

## MARINE BIODIVERSITY OF THE SOUTH CHINA SEA : A CHECKLIST OF STOMATOPOD CRUSTACEA

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**ABSTRACT.** - Study on literature reveals that the stomatopod fauna of the South China Sea and the adjacent waters is very rich, although some areas such as the offshore waters of Borneo and the islands located at the southern part of this region are still very poorly surveyed. A total of 120 species belonging to 52 genera of 13 families and four superfamilies. The Superfamily Bathysquilloidea is represented by two species of one genus, the Gonodactyloidea is represented by 43 species of 20 genera, the Lysiosquilloidea is represented by 14 species of eight genera and the Squilloidea is represented by 61 species of 32 genera.

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### INTRODUCTION

The stomatopod Crustacea of the South China Sea has been studied for more than a century and could be traced back to the famous 'On the Squillidae' of Miers (1880a). The main materials for the region came from Vietnamese fauna studied by French taxonomists such as Ch. Gravier and R. Serène contributed valuable informations on the Vietnamese stomatopod. Recently, Russian scientists such as R. Blumstein and R.R. Makarov also contributed knowledge on the stomatopod fauna of Vietnam focusing mainly the fauna of Tonkin Bay. The latest works on the Vietnamese stomatopod fauna are those of Manning (1995) and Nguyen & Pham (1995). Manning (1995) studied the stomatopod fauna reported from Vietnam (under several older geographic names such as Indochine, Annam and Cochinchine) kept in the collections of various institutions and herewith his work is used as the main reference for the synonymies of the species presented in this checklist. In his work, Manning (1995) revised much of the taxonomic status of Stomatopoda and the present checklist is adopting his classification. Nguyen & Pham (1995) presented a checklist of marine shrimps and lobsters of Vietnam including Stomatopoda. Naiyanetr (1980a) studied the Stomatopoda of Thailand providing keys to the known Thailand species without clearly mentioning from where they were recorded except for the new species described. In his other work on the Crustacean Fauna of Thailand, Naiyanetr (1980b) provides a list of stomatopod species reported from Gulf of Thailand and the Andaman Sea. Moosa (1986) studied the material collected by the French missions in the Philippines where intensive collection was made in the southwest coast at the periphery of the South China Sea, adding several new species to the region stomatopod fauna.

The list of the known South China Sea stomatopod species is presented in Table 1. The South China Sea is divided into six areas: 1. = Gulf of Thailand including Cambodia and northern part of the Malay Peninsula; 2. = Vietnam; 3. = Southwestern part of the Philippines; 4. = West Coast of Borneo; 5. = Southern part of South China Sea including Singapore and Riau Archipelago; and 6. = Central and northern part of South China Sea including Hongkong and southern part of Taiwan. The work of Lee & Wu (1966) and Manning & Chan (1997) are quoted herein since many of their specimens were purchased from Tung Kang Fishmarket, located at the southern part of Taiwan. The specimen purchased from the An-Ping Fishmarket, located further north of Tung Kang, are not included in this checklist, even though it is quite probably that they came from the same fishing ground with those landed in Tung-Kang. The species reported by Garcia (1981) from Tabayas Bay are not included in the checklist and so with other species reported from the Philippines inland waters or from the eastern part of the archipelago. The species reported from the Malacca Strait and from south of the equator are also not included in this checklist. Geographical names quoted in this checklist are according to the references used.

The stomatopod fauna as it is reported in this checklist could be much richer if intensive collections are carried out in the rough as well as soft bottom habitats of the unsurveyed areas especially the deeper water and on the scattered oceanic islands lying within the South China Sea. Knowledge on stomatopod fauna from the west coast of Borneo and the islands of the Riau Archipelago is very limited or lacking. Intensive collection by the French scientists in New Caledonia and the adjacent waters enormously enriched the information on the marine biodiversity of the area and enabled Moosa (1991) to add 59 new additional species including a new family, new genera and new species to the formerly 10 species of Stomatopoda known. Although in his work Moosa (1991) did not mention the bottom substrate where the specimens were collected, his unpublished records are utilized in this study as information of the bottom substrate. Erdmann (1997) in his study on the stomatopod living in the oceanic islands of eastern part of Indonesia recorded 10 undescribed species including a member of an Atlantic genus of *Nannosquilla*. Furthermore, the collection in the Zoological Reference Collection of Singapore probably could enrich the present list.

To have better knowledge on the marine living forms (coastal and oceanic) of the South China Sea, marine biodiversity expeditions organized by the neighbouring countries could be excellent an idea. These expeditions, with proper coverage of the areas, undoubtedly could contribute extensive information on the present knowledge of the available living resources of the region. Stomatopod species has preference on habitat types. Some species, mostly of the Squilloidea, prefer to inhabit soft bottom habitat while the majority of the Gonodactyloidea prefer rough bottom habitats; many members of the Lysiosquilloidea live in burrows. Dingle *et al.* (1977) and Moosa & Erdmann (1994) presented ecological notes on shallow water stomatopods while Richer de Forges & Moosa (1992) presented ecological notes on the deepwater stomatopod fauna. Ecological information is important for making intensive and efficient collections and in preparing effective collection gear.

Synonymies are restricted to the original description whenever available and specimens reported from the South China Sea and its adjacent waters including the descriptions of new species which then fall into synonymies of the South China Sea species. The synonymies presented need further confirmation since the author has no opportunities to look at the specimens. Whenever available, depth and bottom substrate will be included to have information on the ecological preference of each species. Depths mentioned in the original reference as fathom is transferred into metric.

Table 1. Distribution of stomatopod species the known from the South China Sea and the adjacent waters. 1. = Gulf of Thailand, 2. = Vietnam, 3. = Philippines, 4. = West Coast of Borneo, 5. = Southern part of South China Sea, 6. = Central and Northern part of South China Sea

Species	1	2	3	4	5	6
<b>BATHYSQUILLOIDEA</b> Manning, 1967						
<b>BATHYSQUILLIDAE</b> Manning, 1967						
<i>Bathysquilla</i> Manning, 1963						
<i>Bathysquilla crassispinosa</i> (Fukuda, 1909)			*			
<i>Bathysquilla microps</i> (Manning, 1961)			♂			
<b>GONODACTYLOIDEA</b> Giesbrecht, 1910						
<b>EURYSQUILLIDAE</b> Manning, 1977						
<i>Coronidopsis</i> Hansen, 1926						
<i>Coronidopsis serenei</i> Moosa, 1973		♂	♂			
<i>Eurysquilla</i> Manning, 1963						
<i>Eurysquilla foresti</i> Moosa, 1986			*			
<i>Eurysquilloides</i> Manning, 1963						
<i>Eurysquilloides sibogae</i> (Hansen, 1926)		♂	♂			
<i>Manningia</i> Serène, 1962						
<i>Manningia australiensis</i> Manning, 1970		♂				
<i>Manningia pilaensis</i> (De Man, 1888)		♂				
<i>Sinosquilla</i> Liu & Wang, 1978						
<i>Sinosquilla hispida</i> Liu & Wang, 1978		*				
<i>Sinosquilla sinica</i> Lui & Wang, 1978		*	♂			
<b>GONODACTYLIDAE</b> Giesbrecht, 1910						
<i>Gonodactylaceus</i> Manning, 1995						
<i>Gonodactylaceus falcatus</i> (Forskål, 1775)					?♂	♂
<i>Gonodactylaceus glabrous</i> (Brooks, 1886)		♂	♂			
<i>Gonodactylaceus gravieri</i> Manning, 1995		*				♂
<i>Gonodactylaceus mutatus</i> (Lanchester, 1903)	♂	♂				♂
<i>Gonodactylaceus stamensis</i> (Manning & Reaka, 1981)	*					
<i>Gonodactylaceus ternatensi</i> (De Man, 1902)	♂					♂
<i>Gonodactylellus</i> Manning, 1995						
<i>Gonodactylellus affinis</i> (De Man, 1902)		♂	♂			♂
<i>Gonodactylellus hendersoni</i> (Manning, 1967)		♂	♂			♂
<i>Gonodactylellus incipiens</i> (Lanchester, 1903)		♂		♂		♂
<i>Gonodactylellus lanchesteri</i> (Manning, 1967)		♂				
<i>Gonodactylinus</i> Manning, 1995						
<i>Gonodactylinus viridis</i> (Serène, 1954)	♂	*				
<i>Gonodactyloideus</i> Manning, 1984						
<i>Gonodactyloideus cracens</i> Manning, 1984			♂			

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Table 1. – Continued

Species	1	2	3	4	5	6
<b>Gonodactylus</b> Berthold,1827						
<i>Gonodactylus chiragra</i> (Fabricius,1781)	♂	♂	♂	♂		♂
<i>Gonodactylus platysoma</i> Wood-Mason,1895	♂	♂				♂
<i>Gonodactylus smithii</i> Pocock,1893	♂	♂				♂
<b>ODONTODACTYLIDAE</b> Manning,1980						
<b>Odontodactylus</b> Bigelow,1893						
<i>Odontodactylus brevirostris</i> (Miers,1884)			♂			♂
<i>Odontodactylus japonicus</i> (De Haan,1844)						♂
<i>Odontodactylus scyllarus</i> (Linnaeus,1758)		♂				
<b>Raoulius</b> Manning,1995						
<i>Raoulius cultrifer</i> (White,1850)	♂	♂	♂		♂	
<b>PARASQUILLIDAE</b> Manning,1995						
<b>Faughnia</b> Serène,1962						
<i>Faughnia formosae</i> Manning & Chan,1997						*
<i>Faughnia haani</i> (Holthuis,1959)						♂
<i>Faughnia serenei</i> Moosa,1982	*		♂			♂
<b>PROTOSQUILLIDAE</b> Manning,1980						
<b>Chorisquilla</b> Manning,1969						
<i>Chorisquilla brooksii</i> (De Man,1888)		♂			♂	♂
<i>Chorisquilla longispinosa</i> Sun & Yang,1998						*
<i>Chorisquilla excavata</i> (Miers,1880)			♂			?♂
<i>Chorisquilla spinosissima</i> (Pfeiffer,1888)		♂				♂
<b>Haptosquilla</b> Manning,1969						
<i>Haptosquilla glabra</i> (Lenz,1905)		♂				
<i>Haptosquilla glyptocercus</i> (Wood-Mason,1875)		♂				
<i>Haptosquilla pulchella</i> (Miers,1880)				♂		
<i>Haptosquilla stoliura</i> (Müller,1886)		♂				
<i>Haptosquilla tuberosa</i> (Pocock,1893)		♂		♂	♂	*
<i>Laevosquilla laevicaudata</i> Sun & Yang,1998						*
<b>PSEUDOSQUILLIDAE</b> Manning,1977						
<b>Pseudosquilla</b> Dana,1852						
<i>Pseudosquilla ciliata</i> (Fabricius,1787)	♂	♂	♂		♂	♂
<b>Pseudosquillisma</b> Cappola & Manning,1994						
<i>Pseudosquillisma oculata</i> (Brullé,1837)				?♂		♂
<b>Raoulserenea</b> Manning,1995						
<i>Raoulserenea ornata</i> (Miers,1880)		♂				♂
<b>TAKUIDAE</b> Manning,1995						
<b>Taku</b> Manning,1995						
<i>Taku spinosocarinatus</i> (Fukuda,1909)		♂				

Table 1. – Continued

Species	1	2	3	4	5	6
<b>LYSIOSQUILLOIDEA</b> Giesbrecht, 1910						
<b>CORONODIDAE</b> Manning, 1980						
<i>Parvisquilla</i> Manning, 1973						
<i>Parvisquilla multituberculata</i> (Borradaile, 1898)						?*
<i>Heterosquilloides</i> Manning, 1966						
<i>Heterosquilloides insignis</i> (Kemp, 1911)		♂	♂			
<i>Kasim</i> Manning, 1995						
<i>Kasim philippinensis</i> (Moosa, 1986)			*			
<b>LYSIOSQUILLIDAE</b> Giesbrecht, 1910						
<i>Lysiosquilla</i> Dana, 1852						
<i>Lysiosquilla sulcirostris</i> Kemp, 1913		♂				
<i>Lysiosquilla tredecimdentata</i> Holthuis, 1941	♂	♂				
<i>Lysiosquillina</i> Manning, 1995						
<i>Lysiosquillina maculata</i> (Fabricius, 1793)	♂	♂	♂		♂	
<i>Lysiosquilloides</i> Manning, 1977						
<i>Lysiosquilloides siamensis</i> Naiyanetr, 1980	*					
<b>NANNOSQUILLIDAE</b> Manning, 1980						
<i>Acanthosquilla</i> Manning, 1963						
<i>Acanthosquilla acanthocarpus</i> (Claus, 1871)	♂	♂				
<i>Acanthosquilla derijardi</i> Manning, 1967		♂				
<i>Acanthosquilla multifasciata</i> (Wood-Mason, 1875)	♂	♂				
<i>Acanthosquilla tigrina</i> (Nobili, 1903)	♂					
<i>Acanthosquilla sirindhorn</i> Naiyanetr, 1995	*					
<i>Acanthosquilla wilsoni</i> Moosa, 1973			♂			
<i>Alachosquilla</i> Schotte & Manning, 1993						
<i>Alachosquilla vicina</i> (Nobili, 1904)	♂					
<b>SQUILLOIDEA</b> Latreille, 1803						
<b>HARPIOSQUILLIDAE</b> Manning, 1980						
<i>Harpiosquilla</i> Holthuis, 1964						
<i>Harpiosquilla annandalei</i> (Kemp, 1911)	♂	♂				♂
<i>Harpiosquilla harpax</i> (De Haan, 1844)	♂	♂	♂	♂	♂	♂
<i>Harpiosquilla indica</i> Manning, 1969			♂			
<i>Harpiosquilla japonica</i> Manning, 1969		♂				
<i>Harpiosquilla melanoura</i> Manning, 1968		♂				
<i>Harpiosquilla raphidea</i> (Fabricius, 1798)	♂	♂		♂	♂	♂
<i>Harpiosquilla sinensis</i> Liu & Wang, 1998						*
<b>SQUILLIDAE</b> Latreille, 1803						
<i>Anchisquilla</i> Manning, 1968						
<i>Anchisquilla fasciata</i> (De Haan, 1844)	♂	♂	♂		♂	

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Table 1. – Continued

Species	1	2	3	4	5	6
<i>Anchisquilla fasciaticauda</i> Liu & Wang, 1998						*
<b>Anchisquilloides</b> Manning, 1977						
<i>Anchisquilloides michelae</i> Moosa, 1986			*			
<b>Anchisquillopsis</b> Moosa, 1986						
<i>Anchisquillopsis clevai</i> Moosa, 1986			*			
<b>Areosquilla</b> Manning, 1976						
<i>Areosquilla indica</i> (Hansen, 1926)		♂				
<b>Busquilla</b> Manning, 1978						
<i>Busquilla quadraticauda</i> (Fukuda, 1911)		♂				
<b>Carinosquilla</b> Manning, 1968						
<i>Carinosquilla carinata</i> (Serène, 1950)	♂	*				
<i>Carinosquilla multicaudata</i> (White, 1848)	♂	♂			♂	
<b>Clorida</b> Eydoux & Souleyet, 1842						
<i>Clorida bombayensis</i> (Chhapgar & Sane, 1967)	♂	♂				♂
<i>Clorida decorata</i> Wood-Mason, 1875	♂	♂				♂
<i>Clorida denticauda</i> (Chhapgar & Sane, 1967)		♂	♂			
<i>Clorida gaillardi</i> Moosa, 1986			*			
<i>Clorida latreillei</i> Eydoux & Souleyet, 1842	♂	♂			*	
<i>Clorida rotundicauda</i> (Miers, 1880)	♂				♂	
<b>Cloridina</b> Manning, 1995						
<i>Cloridina chlorida</i> (Brooks, 1886)	♂	♂			♂	
<i>Cloridina malaccensis</i> (Manning, 1968)	♂		♂			
<i>Cloridina microphthalma</i> (H. Milne Edwards, 1837)	♂	♂				
<i>Cloridina pelamidae</i> (Blumsteein, 1970)	♂	*				
<i>Cloridina verrucosa</i> (Hansen, 1926)	♂	♂				
<b>Cloridopsis</b> Manning, 1968						
<i>Cloridopsis gibba</i> (Nobili, 1903)				*		
<i>Cloridopsis immaculata</i> (Kemp, 1913)	♂				♂	
<i>Cloridopsis scorpio</i> (Latreille, 1828)	♂	♂			♂	
<b>Dictyosquilla</b> Manning, 1977						
<i>Dictyosquilla foveolata</i> (Wood-Mason, 1895)	♂	♂				*
<b>Erugosquilla</b> Manning, 1995						
<i>Erugosquilla grahami</i> Ahyong & Manning, 1998		♂				
<i>Erugosquilla serenei</i> Ahyong & Manning, 1998		♂				*
<i>Erugosquilla woodmasoni</i> (Kemp, 1911)	♂	♂			♂	♂
<b>Fallosquilla</b> Manning, 1995						
<i>Fallosquilla fallax</i> (Bouvier, 1914)		♂				
<b>Keijia</b> Manning, 1995						
<i>Keijia lirata</i> (Kemp & Chopra, 1921)	♂	♂			*	

Table 1. – Continued

Species	1	2	3	4	5	6
<b>Kempina</b> Manning, 1978						
<i>Kempina mikado</i> (Kemp & Chopra, 1921)		♂	♂			
<i>Kempina stridulans</i> (Wood-Mason, in Alcock, 1894)			♂			
<b>Lenisquilla</b> Manning, 1977						
<i>Lenisquilla lata</i> (Brooks, 1886)		♂	♂			
<b>Levisquilla</b> Manning, 1977						
<i>Levisquilla inermis</i> (Manning, 1965)		♂				
<i>Levisquilla jurichi</i> (Makarov, 1979)		*				
<i>Levisquilla minor</i> (Jurich, 1904)			*			
<b>Lophosquilla</b> Manning, 1968						
<i>Lophosquilla costata</i> (De Haan, 1844)	♂					♂
<i>Lophosquilla makarovi</i> Manning, 1995		*				♂
<b>Miyakea</b> Manning, 1995						
<i>Miyakea holoschista</i> (Kemp, 1911)		♂				
<i>Miyakea nepa</i> (Latreille, 1828)	♂	♂	♂		♂	♂
<b>Oratosquilla</b> Manning, 1968						
<i>Oratosquilla kemp</i> (Schmitt, 1931)		♂				♂
<i>Oratosquilla oratoria</i> (De Haan, 1844)		♂				♂
<b>Oratosquillina</b> Manning, 1995						
<i>Oratosquillina anomala</i> (Tweedie, 1935)					*	
<i>Oratosquillina fossulata</i> (Moosa, 1986)			*			
<i>Oratosquillina gonypetes</i> (Kemp, 1911)	♂	♂	♂			
<i>Oratosquillina gravieri</i> (Manning, 1978)		♂	♂		♂	
<i>Oratosquillina imperialis</i> (Manning, 1965)			♂			
<i>Oratosquillina interrupta</i> (Kemp, 1911)	♂	♂			♂	♂
<i>Oratosquillina ornata</i> (Manning, 1971)		♂				*
<i>Oratosquillina perpensa</i> (Kemp, 1911)	♂	♂				*
<i>Oratosquillina quinquentata</i> (Brooks, 1886)	♂				♂	
<i>Oratosquillina sollicitans</i> (Manning, 1978)	♂			*		
<b>Squilloides</b> Manning, 1968						
<i>Squilloides leptosquilla</i> (Brooks, 1886)			♂			
<b>Toshimitsu</b> Manning, 1995						
<i>Toshimitsu tiwarii</i> (Blumstein, 1974)	♂	*	♂			

Legend: ♂ = species reported; \* = type species described

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The author wishes that the present checklist could be further developed into a guidebook of the South China Sea Stomatopoda.

SYSTEMATIC

SUPERFAMILY BATHYSQUILLOIDEA MANNING, 1967

FAMILY BATHYSQUILLIDAE MANNING, 1967

Genus *Bathysquilla* Manning, 1963

*Bathysquilla crassispinosa* (Fukuda, 1910)

*Squilla crassispinosa* Fukuda, 1910: 146, pl. 4, figs. 4, 4a (type locality: Japan).

*Bathysquilla crassispinosa*. – Moosa, 1986: 371, pl. 1, figs. A, B (Southwest Philippines, Musorstom I: St 51, 13°50.8'N, 120°04.2'E - 13°50.8'N, 120°03.2'E, 200-170 m and St 65, 14°00.0'N, 120°19.2'E - 13°00.8'N, 120°16.2'E, 202-194 m).

**Remarks.** - *Bathysquilla crassispinosa* is deep water species and has been reported from 170 - 310 m. This species has been reported from Japan, Madagascar, South Africa, and the Philippines (see Moosa, 1986).

*Bathysquilla microps* (Manning, 1961)

*Lysiosquilla microps* Manning, 1961: 683, pl. 10, figs. 1-2, pl. 11, figs. 3-4, text-fig. 5 (type locality: Southwest of Tortugas, Florida, 732 m).

*Bathysquilla microps*. – Moosa, 1986: 371, fig. 1 (Southwest Philippines, Musorstom I: St 49, 13°49.1'N, 119°59.8'E - 13°48.6'N, 120°00.9'E, 925-750 m; Musorstom: II St 55, 13°53.7'N, 119°58.5'E - 13°53.1'N, 119°57.0'E, 865-866 m).

**Remarks.** - *Bathysquilla microps* was formerly only known from the West Atlantic. In the Indo-West Pacific waters the species was first reported from off Hawaii by Manning & Struhsaker (1976) and then Moosa (1986) reported this species from the Philippines. This species is a deepwater species; in Hawaii it was collected from 731 to 786 m and in the Philippines from 865 to 925 m.

SUPERFAMILY GONODACTYLOIDEA GIESBRECHT, 1910

FAMILY EURYSQUILLIDAE MANNING, 1977

Genus *Coronidopsis* Hansen, 1926

*Coronidopsis serenei* Moosa, 1973

*Coronidopsis serenei* Moosa, 1973a: 3, 5, fig. 1 (type locality: off Elat Bay, west of Nuhu Tjut Island, Kai Islands, Maluku, Indonesia, 05°40'S, 132°59'E, 70 m). – Manning & Garcia, 1982: 595, figs. 1e, f, 2 (Gulf of Tonkin, Vietnam, 18°00'S, 109°32'E, 76 m). — Moosa, 1986: 373 (Philippines, Musorstom I: St 73, 14°15.0'N, 120°31.2'E - 14°16.6'N, 120°31.8'E, 76-70 m). — Manning, 1995: 32 (no material examined).



*Coronidopsis bicuspis*. – Blumstein, 1974: 124, fig. 9 (Gulf of Tonkin, Vietnam, 43-89 m, muddy sand and clay, with shells) [not *Coronidopsis bicuspis* Hansen, 1926].

*Coronidopsis nudus* Blumstein, 1974: 124, fig. 10 (type locality: Gulf of Tonkin, Vietnam, 20°00'N, 108°13'E, 56 m, muddy sand).

*Coronidopsis gurjanovae* Makarov, 1978: 181, fig. 3 (type locality: Tonkin Bay, Vietnam, 20°14'N, 111°12'E, 75 m).

**Remarks.** - *Coronidopsis serenei* was first reported from off Elat, Great Kai Island, Moluccas, Indonesia by Moosa (1973a). The species was then reported from Gulf of Tonkin, Vietnam by Blumstein (1974 as *Coronidopsis bicuspis* and *C. nudus* new species) and by Makarov (1978 as *Coronidopsis gurjanovae*). Moosa (1986) reported the species from Sulu Sea, the Philippines. This species lives in moderate depths ranging from 56 to 89 m with mud, sand and clay bottom often mixed with shells.

### Genus *Eurysquilla* Manning, 1963

#### *Eurysquilla foresti* Moosa, 1986

*Eurysquilla foresti* Moosa, 1986: 374, fig. 2 (type locality: Southwest Philippines, Musorstom I: St 25, 14°02.7'N, 120°20.3'E - 14°02.0'N, 120°18.0'E, 200-191 m; St 30, 14°01.3'N, 120°18.7'E - 13°59.7'N, 120°16.6'E, 186-177 m; St 34, 14°01.0'N, 120°15.8'E - 13°59.2'N, 120°18.8'E, 191-188 m; St 51, 13°50.8'N, 120°04.2'E - 13°50.8'N, 120°03.2'E, 200-170 m; Musorstom II: St 20, 14°00.9'N, 120°18.1'E - 13°59.5'N, 120°18.2'E, 192-185 m; St 67, 14°00.1'N, 120°18.5'E - 14°01.8'N, 120°19.3'E, 193-199 m).

**Remarks.** - *Eurysquilla foresti* is only known from its type locality, Southwest Philippines, caught in the depth between 170 to 200 (Moosa, 1986). Information on the bottom substrate is not known.

### Genus *Eurysquilloides* Manning, 1963

#### *Eurysquilloides sibogae* (Hansen, 1926)

*Squilla Sibogae* Hansen, 1926: 15, pl. 1, fig. 6 (type locality: 09°0.3'S, 126°24.5'E, off Timor, Indonesia, 122 m).

*Eurysquilloides sibogae*. – Makarov, 1978: 185 (Tonkin Bay, Vietnam, 180 m). — Moosa, 1986: 377 (Southwest Philippines, Musorstom I: St 7, 14°01.0'N, 120°20.0'E - 14°00.2'N, 120°18.2'E, 200-185 m; St 9, 14°01.8'N, 120°17.6'E - 13°59.5'N, 120°17.6'E, 194-180 m; St 10, 13°59.8'N, 120°18.2'E - 14°00.2'N, 120°20.3'E, 187-205 m; St 13, 14°00.5'N, 120°17.0'E, 190 m; St 15, 14°00.3'N, 120°18.0'E, 192-188 m; St 24, 14°00.0'N, 120°18.0'E - 14°01.7'N, 120°20.2'E, 189-209 m; St 25, 14°02.7'N, 120°20.3'E - 14°02.0'N, 120°18.0'E, 200-191 m; St 26, 14°00.9'N, 120°16.8'E - 13°59.5'N, 120°18.2'E, 189 m; St 27, 13°59.8'N, 120°18.6'E - 14°00.5'N, 120°15.7'E, 192-188 m; St 30, 14°01.3'N, 120°18.7'E - 13°59.7'N, 120°16.6'E, 186-177 m; St 31, 14°00.0'N, 120°16.0'E - 14°00.3'N, 120°19.0'E, 187-195 m; St 32, 14°02.2'N, 120°17.7'E - 13°59.4'N, 120°18.0'E, 193-184 m; St 34, 14°01.0'N, 120°15.8'E - 13°59.2'N, 120°18.8'E, 191-188 m; St 35, 13°59.0'N, 120°18.5'E - 14°08.0'N, 120°16.5'E, 186-187 m; St 46, 13°45.6'N, 120°23.0'E, 22-40 m; St 51, 13°50.8'N, 120°04.2'E - 13°50.8'N, 120°03.2'E, 200-170 m; St 55, 13°55.0'N, 120°12.5'E - 13°54.8'N, 120°10.5'E, 200-194 m; St 61, 14°02.2'N, 120°18.1'E - 13°59.7'N, 120°16.8'E, 202-184 m; St 62, 13°59.5'N, 120°15.6'E - 14°00.6'N, 120°13.7'E, 179-194 m; St 63, 14°00.8'N, 120°15.8'E - 14°00.5'N, 120°16.3'E, 191-195 m; and St 71, 14°09.3'N, 120°26.2'E - 14°10.0'N, 120°26.8'E, 174-204 m; Musorstom II: St 1, 14°00.3'N, 120°19.3'E - 14°00.4'N, 120°17.6'E, 198-188 m; St 2, 14°01.0'N, 120°17.1'E - 13°59.9'N, 120°17.5'E, 186-184 m; St 4, 14°01.2'N, 120°18.4'E - 13°59.4'N, 120°18.4'E, 190-183 m; St 10, 14°00.1'N,

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120°18.5'E - 14°01.2'N, 120°18.9'E, 188-195 m; St 11, 14°00.4'N, 120°19.7'E - 14°00.1'N, 120°18.9'E, 196-194 m; St 12, 14°01.0'N, 120°19.7'E - 14°02.0'N, 120°21.0'E, 197-210 m; St 13, 14°00.5'N, 120°20.7'E - 13°59.7'N, 120°19.2'E, 200-193 m; St 18, 14°00.0'N, 120°18.6'E - 14°00.2'N, 120°17.2'E, 195-188 m; St 21, 14°00.2'N, 120°17.8'E - 14°02.2'N, 120°17.4'E, 191-192 m; St 35, 13°27.9'N, 121°11.6'E - 13°28.1'N, 121°12.5'E, 160-198 m, St 52, 14°00.7'N, 120°18.7'E - 13°59.1'N, 120°18.8'E, 190-181 m; St 62, 14°00.4'N, 120°17.0'E - ; 14°00.3'N, 120°18.4'E, 186-189 m, St 66, 14°00.6'N, 120°20.3'E - 14°00.1'N, 120°18.7'E, 209-192 m; St 67, 14°00.1'N, 120°18.5'E - 14°01.8'N, 120°19.3'E, 193-199 m; St 68, 14°01.9'N, 120°18.8'E - 14°00.5'N, 120°17.5'E, 199-195 m; St 71, 14°00.1'N, 120°17.8'E - 14°01.2'N, 120°19.1'E, 189-197 m; and St 80, 13°45.1'N, 120°37.7'E - 13°45.2'N, 120°37.3'E, 178-205 m).— Manning,1995: 32 (no material examined).

**Remarks.** - *Eurysquilloides sibogae* has been reported from Timor Sea (its type locality), Tonkin Bay, Vietnam (Makarov,1978) and the Philippines (Moosa,1986). This species lives from moderate to deep water ranging from 14 m to 335 m. Moosa's specimens from New Caledonia were collected from rough to hard bottom substrate comprising from shell sand, corals and algae, corals and shell sand, algae and grey gravel to corals hard bottom and coral blocks.

### Genus *Manningia* Serène,1962

#### *Manningia australiensis* Manning,1970

*Manningia australiensis* Manning,1970a: 78, fig. 1 (type locality: off Gillett Cay, Swain Reefs, 21°40'S, 152°15'E, Queensland, Australia). — Makarov,1978: 183 (Tonkin Bay, Vietnam, 38 m). — Manning,1995 : 34 (no material examined)

*Manningia vinogradovi* Makarov,1978: 183, fig. 4 (type locality: Tonkin Bay, Vietnam, 20°11.5'N, 113°02'E, 93 m).

**Remarks.** - *Manningia australiensis* has been reported from Australia, New Caledonia, South China Sea and Andaman Islands. The depth range of this species known is 38 to 93 m depth. The New Caledonian specimens reported by Moosa (1991) were collected from blocks and corals in mud and sand with *Halimeda* and red algae.

#### *Manningia pilaensis* (De Man,1888)

*Pseudosquilla pilaensis* De Man,1888: 6, 296 (type locality: Elphinstone Island, Mergui Archipelago, Burma, 12°20'N, 98°00'E). — Dawydoff,1952: 146 (Poulo Condore, Vietnam).

*Pseudosquilla pilaensis* var. — Gravier,1937: 193, fig. 13 (Poulo Condore, Vietnam).

*Manningia pilaensis*. — Serène,1962: 23, figs. 1G, 4, 5C (Indo-China Sea).

*Manningia serenei* Manning,1967b: 9, fig. 3 (type locality : Poulo Condore Island, Vietnam, reefs); — 1995: 34, figs. 6, 7 (Poulo Condore, reefs, holotype of *Manningia serenei*).

**Remarks.** - *Manningia pilaensis* has limited distribution and has been collected from reefs. Depth distribution is not precisely known. In the South China Sea the species is only known from off Vietnam.

**Genus *Sinosquilla* Liu & Wang, 1978**

***Sinosquilla hispida* Liu & Wang, 1978**

*Sinosquilla hispida* Liu & Wang, 1978: 91, 94, fig. 2, pl. 1, figs. 4-6 (type locality: South China Sea, 19°30'N, 112°30'E, 260 m, bottom: coarse silt).

**Remarks.** - Known only from its type locality, the South China Sea, in 260 m depth on coarse silt bottom.

***Sinosquilla sinica* Liu & Wang, 1978**

*Sinosquilla sinica* Liu & Wang, 1978: 89, 90, 94, fig. 1, pl. 1, figs. 1-3 (type locality: South China Sea, 21°00'N, 113°30'E, 58 m, bottom: sandy mud). — Moosa, 1986: 378 (Philippines, Musorstom I: St 34, 14°01.0'N, 120°15.8'E - 13°59.2'N, 120°18.8'E, 191-188 m; Musorstom II: St 51: 13°59.3'N, 120°16.4'E - 14°00.4'N, 120°17.6'E, 170-187 m; St 62, 14°00.4'N, 120°17.0'E - 14°00.3'N, 120°18.4'E, 186-189 m). — Manning, 1995: 36 (no material examined).

*Eurysquillopsis angustirostris* Makarov, 1978: 185, figs. 5, 6 (type locality: Tonkin Bay, Vietnam, 18°00'N, 110°08'E, 95 m).

**Remarks.** - *Sinosquilla sinica* has been reported from the South China Sea by Liu & Wang (1978), the Gulf of Tonkin by Makarov (1978 as *Eurysquillopsis angustirostris*), and from the Philippines by Moosa (1986). This species was collected from depths ranging from 58 to 191 m. The type was collected in sandy mud bottom.

FAMILY GONODACTYLIDAE GIESBRECHT, 1910

**Genus *Gonodactylaceus* Manning, 1995**

***Gonodactylaceus falcatus* (Forskål, 1775)**

*Cancer falcatus* Forskål, 1775: 96 (type locality: Red Sea).

?*Gonodactylus falcatus*. — Tweedie, 1949: 40 (Aor Island, South China Sea).

*Gonodactylus falcatus*. — Liu, 1975: 192, fig. 6: 1-4 (Xisha Island, Guangdong Province, China).

**Remarks.** - Manning (1978a) noted that the distribution of *G. falcatus* outside the Red Sea remain to be determined. Part of the specimens formerly identified as *G. falcatus* by Serene (1951a, 1954) are placed presently by Manning (1995) under *G. gravieri* and *G. ternatensis*. From the Vietnamese specimens studied by Manning (1995) none represent *G. falcatus*. Therefore, the specimen of Tweedie (1949) from Aor Island, South China Sea needs verification.

***Gonodactylaceus glabrous* (Brooks, 1886)**

*Gonodactylus glabrous* Brooks, 1886: 22, 62, pl. 14, fig. 5, pl. 15, figs. 7, 9 (type locality: Samboangan reefs, Philippines, 09°02'N, 117°37'E = Samboangan Point). — Gravier, 1933: 81 (Poulo Condore, part, voir Manning, 1995). — Dawydoff, 1952: 145 (Nhatrang Bay; Poulo Condore). — Manning, 1978a: 5, figs. 3, 10 (Samboangan Reefs, Philippine Islands, the holotype specimen). — Moosa, 1991: 157 (Poulo Condore).

*Gonodactylaceus glabrous*. — Manning, 1995: 44, fig. 12 (Poulo Condore).

**Remarks.** - *Gonodactylaceus glabrous* has been reported from the western Pacific eastward to New Caledonia. Manning (1995) suspected that the distribution of this species could be extended westwardly to the Gulf of Aden. Erdmann (1997) collected the species from dead coral rubble from a relatively wider depth range (0-24 m). Moosa (1991) reported that his specimens from New Caledonia were collected from 6 to 53 m; coarse sand, gravel of calcareous algae, blocks and fragment of coralline algae

***Gonodactylaceus gravieri* Manning,1995**

*Gonodactylus glabrous*. – Gravier,1933: 81, fig. 6 (part, figured specimen only, voir Manning,1995).

*Gonodactylus falcatus*. – Serène,1954: 6, 10 (Paracel Islands, part voir Manning,1995).

*Gonodactylaceus gravieri* Manning,1995: 46, figs. 13, 14 (type locality : Poulo Condore, Vietnam;

— Serène's Material: — Île Pattle, Paracel Islands).

**Remarks.** - *Gonodactylaceus gravieri* so far is only known from the South China Sea, off Vietnam.

***Gonodactylaceus mutatus* (Lanchester,1903)**

*Gonodactylus chiragra* var. *mutatus* Lanchester,1903: 450 (type locality : Furnadu Velu, Miladummadulu Atoll, Maldive Islands, 06°00'N, 73°10'E).

*Gonodactylus glaber* var. *rotundus* Borradaile,1907: 211,212, pl. 22, fig 2 (type localities Coevity, Seychelles Islands, 07°08'S, 56°16'E; and Zanzibar, 06°10'S, 39°12'E)(voir Manning,1995).

*Gonodactylus glabrous*. – Gravier,1933: 81 (part, voir Manning,1995). — Serène,1937: 68 (Indo-Chine). – 1947 : 381 (Nhatrang, Vietnam); – 1951a: pl. 1 fig. B (Nhatrang, Vietnam); – 1953: 507 (Indo-Chine). — Dawydoff,1952: 145 (Indo-Chine, voir Manning,1995) [not *Gonodactylus glabrous* Brooks,1886].

*Gonodactylus chiragra*. – Gravier, 1937: 205, figs. 21, 22 (Bich Damai, Vietnam). — Serene,1939: 349 (Nhatrang Bay, Vietnam). — Dawydoff, 1952 : 145 (Nhatrang Bay; Poulo Condore) [voir Manning,1995] [not *Gonodactylus chiragra* (Fabricius,1781)].

*Gonodactylus graphurus*. – Gravier,1937: 205, figs. 21, 22 (Bich Damai, Vietnam). — Serène,1939: 349 (Nhatrang Bay, Vietnam). — Dawydoff,1952: 145 (Nhatrang Bay, Vietnam; Poulo Condore) [not *Gonodactylus graphurus* Miers,1875].

*Gonodactylus falcatus* var. *ternatensis*. – Serène,1954 : 6, 7, 10, 74, 78, 79, 80-82, 87, figs. 13-7, 13-8, pl. 4 figs. 7-12, pl. 10 (Cauda Bay; Paracel Islands; Poulo Condore) [not *Gonodactylus ternatensis* De Man,1902].

*Gonodactylus mutatus*. – Naiyanetr,1980b: 56 (Gulf of Thailand, listed).

*Gonodactylaceus mutatus*. – Manning,1995: 48, figs. 9g, h, 15, 16 (Serène's Material: — Pattle Island, Paracel Islands — Indo-Chine; Turtle Island, Nhatrang, Vietnam; Bich Damai, Vietnam; Poulo Condore; Chantabun, Gulf of Thailand,Thailand).

**Remarks.** - *Gonodactylaceus mutatus* has been reported from Pacific islands, Southeast Asian waters, western Indian Ocean and New Caledonia. Erdmann (1997) collected this species from cavities in dead coral rubble on shallow reef flats, most commonly in dense seagrass beds.

***Gonodactylaceus siamensis* (Manning & Reaka,1981)**

*Gonodactylus siamensis* Manning & Reaka,1981: 479, fig.1 (type locality: Sattahip, Gulf of Thailand, 1240'N, 10052'E; intertidal; coral rubble reef flat, exposed at low tide).

**Remarks.** - The species known only from the type locality and inhabit intertidal zone with coral rubble bottom which is exposed during low tide. Erdmann (1997) synonymized *siamensis* with *G. mutatus* (Lanchester,1903).

***Gonodactylaceus ternatensis* (De Man,1902)**

*Gonodactylus glabrous* var. *ternatensis* De Man,1902: 914 (part; type locality : Ternate, Maluku, Indonesia, 00°48'N, 127°20'E).

? *Gonodactylus chiragra*. – Gravier,1937: 202 (part; Culao, Vietnam). — Dawydoff,1952: 145 (part). [not *Gonodactylus chiragra* (Fabricius,1781)].

*Gonodactylus falcatus*. – Serène,1951a: pl.1, fig. B (Indo-Chine); – 1954: 6, 7, 10, 11, 31, 41, 42, 45, 47, 54, 74, 78, 79, 80, 81, 87, figs. 8, 13-6, pl. 9 (Vietnam : Baie de Cauda; Paracel Islands; Poulo Condore; part). [not *Gonodactylus falcatus* (Forskål,1775)].

*Gonodactylus ternatensis*. – Manning,1978a: 10, figs.7, 8, 13. ). — Naiyanetr,1980a: 44 (Gulf of Thailand, listed); – 1980b: 55 (Gulf of Thailand, listed). — Manning,1995: 51, pls.1, 2; figs. 8a, b, 9f, 10d, 11e, 17-19 (Serène's Material: Paracel Islands : Île Pattle; Annam: Plage de Culao — ; Annam: Culao, Baie de Cauda, reefs.

**Remarks.** - *Gonodactylaceus ternatensis* has been reported from the Central Pacific islands, Southeast Asian waters, and Indian Ocean. This is a shallow waters species.

**Genus *Gonodactyllellus* Manning,1995**

***Gonodactyllellus affinis* (De Man,1902)**

*Gonodactylus chiragra* var. *affinis* De Man,1902: 912 (type locality: Ternate, 00°48'N, 127°20'E, Maluku, Indonesia).

*Gonodactylus chiragra* var. *confinis* De Man,1902: 912, pl. 27, fig. 66 (type locality: Ternate, Maluku, Indonesia)

*Gonodactylus chiragra* var. *segregatus* a Lanchester,1903 : 448, pl. 23, fig. 6 (type locality: Goidu, 04°54'N, 72°58'E, Goifurfehendu Atoll, Maldive Islands, 46 m; South Male Atoll, 04°00'N, 73°25'E, Maldive Islands,46 m; Minikoi, 08°17'N, 73°02'E, Laccadive Islands; Hulule, 04°11'N, 73°32'E, Male Atoll; South Nilandu Atoll, 03°00'N, 72°55'E, Maldive Islands, 46 m; Macclesfield Bank, 15°50'N, 114°20'E, South China Sea)

*Gonodactylus chiragra* var. *segregatus* b Lanchester,1903: 448, pl. 23, fig. 7, 7a (type locality : North Male Atoll, 04°25'N , 72°30'E, Maldive Islands, 49-64 m; South Nilandu Atoll, Maldive Islands, 35 m).

*Gonodactylus chiragra* form H (= *affinis*). – Kemp,1915: 179 (Port Galera, Mindoro, Philippines) [discussion].

*Gonodactylus chiragra*. – Gravier,1937: 202 (part; Poulo Condore). — Dawydoff,1952: 145 (part; Indo-Chine). — Serène,1953: 507 (Indo-Chine; part). – Serène, 1954: 10, 11, (part; Indo-Chine). [not *Gonodactylus chiragra* (Fabricius,1781)].

*Gonodactylus affinis*. – Moosa,1986: 380 (Southwest Philippines, Musorstom I: St 17, 13°53.7'N, 120°17.7'E, 17 m; Musorstom II: St 73, 13°55.5'N, 120°22.3'E, 20-21 m).

*Gonodactyllellus affinis*. – Manning,1995: 58, figs. 20, 21 (Serène's Material: Annam : Baie de Mui Thom; Cochinchine : Poulo Condore).

**Remarks.** - *Gonodactyllellus affinis* is a polymorphic species exhibiting various forms of dorsal ornamentation on the telson as shown by Moosa & Cleva (1984) This species has wide distribution in the western Pacific Ocean. In the South China Sea this species has been reported by Gravier (1937), Dawydoff (1952), Serène (1953, 1954), and Manning (1995); from the eastern part of the South China Sea this species was reported by Kemp (1915 from Port Galera, Mindoro, Philippines) and Moosa (1986 from Southwest Philippines). The

specimens from Maluku were collected from coarse bottom habitat comprising of sponge, coral, rubble, lithothamnion nodules, shelly grit and grey sand in the depth ranging from 25 to 57 m as reported by Moosa (1973a) (as *Gonodactylus segregatus*). Moosa & Erdmann (1994) collected the species from rubble on barren sand flat in 10 to 20 deep. Erdmann (1997) collected this species in 1-20 m deep. The specimens of Moosa (1991) from New Caledonia were collected from 13 to 80 m deep on moderately rough bottom substrate composed from fine white sand, coarse muddy sand, coarse sand to blocks and fragment with algae or Foraminifera.

***Gonodactylellus hendersoni* (Manning,1967)**

*Gonodactylus Demani*. – Serène,1947: 381 (Nhatrang,Vietnam) [not *Gonodactylus demanii* Henderson, 1893].

*Gonodactylus demani*. – Kemp,1915: 182 (Palawan Island, Philippines). — Roxas & Estampador,1930: 121 (Puerto Galera and Palawan Island, Philippines). — Serène,1953: 506, 506 (Nhatrang,Vietnam;– 1954: 6, 10, 83, 87, figs. 13-9, 14 (Cauda Bay, Vietnam) [not *Gonodactylus demanii* Henderson,1893].

*Gonodactylus hendersoni* Manning,1967d: 4, figs. 1-2 (type locality: Burma; Waikiki, Oahu Island, Hawaii and Naha, Okinawa, Japan).

*Gonodactylus demanii*. – Makarov,1978: 188 (Tonkin Bay, Vietnam, 1-3 m). [not *Gonodactylus demanii* Henderson,1893].

?*Gonodactylus snidvongsi* Naiyanetr,1987: 237, fig.1 (type locality: Ko Kangkao, 12°35'N, 101°31'E, Chonburi Province,Thailand, taken in *Porites*)

*Gonodactylellus hendersoni*. – Manning,1995: 60, pl. 3; figs. 9i, 10f, 11f, 22, 23 ((Serène's Material: — Annam: Station de Cauda; Bai Dong).

**Remarks.** - *Gonodactylellus hendersoni* has been reported from various localities in the central and west Pacific islands, from Japan and Southeast Asian waters. Erdmann (1997) collected this species from dead coral rubble on calm reef flats or from rubble in seagrass beds in 0 to 7 m deep.

***Gonodactylellus incipiens* (Lanchester,1903)**

*Gonodactylus chiragra* var. *incipiens* a Lanchester,1903: 451, pl. 23, fig. 10 (type locality: Funafuti, 08°13'S, 179°13'E, Ellice Island; Macclesfield Bank, South China Sea)

*Gonodactylus chiragra*. – Serène, 1953 : 507 (Indo-China; part); – 1954: 10, 11 (Indo-Chine; part). [not *Gonodactylus chiragra* (Fabricius,1781)]

*Gonodactylellus incipiens*. – Manning,1995: 63, figs. 24, 25b (Serène's Material: Paracels: Île Pattle; Annam: Île de Pecheurs (Hirondelles); Poste de Trai Ca (Ba Ngoi); Station Cauda; Cochinchine : Poulo Panjang)

**Remarks.** - This species has been reported from central and south Pacific islands, Vietnam and Indian Ocean. Moosa (1991) reported that the specimens from New Caledonia were collected from 18-80 m deep on moderately rough bottom substrate from muddy foraminiferal sand to blocks and corals with calcareous algae and gorgonians.

***Gonodactylellus lanchesteri* (Manning,1967)**

*Gonodactylus chiragra*. – Gravier,1937: 202 (part; Baie d'Along,Tonkin,Vietnam). [not *Gonodactylus chiragra* (Fabricius,1781)].

*Gonodactylus lanchesteri* Manning, 1967d: 11, fig. 4 (type locality: Junghi Bay, Ibo Archipelago, 12°21'S, 40°40'E, Moçambique).

*Gonodactylellus lanchesteri*. – Manning, 1995: 64, fig. 26 (Tonkin, Vietnam: Bai d'Along).

**Remarks.** - *Gonodactylellus lanchesteri* is a shallow water species, known previously from western Indian Ocean and South China Sea.

### Genus *Gonodactylinus* Manning, 1995

#### *Gonodactylinus viridis* (Serène, 1954)

*Gonodactylus chiragra*. – Gravier, 1933: 80 (part; Bain; Poulo Condore; Nhatrang; Île des Mamelles; Hon Cohé). – 1937 : 202 (part; Baie d'Along, Tonkin, Vietnam; Poulo Condore; Chantaboun, Gulf of Siam, Thailand). — Dawydoff, 1952: 145 (Indo-Chine; part). — Liu, 1975: 188, part, fig. 3: 4-5 (Xisha Island, Guangdong Province, China) [not *Gonodactylus chiragra* (Fabricius, 1781)].

*Gonodactylus chiragra* var. *viridis* Serène, 1954: 6, 7, 10, 74, 75, 76, 87, fig. 13-3 (type locality: Baie de Cauda, 12°11'-13'N — 109°13-16'E).

*Gonodactylinus viridis*. – Manning, 1995 : 66, pl. 4; figs. 8c, d, 9c, 10c, 11e, 25a (Serène's Material: — Annam : Station Cauda; à la plage; Tonkin: Baie d'Along; region de Hongay; Annam : Cauda, Baie de Nhatrang, reefs; Île de Mamelles, Hon Cohé; Poulo Condore; Thailand: Chantaboun, Gulf of Thailand).

**Remarks.** - *Gonodactylinus viridis* is a shallow water, reef flat, inhabitant and has been reported from Japan, Southeast Asian waters and New Caledonia. This is the most abundant species in the Indonesian reef flat which is probably the same in the neighboring waters such as the Philippines.

### Genus *Gonodactyloideus* Manning, 1984

#### *Gonodactyloideus cracens* Manning, 1984

*Gonodactyloideus cracens* Manning, 1984: 84-86 (type locality: north of Dampier Archipelago, West Australia). — Moosa, 1986: 379, fig. 3 (Southwest Philippines, Musorstom I: St 57, 13°53.1'N, 120°13.2'E - 13°52.7'N, 120°13.5'E, 107-96 m).

**Remarks.** - *Gonodactyloideus cracens* so far is only known from two localities: Dampier Archipelago, Australia and the Philippines. This species was collected from the depth ranging from 96 to 107 m.

### Genus *Gonodactylus* Berthold, 1827

#### *Gonodactylus chiragra* (Fabricius, 1781)

*Squilla chiragra* Fabricius, 1781: 515 (type locality restricted to Ambon Island, Indonesia. 03°43'S, 128°12'E, by selection of neotype by Manning (1981 : 217) [voir Manning, 1995]).

*Gonodactylus chiragra*. – Lanchester, 1901: 555 (Kota Bharu, Kelantan, Malaysia). — Gravier, 1933 : 80 (Vietnam : Île de la Tortue, Nhatrang; Bain and Baïcan, Poulo Condore; Culao, Nhatrang; Hon Cohé; Île des Mamelles; Lien Chiên, Tourane; part). — Tweedie, 1934: 41 (Sultan Shoal, near Singapore). — Gravier, 1937: 202 (Réam, Cambodia; Poulo Condore; Baie d'Along, Hongay; Cambodia : Îlot Kohn, near Siamese border; Baie de Tourane; Culao, Baie Nhatrang; Chantaboun, Gulf of Siam, Thailand; part); — Serène, 1937 : 68 (Annam); – 1947: 381 (Nhatrang, Vietnam);

– 1950b: 342, pl. 2 (Nhatrang, Vietnam); – 1951a: pl. 1, fig. A (Indo-Chine). — Dawydoff, 1952: 145 (Baie d'Along to Thai Border; part). — Serène, 1953: 507 (Indo-Chine); – 1954 : 6, 10, 11, 19, 21, 22, 23, 27, 31, 41, 42-45, 47, 54, 72, 73, 74, 75, 83, 87, figs. 9, 10, 13-1, 13-2, 15, pl. 7 (Baie de Cauda; Poulo Condore). — Blumstein, 1974: 126 (Gulf of Tonkin). — Liu, 1975, 188, part, fig. 3: 1-2 (Xisha Island, Guangdong Province, China). — Naiyanetr, 1980a: 43 (Gulf of Thailand, listed); – 1980b: 55 (Gulf of Thailand, listed). — Manning, 1995: 71, pls. 5-8; figs. 8e, 9a, b, 10a, 11a, 27a, 28-30 (Serène's Material: — Paracels: Île Pattle; Annam: Station de Cauda; Bai de Cay Xoai; Banc de Sable Cua Be —; Tonkin : Baie 'Along; Annam: Baie de Tourane; Lien Chien, Tourane; Île de la Tortue, Nhatrang; Cauda, Baie de Nhatrang, reefs; Cochinchine: Baican, Poulo Condore, reefs; Chantaboun ,Gulf of Thailand, Thailand).  
*Gonodactylus Chiragra*. – Serène, 1939: 349 (Baie de Nhatrang).

**Remarks.** - *Gonodactylus chiragra* has wide distribution in the Indo-West Pacific. The recent studies on the Indo-Pacific stomatopod fauna, especially by Manning, revealed that several species have been erected based on the specimens formerly identified as *G. chiragra*. This species lives in shallow water often moving actively in between the coral heads searching for prey. *Gonodactylus chiragra* exhibit sexual dimorphism, the large male has dark greenish brown coloration while the female is whitish green.

### *Gonodactylus platysoma* Wood-Mason, 1895

*Gonodactylus platysoma* Wood-Mason, 1895: 11, pl. 3, figs. 3-9 (type locality: Society Islands, 17°00'S, 150°00'E, restricted by selection of lectotype by Gosh & Manning [1968 : 654]). — Serène, 1954 : 10, 74, fig. 13-4 (baie de Cauda) — Liu, 1975: 189, fig. 4: 1, 2 (Xisha Island, Guangdong Province, China). — Manning, 1995: 75, pls. 9, 10; figs. 9d, 10b, 11b, 27b, 31 (Serène's Material: — Indochine; Paracels: Île Pattle —; Cambodia: Îlot Kohn, near Siamese Border).  
*Gonodactylus chiragra*. – Gravier, 1937: 202 (Cambodia : Îlot Kohn, near Siamese border; part) [not *Gonodactylus chiragra* (Fabricius, 1781)].

**Remarks.** - *Gonodactylus platysoma* has been reported from several localities in the Pacific, Australia, Japan and the Southeast Asian waters. The species usually was collected from the reefs habitat or often collected from coral head in seagrass beds.

### *Gonodactylus smithii* Pocock, 1893

*Gonodactylus Smithii* Pocock, 1893: 475, pl. 20B, fig. 1 (type locality : Arafura Sea).  
*Gonodactylus chiragra* var. *anancyrus* Borradaile, 1900: 395, 397, 401 (type localities: Talili Bay, 04°12'S, 152°08'E, New Britain and Lifu, 20°53'S, 167°13'E, Loyalty Islands).  
*Gonodactylus chiragra* var. *smithii*. – Tweedie, 1934: 41 (Sultan Shoal, near Singapore).  
*Gonodactylus chiragra* var. *acutirostris*. – Gravier, 1937: 204, fig. 20 (Bich Damai). — Dawydoff, 1952: 145 (part; ? Baie de Nhatrang; Poulo Condore) [not *Gonodactylus acutirostris* De Man, 1898].  
*Gonodactylus acutirostris*. – Serène, 1947: 381, 382, fig. 2, pl. 1 (Nhatrang, Vietnam); – 1953: 506, 507 (Nhatrang, Vietnam) [not *Gonodactylus acutirostris* De Man, 1898].  
*Gonodactylus smithii*. – Serène, 1954: 6, 7, 10, 54, 74, 76, 77, 87, fig. 13-5, pl. 8 (baie de Cauda).  
*Gonodactylus smithii*. – Makarov, 1978: 188 (erroneous spelling; Tonkin Bay, 0-2 m).  
*Gonodactylus smithii*. – Liu, 1975: 191, fig. 5: 1-4 (Xisha Island, Guangdong Province, China). — Naiyanetr, 1980a: 43 (Gulf of Thailand, listed); – 1980b: 55 (Gulf of Thailand, listed). — Manning, 1995: 76, pls. 11, 12; figs. 9e, 10d, 11c, 27c, 32-35 (Serène's Material: — Annam: Station Cauda; Île de la Tortue —; Annam: Bich Damai; Tonkin: Baie d'Along).

**Remarks.** - *Gonodactylus smithii* has been reported from Japan, Southeast Asian waters, Australia and New Caledonia. This species inhabits shallow water in sand flat or seagrass beds with coral rubble substrate (Moosa & Erdmann, 1994). Moosa (1991) reported this species



from New Caledonian waters which were collected from 11 to 50 m deep on coarse foraminiferal sand to coral, block and coralline algae fragments substrate.

FAMILY ODONTODACTYLIDAE MANNING, 1980

Genus *Odontodactylus* Bigelow, 1893

*Odontodactylus brevirostris* (Miers, 1884)

*Gonodactylus brevirostris* Miers, 1884: 567, pl. 52, fig. c (type locality: Providence Island, south of Seychelles).

*Gonodactylus Havanensis* Bigelow, 1893: 101 (type locality: off Havana, Cuba ).

*Gonodactylus Hansenii* Pocock, 1893 : 477, pl. 20B (type locality: Macclesfield Bank, South China Sea ).

*Odontodactylus latirostris* Borradaile, 1907: 212, pl. 22, figs. 3, 3a (type locality: Amirante Islands).

*Odontodactylus southwelli* Kemp, 1911: 94 (type locality: Andaman Islands).

*Odontodactylus nigricaudatus* Chace, 1942: 88, pl. 28 (type locality: Yucatan, Gulf of Mexico)

*Odontodactylus brevirostris*. – Manning, 1967c: 23, figs. 22 (North Ubian Island, Philippines, 06°07.5'N, 120°26'E, surface; Jolo, Philippines, 46 m; Macclesfield Bank, South China Sea).— Moosa, 1986: 382 (Southwest Philippines, Musorstom I: St 57, 13°53.1'N, 120°13.2'E - 13°52.7'N, 120°13.5'E, 107-96 m).

**Remarks.** - *Odontodactylus brevirostris* has wide distribution and has been reported from West Atlantic to Indo-West Pacific. In the Indo-West Pacific *O. brevirostris* has been reported from western Indian Ocean, Indo-Malayan and eastward to Hawaii. In the South China Sea this species has only been reported from Macclesfield Bank and Southwest Philippines. Moosa (1991) reported this species from New Caledonia where it was collected from 10 to 48 m deep on fine muddy sand, white sand to coarse sand with *Foraminifera*, algae and blocks. The depth ranges reported are from 10 m down to 424 m. This species also was reported swimming on the surface.

*Odontodactylus japonicus* (De Haan, 1844)

*Gonodactylus japonicus* De Haan, 1844: 225, pl. 51, fig. 77 (type locality: Japan)

*Odontodactylus japonicus*. – Kemp, 1913: 139 (Hong Kong).

**Remarks.** - *Odontodactylus japonicus* has wide distribution and has been reported from East African waters to China, Japan and Australia. In the South China Sea, this species was recorded in Hong Kong. The depth range of this species is from 55 to 100 m (Manning, 1967c).

*Odontodactylus scyllarus* (Linnaeus, 1758)

*Cancer Scyllarus* Linnaeus, 1758: 633 (type locality: Mare Asiatico)

*Gonodactylus Bleekerii* A. Milne Edwards, 1868: 65 footnote (type locality: Batavia [Jakarta], 06°10'S, 106°48'E, Indonesia)

*Gonodactylus elegans* Miers, 1884: 566, 575, pl. 52, fig. B (type localities: Providence Island, 09°14'S, 51°02'E, 24-37 m and Providence Reef, 09°23'S, 51°03'E, 44 m, Seychelles).

*Odontodactylus scyllarus*.— Gravier, 1937: 200, figs. 7-19 (Baie de Tourane).— Serène, 1937: 68 (Annam); – 1939: 349 (Baie de Nhatrang, Vietnam).— Dawydoff, 1952: 145 (Sud Annam: Poulo Condore).— Serène, 1953: 507 (Indochine);– 1954: 6, 10 (Baie de Cauda).— Manning, 1967c: 10, fig. 3 (Baie de Tourane as Lovane, Vietnam).— Manning, 1995: 82, pl. 13; figs. 36, 37, 38a,

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b. (Serène's Material: — Indochine; Annam: Île Tré, Baie de Nhatrang; Annam: Baie de Tourane).  
— Nguyen & Pham, 1995: 140 (Vietnam).

**Remarks.** - *Odontodactylus scyllarus* exhibits very beautiful color pattern and is often seen at the coral reefs areas. This species has been reported from New Caledonia, Australia, Japan, Southeast Asian waters westward to east African waters. This species was collected from shallow water reef flat to 36 m deep.

### Genus *Raoulius* Manning, 1995

#### *Raoulius cultrifer* (White, 1850)

*Gonodactylus cultrifer* White, 1850: 96, pl. 16, figs. 1, 2. (type locality : China).— Lanchester, 1901: 555 (Kota Bharu, Kelantan, Malaysia).

*Gonodactylus carinifer* Pocock, 1893: 478, pl. 20B, fig. 4 (type locality : Holothuria Bank, Australia, 13°25'S, 126°00'E, 44 m)

*Odontodactylus cultrifer*. — Serène, 1953: 506, 507, (Nhatrang, Vietnam); — 1954 : 6, 8, 11, 13, 17, 22, 54, 72, 87, pl. 6, figs. 5, 6 (Vietnam : Baie de Cauda; Baie de Nhatrang).— Manning, 1967c: 18, fig. 5 (Poulo Condore, Vietnam).— Blumstein, 1974: 126 (Gulf of Tonkin, muddy sand).— Makarov, 1978: 188 (Tonkin Bay, 38 m). — Naiyanetr, 1980a: 44 (Gulf of Thailand, listed);— 1980b: 55 (Gulf of Thailand, listed).— Moosa, 1986: 382 (Southwest Philippines, Musorstom I: St 73, 14°15.0'N, 120°31.2'E - 14°16.6'N, 120°31.8'E, 76-70 m). — Nguyen & Pham, 1995: 141 (Vietnam).

*Odontodactylus carinifer*. — Gravier, 1933: 78, figs. 3-5 (Poulo Condore). — Serène, 1937: 68 (Indochine). — Dawydoff, 1952 : 145 (Poulo Condore). — Serène, 1953 : 506, 507 (Nhatrang, Vietnam).

*Odontodactylus mindanaoensis* Roxas & Estampador, 1930: 94, 115, pl. 4, figs. 1-3 (type locality: Cotabato, Mindanao, Philippines, 07°13'N, 124°15'E)

*Odontodactylus cultrifer* var. *tridentata* Serène, 1954: 6, 7, 8, 72, pl. 6, figs. 7, 8 (type locality: Baie de Cauda; Baie de Nhatrang, Vietnam, 15-25 m).

*Raoulius cultrifer*. — Manning, 1995: 86, pls. 14, 15; figs. 38c, d, 39-42 (Serène's Material: — Indochine; Annam : Station Cauda; Île Tré; Mui Sinh —; Cochinchine : Poulo Condore).

**Remarks.** - *Raoulius cultrifer* has been reported from China, off Vietnam, Philippines and eastward to New Caledonia. The depth range known is from 9 to 48 m. The species inhabits soft bottom habitat.

### FAMILY PARASQUILLIDAE MANNING, 1995

#### Genus *Faughnia* Serène, 1962

#### *Faughnia formosae* Manning & Chan, 1997

*Faughnia formosae* Manning & Chan, 1997: 546, figs. 1-4 (type locality: off Tai-Shi, Taiwan, 24° 55'N, 121° 52'E, I-Lan County, northeastern coast, on sand and mud, 100-200 m. — off Tong Kong, 22° 28'N, 120° 25'E, southwestern coast, sandy mud bottom).

**Remarks.** - Known only from Taiwanese waters, the northeastern and the southwestern coasts of Taiwan, in depths ranging from 100-200 m on sandy mud bottom.

***Faughnia haani* (Holthuis,1959)**

- Squilla empusa* De Haan,1844: 224, pl. 51, fig. 6 (type locality: Japan) [preoccupied by *Squilla empusa* Say,1818].  
*Pseudosquilla haani* Holthuis,1959: 179 [replacement name for *Squilla empusa* De Haan,1844, preoccupied].  
*Parasquilla haani*.— Lee & Wu,1966: 44, fig. 2A-D (Keelung; Tung Kang Fishmarket, South Taiwan, 72-90 m).  
*Faughnia haani*. — Manning & Makarov,1978: 521 (Hong Kong, 22° 15'N, 114° 11'E, 73 m ).— Manning & Chan,1997: off Tong Kong, Ping-Tong County, southwestern coast of Taiwan, sandy mud, 100-200 m).

**Remarks.** - *Faughnia haani* has been reported from Japan, Hong Kong and off Taiwan, in depths ranging from 72 to 200 m on sandy mud bottom.

***Faughnia serenei* Moosa, 1982**

- Faughnia serenei* Moosa,1982: 600, figs. 1-5 (type locality: South China Sea, 15°40'N, 109°22.9'E - 15°40'N, 109°28.4'E, 108-194 m, shell detritus and sand; off Sombrero Island, the Philippines, 13°48'45"N, 120°41'51"E, 286 m, dark green mud; South China Sea, vicinity southern Luzon, the Philippines, 13°29'40"N, 121°00'45"E, 311 m);— 1986: 385 (Southwest Philippines, Musorstom I: St 9, 14°01.8'N, 120°17.6'E - 13°59.5'N, 120°17.6'E, 194-180 m; St 10, 13°59.8'N, 120°18.2'E - 14°00.2'N, 120°20.3'E, 187-205 m; St 30, 14°01.3'N, 120°18.7'E - 13°59.7'N, 120°16.6'E, 186-177 m; St 31, 14°00.0'N, 120°16.0'E - 14°00.3'N, 120°19.0'E, 187-195 m; St 51, 13°50.8'N, 120°04.2'E - 13°50.8'N, 120°03.2'E, 200-170 m; St 68, 14°00.8'N, 120°16.3'E - 13°58.8'N, 120°19.0'E, 199-183 m; St 69, 13°58.8'N, 120°17.3'E - 14°00.9'N, 120°19.0'E, 187-199 m); Musorstom II: St 31, 13°40.5'N, 120°53.7'E - 13°40.0'N, 120°55.0'E, 230-203 m). — Manning & Chan,1977: 552, figs. 3,4 (off Tong Kong, 2228'N, 12025'E, Ping-Tong County, southwestern coast of Taiwan, sandy mud, 200 m).

**Remarks.** - *Faughnia serenei* is only known from two localities, the South China Sea, Taiwan and the Philippines. The species was collected from 72 to 311 m deep on soft bottom substrate from dark green sand, sandy mud to shelly detritus sand.

FAMILY PROTOSQUILLIDAE MANNING,1980

**Genus *Chorisquilla* Manning,1969**

***Chorisquilla brooksii* (De Man,1888)**

- Protosquilla Brooksii* De Man,1888: 579, pl. 22a, fig. 8 (type locality: Edam Island, Jakarta Bay, Indonesia, 05°58'S, 106°50'E)  
*Gonodactylus* sp. — Gravier,1937: 211 (Culao, Baie de Nhatrang, Vietnam).  
*Gonodactylus Brooksii*. — Serène,1947: 381, 382, 387, pls. 3-4 (Nhatrang, Vietnam).  
*Gonodactylus brooksii*.- Tweedie,1949: 41 (Aor Island, South China Sea). — Serène,1952: pl. 3, fig. 9 (Île de Tortue, Nhatrang, Vietnam);— 1953: 506, 506 (Nhatrang, Vietnam);— 1954 : 6, 10, figs. 13-14 (Baie de Cauda).  
*Chorisquilla brooksii*.— Manning,1995: 94, pl. 16; figs. 9n, 43a, 44-47 (Serène's Material: — Annam: Station Cauda; Île de Tortue, Nhatrang —; Annam: Culau, Baie de Nhatrang). — Sun & Yang, 1998:145; fig. 2 (Nansha Is.).

**Remarks.** - *Chorisquilla brooksii* was usually collected from the reefs where it lives in holes or cracks. This species has been reported from the Southeast Asian waters including the South China Sea where it was collected from off Vietnam and Aor Island, near Singapore.

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### *Chorisquilla excavata* (Miers,1880)

*Gonodactylus excavatus* Miers,1880a: 123, pl. 3, figs. 11-12 (type locality: unknown).— Pocock,1893: 476 (Macclesfield Bank, South China Sea, 47 m).

*Chorisquilla pocoki* Manning,1975: 256, figs. 1b, 2 (type locality: Macclesfield Bank, South China Sea).

*Chorisquilla andamanica* Manning,1975: 258, fig. 3 (type locality: off Andaman Island, 37 m)

*Chorisquilla excavata*. – Moosa,1986: 383, fig. 4 (Southwest Philippines, Musorstom II: Station 73 [20-21 m]).

**Remarks.** – *Chorisquilla excavata* exhibits polymorphic telson. In the South China Sea this species has been reported from Macclesfield Bank and the Philippines. Erdmann (1997) collected this species from the coral rubble in 15 m deep. The recorded depth range is from 10 to 73 m. Moosa (1991) reported that in New Caledonia this species was collected from grey sand, coral and graveel to ocrals and blocks.

### *Chorisquilla longispinosa* Sun & Yang,1998

*Chorisquilla longispinosa* Sun & Yang, 1998: 144, 151, fig. 1 (type locality : Nansha Is.).

### *Chorisquilla spinosissima* (Pfeiffer,1888)

*Gonodactylus spinosissimus* Pfeiffer,1888: 35 (type locality: Baui Island, Zanzibar, 06°09'N, 39°08'E).

— Serène,1939: 344, 347, 349 (Baie de Nhatrang, Vietnam).— Dawydoff,1952: 145 (Nhatrang, Vietnam).— Serène, 1953: 507 (Indochine);– 1954: 6 (Baie de Cauda, Vietnam).

*Protosquilla hsytrix* Nobili,1899: 276 (type locality: Beagle Bay, Papua Niugini, 10°02'S, 147°43'S).

?*Protosquilla guerini*. – Dawydoff,1952: 146 (Paracel Islands).

*Chorisquilla spinosissima*. – Manning, 1995: 97, fig. 48 (Serène's Material: Indochine).

**Remarks.** - *Chorisquilla spinosissima* has wide distribution and has been reported from western Indian Ocean, Southeast Asian waters, Japan, Australia and New Caledonia. In the South China Sea, this species has been reported from off Vietnam. *C. spinosissima* inhabits rough bottom habitat in shallow to moderate depth from 2 to 65 m.

### *Laevosquilla laevicaudata* Sun & Yang,1998

*Laevosquilla laevicaudata* Sun & Yang, 1998: 147, 153, fig. 3 (type locality : Nansha Is.).

## Genus *Haptosquilla* Manning,1969

### *Haptosquilla glabra* (Lenz,1905)

*Protosquilla glabra* Lenz,1905: 388, pl. 47, fig. 13 (type locality: Zanzibar, 06°10'S, 39°20'E).

*Gonodactylus glaber*. – Gravier,1937: 208 (part; Vietnam: Culao, Baie de Nhatrang; Poulo Condore).—

Serène, 1947: 381, 385, fig. 1, pl. 2 (Nhatrang, Vietnam).— Dawydoff,1952: 145 (part; Vietnam: Baie de Nhatrang; Poulo Condore). — Serène,1953: 506, 507 (Nhatrang, Vietnam).

*Gonodactylus Glaber*. – Serène,1939: 349 (Baie de Nhatrang, Vietnam).

*Gonodactylus lenzi* Holthuis,1941: 288 (replacement name for *Gonodactylus glaber* (Lenz,1905). —

Serène,1954 : 5, 6, 7, 10, 11, 19, 28, 31, 34-41, 46, 47, 49-51, 52, 86, figs. 5-7, 11B,C, 13-12, pl. 1 (Baie de Cauda).

*Haptosquilla lenzi*. – Moosa, 1986: 384 (Poulo Condor)

*Haptosquilla glabra*. – Manning, 1995: 100, pl. 17; figs. 9l, 43c, 49-51 (Serène's Material: — Annam: Station Cauda; Île Tortue, Nhatrang —; Cochinchine: Îles Poulo Condore).

**Remarks.** - *Haptosquilla glabra* has been reported from East African waters eastward to Southeast Asian waters. In the South China Sea this species has been reported from off Vietnam.

### *Haptosquilla glyptocercus* (Wood-Mason, 1875)

*Gonodactylus glyptocercus* Wood-Mason, 1875: 232 (type locality : Nicobar Islands, 08°00'N, 93°30'E). — Serène, 1947: 381 (Nhatrang, Vietnam); – 1953: 506 (Nhatrang, Vietnam); – 1954: 5, 6, 10, 11, 19, 28, 49, 51, 52, 53, 86, figs. 4, 11D,E, 13-13 (Baie de Cauda).

*Protosquilla cerebralis* Brooks, 1886: 22, 72, pl. 14, figs. 2, 3, pl. 16, figs. 2, 3 (type locality: Levuka, Fiji, 17°42'S , 178°50'E).

*Gonodactylus excavatus*?.- Gravier, 1937: 209, fig. 23 (part; Vietnam: Îles Poulo Condore; Cualao, Baie de Nhatrang). — Serène, 1954: 53 [not *Gonodactylus excavatus* (Miers, 1880a)].

*Gonodactylus excavatus*.- Serène, 1939: 349 (Baie de Nhatrang, Vietnam).— Dawydoff, 1952: 145 (part; Vietnam: Baie de Nhatrang; Poulo Condore).— Serène, 1953: 507 (Indochine). [not *Gonodactylus excavatus* (Miers, 1880a)].

?*Gonodactylus pulcher*.- Dawydoff, 1952: 145 (Vietnam: Baie de Nhatrang; Poulo Condore).

*Gonodactylus glyptocercus*.- Serène, 1953: 507 (erroneous spelling; Indochine).

*Haptosquilla glyptocercus*.- Moosa, 1986: 384 (Vietnam: Baie de Nhatrang; Poulo Condore).— Manning, 1995: 102, pl. 18; figs. 9m, 43b, 52, 53 (Serène Material.— Annam: Anse de Cauda; Station Cauda.— Annam: Cualao, Baie de Nhatrang, reefs; Île Tortue, Nhatrang; Cochinchine: Îles de Poulo Condore, reefs).

**Remarks.** - *Haptosquilla glyptocercus* was often collected from coral reefs or seagrass beds where it lives in holes or crevices of coral heads. This species has been reported from Andaman Islands, Vietnam, the Philippines, Indonesia and eastward to New Caledonian waters.

### *Haptosquilla pulchella* (Miers, 1880)

*Gonodactylus pulchellus*. – Tweedie, 1949: 40 (Labuan, off North coast of Borneo).

**Remarks.** - The only available record of the presence of this species in the South China Sea is that of Tweedie (1949) whose specimen was collected at Labuan, East Malaysia. *Haptosquilla pulchella* is a shallow water species, Moosa & Erdmann (1994) collected it from 1—2 m, although one of their specimen was collected from 22 m. This species seems to prefer bare reef flats in rubble and sandy bottom habitat.

### *Haptosquilla stoliura* (Müller, 1886)

*Protosquilla stoliura* Müller, 1886: 471, 477, pl. 4, fig. 2 (type locality: Amboina, Maluku, Indonesia: 03°43'S , 128°12'E).

*Gonodactylus pulchellus*.- Gravier, 1937: 207 (Hongay, Baie d'Along).— Dawydoff, 1952: 145 (Vietnam: Baie de Nhatrang; Poulo Condore).— Serène, 1939: 349 (Nhatrang);- 1947: 381 (Nhatrang, Vietnam);- 1953: 507 (Indochine). [not *Gonodactylus pulchellus* Miers, 1880a].

*Haptosquilla stoliura*. - Manning, 1995: 104, fig. 54 (Tonkin: Baie d'Along, region de Hongay).

**Remarks.** - *Haptosquilla stoliura* inhabits hard bottom habitat, living in hole among the hard coral fragments in intertidal area. Moosa & Erdmann (1994) collected the species from coral rubble in seagrass beds. Erdmann (1997) reported a specimen collected from 18 deep at the base of a reef slope. This species has been reported from western Indian Ocean eastward to Vietnam, Philippines, Indonesia and Australia.

***Haptosquilla tuberosa* (Pocock,1893)**

*Gonodactylus tuberosus* Pocock,1893: 476, pl. 20B, fig. 2 (type locality: Macclesfield Bank, South China Sea, 15°50'N, 114°20'E, 68 m).— Serène,1954: 6, fig. 13-11 (Baie de Cauda).

?*Protosquilla trispinosa*.— Serène,1937: 69 (Annam);— 1947: 381 (Nhatrang, Vietnam). [not *Gonodactylus trispinosus* Dana,1852].

*Gonodactylus trispinosus*. — Dawydoff,1952: 145 (Vietnam: Baie de Nhatrang; Poulo Condore). [not *Gonodactylus trispinosus* Dana,1852].

*Haptosquilla tuberosa*. — Manning,1995: 105, pl. 19; figs. 9k, 43e, 55-58 (Serène's Material: — Indochine).

**Remarks.** - *Haptosquilla tuberosa* is only known from the South China Sea (Macclesfield Bank and off Vietnam) and Indonesia. The depth range of this species reported is from 25 to 68 m collected from sand with shelly grit, coarse foraminiferal and shell sand to lithothamnion and rubble bottom.

FAMILY PSEUDOSQUILLIDAE MANNING,1977

**Genus *Pseudosquilla* Dana,1852**

***Pseudosquilla ciliata* (Fabricius,1787)**

*Squilla ciliata* Fabricius,1787: 333 (type locality : Oceano Indico).

*Squilla stylifera* Lamarck,1818: 189 (type locality: unknown).

*Squilla quadrispinosa* Eydoux & Souleyet,1842: 362, pl. 5, fig. 1 (type locality: Île Sandwich, 24°00'N, 167°00'E).

*Pseudosquilla ciliata* ? var. — Tweedie,1934: 40 (Pulau Panjang, South Natuna Islands).

*Pseudosquilla*?.— Gravier,1937: 195 (Culao,Baie de Nhatrang, Vietnam)

*Pseudosquilla ciliata*. — Gravier,1937: 191 (Thailand, Gulf of Siam, Chantaboun; region of Hongay, Baie d'Along,Tonkin).— Serène,1950b: 342, pl. 1, fig. 2 (Nhatrang, Vietnam);— 1951b: 11, 12, 14, 15, 16, 22, 23, 24, figs. 1, 2, 3,4, 5, 6, 8(I) (Indochine).— Dawydoff,1952: 146 (Baie d'Along to Chantaboun).— Serène, 1953: 507 (Indochine);— 1954: 6, 10 (Baie de Cauda). — Naiyanetr,1980b: 56 (Gulf of Thailand, listed).— Manning,1995: 111, pls. 20, 21; figs. 59a, 60a, b, e, 61-63 (Serène's Material.— Annam: Station Cauda — Tonkin: Baie d'Along; Thailand: Chantaboun). — Sun & Yang,1998: 149, fig. 4 (Nansha Is.)

**Remarks.** - *Pseudosquilla cilata* is widely distributed. It exhibits color polymorphism. Moosa & Erdmann (1994) reported that the specimens collected from seagrass beds have emerald green color while the specimens collected from coral rubble cavities are brown with whitish longitudinal band on dorsal surface of body. *Pseudosquilla ciliata* has wide distribution and from the South China Sea it was reported from Vietnam, Gulf of Thailand and Natuna Island. Moosa (1991) reported this species in New Caledonia where it was collected from 1 to 86 m on various types of bottom substrate comprising from muddy foraminiferal sand, coarse muddy sand, grey mud with oyster shells to blocks, gravel and fragments of coralline algae.

**Genus *Pseudosquillisma* Cappola & Manning, 1994**

***Pseudosquillisma oculata* (Brullé, 1837)**

?*Pseudosquilla oculata*. – Pocock, 1893: 474 (Macclesfield Bank, South China Sea).

*Pseudosquilla oculata*. – Liu, 1975: 186, fig. 1: 1-4 (Xisha Island, Guangdong Province, China).

**Remarks.** - *Pseudosquilla oculata* is widely distributed and has been reported from the Indo-West Pacific region and the Atlantic. In the South China Sea, this species has been reported from Macclesfield Bank and Xisha Island. This species inhabits hard bottom substrate and has reported to 69 m deep.

**Genus *Raoulserenea* Manning, 1995**

***Raoulserenea ornata* (Miers, 1880)**

*Pseudosquilla ornata* Miers, 1880a: 4, 111, pl. 3, figs. 5, 6 (type locality: The Philippines).—

Serène, 1951b: 11, 12, 22, 23, 24, figs. 7, 8(II) (Indochine);— 1953: 507 (Indochine);— 1954: 6, 10 (Baie de Cauda).— Liu, 1975: 185, fig. 2: 1-5 (Xisha Island, Guangdong Province, China).

*Raoulserenea ornata*.— Manning, 1995: 118, pl. 22; figs. 59b, 60c, d, f, 64 (Serène's Material: — Annam: Île de Tortue).

**Remarks.** - *Raoulserenea ornata* has been reported from western Indian Ocean eastward to China, south China, Australia and New Caledonia. In the South China Sea this species has been reported from off Vietnam and Xisha Island, Guangdong Province. This species usually was collected from shallow water to 31 m deep. Erdmann (1997) collected this species from reef flat in 1-3 m depth.

**FAMILY TAKUIDAE MANNING, 1995**

**Genus *Taku* Manning, 1995**

***Taku spinosocarinatus* (Fukuda, 1909)**

*Gonodactylus spinosocarinatus* Fukuda, 1909: 54 (type locality: Jogashima, Sagami Province, Japan, 35°08'N, 139°37'E).

*Gonodactylus strigatus* Hansen, 1926: 31, pl. 2, fig. 2 (type locality: Zuid Island near Selayar, Indonesia, 06°05'S, 120°30'E).— Serène, 1949: 225, 2 figs. (Poulo Condore).

*Gonodactylus demani* var. *pruvotae* Gravier, 1930a: 214, fig. 1 (type locality: Île de Pins, New Caledonia, 22°37'S, 167°30'E).

*Gonodactylus spinosocarinatus*.— Serène, 1952: 14, 15, figs. 28-32 (Vietnam: Nhatrang: île Poulo Condore);— 1954: 6, 7, 10, 11, fig. 13-10 (Baie de Cauda).

*Taku spinosocarinatus*.— Manning, 1995: 120, pl. 23; figs. 9j, 65, 66 (Serène's Material. — Annam: Île de Pecheurs; Île Tré; Cochinchine: Poulo Condore —; Annam: Culao, baie de Nhatrang).

**Remarks.** - *Taku spinosocarinatus* has been reported from Japan, Vietnam, Indonesia, Australia and New Caledonia. This species inhabits intertidal zone, Erdmann (1997) reported that his specimens were collected from wave washed reef flat, in 1-1.5 m depth.

SUPERFAMILY LYSIOSQUILLOIDEA GIESBRECHT,1910

FAMILY CORONIDIDAE MANNING,1980

Genus *Parvisquilla* Manning,1973

*Parvisquilla multituberculata* (Borradaile,1898)

*Lysiosquilla multituberculata* Borradaile,1898: (type locality: Sandal Bay, Lifu, Loyalty Islands).  
*Coronida xishaensis* Liu,1975: 183, pl. 1, figs.1-7 (type locality: Xisha Islands, Guangdong Province, China) (in Chinese text)

*Parvisquilla xishaensis* Liu,1975: 196, pl. 1, figs. 1-6 (type locality: Shi Island, Xisha Islands, Guangdong Province, China, coral reef) (in English text).

**Remarks.** - *Parvisquilla multituberculata* has been reported from the South China Sea where it was collected from Shi Island, Xisha Islands, as *P.xishaensis*), New Caledonia (Loyalty Island) and Pacific Ocean (Tonga, Samoa, Moorea and Society Islands, see Manning,1978b). Liu (1975) specimen was taken from coral reefs, Erdmann (1997) collected his specimens from cavities in dead coral rubble at the reef flat in <1.5 m deep.

FAMILY HETEROSQUILLIDAE MANNING,1995

Genus *Heterosquilloides* Manning,1966

*Heterosquilloides insignis* (Kemp,1911)

*Lysiosquilla insignis* Kemp,1911: 94 (type locality: off North Andaman Island, 14°27'N, 93°50'E, 430 m)

*Heterosquilla (Heterosquilloides) zarenkovi* Makarov,1978: 179, fig. 2 (type locality: Tonkin Bay, 14°57'N, 109°42.8'E, 300 m).

*Heterosquilloides insignis*.- Moosa,1986: 386, pl. 1, fig. C (Southwest Philippines, Musorstom I: St 50, 13°49.2'N, 120°01.8'E - 13°48.2'N, 120°02.5'E, 415-510 m). — Manning,1995 :124 (no material examined).

**Remarks.** - *Heterosquilloides insignis* is a deepwater species and has been reported from South Africa eastward to Andaman Island, Vietnam and Philippines. The depth reported ranges from 275 to 510 m.

Genus *Kasim* Manning,1995

*Kasim philippinensis* (Moosa,1986)

*Heterosquilloides philippinensis* Moosa,1986: 387, fig. 5 (type locality: Southwest Philippines, Musorstom II: Station 66: 14°00.6'N, 120°20.3'E - 14°00.1'N, 120°18.7'E, 209-192 m; Musorstom I: St 9, 14°01.8'N, 120°17.6'E - 13°59.5'N, 120°17.6'E, 194-180 m; St 20, 13°59.2'N, 120°20.3'E - 14°00.0'N, 120°22.3'E, 208-222 m; St 21, 14°01.0'N, 120°22.8'E - 14°02.8'N, 120°24.3'E, 223-174 m; St 24, 14° 00.0'N, 120°18.0'E - 14°01.7'N, 120°20.2'E, 189-209 m; St 51, 13°50.8'N, 120°04.2'E - 13° 50.8'N, 120° 03.2'E, 200-170 m; Musorstom II: St 12, 14°01.0'N, 120°19.7'E - 14°02.0'N, 120°21.0'E, 197-210 m; St 18, 14°00.0'N, 120°18.6'E - 14°00.2'N, 120°17.2'E, 195-188 m; St 21, 14°00.2'N, 120°17.8'E - 14°02.2'N, 120°17.4'E, 191-192 m; St 35, 13°27.9'N, 121°11.6'E - 13°28.1'N, 121°12.5'E, 160-198 m; St 67, 14°00.1'N, 120°18.5'E - 14°01.8'N, 120°19.3'E, 193-199 m; St 71, 14°00.1'N, 120°17.8'E - 14°01.2'N, 120°19.1'E, 189-197 m; St 72, 14°00.7'N, 120°19.4'E - 14°00.1'N, 120°17.8'E, 197-182 m).



**Remarks.** - *Kasim philippinensis* is only known from its type locality, off Southwest Philippines where it was collected in depths ranging from 160 to 210 m.

FAMILY LYSIOSQUILLIDAE GIESBRECHT,1910

Genus *Lysiosquilla* Dana,1852

*Lysiosquilla sulcirostris* Kemp,1913

*Lysiosquilla maculata* var. *sulcirostris* Kemp,1913: 4, 10, 110, 116, pl. 8, figs. 92, 93 (type locality: Andaman Islands, 12°30'N, 92°45'E).— Serène,1951a: fig. 3, pl. 1, fig. C (Indochine); – 1954: 6, 7, 8, 11, 13, 16, 17, 21, 22, 54, 55, 68, 70, 71, 87, figs. 1, 2, pl. 5, figs. 3, 4, pl. 6, figs. 3-4 (Baie de Cauda; Baie de Nhatrang, 15-25 m).

*Lysiosquilla maculata*.— Serène,1951a: 141, 142, fig. 3 (Indochine);– 1951b: fig. 4 (Indochine) [not *Lysiosquilla maculata* (Fabricius,1793)].

*Lysiosquilla sulcirostris*.— Manning,1995: 126, figs. 67, 68a, 69a, b, d, e, 70c, d, 71c, d, 72c, d, 73 (Serène's Material — Annam: Devant Cua Be; Devant Mui Sinh; en face Île Tré —; Tonkin: Gulf of Tonkin, 6 miles of Îlwa Gou Lou, 33 m, sand).

**Remarks.** - *Lysiosquilla sulcirostris* has been reported from scattered localities extending from East African waters to Andaman Islands, Southeast Asian waters and Japan. The depth range of this species reported is from 15 to 33 m, probably it could be found in less deeper waters.

*Lysiosquilla tredecimdentata* Holthuis,1941

*Lysiosquilla maculata* var. *tredecimdentata* Holthuis,1941: 273, fig. 6 (type locality: Hedjaff, near Aden, 12°46'N, 45°45'E).

*Lysiosquilla maculata*. – Serène,1954: 6, 8, 11, 66 (part; Vietnam: Baie de Cauda; Baie de Nhatrang, 15-25 m) [not *Lysiosquilla maculata* (Fabricius,1793)].

*Lysiosquilla tredecimdentata*.— Naiyanetr,1980a: 54 (Gulf of Thailand, listed). — Manning,1995: 132, pl. 24; figs. 68b, 69c, f. (Serène's Material — Annam: Station Cauda; en face Île Tré).

**Remarks.** - *Lysiosquilla tredecimdentata* has been reported from South Africa northward to Red Sea and eastward to Andaman Islands and off Vietnam in the South China Sea. Serène (1954) reported his specimens were collected from 15 to 25 m deep.

Genus *Lysiosquillina* Manning,1995

*Lysiosquillina maculata* (Fabricius,1793)

*Squilla maculata* Fabricius,1793: 511 (type locality: India Orientali).

*Lysiosquilla Miersi* De Vis,1883: 321 (type locality: Moreton Bay, Queensland, Australia, 27°15'S, 153°14'E).

*Lysiosquilla maculata*. – Roxas & Estampador,1930: 93, 110 (Tay Tay Bay, Palawan, Philippines). — Tweedie,1934: 41 (Siglap, Singapore). — Gravier,1937: 197 (Baie de Tourane). — Serène,1937: 68 (Annam);– 1939: 349 (Baie de Nhatrang, Vietnam, 8-12 m). — Dawydoff,1952: 146 (Laboratoire maritime de Nhatrang; Baie d'Along, Vietnam). — Serène,1953: 507 (Indochine); – 1954: 6, 8, 11, 13, 54, 64-70, 87, fig. 12, pl. 5, figs. 1, 2, pl. 6, figs. 1, 2 (part; Vietnam: Baie de Cauda; Baie de Nhatrang; 15-25 m).— Naiyanetr,1980a: 42 (Gulf of Thailand, listed);– 1980b: 54 (Gulf of Thailand, listed)

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*Lysiosquillina maculata*. – Manning, 1995: 134, figs. 68c, 70a, b, 71a, b, 72a, b, 74-77, 78a, 79a, 80a (Serène' Material: Annam: Station Cauda —; Annam: Baie de Tourane).

**Remarks.** - *Lysiosquillina maculata* is widely distributed in the Indo-West Pacific and has been reported from East African waters eastward to Japan, Southeast Asian waters, Australia, central and south Pacific islands and Hawaii. The species lives in burrows and often caught swimming at night.

### Genus *Lysiosquilloides* Manning, 1977

#### *Lysiosquilloides siamensis* (Naiyanetr, 1980)

*Lysiosquilla siamensis* Naiyanetr, 1980a: 35, 42, pl. 34, figs. a-d (type locality: Gulf of Thailand; Chumphon Province; Chonburi Province); – 1980b: 54 (Gulf of Thailand, listed);

*Lysiosquilloides siamensis*. – Naiyanetr, 1983: 393, figs. 1, 3 (Gulf of Thailand; Ko Si Chung, Chon Buri Province, Gulf of Thailand; coast of Chumphon Province, Gulf of Thailand).

**Remarks.** - *Lysiosquilloides siamensis* is only known from its type locality, the Gulf of Thailand.

## FAMILY NANNOSQUILLIDAE MANNING, 1980

### Genus *Acanthosquilla* Manning, 1963

#### *Acanthosquilla acanthocarpus* (Claus, 1871)

*Coronis acanthocarpus* White, 1847: 85 (*nomen nudum*; Port Essington, Northern Territory, Australia, 11°10'S, 132°08'E).

*Coronis acanthocarpus* Claus, 1871: 129 (type locality: Port Essington, Northern Territory, Australia, 11°10'S, 132°08'E).

*Lysiosquilla acanthocarpus* Miers, 1880a: 3, 11, pl. 1, figs. 7-9 (type locality: Port Essington, Northern Territory, Australia, 11°10'S, 132°08'E). — Tweedie, 1949: 40 (Bachok, Kelantan).

*Lysiosquilla sarasinorum* Müller, 1886: 471, 478, pl. 4, fig. 3 (type locality: Trincomali, Srilanka, 08°34'N, 81°14'E).

*Lysiosquilla acanthocarpus*. – Serène, 1954: 6, 8 (Vietnam: Baie de Cauda; Baie de Nhatrang, 15-25 m).

*Acanthosquilla acanthocarpus*. – Naiyanetr, 1980a: 42 (Gulf of Thailand, listed); – 1980b: 54 (Gulf of Thailand, listed). — Manning, 1995: 140, figs. 79, 81c, d, g, h, 82c (Serène's Material: Indochine; Annam: Banc de sable Cue Be).

**Remarks.** - *Acanthosquilla acanthocarpus* has been reported from Persian Gulf eastward to Southeast Asian waters, Taiwan, Japan and Australia. The depth reported by Serène (1954) is 15 to 25 m, probably this live in shallower water.

#### *Acanthosquilla derijardi* Manning, 1960

*Acanthosquilla derijardi* Manning, 1970b: 1434, fig. 2 (type locality: Grand Récif, Tulear, Madagascar, 23°20'S, 43°41'E). — Manning, 1995: 141 (no material examined).

?*Acanthosquilla multispinosa* Blumstein, 1974: 113 (type locality: Gulf of Tonkin, 19°00'N, 107°30'E, 69 m). — Makarov, 1978: 179, fig. 1 (Tonkin Bay, 31-44 m).

?*Acanthosquilla manningi* Makarov, 1978: 177, fig. 1 (type locality: Tonkin Bay, 15°58'N, 109°22'E, 65 m).

*Lysiosquilla multifasciata* — Tweedie, 1949: 39-40, fig. 1 [not *L. multifasciata* Wood-Mason].

**Remarks.** - *Acanthosquilla derijardi* has been reported from East African waters to Southeast Asian waters, Japan, Caroline Islands and New Caledonia. The depth range reported was 18 to 65 m on coarse sand or muddy sand.

### *Acanthosquilla multifasciata* (Wood-Mason, 1895)

*Lysiosquilla mutifasciata* Wood-Mason, 1895: 1, pl. 1, figs. 4-7 (type locality: Bombay, India, 18°58'N, 72°50'E).— Serène, 1954: 6, 8 (Vietnam: Baie de Cauda; Baie de Nhatrang, 15-25 m).

*Lysiosquilla Valdiviensis* Jurich, 1904: 372, pl. 26, fig. 2 (type locality: unknown).

*Lysiosquilla* sp.— Gravier, 1937: 198, figs. 15, 16 (Indochine).

*Lysiosquilla biniensis* var. *pacificus* Borradaile, 1900: 395, 398, 403 (type locality: Blanche Bay, New Britain, 04°16'S, 152°13'E).

*Lysiosquilla acanthocarpus*.— Serène, 1939: 344, 345, 349, fig. 1 (Nhatrang Bay, Vietnam, 8-12 m); — 1953: 507 (Indochine).

*Lysiosquilla*.— Dawydoff, 1952: 146 (Hon Cohé).

*Acanthosquilla multifasciata*.— Naiyanetr, 1980a: 42 (Gulf of Thailand, listed);— 1980b: 54 (Gulf of Thailand, listed).— Manning, 1995: 143: pls. 25, 26; figs. 78b, 80b, 81a, b, e, f, 82a, b, 83-86  
Serène's Material: — Annam: in front of the Institute to Cua Be; Culao; Banc de Sable Cua Be; Annam: Hon Cohé).

**Remarks.** - *Acanthosquilla multifasciata* is widely distributed in the Indo-West Pacific. It has been reported from Red Sea, Southeast Asian waters, Japan, New Britain and Australia. Moosa (1973a) reported this species from 30 to 72 m on mud or sand and rubble bottom. Moosa (1991) reported that his specimens from New Caledonian waters were collected from 8 to 80 m on muddy sand with sponges, red mud, coarse muddy shell sand to sand with fragments of coralline algae.

### *Acanthosquilla sirindhorn* Naiyanetr, 1995

*Acanthosquilla sirindhorn* Naiyanetr, 1995: 409, figs. 1, 2, pl. 1 (type locality: Fishing Harbour, Pattani, Patani Province, Gulf of Thailand).

**Remarks.** - The species is only known from its type locality, the southern part of the Gulf of Thailand.

### *Acanthosquilla tigrina* (Nobili, 1903)

*Lysiosquilla tigrina* Nobili, 1903: 28 (type locality: Santubong, Borneo).

*Acanthosquilla tigrina*. — Naiyanetr, 1980a: 42 (Gulf of Thailand, listed);— 1980b: 54 (Gulf of Thailand, listed).

**Remarks.** - *Acanthosquilla tigrina* was only known from the Andaman Islands, Gulf of Thailand and Santubong, Borneo.

***Acanthosquilla wilsoni* Moosa, 1973**

*Acanthosquilla wilsoni* Moosa, 1973a: 15, fig. 2 (type locality: Aru Islands, Moluccas, Indonesia, 0554'S, 13404'E, 72-75 m, mud bottom); – 1986: 389, fig. 6 (southwest Philippines, Musorstom I: St 56, 13°53.1'N, 120°08.9'E - 13°53.3'N, 120°10.7'E, 134-129 m).

**Remarks.** - The species was described based on a single specimen without raptorial claws. The specimen from Philippines reported by the same author has claws but with missing telson. Both specimens clearly belong to the same species. *Acanthosquilla wilsoni* lives in depths from 72 to 129 m. The type was collected in the mud bottom, off Aru Island, Maluku, Indonesia.

**Genus *Alachosquilla* Schotte & Manning, 1993**

***Alachosquilla vicina* (Nobili, 1904)**

*Lysiosquilla vicina* Nobili, 1904: 229 (type locality: Obock, Red Sea, in sand inhabited by *Balanoglossus*).

*Acanthosquilla vicina*. – Naiyanetr, 1980a: 42 (Gulf of Thailand, listed); – 1980b: 54 (Gulf of Thailand, listed).

**Remarks.** - *Alachosquilla vicina* is a rare species; the type was collected from the Red Sea. Naiyanetr (1980a, 1980b) listed this species in the Gulf Thailand fauna.

SUPERFAMILY SQUILLOIDEA LATREILLE, 1803

FAMILY HARPIOSQUILLIDAE MANNING, 1980

**Genus *Harpiosquilla* Holthuis, 1964**

***Harpiosquilla annandalei* (Kemp, 1911)**

*Squilla annandalei* Kemp, 1911: (type locality: Gulf of Martaban, Burma, 14°48'N, 95°52'E, 112 m).— Serène, 1954: 6, 8 (Vietnam: Baie de Cauda; baie de Nhatrang, 15-25 m).

*Squilla raphidea*.— Gravier, 1930b: 525 (part; Indochine) [not *Squilla raphidea* Fabricius, 1798].

*Harpiosquilla annandalei*.— Blumstein, 1974: 118 (Gulf of Tonkin, 37-38 m, muddy sand and clay).— Naiyanetr, 1980a: 42 (Gulf of Thailand, listed); – 1980b: 54 (Gulf of Thailand, listed). — Manning, 1995: 149, pl.27; figs. 87a, c, 88d, 89a, 90b-e, 91d, 92f, 94d (Serène's Material: — Annam: Station Cauda; Rocher Noir et Île aux Singes —; Annam: Cap Varella. ). — Nguyen & Pham, 1995: 129 (Vietnam).

**Remarks.** - This species has been reported from various localities in the Indo-West Pacific region, from the Gulf of Oman in the Arabian Sea to South East Asia and Japan in the depth ranging from 15 to 206 meters. The bottom substrate where this species was recorded are clay, mud, green mud, grey soft mud, sand, minute gastropod shells.

***Harpiosquilla harpax* (De Haan, 1844)**

*Squilla harpax* De Haan, 1844 (atlas): pl 51, fig.1 (type locality: Japan); – 1849 (text): 222.— Tiwari & Biswas, 1952: 358, figs. 3b, d, f (Hongkong)

- Squilla obsoleta* White, 1847: 84 (*nomen nudum*; type locality: unknown).
- Squilla raphidea*.— Bigelow, 1894: 535 (Hongkong). — Kemp, 1913: 88, pl. 7, fig. 77 (part; Hongkong). — Gravier, 1930b: 525 (part; Indochine; west of Haon-Tae Island, Poulo Condore; Cape Saint-Jacques; embochure du Basac; Tourane Bay, Vietnam);— 1937: 186, figs. 8-10 (part; Baie d'Along, Vietnam).— Serène, 1937: 68 (Indochine).— Dawydoff, 1952: 145 (part; Baie d'Along).— Serène, 1953: 507 (Indochine);— 1954: 6, 8, 62, 63, 87, pl. 4, figs. 1-6 (part; Vietnam: Cauda Bay; Nhatrang Bay; 15-25 m). — Chuang, 1961: 181, 206, pl. 81, fig. 4 (Siglap, Singapore). [not *Squilla raphidea* Fabricius, 1798].
- Squilla raphidea* var. — Gravier, 1937: 189 (part; Baie d'Along, Vietnam).
- ?*Squilla raphidea*. Serène, 1939: 349 (Baie de Nhatrang, Vietnam, 8-12 m) [not *Squilla raphidea* Fabricius, 1798].
- Harpiosquilla harpax*.— Manning, 1967a: 193 (Singapore); — 1969: 6, 25, figs. 28-38 (Baie de Nhatrang, Vietnam; Hongkong; Tachalom, Gulf of Siam; north of Singora, Gulf of Siam).— Blumstein, 1974: 119 (Gulf of Tonkin, 18-95 m, mud and sand with shells).— Naiyanetr, 1980a: 42 (Gulf of Thailand, listed);— 1980b: 54 (Gulf of Thailand, listed). — Moosa, 1986: 390 (southwest Philippines, Musorstom I: St 1, 14°28.0'N, 120°42.0'E - 14°27.0'N, 120°40.8'E, 36-37 m; St 2, 14°02.8'N, 120°18.8'E - 14°02.0'N, 120°17.8'E, 187-182 m; St 56, 13°53.1'N, 120°08.9'E - 13°53.3'N, 120°10.7'E, 134-129 m; St 72, 14°11.8'N, 120°28.7'E - 14°13.1'N, 120°28.8'E, 127-122 m). — Manning, 1995: 153, pl. 28; figs. 90a, 92b, 93, 95, 96 (Serène's Material: — Annam: Station Cauda —; Indochine; Tonkin: Baie d'Along; Annam: Baie de Tourane; Cap Saint Jacques; Cochinchine: West of Haon-Tae, Poulo Condore). — Nguyen & Pham, 1995: 128 (Vietnam). — Ah Yong et al., 1999: 38 (Zhujiang, China).

**Remarks.** - *Harpiosquilla harpax* was formerly synonymized with *H. raphidea* by many authors and Tiwari & Biswas (1952) revived *harpax* as a separate species from *raphidea*. Therefore in many literatures the two species were mixed up. *Harpiosquilla harpax* has less marked submedian carinae on the dorsal surface of the body compared to *H. raphidea* and usually the could attain the size of *H. raphidea*. Both species could be found at the same locality and *H. harpax* often recorded in much deeper waters from 2 to 93m, living in muddy bottom. *H. harpax* has wide distribution, in the South China this species has been reported from Hongkong (Bigelow, 1894; Kemp, 1913; Tiwari & Biswas, 1952; Ah Yong et al., 1999); Singapore (Boone, 1938; Tiwari & Biswas, 1952; Manning, 1967; Chuang, 1961) and Philippines.

#### ***Harpiosquilla indica* Manning, 1969**

*Harpiosquilla indica* Manning, 1969: 6, 33, figs. 39-43 (type locality: Malacca Strait). — Garcia, 1980: 29, figs. 5-6 (Hermosa, Dasol Bay, Pangasinan, Philippines, 9-11 m, muddy bottom).

**Remarks.** - *Harpiosquilla indica* has been reported from Malacca Strait, Philippines and Bima Bay, Indonesia. Moosa (1974) reported this species from intertidal zone where the specimens were caught by the fishermen nets.

#### ***Harpiosquilla japonica* Manning, 1969**

*Squilla raphidea*.— Gravier, 1930b: 525 (part; Indochine; entrée de Port Dayot, Baie de Hon-Coké; Baie de Nhatrang, Vietnam); — 1937: 186 (part; Baie d'Along). — Dawydoff, 1952: 145 (part; Baie d'Along).— Serène, 1954: 6, 8 (part; Vietnam: Baie de Cauda; Baie de Nhatrang; 15-25 m) [not *Squilla raphidea* Fabricius, 1798].

*Squilla raphidea* var. — Gravier, 1937: 189 (part; Baie d'Along).

*Harpiosquilla japonica* Manning, 1969: 6, 15, figs. 10, 11 (type locality: Wakanoura Bay, Kii, Japan, 34°10'N, 135°10'E);— 1995: 158, figs. 87b, d, 88b, 91b, 92a, e, 94b (Indochine; Tonkin: Baie d'Along; Annam: Baie de Hon-Coké, entrance of Port Dayot, mud bottom; Baie de Nhatrang).

**Remarks.** - Observing the above synonymies it could be seen that *H. japonica* was formerly mixed up with *H. raphidea* which in turn was also mixed up with *H. harpax*. Manning (1969b) erected *japonica* from specimens collected at Wakanoura, Kii Peninsula, Japan. This species has been reported from Japan, the Philippines and Vietnam.

### ***Harpiosquilla melanoura* Manning, 1968**

*Squilla raphidea*. – Serène, 1954: 6, 8 (part; Baie de Nhatrang ; Baie de Cauda, 15-25 m) [not *Squilla raphidea* Fabricius, 1798].

*Harpiosquilla melanoura* Manning, 1968b: 14, 18, fig. 5 (type locality: Banc de Pracel [Pracel Shoal, 17°00'S, 43°30'E], western coast of Madagascar, 55 m); – 1995: 160, figs. 88a, c, 89b, 01 a, c, 92d, 94c (Serène's Material: — Indochine; —; Annam: Station Cauda).

**Remarks.** - *Harpiosquilla melanoura* has been reported from western Indian Ocean eastward to Vietnam, Philippines, Japan and Australia.

### ***Harpiosquilla raphidea* (Fabricius, 1798)**

*Squilla raphidea* Fabricius, 1798: 416 (type locality: Oceano Indico, probably east coast of India).— Lanchester, 1900: 264 (Muara Tebas, Malaysia); – 1901: 553 (Singora, Gulf of Thailand, Thailand; Kota Bharu, Kelantan, Malaysia).— Nobili, 1903: 38 (Singapore). — Kemp, 1913: 88 (part; ?Singapore). — Gravier, 1930b: 525 (part; entrée de Port Dayot, Baie de Hon Coké).— Roxas & Estampador, 1930: 94, 101 (Manila Bay). — Tweedie, 1934: 40 (Siglap, Singapore). Tiwari & Biswas, 1952: 356, figs. 3a, c, e (Singapore; Kuching Fishmarket, Serawak, East Malaysia). — Serène, 1953: 507 (part; Indochine); – 1954: 6, 8, (part; Vietnam: Baie de Nhatrang; Baie de Cauda; 15-25 m).

*Harpiosquilla raphidea*. – Manning, 1969: 9, figs. 4-9 (Pakpoon, western side of Gulf of Thailand, Nakon Sritamarat Province).— Naiyanetr, 1980a: 42 (Gulf of Thailand, listed);– 1980b: 54 (Gulf of Thailand, listed).— Manning, 1995: 161, figs. 92c, 94a, 97 (Indochine; Cochinchine). ). — Nguyen & Pham, 1995: 130 (Vietnam).

**Remarks.** - *Harpiosquilla raphidea* is a large species which could attain total length of 335 mm. Many of record reported from literatures mixed *Harpiosquilla raphidea* with *H. harpax*, *H. melanoura*, or *H. indica* (see Manning, 1969b). *Harpiosquilla raphidea* and *H. harpax* could be collected at the same location by using bottom net. This species has wide distribution in the Indo-West Pacific region from South East Asian waters to East African waters collected from shallow waters of about 2 to 45 meters.

### ***Harpiosquilla sinensis* Liu & Wang, 1998**

*Harpiosquilla sinensis* Liu & Wang, 1998: 590, 594, fig. 2 (type locality: off Nansha Is.).

FAMILY SQUILLIDAE LATREILLE, 1803

Genus *Anchisquilla* Manning, 1968

*Anchisquilla fasciata* (De Haan, 1844)

- Squilla fasciata* De Haan, 1844 (atlas): pl. 51, fig. 4 (type locality: Japan); – 1849 (text): 224. — Gravier, 1930b: 524 (Cap Saint Jacques). — Tweedie, 1934: 35 (Siglap, Singapore). — Gravier, 1937: 176, 177, fig. 1 (Poulo Condore). — Serène, 1937: 68 (annam); – 1939: 349 (Baie de Nhatrang, Vietnam). — Dawydoff, 1952: 145 (Poulo Condore). — Serène, 1953: 507 (Indochine); – 1954: 6, 8, 10, 54, 59, 60, 87, pl. 3, figs. 1-4 (Vietnam: Baie de Cauda; Baie de Nhatrang, 15-25 m).  
*Squilla subfasciata* Tate, 1883: 52, pl. 2, fig. 1a-d (type locality: Saint Vincent's Gulf, South Australia, 35°00'S, 138°05'E).  
*Anchisquilla fasciata*. — Blumstein, 1974: 114, fig. 2 (Gulf of Tonkin, 18-100 m, sand and mud, and muddy sand with Foraminifera). — Naiyanetr, 1980a: 42 (Gulf of Thailand, listed); – 1980b: 54 (Gulf of Thailand, listed). — Moosa, 1986: 390 (Southwest Philippines, Musorstom I: St 1, 14°28.0'N, 120°42.0'E - 14°27.0'N, 120°40.8'E, 36-37 m; St 72, 14°11.8'N, 120°28.7'E - 14°13.1'N, 120°28.8'E, 127-122 m). — Manning, 1995: 166: pl. 29; figs. 98-100. (Serène's Material: — Indochine; Annam: Staion de Cauda; Baie de Nhatrang —; Cochinchine: Cap Saint Jacques; Poulo Condore). — Nguyen & Pham, 1995: 131 (Vietnam).

**Remarks.** - *Anchisquilla fasciata* is widely distributed in the Indo-West Pacific and has been reported from Red Sea, Southeast Asian waters, Japan, Australia and New Caledonia. The depth range reported is from intertidal zone (caught by light fishing in coral island) to 127 m. Moosa (1991) reported that his specimens from New Caledonia were collected from 10 to 70 m, on mud, red mud with *Foraminifera* to grey sand with algae.

*Anchisquilla fasciaticauda* Liu & Wang, 1998

- Anchisquilla fasciaticauda* Liu & Wang, 1998: 588, 598, fig. 1 (type locality: South China Sea).

Genus *Anchisquilloides* Moosa, 1986

*Anchisquilloides michelae* Moosa, 1986

- Anchisquilloides michelae* Moosa, 1986: 391, fig. 7 (type locality: Southwest Philippines, Musorstom I: St 69: 13°58.8'N, 120°17.3'E - 14°00.9'N, 120°19.0'E, 187-199 m; Musorstom I: St 16, 13°59.0'N, 120°10.5'E - 13°59.0'N, 120°12.3'E, 164-150 m).

**Remarks.** - *Anchisquilloides michelae* is only known from its type locality, Southwest Philippines, collected from 150 to 199 m deep.

Genus *Anchisquillopsis* Moosa, 1986

*Anchisquillopsis clevai* Moosa, 1986

- Anchisquillopsis clevai* Moosa, 1986: 394, fig. 8 (type locality: Southwest Philippines, Musorstom II: St 63: 14°07.3'N, 120°15.0'E - 14°07.2'N, 120°16.0'E, 230-215 m; Musorstom I: St 40, 13°57.4'N, 120°27.8'E - 13°58.3'N, 120°29.4'E, 287-265 m).

**Remarks.** - *Anchisquillopsis clevai* is only known from its type locality, Southwest Philippines, collected from 215 to 287 m deep.

### **Genus *Areosquilla* Manning,1976**

#### ***Areosquilla indica* (Hansen,1926)**

*Squilla indica* Hansen,1926: 12, pl. 1 figs. 4a-c (part, voir Manning,1976a; type locality: Lohio Bay, Buton Strait, between Muna and Butung [Buton] Islands, South Sulawesi, Indonesia, 22 m, sandy mud bottom)

? *Oratosquilla indica*.— Nguyen & Pham,1995: 137 (Vietnam).

**Remarks.** - The presence of this species in the South China is referred to Nguyen & Pham (1995). *Areosquilla indica* has been reported from Indonesia collected from 22 m depth on muddy bottom and New Caledonia from 30 m deep collected on mud with *Turitelle* and *Foraminifera* substrate.

### **Genus *Busquilla* Manning,1978**

#### ***Busquilla quadraticauda* (Fukuda,1911)**

*Squilla quadraticauda* Fukuda,1911: 286, fig. 1 (type locality: Matsuwa, Sagami Province, Japan, 35°09'N, 139°41'E).

*Squilla boopis* Kemp,1911: 97 (type locality: Gulf of Martaban, Burma, 14°26'N, 96°23'E, 123 m).

*Anchisquilla punctata* Blumstein,1970: 218, fig. 1 (type locality: Gulf of Tonkin, Vietnam, 17°48'N, 109°32'E, 102 m, muddy sand); – 1974: 115 (Gulf of Tonkin, 102 m).

*Busquilla quadraticauda* Manning,1995: 170 (no material examined).

**Remarks.** - *Busquilla quadraticauda* has been reported from Burma, Vietnam, Indonesia and Japan. The depth range of this species reported is from 45 to 123 m. Moosa (1973a) collected this species from sand and rubble bottom.

### **Genus *Carinosquilla* Manning,1968**

#### ***Carinosquilla carinata* (Serène,1950)**

*Squilla carinata* Serène, 1950a: 571 (type locality : Baie de Cauda, Nhatrang, Vietnam,12°11'-13'N – 109°13-16'E, 15-20 m, grey mud bottom); – 1954: 6, 7, 8, (Vietnam: Baie de Cauda; Baie de Nhatrang, 15-25 m).

*Carinosquilla carinata*.— Blumstein,1974: 115 (Gulf of Tonkin,35-50 m,muddy sand) .— Naiyanetr,1980a: 43 (Gulf of Thailand, listed); – 1980b: 55 (Gulf of Thailand, listed). — Manning,1995: 173, pl.30; figs. 101-104, 105b, 106b,107b, 108b (Serène's Material: Indochine; Annam: Baie de Nhatrang; Cauda, in front of the laboratory).— Nguyen & Pham,1995: 139 (Vietnam).

*Carinosquilla thailandensis* Naiyanetr,1983: 394, figs. 2,4 (type locality: Ko Phai, 12°56'N, 100°41'E, Chon Buri Province, Gulf of Thailand, Thailand).

**Remarks.** - *Carinosquilla carinata* has been reported from East African waters, Red Sea, Thailand and New Caledonia. The depth range of this species reported is from 15 to 60 m collected on grey mud, muddy sand, or shell sand bottom or bottom with rubble.



***Carinosquilla multicaarinata* (White,1848)**

*Squilla multicaarinata* White,1848: 144, pl. 6, fig. 1 (type locality: Nagasaki Bay, Japan, 3244'N, 12952'E, and the Philippines).— Nobili,1903: 38 (Singapore). — Kemp & Chopra,1921: 307 (Singapore). — Tweedie,1934: 39 (Siglap, Singapore). — Serène,1937: 68 (Annam); – 1939: 344, 349 (Baie de Nhatrang, Vietnam, 8-12 m); – 1950a: 571 (Baie de Cauda, Vietnam, 15-20 m). — Dawydoff,1952: 145 (Baie de Nhatrang, Vietnam). — Serène,1953: 506, 506 (Nhatrang, Vietnam); – 1954: 6, 8 (Vietnam: Baie de Cauda; Baie de Nhatrang, 15-25 m).  
*Carinosquilla multicaarinata*. – Naiyanetr,1980a: 43 (Gulf of Thailand, listed);– 1980b: 55 (Gulf of Thailand, listed). — Manning,1995: 175, pl. 31; figs. 105a, 106a, 107a, 108a, 109-111 (Serène's Material: — Annam: Station Cauda; Baie de Nhatrang).

**Remarks.** - *Carinosquilla multicaarinata* has been reported from scattered localities between India, Burma, South China Sea, Indonesia, Philippines and Japan. The depth range of this species is from 8 to 25 m.

**Genus *Clorida* Eydoux & Souleyet,1842**

***Clorida bombayensis* (Chhappgar & Sane, 1967)**

*Squilla Latreillei*. – Gravier,1930b: 524 (Cap Saint Jacques). — Serène,1939: 349 (Baie de Nhatrang, Vietnam, 8-12 m; part?) [not *Clorida latreillei* (Eydoux & Souleyet,1842)].  
*Squilla Latreilli*. – Serène,1937: 68 (Indochine; part?) [not *Clorida latreillei* (Eydoux & Souleyet,1842)].  
*Squilla latreillei*. – Serène,1952: 6, 8, 9, 10, 11, figs. 1, 2, 14, 15, 19, pl. 1, figs. 1, 4, pl.2. figs. 1, 4 (Nhatrang, Vietnam). — Dawydoff,1952: 145 (Indochine). [not *Clorida latreillei* (Eydoux & Souleyet,1842)].  
*Squilla latreilli*. – Serène,1953: 506, 507, (Nhatrang, Vietnam; part). – 1954: 6, 8, 54-58, 87, 92, pl. 2 (Vietnam: Baie de Cauda; Baie de Nhatrang, 15-25 m; part?). [not *Clorida latreillei* (Eydoux & Souleyet,1842)].  
*Squilla bombayensis* Chhappgar & Sane,1967: 1, fig. 1 (type locality: Bombay, India, 18°58'N , 72°50'E).  
*Clorida latispina* Manning,1968a: 247, fig. 3 (type localities: off Hong Kong, 21°44'N, 114°48'E, 62 m; black mud and Kota Bahru Kelantan, Malaysia). — Blumstein,1974: 115 (Gulf of Tonkin,30-55 m). — Manning,1978b: 26 (Cap St. Jacques). — Makarov,1979: 55 (Tonkin Bay, 25 m). — Naiyanetr,1980a: 43 (Gulf of Thailand, listed);– 1980b: 54 (Gulf of Thailand, listed).  
*Clorida latreillei*. – Moosa,1986: 397 (part; Cap Saint Jacques) [not *Clorida latreillei* (Eydoux & Souleyet,1842)].  
*Clorida bombayensis*: – Manning,1995: 182, pls. 32, 33; figs. 112, 113, 114a ,b, 115a (Serène's Material: — Annam: Station Cauda —; Cochinchine: Cap Saint Jacques).

**Remarks.** - The distribution of this species needs verification. Specimens identified as *C. latreillei* could possibly belong to *C. bombayensis* or to *C. gaillardi* Moosa,1986. Manning (1995) suspects that probably *gaillardi* is also a synonym of *bombayensis*.

***Clorida decorata* Wood-Mason,1875**

*Clorida decorata* Wood-Mason,1875: 231 (type locality: Port Blair, Andaman Islands, 11°36'N, 92°45'E). — Blumstein,1974: 115 (Gulf of Tonkin, 7-40 m, sandy and clayey mud). — Makarov,1979: 48, fig. 3 (Tonkin Bay, 7-30 m). — Naiyanetr,1980a: 42 (Gulf of Thailand, listed); – 1980b: 54 (Gulf of Thailand, listed).— Manning,1995: 186, figs. 116, 117, 118c, d (Serène's Material: — Indochine). — Nguyen & Pham,1995: 126 (Vietnam). — Ah Yong et al.,1999: 42 (Zhujiang, China).

**Remarks.** - *Clorida decorata* has been reported from Andaman Islands and off Vietnam to Macau in 7- 40 m depth on sandy and clayey mud bottom.

***Clorida denticauda* (Chhapgar & Sane, 1967)**

*Squilla denticauda* Chhapgar & Sane, 1967: 4, fig. 2 (type locality: Bombay, India, 18°58'N, 72°50'E).  
? *Clorida seversi* Moosa, 1973a: 22, fig. 4 (type locality: north of Nuhu Rowa, Kai Islands, Maluku, Indonesia, 05°32'S, 132°41'E, 27-37 m). — Makarov, 1979: 54 (Tonkin Bay, 110 m).  
? *Clorida nazasaensis* Garcia & Manning, 1982: 538, fig. 2 (type locality: Nazasa Bay, Zambales, the Philippines, 14°49'N, 120°06'E, 3-37 m).  
*Clorida denticauda*. — Manning, 1995: 189 (no material examined).

**Remarks.** - *Clorida denticauda* has been reported from Bombay, Vietnam, Philippines, and Indonesia. The depth range of this species known is from 3 to 110 m. Moosa (1973a) reported that his specimens were collected from sand and rubble bottom.

***Clorida gaillardi* Moosa, 1986**

*Clorida gaillardi* Moosa, 1986: 396, fig. 9 (type locality: Southwest Philippines, Musorstom I: St 1: 14°28.0'N, 120°42.0'E - 14°27.0'N, 120°40.8'E, 36-37 m).

**Remarks.** - *Clorida gaillardi* is very close to *C. latreillei*, the two can be easily separated by the form of the lateral process of the fifth thoracic somite which is large and curved anterolaterally in *C. gaillardi* and directed laterally in *C. latreillei*. Some specimens formerly identified as *C. latreillei* need to be verified. *C. gaillardi* has been reported from the southwestern part of Philippines, its type locality and then reported by Moosa (1991) from New Caledonia. The species was collected from 11 to 37 m depth.

***Clorida latreillei* Eydoux & Souleyet, 1842**

*Clorida latreillei* Eydoux & Souleyet, 1842: 265, pl. 5, figs. 2-5 (type locality: Singapore. 01°20'N, 103°50'E). — Blumstein, 1974: 116, fig. 3 (Gulf of Tonkin, 18-23 m, muddy sand and mud). — Makarov, 1979: 47 (Tonkin Bay, 10-14 m). — Naiyanetr, 1980a: 42 (Gulf of Thailand, listed); — 1980b: 54 (Gulf of Thailand, listed). — Manning, 1995: 189, fig. 119 (Serène's Material: — Indochine; Annam: Cauda, in front of the laboratory; Rocher Noire et Île aux Singes).  
*Squilla latreillei*. — Dawydoff, 1952: 145 (Indochine). — Serène, 1953: 506, 507 (Nhatrang, Vietnam; part?); — 1954: 6, 8, 54-58, 87 (Vietnam: Baie de Cauda; Baie de Nhatrang, 15-25 m; part?).  
*Clorida latreillei*. — Serène, 1953: 506, 507 (Nhatrang, Vietnam; part).  
? *Clorida javanica* Moosa, 1974: 76, figs. 2, 3 (type locality: Java Sea, north of Central Java, 20 m).  
? *Clorida japonica* Manning, 1978b: 25, fig. 12 (type locality: Sanuki Shima, Shikoku, Japan, 34°21'N, 134°11'E).  
*Clorida latreillei*. — Nguyen & Pham, 1995: 125 (Vietnam).

**Remarks.** - The geographical distribution of this species needs verification. Manning (1995) mentioned that the distribution of this species is from Japan to western Indian Ocean including Vietnam and Indonesia.

*Clorida rotundicauda* (Miers,1880)

*Chloridella rotundicauda* Miers,1880a: 3, 15, pl. 2, figs.5,6 (type locality: Taiwan).

*Squilla choprai* Tweedie,1935: 49, pl.1 (type locality: Port Swettenham, Selangor, Malaysia, from mangrove swamp; mouth of Serangoon River, Singapore).— Moosa,1973b: 147 (Serangoon River, paratypes of *Squilla choprai* Tweedie,1935).

*Clorida rotundicauda*.— Naiyanetr,1980a: 42 (Gulf of Thailand, listed);— 1980b: 54 (Gulf of Thailand, listed).

**Remarks.** - *Clorida rotundicauda* is a shallow water species recorded from mangrove swamps and estuaries. The distribution of this species is so far restricted to around the South China Sea.

Genus *Cloridina* Manning,1995

*Cloridina chlorida* (Brooks,1886)

*Squilla chlorida* Brooks,1886: 21, 40, pl. 2, figs. 1-5 (type locality: Amboina, Maluku, Indonesia, 03°43'S, 128°12'E, 27 m).

*Chloridella chlorida*. — Lanchester,1901: 554 (Kelantan, Malaysia).

*Clorida chlorida*. — Blumstein,1974: 115 (erroneous spelling; Gulf of Tonkin, 10-23 m, clayey sand, red sandy mud with broken shells).

*Clorida chlorida*. — Makarov,1979: 41 (Tonkin Bay, 74-95 m ).— Naiyanetr,1980a: 43 (Gulf of Thailand, listed);— 1980b: 54 (Gulf of Thailand, listed). — Nguyen & Pham,1995: 127 (Vietnam).

*Cloridina chlorida*. — Manning,1995: 192 (no material examined).

**Remarks.** - *Cloridina chlorida* has been reported from East African waters eastward to Southeast Asian waters and New Caledonia. The depth ranges known of this species is from 10 to 95 m. Moosa (1991) reported that his specimens from New Caledonia were collected from 10 to 82 m deep on mud, oyster shells, muddy sand, fine shell sand, blocks and corals in mud bottom.

*Cloridina malaccensis* (Manning,1968)

*Clorida malaccensis* Manning,1968a: (type locality: Strait of Malacca).— Naiyanetr,1980a: 43 (Gulf of Thailand, listed);— 1980b: 54 (Gulf of Thailand, listed).— Moosa,1986: 399 (Southwest Philippines, Musorstom I: St 1, 14°28.0'N, 120°42.0'E - 14°27.0'N, 120°40.8'E, 36-37 m).

**Remarks.** - *Cloridina malaccensis* has been reported from Malacca Strait to Gulf of Thailand, Southwest Philippines and New Caledonia. Moosa (1991) specimens from New Caledonia were collected from 29 to 80 m deep on mud, fine sandy mud with bryozoans to coarse sand and blocks bottom.

*Cloridina microphthalma* (H.Milne Edwards,1837)

*Squilla microphthalma* H.Milne Edwards,1837: 523 (type locality: Indian coast).

*Clorida microphthalma*. — Blumstein,1974: 115 (Chan-Ka and Kon-be, Gulf of Tonkin, intertidal).

— Naiyanetr,1980a: 42 (Gulf of Thailand, listed);— 1980b: 54 (Gulf of Thailand, listed). — Nguyen & Pham,1995: 126 (Vietnam).

*Cloridina microphthalma*. — Manning,1995: 192 (key).

**Remarks.** - *Cloridina microphthalma* has been reported from East African waters, Arabian Sea, India, Indonesia, Vietnam, Taiwan and New Caledonia. The depth range of this species is from intertidal zone to 80 m deep.

***Cloridina pelamidae* (Blumstein,1970)**

? *Squilla* sp. – Gravier,1937: 189, figs. 11, 12 (Culao, Baie de Nhatrang, Vietnam).

*Squilla microphthalma*. – Serène,1952: 8, 9, 10, figs. 17, 20, pl. 1, figs. 2, 5, pl. 2, figs. 2, 5 (Nhatrang, Vietnam); – 1954: 6, 8, 54, 87 (Vietnam: Baie de Cauda; Baie de Nhatrang, 15-25 m) [not *Cloridina microphthalma* (H.Milne Edwards,1837)].

*Clorida pelamidae* Blumstein,1970: 220, figs. 2, 3 (type locality: Gulf of Tonkin, 2020'N, 10647'E, 25 m, red mud); – 1974: 116 (Gulf of Tonkin, 20-25 m, red clayey mud). — Naiyanetr & Türkay,1983: 401, figs. 1-2 (Ko Si Chung, Chon Buri Province, Thailand = holotype of *C. thailandica*; Gulf of Tonkin, Vietnam = topotype of *pelamidae*).

*Clorida thailandica* Naiyanetr,1980a: 38, 43, pl. 35 (type locality: Ko Sichang, Chonburi Province, Thailand, 13°10'N, 100°48'E); – 1980b: 55 (Gulf of Thailand, listed).

*Cloridina pelamidae*. – Manning,1995: 193, pl. 34; figs. 114c, d, 115b-d, 118a, b (Serène's Material: — Indochine; Annam: Cauda, in front of the laboratory; Rocher Noire et Île aux Singes).

**Remarks.** - *Cloridina pelamidae* is only known from the South China Sea where it was reported from Gulf of Tonkin to the Gulf of Thailand from 20 to 25 m deep on red mud bottom.

***Cloridina verrucosa* (Hansen,1926)**

*Squilla verrucosa* Hansen,1926: 3, pl. 1, fig. 1 (type locality: Lesser Sunda Island, Indonesia, 08°27'S, 122°54'E, 247 m, sandy mud, by selection of lectotype by Manning [1976a]).

?*Leptosquilla*. – Serène, 1937 (Annam)

*Squilla merguensis* Tiwari & Biswas,1952: 350, fig. 1a (type locality: 4 miles northeast of Kabusa Island, Mergui Archipelago, Andaman Sea, 12°49'N, 97°53'E, 60 m).

*Squilla fallax*. – Serène,1954: 6 (baie de Cauda) [not *Squilla fallax* Bouvier,1914].

*Clorida merguensis*. – Blumstein,1974: 116, fig. 4 (Gulf of Tonkin, 20-66 m, muddy sand and clay). — Makarov, 1979: 44, fig. 3 (Tonkin Bay, 18-75 m).— Naiyanetr,1980b: 55 (Gulf of Thailand, listed).— Moosa,1986: 400 (Southwest Philippines, Musorstom I: St 1, 14°28.0'N, 120°42.0'E - 14°27.0'N, 120°40.8'E, 36-37 m).

*Clorida verrucosa*. – Blumstein,1974: 116, fig. 5 (Gulf of Tonkin, 24-113 m, muddy sand and clay, sandy mud). — Makarov,1979: 42, fig. 2 (Tonkin Bay, 26-140 m).

*Cloridina verrucosa*. – Manning,1995: 195, fig. 120 (no material examined).

**Remarks.** - *Cloridina verrucosa* has been reported from Mergui Archipelago, Gulf of Thailand, Vietnam, Southwest Philippines, and Indonesia. The depth range of this species is from 18 to 247 m on muddy sand and clay bottom.

**Genus *Cloridopsis* Manning,1968**

***Cloridopsis gibba* (Nobili,1903)**

*Squilla (Chloridella) gibba* Nobili,1903: 30, 31, fig. 3 (type locality: Pulo Burong, Borneo, East Malaysia).

*Squilla gibba*. – Kemp,1913: 20, 28, pl. 1, figs. 5-12 (Buntal or Pulo Burong, Borneo, East Malaysia).

**Remarks.** - In the South China Sea this species has only been reported from Buntal or Pulau Burong, west coast of Borneo (Malaysia).

***Cloridopsis immaculata* Kemp,1913**

*Squilla scorpio* var. *immaculata* Kemp,1913: 45, pl. 2, fig. 31 (type locality: not specifically mentioned, probably Calcutta, the specimens of Kemp were collected from East Indian coast and one from Karachi, Pakistan ). — Tweedie,1934: 37 (Jurong, Singapore).

*Cloridopsis immaculata*.— Naiyanetr,1980a: 42 (Gulf of Thailand, listed);— 1980b: 54 (Gulf of Thailand, listed).

**Remarks.** - *Cloridopsis immaculata* has been reported from brackish water by Kemp (1913), and from the a stream in the mangrove swamps (Tweedie,1934). This species was also found penetrating into the river mouth (estuary) of the Banyuasin and Batanghari River in East Sumatra.

***Cloridopsis scorpio* (Latreille,1828)**

*Squilla scorpio* Latreille,1828: 472 (type locality: Pondicherry, India, 11°56'N, 79°50'E).— Kemp,1913: 42, pl. 2, fig. 30 (Tambak, Borneo). — Tweedie,1934: 36 (Changi and Siglap, Singapore).— Kemp & Chopra,1921: 300 (Singapore).

*Cloridopsis scorpio*. — Blumstein,1974: 118 (Gulf of Tonkin,10-20 m, muddy sand).— Naiyanetr,1980a: 42 (Gulf of Thailand, listed);— 1980b: 54 (Gulf of Thailand, listed). — Manning,1995: 196 (no material examined). — Ah Yong et al.,1999: 42 (Zhujiang, China).

*Chloridopsis scorpio*.— Nguyen & Pham,1995: 137 (Vietnam).

*Chloridopsis aquilonaris* Manning, 1978c: 28 (type locality: China).

**Remarks.** - *Cloridopsis scorpio* has been reported from India eastward to South China Sea and Indonesia. This species often caught swimming near the shore close to mangroves.

**Genus *Dictyosquilla* Manning,1977**

***Dictyosquilla foveolata* (Wood-Mason,1895)**

*Squilla foveolata* Wood-Mason,1895: 2, pl. 2, fig. 1 (type locality: Hong Kong, 22°15'N, 114°11'E).

*Dictyosquilla foveolata*. — Blumstein,1974: 118 (Gulf of Tonkin, Vietnam, 47 m, mud). — Naiyanetr,1980a: 43 (Gulf of Thailand, listed);— 1980b: 54 (Gulf of Thailand, listed). — Manning,1995: 197 (no material examined). — Ah Yong et al.,1999: 46 (Zhujiang, China).

**Remarks.** - *Dictyosquilla foveolata* has been reported form Burma, Vietnam and China. Blumstein (1974) reported this species from the Ggulf of Tonkin collected from 477 m deep on mud bottom).

**Genus *Erugosquilla* Manning,1995**

***Erugosquilla grahami* Ah Yong & Manning,1998**

*Erugosquilla grahami* Ah Yong & Manning,1998: 654, figs. 1, 2, 3A (type locality: Taiwan)

***Erugosquilla sereni* Ah Yong & Manning, 1998**

- Erugosquilla sereni* Ah Yong & Manning, 1998: 658 (type locality: Vietnam).  
*Squilla massavensis*. – Serène, 1951a: fig. 2 (Indochine); – 1953: 507 (Indochine); – 1954: 6, 8, 54, 60-62, 87, pl. 3, figs. 5-8 (Vietnam: Baie de Cauda; Baie de Nhatrang, Vietnam, 15-25 m) [not *Squilla massavensis* Kossmann, 1880].  
*Erugosquilla hesperia*. – Manning, 1995: 198, pl. 35; figs. 121, 122, 123a, 136n (Serène's Material: — Indochine; Annam: Baie de Nhatrang; Station Cauda) [not *E. hesperia* Manning, 1968].  
? *Oratosquilla massavensis*. – Nguyen & Pham, 1995: 133 (Vietnam) [not *E. massavensis* (Kossmann)].

**Remarks.** - *Erugosquilla sereni* has been reported from Vietnam in depths ranging from 15 to 25 m.

***Erugosquilla woodmasoni* (Kemp, 1911)**

- Squilla wood-masoni* Kemp, 1911: 99 (type locality: Madras, India, 13°05'N, 80°17'E). — Tweedie, 1934: 39 (Siglap, Singapore). — Serène, 1953: 506, 507 (Nhatrang, Vietnam); – 1954: 5, 6, 8, 10, 60 (Vietnam: Baie de Cauda; Baie de Nhatrang, 15-25 m).  
*Squilla oratoria*. – Gravier, 1930b: 525 (part, Varella [Annam]); – 1937: 183 (Hongay, Baie d'Along, Tonkin; part). — Dawydoff, 1952: 145 (Baie d'Along; part) [not *Squilla oratoria* De Haan, 1844].  
*Oratosquilla tweediei* Manning, 1971: 12, fig. 4 (type locality: Singapore, 01°20'N, 103°50'E).  
*Oratosquilla woodmasoni*. – Blumstein, 1974: 121 (Gulf of Tonkin, 65-113 m, muddy clay, muddy sand and shells). — Manning, 1978c: 36, figs. 21-22 (Hongkong, 22°15'N, 114°11'E = syntype of *Squilla woodmasoni*; Singapore, 01°17'N, 103°51'E = holotype and paratypes of *Squilla tweediei*; Naiyanetr, 1980a: 43 (Gulf of Thailand, listed); – 1980b: 54 (Gulf of Thailand, listed). — Moosa, 1986: 410 (Musorstom I: Singapore, light fishing). — Nguyen & Pham, 1995: 134 (Vietnam).  
*Oratosquilla jakartensis* Moosa, 1975: 13, fig. 1 (type locality: Jakarta Bay, Indonesia, 06°08'S, 106°45'E).  
*Erugosquilla woodmasoni*. – Manning, 1995: 200, pl. 36; figs. 123b, 124-126, 136k-m (Serène's Material: — Indochine; Annam: Station Cauda; Baie de Nhatrang —; Tonkin: Hongay, Baie d'Along; Annam: Cap Varella).

**Remarks.** - *Erugosquilla woodmasoni* is widely distributed in the Indo-West Pacific. This species has been reported from East African waters, Southeast Asian waters, Japan and Australia. In the South China Sea this species is known from Singapore, Gulf of Thailand, Vietnam, Southwest Philippines, and Hong Kong. The depth range of this species is from shallow a water of less than 10 to 25 m on muddy or sandy bottom.

**Genus *Fallosquilla* Manning, 1995**

***Fallosquilla fallax* (Bouvier, 1914)**

- Squilla fallax* Bouvier, 1914: 699 (type locality: Mauritius, 20°18'S, 57°35'E).  
*Squilla ambigua* Hansen, 1926: 6, pl. 1, fig. 2 (type locality: East of Dangar Besar, Saleh Bay, Sumbawa, Indonesia, 08°2'S, 117°40'E, 23 m).  
*Clorida fallax*. – Makarov, 1979: 39 (Tonkin Bay, 23 m). — Nguyen & Pham, 1995: 127 (Vietnam).  
*Fallosquilla fallax*. – Manning, 1995: 204 (no material examined).

**Remarks.** - *Fallosquilla fallax* has been reported from Solomons in the Pacific to New Caledonia, Australia, Vietnam, westward to Mauritius and Red Sea. Moosa (1991) reported specimens from New Caledonia which were collected from 17 to 280 m, on red mud, muddy coarse sand to coarse shell sand bottom.

Genus *Keijia* Manning, 1995

*Keijia lirata* (Kemp & Chopra, 1921)

- Squilla lirata* Kemp & Chopra, 1921: 303, figs. 3, 4 (type locality: Singapore, 01°20'N, 103°50'E).— Tweedie, 1934: 39 (Siglap, Singapore).  
*Squilla costata*. – Gravier, 1933: 77, figs. 1-2 (Poulo Dama). — Serène, 1937: 68 (Indochine); – 1950a: 571 (Baie de Cauda, 15-20 m).— Dawydoff, 1952: 145 (Indochine; Gulf of Thailand). — Serène, 1953: 506, 507 (Nhatrang, Vietnam). [not *Squilla costata* De Haan, 1844].  
*Squilla lirata*. – Serène, 1954: 6, 8 (Vietnam: Baie de Cauda; Baie de Nhatrang, 15-25 m).  
*Carinosquilla lirata*. – Moosa, 1986: 405 (Poulo Dama, Gulf of Thailand).— Naiyanetr, 1980a: 43 (Gulf of Thailand, listed);— 1980b: 55 (Gulf of Thailand, listed). — Nguyen & Pham, 1995: 138 (Vietnam).  
*Keijia lirata*. – Manning, 1995: 205, figs. 105c, 106c, 107c, 108c, 127, 128 (Serène's Material: — Indochine; Annam: Station Cauda —; Cochinchine: Poulo Dama, Gulf of Thailand).

**Remarks.** - *Keijia lirata* has been reported from India, Singapore, Gulf of Thailand, Vietnam and Indonesia. The recorded depth range of this species recorded is 15 to 20 m.

Genus *Kempina* Manning, 1978

*Kempina mikado* (Kemp & Chopra, 1921)

- Squilla mikado* Kemp & Chopra, 1921: 301, fig. 2 (type locality: Misaki, Japan, 33°20'N, 132°08'E).  
*Squilla zanzibarica* Chopra, 1939: 143, figs. 2, 3a, 4 (type locality: off Zanzibar, 05°38'54"S, 39°15'42"E – 05°40'18"S, 39°17'36"E, 212 m).  
*Oratosquilla mikado*. – Blumstein, 1974: 119 (Gulf of Tonkin, 150 m, clayey sand *Kempina mikado*.  
 – Moosa, 1986: 400, fig. 10 (Southwest Philippines, Musorstom I: St 9, 14°01.8'N, 120°17.6'E - 13°59.5'N, 120°17.6'E, 194-180 m; St 10, 13° 59.8'N, 120° 18.2'E - 14° 00.2'N, 120° 20.3'E, 187-205 m; St 19, 13°57.8'N, 120°18.2'E - 13°59.0'N, 120°19.4'E, 167-187 m; St 20, 13°59.2'N, 120°20.3'E - 14°00.0'N, 120°22.3'E, 208-222 m; St 24, 14° 00.0'N, 120° 18.0'E - 14° 01.7'N, 120° 20.2'E, 189-209 m; St 26, 14°00.9'N, 120°16.8'E - 13°59.5'N, 120°18.2'E, 189 m; St 30, 14° 01.3'N, 120°18.7'E - 13° 59.7'N, 120°16.6'E, 186-177 m; St 31, 14°00.0'N, 120°16.0'E - 14°00.3'N, 120°19.0'E, 187-195 m; St 35, 13°59.0'N, 120°18.5'E - 14°08.0'N, 120°16.5'E, 186-187 m; St 51, 13° 50.8'N, 120°04.2'E - 13° 50.8'N, 120° 03.2'E, 200-170 m; St 55, 13° 55.0'N, 120°12.5'E - 13° 54.8'N, 120°10.5'E, 200-194 m; St 56, 13°53.1'N, 120°08.9'E - 13°53.3'N, 120°10.7'E, 134-129 m; St 62, 13°59.5'N, 120°15.6'E - 14°00.6'N, 120°13.7'E, 179-194 m; St 64, 14°00.5'N, 120°16.3'E - 13°59.5'N, 120°18.8'E, 194-195 m; St 68, 14°00.8'N, 120°16.3'E - 13°58.8'N, 120°19.0'E, 199-183 m; St 69, 13°58.8'N, 120°17.3'E - 14°00.9'N, 120°19.0'E, 187-199 m; St 71, 14°09.3'N, 120°26.2'E - 14°10.0'N, 120°26.8'E, 174-204 m; St 72, 14°11.8'N, 120°28.7'E - 14°13.1'N, 120°28.8'E, 127-122 m; Musorstom II: St 12, 14°01.0'N, 120°19.7'E - 14°02.0'N, 120°21.0'E, 197-210 m; St 21, 14°00.2'N, 120°17.8'E - 14°02.2'N, 120°17.4'E, 191-192 m; St 61, 14°00.0'N, 120°16.4'E - 14°00.1'N, 120°16.7'E, 178-180 m; St 62, 14°00.4'N, 120°17.0'E - 14°00.3'N, 120°18.4'E, 186-189 m; St 64, 14°01.5'N, 120°18.9'E - 14°00.1'N, 120°18.2'E, 195-191 m; St 80, 13°45.1'N, 120°37.7'E - 13°45.2'N, 120°37.3'E, 178-205 m). — Manning, 1995: 208 (no material examined).

**Remarks.** - This species has wide distribution and has been reported from Japan, South China Sea, eastward to New Caledonia (Moosa, 1991) and westward to Red Sea and East African waters (see Moosa, 1986). *Kempina mikado* inhabits moderate to deep water ranging from 58 to 804 m.

***Kempina stridulans* (Wood-Mason,1894)**

*Squilla stridulans* Wood-Mason (in Alcock,1894): 409 (type locality: Orissa Coast, Eastern India, 122 m).

*Kempina stridulans*. – Moosa,1986: 402 (Southwest Philippines, Musorstom I: St 51, 13°50.8'N, 120°04.2'E - 13°50.8'N, 120°03.2'E, 200-170 m; Musorstom II: St 41, 13°15.3'N, 122°45.9'E - 13°16.9'N, 122°46.6'E, 166-172 m; St 62, 14°00.4'N, 120°17.0'E - 14°00.3'N, 120°18.4'E, 186-189 m).

**Remarks.** - *Kempina stridulans* is only known from Indian waters and the Philippines in depths ranging from 122 to 432 m (Moosa,1986).

**Genus *Lenisquilla* Manning,1977**

***Lenisquilla lata* (Brooks,1886)**

*Squilla lata* Brooks,1886: 21, 34, pl. 3, figs. 103 (type locality: Arafura Sea, 08°56'S, 136°05'E, 90 m).

*Squilloides latus spinosus* Blumstein,1970: 223, figs. 4, 5 (type locality: Gulf of Tonkin, 17°48'N, 109°32'E, 102 m, muddy sand).

*Squilloides espinosus* Blumstein,1974: 121, fig. 7 (type locality: Gulf of Tonkin, 18°00'N, 109°32'E, 76 m, mud).

*Squilloides latus*. – Blumstein,1974: 123 (Gulf of Tonkin, 80-100 m, muddy and clayey sand).

*Lenisquilla spinosa*. – Moosa,1986: 403 (Southwest Philippines, Musorstom I: St 25, 14°02.7'N, 120°20.3'E - 14°02.0'N, 120°18.0'E, 200-191 m; St 72, 14°11.8'N, 120°28.7'E - 14°13.1'N, 120°28.8'E, 127-122 m; St 73, 14°15.0'N, 120°31.2'E - 14°16.6'N, 120°31.8'E, 76-70 m; Musorstom II: St 41, 13°15.3'N, 122°45.9'E - 13°16.9'N, 122°46.6'E, 166-172 m; St 51: 13°59.3'N, 120°16.4'E - 14°00.4'N, 120°17.6'E, 170-187 m; St 62, 14°00.4'N, 120°17.0'E - 14°00.3'N, 120°18.4'E, 186-189 m).

*Lenisquilla lata*. – Manning,1995: 209 (no material examined).

**Remarks.** - *Lenisquilla lata* has been reported from East African waters northward to Red Sea and eastward to Southeast Asian waters, Japan and Arafura Sea. In the South China Sea this species has been reported from off Vietnam and Southwest Philippines. The depth range known is from 70 to 200 m on mud to mud and clayey sand bottom.

**Genus *Levisquilla* Manning,1977**

***Levisquilla inermis* (Manning,1965)**

*Squilla inermis* Manning,1965: 255, fig. 2 (type locality: Enoshima, Sagami Bay, Japan, 35°18'N, 139°29'E, 70 m).

*Anchisquilla inermis*. – Blumstein,1974: 115 (Gulf of Tonkin, 20-80 m, muddy and clayey sand).

*Levisquilla inermis*. – Manning,1995: 210 (no material examined).

**Remarks.** - *Levisquilla inermis* was only known from two localities: Japan and off Vietnam, and was collected from 20 to 80 m depth on muddy and clayey sand bottom.



***Levisquilla jurichi* (Makarov,1979)**

*Clorida jurichi* Makarov,1979: 40, fig. 1 (type locality: Tonkin Bay, Vietnam, 21°13.5'N, 108°45.8'E, 18 m).

*Levisquilla jurichi*. – Manning,1995: 210 (no material examined).

**Remarks.** - *Levisquilla jurichi* is only known from its type locality, the Gulf of Tonkin and New Caledonia. The depth range of this species is from 18 m depth. Moosa (1991) specimen was collected from coarse muddy sand bottom (not mentioned in his publication).

***Levisquilla minor* (Jurich,1904) IWP**

*Squilla minor* Jurich,1904: 364, pl.xxv figs. 4, 4a (type locality: off Zanzibar).

*Levisquilla armata* Garcia & Manning,1982: 540, fig. 3 (type locality: South Panglao, Panglao Island, Bohol, Philippines, 09°35'N, 123°48'E, 82-128 m; Cape Calabite, Occidental Mindoro, Philippines, 13°23'N, 120°19'E).

**Remarks.** - *Levisquilla minor* has been reported from two localities: off Zanzibar and the Philippines. The depth range known is from 82 to 128 m.

**Genus *Lophosquilla* Manning,1968**

***Lophosquilla makarovi* Manning,1995**

*Lophosquilla makarovi* Manning,1995: 211, fig. 129 (type locality: Annam: Pointe de Ba Lum and Hong Kong Island, South of Cheung Chau Island, 22°15'N, 114°11'E).

**Remarks.** - *Lophosquilla makarovi* is only known from the South China Sea where it was reported from off Vietnam and off Hong Kong.

**Genus *Miyakea* Manning,1995**

***Miyakea holoschista* (Kemp,1911)**

*Squilla holoschista* Kemp,1911: 97 (type locality: Madras, India, 13°05'N, 80°17'E). — Serène,1939: 349 (Nhatrang Bay, Vietnam, 8-12 m); – 1953: 507 (Indochine); 1954: 6, 8, 54, 60 (Cauda Bay, Vietnam; Baie de Nhatrang, Vietnam 15-25 m).

*Miyakea holoschista*. – Manning,1995: 214, figs. 130c,d, 131a-c (Serène's Material: — Annam: Station Cauda—).

*Oratosquilla holoschista*.– Nguyen & Pham,1995: 133 (Vietnam).

**Remarks.** - *Miyakea holoschista* has been reported from India, Ceylon, Vietnam, and Sunda Strait. This species lives in the shallow subtidal zone.

***Miyakea nepa* (Latreille,1828)**

- Squilla nepa* Latreille,1828: 471 (type locality: China and Pondicherry, India, 11°59'N, 79°50'E). — Miers,1880b: 458 (West Borneo). — Lanchester,1901: 553 (Trengganu and Kota Bharu, Kelantan, Malaysia; Patani, Thailand). — Nobili,1903: 38 (Singapore). — Kemp,1913: 60, pl. 4, fig. 49 (Hongkong; Singapore?). — Roxas & Estampador,1930: 94, 104 (Manila Bay, Philippines). — Tweedie,1934: 37 (Siglap, Singapore). — Gravier,1937: 179, figs. 2,3 (Lien Chien, Baie de Tourane; Chantaboun, Gulf of Siam, Thailand). — Serène,1937: 68 (Annam); — 1939: 349 (Baie de Nhatrang, Vietnam, 8-12 m); 1951a: 138, 140, 141, fig. 1 (Indochine). — Dawydoff,1952: 145 (Sud et Centre Annam, Golfe de Thailand). — Serène,1953: 506, 507 (Nhatrang, Vietnam); — 1954: 5, 6, 8, 10, 60 (Vietnam: Baie de Cauda; Baie de Nhatrang, 15-25 m).
- Squilla holochista*. — Gravier,1937: 182, figs. 4, 5 (Chantaboun, Gulf of Siam, Thailand). [not *Squilla holochista* Kemp,1911].
- Squilla holochista*. — Dawydoff,1952: 145 (Vietnam; Gulf of Thailand). Not *Squilla holochista* Kemp,1911].
- Oratosquilla nepa*. — Blumstein,1974: 119 (Gulf of Tonkin, Vietnam,8-20 m, mud).— Naiyanetr,1980a: 43 (Gulf of Thailand, listed);— 1980b: 54 (Gulf of Thailand, listed). — Moosa,1986: 410 (Southwest Philippines, Musorstom I: St 1, 14°28.0'N, 120°42.0'E - 14°27.0'N, 120°40.8'E, 36-37 m; Fishmarket, Manila, Philippines).
- Miyakea nepa*. — Manning,1995: 216, pl. 37; figs. 130a, 131d, e, 132-134 (Serène's Material: — Annam: Station Cauda—; Annam: Lien Chien, Baie de Tourane, sable vaseux; Thailand: Chantaboun, Gulf of Thailand). — Ah Yong et al.,1999: 47 (Zhujiang, China).

**Remarks.** - *Miyakea nepa* has been reported from East African waters eastward to India, Southeast Asian waters, Japan, Australia and New Caledonia. The species was reported from less saline water by Moosa (1975). The depth range of this species is from shallow intertidal zone to 37 m.

**Genus *Oratosquilla* Manning,1968**

***Oratosquilla kemp* (Schmitt,1931)**

- Chloridella kemp* Schmitt,1931: 135, pl. 17, figs. 6-9, pl. 18, figs. 10, 11 (type locality: Amoy, China, 24°26", 118°07'E).
- Squilla oratoria*. — Gravier,1937: 183 (Lien Chieh, Bay de Tourane; part). — Dawydoff,1952: 145 (Baie de Tourane; part). [not *Squilla oratoria* De Haan,1844].
- Squilla oratoria* var. *perpensa*. — Gravier,1937: 185, fig. 7 (Tourane). — Dawydoff,1952: 145 (Vietnam: Baie d'Along; Lien Chieu, near Tourane). [not *Squilla oratoria* var. *perpensa* Kemp,1911].
- Oratosquilla kemp*. — Blumstein,1974: 119 (Kon-be Island, Gulf of Tonkin). — Manning,1995: 221, figs. 135, 136 h-j (Annam: Baie de Tourane). — Ah Yong et al.,1999: 47 (Zhujiang, China).

**Remarks.** - *Oratosquilla kemp* has been reported from Japan southward to off Vietnam. The depth range is not clear.

***Oratosquilla oratoria* (De Haan,1844)**

- Squilla oratoria* De Haan,1844 (atlas): pl. 51, fig. 2 (type locality: Japan); 1849 (text): 223. Kemp,1913: 66, pl. 5, figs. 54-56 (Hongkong). — Gravier,1937: 183, fig. 6 (Lien-Chien, Baie de Tourane; part). — Dawydoff,1952: 145 (Baie d'Along to Poulo Condore).
- Squilla affinis* Berthold,1845: 46 (type locality: China).— ? Pocock,1893: 474 (Kowloon Bay, Hongkong, Holothuria Bank, South China Sea, 68-93 m).
- Oratosquilla oratoria*. — Manning,1995: 224, figs. 136a ,b, 137 (Annam: Lien-Chien, Baie de Tourane, muddy sand). — Ah Yong et al., 1999: 49 (Zhujiang, China).

**Remarks.** - *Oratosquilla oratoria* has been reported from Southern Russia, Japan, Taiwan, Hong Kong and off Vietnam. This species is sold in the fishmarket in Japan. The species lives in moderate depths down to about 100 m.

**Genus *Oratosquillina* Manning,1995**

***Oratosquillina anomala* (Tweedie,1935)**

*Squilla affinis* var. *intermedia* Nobili,1903: 39 (part; Singapore, 01°17'N, 103°51'E = syntype of *Squilla anomala* var. *intermedia* Nobili,1903. see Manning,1978c).

*Squilla oratoria* var. *perpensa*. – Parisi,1922: 98 (part; specimen from Singapore only; not *Squilla oratoria* var. *perpensa* Kemp,1911. see Manning,1978c).

*Chlodella oratoria* Schmitt,1931: 147 (Tsimei, Fukien Province, China).

*Squilla anomala* Tweedie,1935 : 45 (type locality: Siglap, Singapore; Morib, Selangor).— Moosa,1973b: 147 (Siglap, Singapore, paratypes of *Squilla anomala* Tweedie,1935).

*Oratosquilla anomala*. – Manning,1978c: 7, figs. 1-3 (Siglap, Singapore, 01°19'N, 103°56'E, littoral = holotype of *Squilla anomala* Tweedie).

**Remarks.** - *Oratosquillina anomala* seems to inhabit the littoral zone. Tweedie (1935) purchased specimens from the Siglap Fishmarket, Singapore which were possibly collected from shallow water area around Singapore Island. The species reaches China.

***Oratosquillina fossulata* (Moosa,1986)**

*Oratosquilla fossulata* Moosa,1986: 405, fig. 11 (type locality: Southwest Philippines, Musorstom I: St 16, 13°59.0'N, 120°10.5'E - 13°59.0'N, 120°12.3'E, 164-150 m; Musorstom I: St 26, 14°00.9'N, 120°16.8'E - 13°59.5'N, 120°18.2'E, 189 m; St 58, 13°58.0'N, 120°13.7'E - 13°59.5'N, 120°15.2'E, 143-178 m; Musorstom II: St 6, 13°56.5'N, 120°20.7'E - 13°56.4'N, 120°22.3'E, 136-152 m).

**Remarks.** - *Oratosquillina fossulata* has been reported from the Philippines and New Caledonia in the depths of 13 to 330 m on mud and fine shells, sand to hard bottom with corals.

***Oratosquillina gonypetes* (Kemp,1911)**

*Squilla gonypetes* Kemp,1911: 96 (type locality: off Cheduba Island, Burma, 18°48'N, 93°38'E, 13 m, by lectotype selection by Manning,1978c, see Manning,1995; part).

*Oratosquilla gonypetes*. – Blumstein,1974: 119 (Gulf of Tonkin, 64-92 m, muddy sand with Foraminifera). — Naiyanetr,1980b: 55 (Gulf of Thailand, listed).— Moosa,1986: 408 (Southwest Philippines, Musorstom I: St 45, 13°46.0'N, 120°23.8'E - 13°45.5'N, 120°23.5'E, 100-180 m; St 56, 13°53.1'N, 120°08.9'E - 13°53.3'N, 120°10.7'E, 134-129 m; St 72, 14°11.8'N, 120°28.7'E - 14°13.1'N, 120°28.8'E, 127-122 m). — Nguyen & Pham,1995: 131 (Vietnam).

*Oratosquillina gonypetes*. – Manning,1995: 228 (no material examined).

**Remarks.** - *Oratosquillina gonypetes* has been reported from East African waters to Southeast Asian waters and Japan. The depth range of this species is from 13 or probably shallower to 180 m.

***Oratosquillina gravieri* (Manning,1978)**

- Squilla oratoria*. – Gravier,1937: 183 (part; Hongay, Baie d'Along, Tonkin, Vietnam). — Dawydoff,1952: 145 (Baie d'Along, Vietnam; part). [not *Squilla oratoria* De Haan,1844].
- Squilla affinis*. – Serène,1937: 68 (Annam). —? Dawydoff,1952: 145 (Spratly). [not *Squilla affinis* Berthlod,1845 = *Squilla oratoria* De Haan,1844].
- ?*Squilla oratoria*. – Serène,1939: 349 (Baie de Nhatrang, Vietnam, 8-12 m); – 1953: 507 (Indochine). [not *Squilla oratoria* De Haan,1844].
- Squilla oratoria* var. *inornata*. – Tweedie,1934: 37 (Siglap, Singapore). — Serène,1954: 6, 8, 10 (Vietnam: Baie de Cauda; Baie de Nhatrang, 5-25 m). [not *Squilla inornata* Tate,1883].
- Oratosquilla inornata*. – Blumstein,1974: 119 (Gulf of Tonkin, Vietnam, 2-17 m). [not *Squilla inornata* Tate,1883]. — ? Nguyen & Pham,1995: 136 (Vietnam).
- Oratosquilla gravieri* Manning,1978c: 7, 14, fig. 6 (type locality: Hongay, Baie d'Along [Yung Ha Long], Vietnam, 20°55'N, 107°05'E).— Moosa,1986: 409 (Southwest Philippines, Musorstom I: St 1, 14°28.0'N, 120°42.0'E - 14°27.0'N, 120°40.8'E, 36-37 m; , 14°02.8'N, 120°18.8'E - 14°02.0'N, 120°17.8'E, 187-182 m).
- Oratosquillina gravieri*. – Manning,1995: 228, pl.38; figs. 136c,d, 138, 139 (Serène's Material: — Annam: Station Cauda; Baie de Nhatrang —; Tonkin: Hongay, Baie d'Along).

**Remarks.** - *Oratosquillina gravieri* is only known from the South China Sea where it was reported from off Vietnam and the Philippines in the depths of 2 to 187 m.

***Oratosquillina imperialis* (Manning,1965)**

- Squilla imperialis* Manning,1965: 253, fig. 1, pl. 13, fig. b (type locality: off Hayama, Sagami Bay, Japan).
- Oratosquillina imperialis*. – Moosa,1986: 409 (Southwest Philippines, Musorstom I: St 32, 14°02.2'N, 120°17.7'E - 13°59.4'N, 120°18.0'E, 193-184 m; St 56, 13°53.1'N, 120°08.9'E - 13°53.3'N, 120°10.7'E, 134-129 m; St 72, 14°11.8'N, 120°28.7'E - 14°13.1'N, 120°28.8'E, 127-122 m; Musorstom II: St 64, 14°01.5'N, 120°18.9'E - 14°00.1'N, 120°18.2'E, 195-191 m).

**Remarks.** - *Oratosquillina imperialis* is only known from Japan and the Southeast Philippines. The depth range of this species is 110 to 193 m.

***Oratosquillina interrupta* (Kemp,1911)**

- Squilla interrupta* Kemp,1911: 98 (type locality: Sandheads, Hughly River, India, 21°55'N, 88°05'E); – 1913: 72, pl. 5, figs. 60-62 (Hongkong; Singapore; South Taiwan; Buntal and Burong Island, East Malaysia). — Tweedie,1934: 38 (off Changi and Siglap, Singapore). — Serène,1950b: 342, pl. 1, fig. 1 (Station Cauda); – Serène,1954: 6, 8 (Vietnam: Baie de Cauda; Baie de Nhatrang, 15-25 m).
- Squilla oratoria*. – Gravier,1930b: 525 (part; Cap Saint-Jacques; Indochine). — Dawydoff,1952: 145 (part; ??). [not *Squilla oratoria* De Haan,1844].
- Oratosquilla arabica* Ahmed,1971: 251, fig. 1 (type locality: Gulf off Iraq).
- Oratosquilla interrupta*. – Blumstein,1972: 119 (Gulf of Tonkin, intertidal to 2 m, muddy sand beach). — Naiyanetr,1980a: 43 (Gulf of Thailand, listed);– 1980b: 54 (Gulf of Thailand, listed). — Nguyen & Pham,1995: 135 (Vietnam). — Ahyong et al., 1999: 49 (Zhujiang, China).
- Oratosquillina interrupta*. – Manning,1995: 231, figs. 136e-g, 140, 141 (Serène's Material: — Annam: Station Cauda—; Indochine; Cochinchine: Cap Saint-Jacques).

**Remarks.** - *Oratosquillina interrupta* has been reported from Persian Gulf eastward to Southeast Asian waters, Japan and Australia. The depth range of this species is from 2 to 25 m. Blumstein (1972) reported that her specimen was collected from a muddy sand beach while Kemp (1913) reported specimens from Hughly River.

***Oratosquillina ornata* (Manning,1971)**

*Oratosquilla ornata* Manning,1971: 9, fig. 3 (type locality: off Hong Kong, 21°52'N, 115°51'E, 144 m, sand and green mud bottom).

*Oratosquilla vietnamica* Blumstein,1974: 119, fig. 6 (type locality: Gulf of Tonkin, 18°00'N, 109°32'E, 76 m, mud).

*Oratosquillina ornata*. – Manning,1995: 233 (no material examined).

**Remarks.** - *Oratosquillina ornata* is known only from the South China Sea, off Vietnam and Hong Kong. The depth range of this species is from 76 to 144 m collected from mud or sand and green mud bottom).

***Oratosquillina perpensa* (Kemp,1911)**

*Squilla oratoria* var. *perpensa* Kemp,1911: 98 (part; type locality: Hong Kong, 22°15'N, 114°11'E); – 1913: 70, pl. 5, figs. 57-59 (Hongkong). — ? Gravier,1937: 185, fig. 7 (Tourane). — Dawydoff,1952: 145 (Baie d'Along; Lien Chieu, near Tourane, Vietnam).

*Squilla perpensa*. – Manning,1967a: 105 (Singapore).

*Oratosquilla perpensa*. – Blumstein,1974: 119 (Gulf of Tonkin, 11-72 m, red sand and mud) .— Manning,1978c: 21, fig. 11 (Hongkong, 22°15'N, 114°11'E). — Naiyanetr,1980a: 43 (Gulf of Thailand, listed);– 1980b: 54 (Gulf of Thailand, listed). — Nguyen & Pham,1995: 134 (Vietnam).

*Oratosquillina perpensa*. – Manning,1995: 233 (no material examined).

**Remarks.** - *Oratosquillina perpensa* has been reported from Japan, Hong Kong, Vietnam, Singapore, Indonesia and Burma. The depth reported is from 11 to 72 m on red sand and mud bottom).

***Oratosquillina quinquentata* (Brooks,1886)**

*Squilla quinquentata* Brooks,1886: 26, pl. 1, fig. 3, pl. 2, fig. 6. (type locality: Arafura Sea, 09°59'S, 139°42'E, 51 m, green mud bottom ).— Tweedie,1934: 36 (Siglap, Singapore).

*Oratosquilla quinquentata*. – Manning,1978c: 23, fig. 12 (Gulf of Thailand).— Naiyanetr,1980b: 55 (Gulf of Thailand, listed). — Nguyen & Pham,1995: 132 (Vietnam).

**Remarks.** - *Oratosquilla quinquentata* has been reported from Australia to the Gulf of Thailand and Bombay.

***Oratosquillina solicitans* (Manning,1978)**

*Oratosquilla solicitans* Manning,1978c: 25, figs. 13, 14, 15a-d (type locality: Sandakan, Sabah, Malaysia, 05°50'N, 118°07'E; Singapore, 01°17'N, 103°51'E; Gulf of Thailand; Lem Sing, Mae Nam, Chantaburi River, Gulf of Thailand, 12°29'N, 102°04'E; Mae Nam, Chantaburi River, Tha Chalaep Harbor [Ban Tha Chalaep, 12°30'N, 102°03'E], Gulf of Thailand; ).— Naiyanetr,1980a: 43 (Gulf of Thailand, listed);– 1980b: 54 (Gulf of Thailand, listed).

**Remarks.** - *Oratosquillina solicitans* has been reported from Taiwan, Gulf of Thailand, Singapore, Sandakan, and Indonesia (see Manning,1978c). The depth range of this species is not clearly known but probably it is a shallow water species.

Genus *Squilloides* Manning, 1968

*Squilloides leptosquilla* (Brooks, 1886)

*Squilla leptosquilla* Brooks, 1886: 30, pl. 1, figs. 1-2 (type locality: Celebes Sea, near Philippines, 207 m, green mud bottom).

*Squilloides leptosquilla*. — Moosa, 1986: 410, pl. 1, figs. D, E (Southwest Philippines, Musorstom I: St 7, 14°01.0'N, 120°20.0'E - 14°00.2'N, 120°18.2'E, 200-185 m; St 9, 14°01.8'N, 120°17.6'E - 13°59.5'N, 120°17.6'E, 194-180 m; St 10, 13°59.8'N, 120°18.2'E - 14°00.2'N, 120°20.3'E, 187-205 m; St 11, 13°59.8'N, 120°23.7'E - 14°00.9'N, 120°21.5'E, 230-217 m; St 20, 13°59.2'N, 120°20.3'E - 14°00.0'N, 120°22.3'E, 208-222 m; St 21, 14°01.0'N, 120°22.8'E - 14°02.8'N, 120°24.3'E, 223-174 m; St 24, 14°00.0'N, 120°18.0'E - 14°01.7'N, 120°20.2'E, 189-209 m; St 25, 14°02.7'N, 120°20.3'E - 14°02.0'N, 120°18.0'E, 200-191 m; St 30, 14°01.3'N, 120°18.7'E - 13°59.7'N, 120°16.6'E, 186-177 m; St 31, 14°00.0'N, 120°16.0'E - 14°00.3'N, 120°19.0'E, 187-195 m; St 40, 13°57.4'N, 120°27.8'E - 13°58.3'N, 120°29.4'E, 287-265 m; St 42, 13°5.1'N, 120°28.6'E - 13°54.1'N, 120°29.1'E, 379-407 m; St 43, 13°50.5'N, 120°28.0'E - 13°52.3'N, 120°28.6'E, 484-448 m; St 51, 13°50.8'N, 120°04.2'E - 13°50.8'N, 120°03.2'E, 200-170 m; St 68, 14°00.8'N, 120°16.3'E - 13°58.8'N, 120°19.0'E, 199-183 m; Musorstom II: St 12, 14°01.0'N, 120°19.7'E - 14°02.0'N, 120°21.0'E, 197-210 m; St 13, 14°00.5'N, 120°20.7'E - 13°59.7'N, 120°19.2'E, 200-193 m; St 20, 14°00.9'N, 120°18.1'E - 13°59.5'N, 120°18.2'E, 192-185 m; St 21, 14°00.2'N, 120°17.8'E - 14°02.2'N, 120°17.4'E, 191-192 m; St 64, 14°01.5'N, 120°18.9'E - 14°00.1'N, 120°18.2'E, 195-191 m; St 66, 14°00.6'N, 120°20.3'E - 14°00.1'N, 120°18.7'E, 209-192 m; St 67, 14°00.1'N, 120°18.5'E - 14°01.8'N, 120°19.3'E, 193-199 m; St 68, 14°01.9'N, 120°18.8'E - 14°00.5'N, 120°17.5'E, 199-195 m; St 75, 13°50.5'N, 120°30.3'E - 13°52.8'N, 120°29.8'E, 300-330 m; St 83, 13°55.2'N, 120°30.5'E - 13°56.6'N, 120°30.5'E, 320-318 m).

**Remarks.** - *Squilloides leptosquilla* has been reported from Banda Sea, Indonesia, the Philippines, off Nicobar, and the Andaman Islands. The depth range of this species is from 170 to 754 m. The bottom substrate known is green mud.

Genus *Toshimitsu* Manning, 1995

*Toshimitsu tiwarii* (Blumstein, 1974)

*Lophosquilla tiwarii*. — Naiyanetr, 1980a: 43 (Gulf of Thailand, listed); — 1980b: 55 (Gulf of Thailand, listed). [not Blumstein, 1974: 123, fig. 8 (type locality: Gulf of Tonkin, 20°20'N, 108°25'E, 53 m, muddy and clayey sand). — Moosa, 1986: 404 (Southwest Philippines, Musorstom I: St 1, 14°28.0'N, 120°42.0'E - 14°27.0'N, 120°40.8'E, 36-37 m; , 14°02.8'N, 120°18.8'E - 14°02.0'N, 120°17.8'E, 187-182 m

*Lophosquilla costata* — [not *Squilla costata* De Haan, 1844].

*Toshimitsu tiwarii*. — Manning, 1995: 235, fig. 142 (Serène's Material: — Annam: Nhatrang Bay).

*Carinosquilla costata*. — Nguyen & Pham, 1995: 138 (Vietnam).

**Remarks.** - *Toshimitsu tiwarii* has been reported from Gulf of Tonkin, Vietnam, the Philippines and Burma. The depth range of this species is from 36 to 53 m on muddy on clayey sand bottom.

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