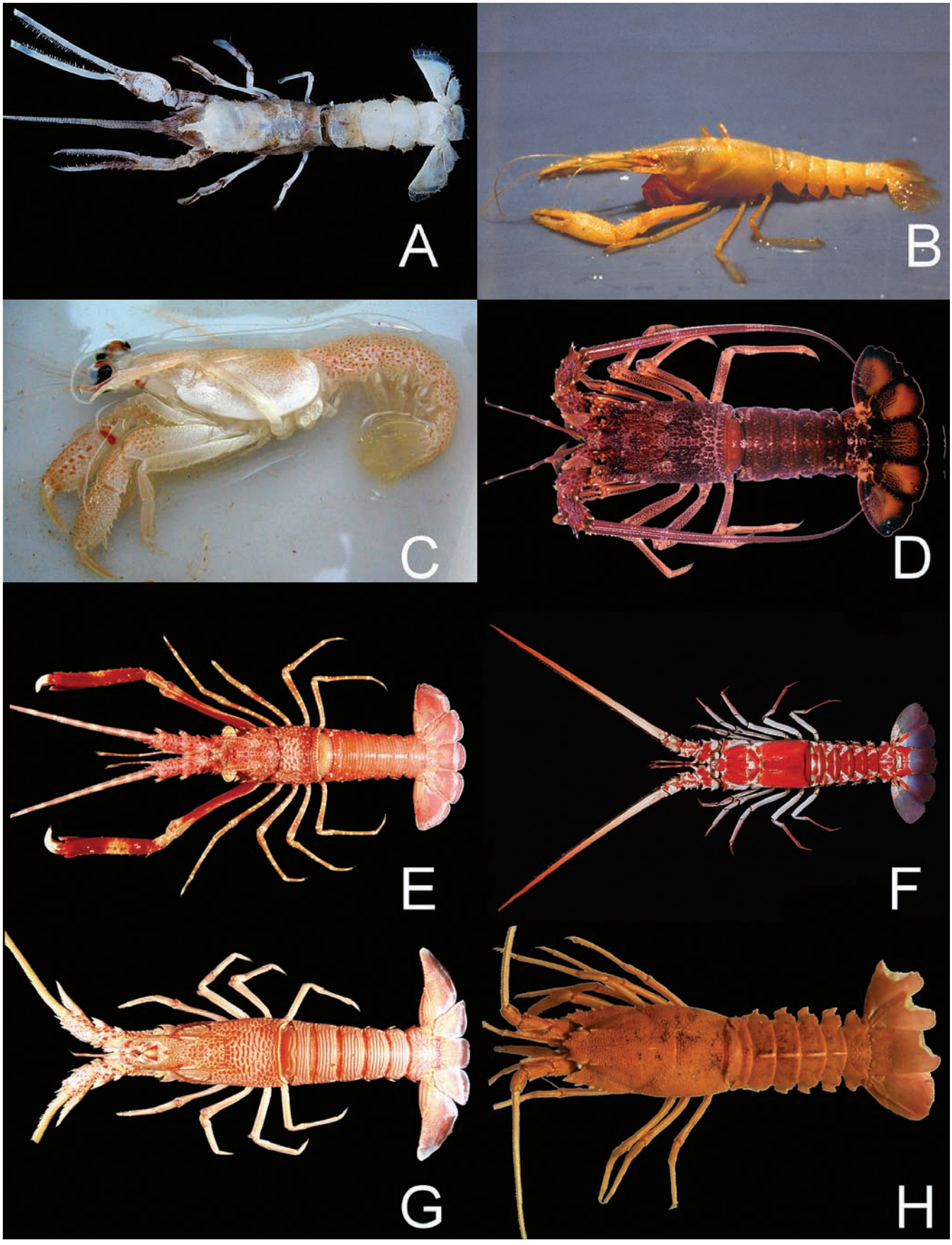
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Fig. 4. A, *Palinurellus wieneckii* (Palinuridae), Christmas Island; B, *Palinurus delagoae* (Palinuridae), Mozambique; C, *Palinustus waguensis* (Palinuridae), Philippines; D, *Panulirus homarus rubellus* (Palinuridae), Madagascar; E, *Projasus bahamondei* (Palinuridae), probably Chile (market in Taiwan); F, *Puerulus angulatus* (Palinuridae); Philippines; G, *Arctides regalis* (Scyllaridae), Réunion; H, *Scyllarides squammosus* (Scyllaridae), Madagascar. (Photo credits: A: S. H. Tan; G: J. Poupin)

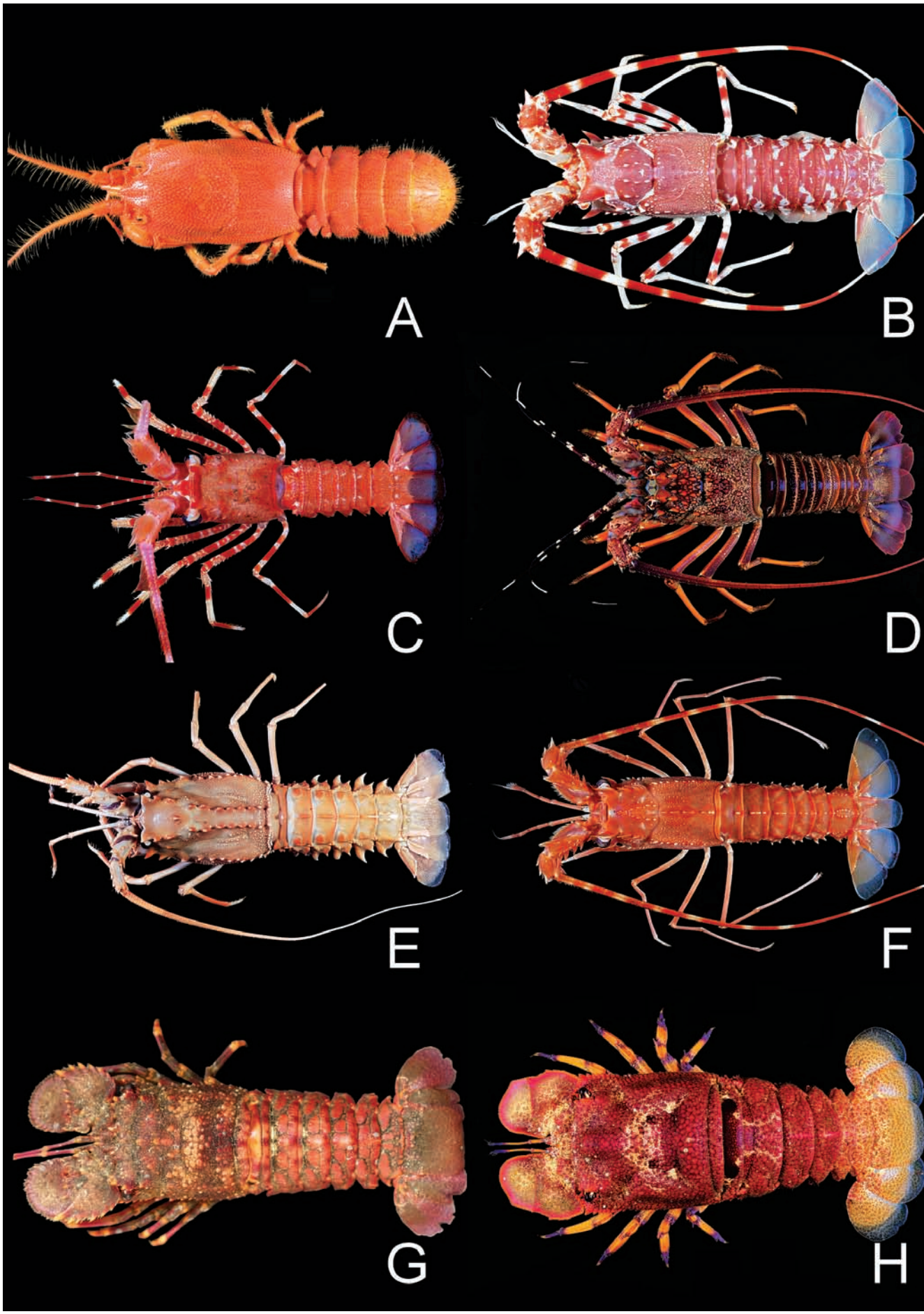
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Fig. 5. A, *Ibacus ciliatus* (Scyllaridae), Philippines; B, *Parribacus antarcticus* (Scyllaridae), Madagascar; C, *Bathyarctus formosanus* (Scyllaridae), Taiwan; D, *Biarctus vitiensis* (Scyllaridae), Taiwan; E, *Chelarctus aureus* (Scyllaridae), Philippines; F, *Crenarctus bicuspidatus* (Scyllaridae), Madagascar; G, *Eduarctus martensii* (Scyllaridae), Vanuatu; H, *Galearctus timidus* (Scyllaridae), Philippines.

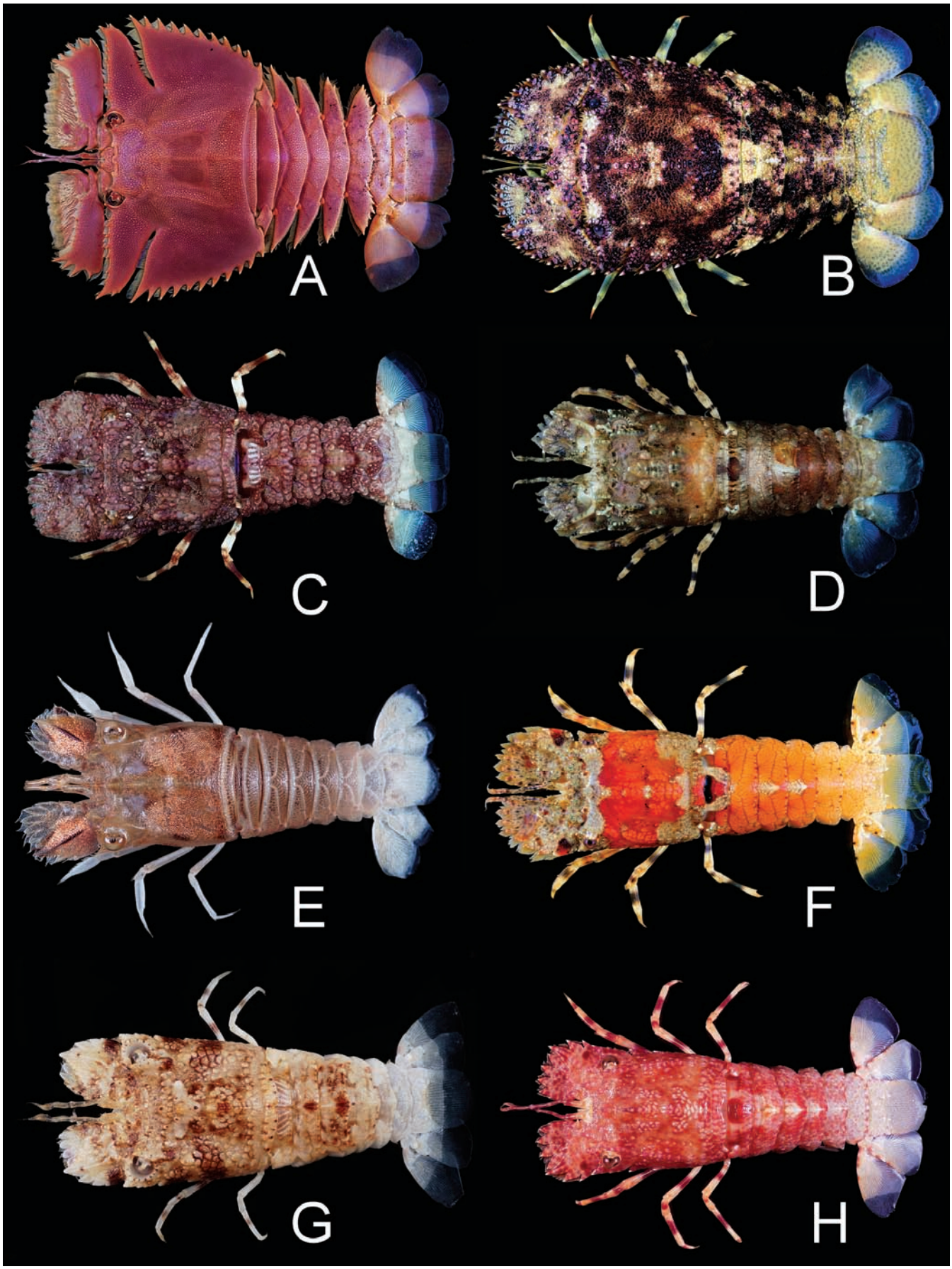
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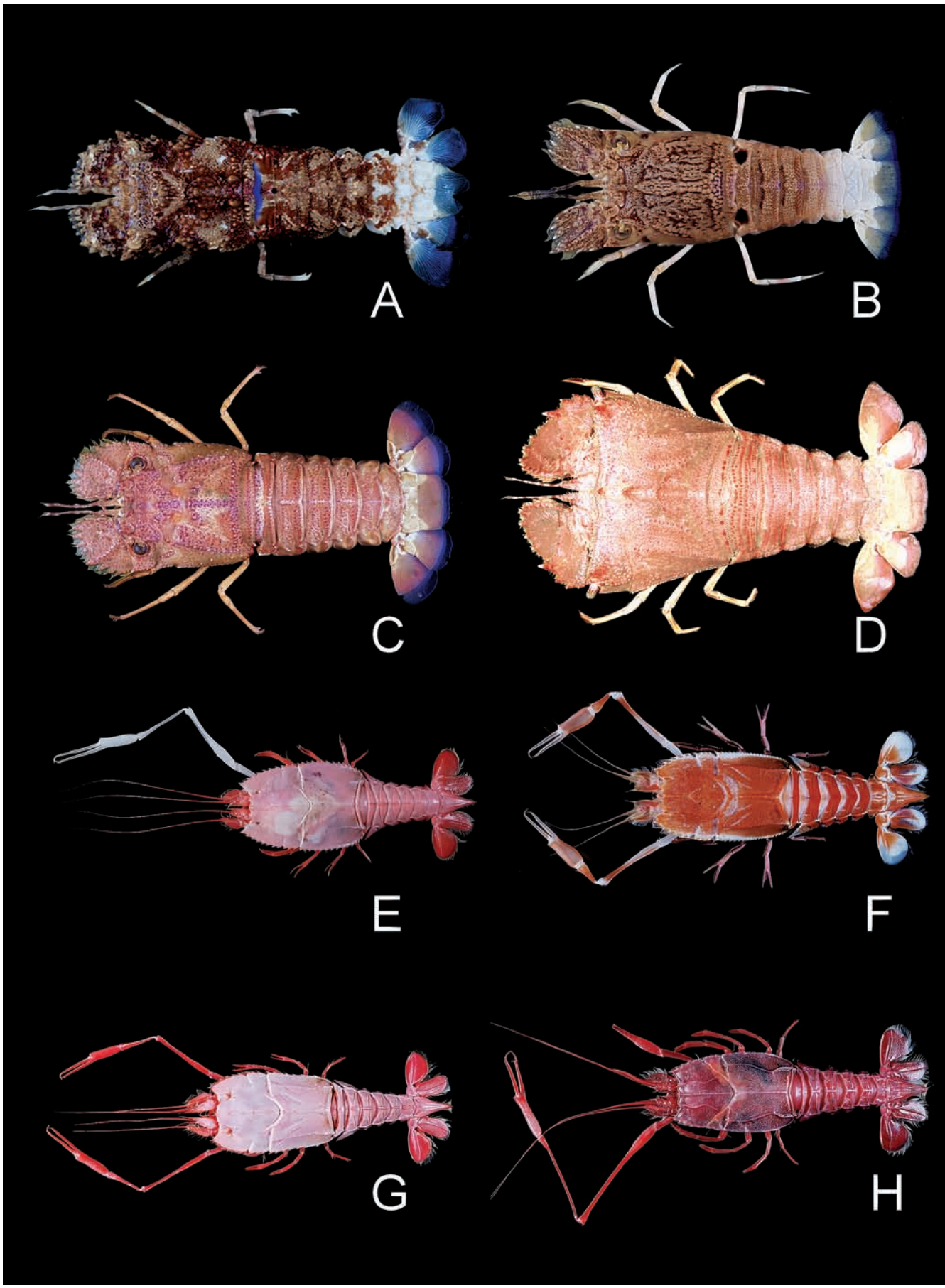
Fig. 6. A, *Petrarctus brevicornis* (Scyllaridae), Philippines; B, *Remiarctus bertholdii* (Scyllaridae), Philippines; C, *Scammarctus batei arabicus* (Scyllarides), Mozambique; D, *Thenus orientalis* (Scyllaridae), Taiwan; E, *Pentacheles laevis* (Polychelidae), Taiwan; F, *Polycheles coccifer* (Polychelidae), Philippines; G, *Stereomastis panglao* (Polychelidae), Philippines; H, *Willemoesia* sp. (Polychelidae), Taiwan.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