Griffin, D. 1976

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Yours Clare with sincere thanks Dan

Spider crabs of the family Majidae (Crustacea: Brachyura) from the Philippine Islands*

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Introduction

Early collections of spider crabs were made in the Philippine Islands by Cumming and White (Adams & White, 1848) and by major expeditions such as the *Challenger* (Miers, 1886). Very few species, however, had been recorded by the turn of the century.

Leaving San Francisco on 16.x.1907, the U.S. Fisheries Steamer *Albatross* made an extensive series of cruises through the Philippine Islands, leaving Manila on 21.i.1910. During this cruise, numerous shore collections were made and 576 trawl stations in the Philippine Islands and surrounding area were worked from shallow water to depths exceeding 800 fms.

The very large collections were studied by a number of scientists. Mary J. Rathbun, at that time Associate in Zoology at the U.S. National Museum (Smithsonian Institution), published a series of papers describing new species of Brachyura from the Philippines. In her report on the families ' Inachidae ' and Parthenopidae (Rathbun, 1916), a total of 30 new species of spider crabs were described; 28 of these species came from the Philippines; one from the China Sea near Hong Kong—*Leptomithrax sinensis*—and one from the Molucca Sea—*Antilibinia gilloloensis*. The material not representing new species was not, however, dealt with although it was sorted and tentatively identified by Rathbun.

The present account deals with all the spider crabs of the family Majidae collected by the *Albatross* in the Philippine Islands. The collections are very rich, as was indicated by the number of new species described by Rathbun. A total of 19 species not previously known from the Philippines are recorded here, bringing to 45 (two species reduced to synonymy) the number of species added to the spider crab fauna of the Philippines by the *Albatross* collections. Sixty-three spider crabs are dealt with in this report; 10 species of spider crab known from the Philippine Islands are not contained in the collections made by the *Albatross*. (Species only recorded by Adams and White (1848) from ' Eastern Seas ' are not included in this report.)

The *Albatross* stations from which specimens dealt with in this report were collected are listed in table 1 (the data is taken from Department of Commerce and Labour Bureau of Fisheries Document 741, Government Printing Office, Washington, 1910); only locality position, data, depth and character of bottom are given.

In the species accounts the only references given are those to the original description, those dealing with the Philippine Islands and major accounts.

The material examined is summarized into the number of males and females, range of carapace length (including rostrum) in mm; the associated

*Based on the collections made by the U.S. Fisheries Steamer *Albatross* during the years 1907–1910.

Table 1

List of *Albatross* stations from the Philippine Islands from which spider crabs were collected

Station No.	Locality	Latitude (N)	Longitude (E)	Date	Depth (fms)	Bottom
				1908		
5097	Corregidor Lt	14°19′15″	120°33′52″	Jan. 2	30	gy. M., S., Sh
5100	Corregidor Lt	14°17′15″	120°32′40″	Jan. 2	35	gy. S
5104	Sueste Pt. Lt	14°45′48″	120°12′20″	Jan. 8	33	
5117	Sombrero Id	13°52′22″	120°46′22″	Jan. 21	118	
5118	Sombrero Id	13°48′45″	120°41′51″	Jan. 21	159	dk. gn. M
5123	Malabrigo Lt	13°12′45″	121°38′45″	Feb. 2	283	gn. M
5131	Id off Panabutan Pt	—	—	Feb. 6	27	gn. M., co. S
5134	Balukbaluk Id	6°44′45″	121°48′	Feb. 7	25	fne. S.
5136	Jolo Lt	6°04′20″	120°59′20″	Feb. 14	22	S., Sh
5138	Jolo Lt	6°06′	120°58′50″	Feb. 14	19	S., Co
5139	Jolo Lt	6°06′	121°02′30″	Feb. 14	20	co. S
5141	Jolo Lt	6°09′	120°58′	Feb. 15	29	co. S
5142	Jolo Lt	6°06′10″	121°02′40″	Feb .15	21	co. S., Sh
5144	Jolo Lt	6°05′50″	121°02′15″	Feb. 15	19	co. S
5145	Jolo Lt	6°04′30″	120°59′30″	Feb. 15	23	co. S., Sh
5146	Sulade Id	5°46′40″	120°48′50″	Feb. 16	24	co. S., Sh
5147	Sulade Id	5°41′40″	120°47′10″	Feb. 16	21	co. S., Sh
5148	Sirun Id	5°35′40″	120°47′30″	Feb. 16	17	co. S
5149	Sirun Id	5°33′	120°42′10″	Feb. 18	10	Co., Sh
5151	Sirun Id	5°24′40″	120°27′15″	Feb. 18	24	co. S., Sh
5157	Tinakta Id	5°12′30″	119°55′50″	Feb. 21	18	fne. S
5158	Tinakta Id	5°12′	119°54′30″	Feb. 21	12	crs. S., Sh
5159	Tinakta Id	5°11′50″	119°54′	Feb. 21	10	co. S
5160	Tinakta Id	5°12′40″	119°55′10″	Feb. 22	12	S
5162	Tinakta Id	5°10′	119°47′30″	Feb. 22	230	crs. S., brk. Sh
5163	Observation Id	4°59′10″	119°51′	Feb. 24	28	co. S
5164	Observation Id	5°01′40″	119°52′20″	Feb. 24	18	gn. M
5165	Observation Id	4°58′20″	119°50′30″	Feb. 24	9	Co
5169	Sibutu Id	4°32′15″	119°22′45″	Feb. 27	10	co. S
5172	Jolo Lt	6°03′15″	120°35′30″	Mar. 5	318	fne. S., Sh
5173	Jolo Lt	6°02′55″	120°53′	Mar. 5	186	Sh., Co
5174	Jolo Lt	6°03′45″	120°57′	Mar. 5	20	crs. S
5179	Romblon Lt	12°38′15″	122°12′30″	Mar. 25	37	hrd. S
5198	Baliscasag Id	9°40′50″	123°39′45″	Apr. 9	220	gn. M
5201	Limasaua Id	10°10′	125°04′15″	Apr. 10	554	gy. S., M
5202	Limasaua Id	10°12′	125°04′10″	Apr. 10	502	gy. M
5206	Badian Id	11°31′40″	124°42′40	Apr. 14	32	gn. M
5207	Badian Id	11°38′05″	124°40′45″	Apr. 14	35	gn. M., S
5213	Destacado Id	12°15′	123°57′30″	Apr. 20	80	S., M., Sh
5218	Anima Sola Id	13°11′15″	123°02′45″	Apr. 22	20	crs. S
5219	Mompog Id	13°21′	122°18′45″	Apr. 23	530	gn. M
5221	San Andreas Id	13°38′15″	121°48′15″	Apr. 24	193	gn. M
5235	Nagubat Id	9°43′	125°48′15″	May 9	44	sft. M
5249	Lanang Pt	7°06′06″	125°40′08″	May 18	23	Co., S
5251	Linao Pt	7°05′12″	125°39′35″	May 18	20	Co
5252	Linao Pt	7°04′48″	125°39′38″	May 18	28	Co
5253	Linao Pt	7°04′48″	125°39′38″	May 18	28	Co
5254	Linao Pt	7°05′42″	125°39′42″	May 18	21	S., Co
5260	Balanja Pt	12°25′35″	121°31′35″	June 3	234	gn. M., S
5265	Matacot Pt	13°41′15″	120°00′50″	June 6	135	S., M
5268	Matacot Pt	13°42′	120°57′15″	June 8	170	S., P
5269	Matacot Pt	13°39′50″	120°59′30″	June 8	220	fne. S., P
5276	Malavatuan Id	13°49′15″	120°14′45″	July 17	18	Sh., P., S
5279	Malavatuan Id	13°57′30″	120°22′15″	July 17	117	gn. M
5280	Malavatuan Id	13°55′20″	120°25′55″	July 17	193	gy. S
5282	Malavatuan Id	13°53′	120°26′45″	July 18	248	dk. gy. S
5283	Malavatuan Id	13°48′30″	120°28′40″	July 18	280	dk. gy. S
5289	Matacot Pt	13°41′50″	120°58′30″	July 22	172	brk. Sh., S

Table 1.—(*continued*)

Station No.	Locality	Latitude (N)	Longitude (E)	Date	Depth (fms)	Bottom
				1908		
5290	Matacot Pt	13°40′09″	120°59′30″	July 22	214	Lav., G
5293	Escarceo Lt	13°28′15″	121°04′30″	July 23	180	fne. bk. S
5296	Matacot Pt	13°40′09″	120°57′45″	July 24	210	M., S
5297	Matacot Pt	13°41′20″	120°58′	July 24	198	M., S
5302	China Sea, vicinity Hong Kong	21°42′	114°50′	Aug. 9	38	stf. gy. M
5304	Ditto	21°46′	114°47′	Aug. 9	34	bl. M
5305	Ditto	21°54′	114°46′	Oct. 24	37	sft. gy. M
5311	Ditto	21°33′	116°15′	Nov. 4	88	crs. S., Sh
5317	China Sea, vicinity Formosa	21°36′	117°27′	Nov. 5	230	S., sml. Sh
5325	Hermanos Id	18°34′15″	121°51′15″	Nov. 12	224	gn. M
5335	Observatory Id	11°37′15″	119°48′45″	Dec. 18	46	S., M
5348	Pt Tabonan	10°57′45″	118°38′15″	Dec. 27	375	Co., S
				1909		
5353	Cape Melville Lt	7°50′45″	116°43′15″	Jan. 1	148	
5355	Balabac Lt	8°08′10″	117°19′15″	Jan. 5	44	co. S
5358	Sandakan Lt	6°06′40″	118°18′15″	Jan. 7	39	M
5360	Corregidor Lt	14°21′	120°41′	Feb. 7	12	hrd.
5363	C. Santiago Lt	13°47′20″	120°43′30″	Feb. 20	180	
5364	C. Santiago Lt	13°48′30″	120°43′45″	Feb. 20	160	
5366	Escarceo Lt	13°39′	120°58′30″	Feb. 22	240	
5367	Malabrigo Lt	13°34′37″	121°07′30″	Feb. 22	180	S
5369	Tayabas Lt	13°48′	121°43′	Feb 24	106	bk. S
5371	Tayabas Lt	13°49′40″	121°40′15″	Feb. 24	83	gn. M.
5372	Tayabas Lt	13°49′12″	121°36′09″	Feb. 24	150	gn. M
5373	Tayabas Lt	13°40′	121°31′10″	Mar. 2	338	sft. M
5378	Mompog Id	13°17′45″	122°22′	Mar. 4	395	sft. gn. M
5388	Bagatao Id	12°51′30″	123°26′15″	Mar. 11	226	sft. gn. M
5395	Panalangan Pt	11°56′40″	124°14′	Mar. 15	140	hrd. gn. M.
5403	Capitancillo Id	11°10′	124°17′15″	Mar. 16	182	gn. M
5404	Ponson Id	10°50′	124°26′18″	Mar. 17	190	M
5406	Ponson Id	10°49′03″	124°22′30″	Mar. 17	298	M
5407	Ponson Id	10°51′38″	124°20′54″	Mar. 17	350	gn. M
5409	Capitancillo Lt	10°38′	124°13′08″	Mar. 18	189	gn. M
5415	Lauis Pt Lt	10°07′50″	123°57′	Mar. 24	88	fne. S
5418	Lauis Pt Lt	10°08′50″	123°52′30″	Mar. 25	159	gy. M., S
5419	Lauis Pt Lt	9°58′30″	123°46′	Mar. 25	175	gn. M
5423	Cagayan Id	9°38′30″	121°11′	Mar. 31	508	gy. M., co. S
5426	30th of June Id	9°12′	118°28′	Apr. 3	27	fne. gy. S
5432	Corandagos Id	10°37′50″	120°12′	Apr. 8	51	S
5440	S. Fernando Pt Lt	16°33′52″	119°52′54″	May 10	172	fne. gy. S., Glob
5442	S. Fernando Pt Lt	16°30′36″	120°11′06″	May 10	45	co. S
5444	Atalaya Pt	12°43′51″	124°58′50″	June 3	308	gn. M
5445	Atalaya Pt	12°44′42″	124°59′50″	June 3	383	gn. M., S
5453	Legaspi Lt	13°12′	123°49′18″	June 7	146	
5454	Legaspi Lt	13°12′	123°50′30″	June 7	153	
5459	Legaspi Lt	13°10′21″	123°59′54″	June 8	201	
5460	Sialat Pt Lt	13°32′30″	123°58′06″	June 10	565	gy. M
5469	Atulayan Id	13°36′48″	123°38′24″	June 18	500	gn. M
5475	S. Bernardino Lt	12°55′26″	124°22′12″	June 24	195	Sh
5478	Tacbuc Pt	10°46′24″	125°16′30″	July 29	57	Sh
5481	Cabugan Grande Id	10°27′30″	125°17′10″	July 30	61	S., Sh., G
5482	Cabugan Grande Id	10°27′30″	125°18′	July 30	67	brk. Sh, S, gn. M
5483	Cabugan Grande Id	10°27′30″	125°19′15″	July 30	74	S., brk. Sh
5484	Cabugan Grande Id	10°28′	125°20′	July 30	76	S., brk. Sh
5487	San Ricardo Pt	10°02′45″	125°05′33″	July 31	732	gn. M
5492	Diuata Pt	9°12′45″	125°20′	Aug. 1	735	gy. M

(*continued over*)

Table 1.—(*continued*)

Station No.	Locality	Latitude (N)	Longitude (E)	Date	Depth (fms)	Bottom
				1909		
5502	Macabalan Pt Lt	8°37′37″	124°35′	Aug. 4	214	
5503	Macabalan Pt Lt	8°36′26″	124°36′08″	Aug. 4	226	gn. M
5504	Macabalan Pt Lt	8°35′30″	124°36′	Aug. 5	200	gn. M
5506	Macabalan Pt Lt	8°40′	124°31′45″	Aug. 5	262	gn. M
5510	Camp Overton Lt	8°16′	124°03′50″	Aug. 7	423	gy. M., fne. S
5511	Camp Overton Lt	8°15′20″	123°57′	Aug. 7	410	gy. M., S
5512	Camp Overton Lt	8°16′02″	123°58′26″	Aug. 7	445	gy. M., fne. S
5513	Camp Overton Lt	8°16′45″	124°02′48″	Aug. 7	505	gy. M., fne. S
5516	Pt Tagolo Lt	8°46′	123°32′30″	Aug. 9	175	Glob
5517	Pt Tagolo Lt	8°45 30″	123°33′45″	Aug. 9	169	Glob
5518	Pt Tagolo Lt	8°48′	123°31′	Aug. 9	200	gy. M., Glob
5519	Pt Tagolo Lt	8°47′	123°31′15″	Aug. 9	182	Glob., S
5526	Balicasag Id	9°12′45″	123°45′30″	Aug. 11	805	gn. M., Glob
5527	Balicasag Id	9°22′30″	123°42′40″	Aug. 11	392	glob. Oz
5528	Balicasag Id	9°24′45″	123°39′15″	Aug. 11	439	glob. Oz
5536	Apo Id	9°15′45″	123°22′00″	Aug. 19	279	gn. M
5537	Apo Id	9°11′00″	123°23′00″	Aug. 19	254	gn. M
5538	Apo Id	9°08′15″	123°23′20″	Aug. 19	256	gn. M., S
5541	Tagolo Lt	8°49′38″	123°34′30″	Aug. 20	219	fne. S., brk. Sh
5542	Tagolo Lt	8°48′30″	123°35′30″	Aug. 20	200	fne. S., brk. Sh
5543	Tagolo Lt	8°47′15″	123°35′00″	Aug. 20	162	S
5555	Cabalian Pt	5°51′15″	120°58′35″	Sept. 18	34	crs. S
5557	Cabalian Pt	5°51′30″	121°01′00″	Sept. 18	13	S., Co
5558	Cabalian Pt	5°51′33″	121°00′58″	Sept. 18	15	Co
5559	Cabalian Pt	5°51′36″	121°00′45″	Sept. 18	13	Co
5561	Teomabal Id	5°50′45″	121°01′15″	Sept. 18	10	
5566	Dammi Id	5°52′12″	120°31″00″	Sept. 21	244	fne. S., Sh
5587	Sipadan Id	4°10′35″	118°37′12″	Sept. 28	415	gn. M., S., Co
5589	Mabul Id	4°12′10″	118°38′08″	Sept. 29	260	fne. gy. S., gy. M
5617	Ternate Id	00°49′30″	127°25′30″	Nov. 27	131	
5623	Makyan Id	0°16′30″	127°30′00″	Nov. 29	272	fne. S., M
5624	Makyan Id	0°12′15″	127°29′30″	Nov. 29	288	fne. S., M
5625	Kayoa Is	0°07′00″	127°28′00″	Nov. 29	230	gy. M., fne. S
5626	Kayoa Id	0°07′30″	127°29′00″	Nov. 29	265	gy. M., fne S
5640	Labuan Blanda Id	4°27′00″S	122°55′40″	Dec. 13	24	S., brk. Sh
5656	Olang Pt	3°17′40″S	120°36′45″	Dec. 19	484	gy. M

Abbreviations; capitalized for nouns, not for adjectives: bk.—black; bl.—blue; brk.—broken; Co.—Coral; crs.—coarse; dk.—dark; fne.—fine; G.—Gravel; Glob.—Globigerina; gn.—green; gy.—grey; hrd.—hard; Lav.—Lava; M.—Mud; Oz.—Ooze; P.—Pebbles; S.—Sand; sft.—soft; Sh.—Shells; sml.—small.

information is summarized under locality (the stations are grouped by major area and the locality given is the general area as listed in the original station list) and habitat.

Where particular specimens are referred to the catalogue number is generally given after the abbreviation of the Museum; the abbreviations are as follows:

Smithsonian Institution Washington—USNM
British Museum (Natural History) London—BMNH
Universitetets Zoologiske Museum, Copenhagen—ZMC
Rijksmuseum van Natuurlijke Historie, Leiden—RML
Zoological Survey of India, Calcutta—ZSC.

Achaeus akanensis Sakai

Achaeus akanensis Sakai, 1938 : 224–225, text fig. 15.

Material examined: 1 ♂, 3·5 mm, 1 ovig. ♀, 6 mm (USNM 49867, 49869).

Localities: S.W. Luzon-Mindoro: vicinity of Romblon, St. 5179, 1 specimen. Sulu Archipelago: vicinity of Jolo, St. 5141, 1 specimen.

Habitat: 29–37 fms, sand and coral.

Remarks: These two specimens do not differ greatly from the material described by Sakai. In both specimens the ' neck ' is extremely short, the hepatic regions laterally protruding with forwardly directed spines and the rostral spines extremely short and slender.

The female (the larger specimen) possesess a strong spine on each supraorbital eave; in the male these appear to be broken. The distribution of spines on the carapace in both specimens are for the most part as described by Sakai although the protogastric ones are small and there are some low tubercles on the branchial region laterally subdorsally. The third and fourth ambulatory legs are missing from the male; the dactyls of the fourth leg of the female are weakly curved and ventrally spinulous, the more distal spinules being large.

These specimens were identified as *A. lorina* by Rathbun. *A. lorina* has a long postorbital ' neck ' and lacks a supraorbital spine.

Distribution: Philippine Islands; southern Luzon and Sulu Archipelago; previously known only from Japan.

Achaeus brevirostris (Haswell)

Stenorhynchus brevirostris Haswell, 1879 : 408.
Achaeus brevirostris.—Griffin, 1970 : 98–101, figs. 1 (*a*), 2, 15 (*e*), (*f*).

Material examined: 1 ♀, 14 mm (USNM 49824).

Locality: Sulu Archipelago: vicinity of Jolo, St. 5136, 1 specimen.

Habitat: 22 fms, sand and shells.

Remarks: The present specimen was identified by Rathbun as *Achaeus affinis* Miers, shown elsewhere to be a synonym of Haswell's species (Griffin & Yaldwyn, 1965). Specimens of this species from the Gulf of Thailand in the Smithsonian Institution and the University Zoological Museum, Copenhagen, were also identified by Rathbun as *A. affinis*. This adult female has fronds of thecate hydroids attached to the body and legs.

Distribution: Philippine Islands: Sulu Archipelago; previously recorded from the Indo-west Pacific from Zanzibar (east Africa) to northern Australia and Java.

Achaeus lorina (Adams & White)

Inachus lorina Adams & White, 1848 : 3–4, pl. 2, fig. 2.
Achaeus lorina.—Griffin, 1968 a : 79 (in discussion).

Material examined: 1 ♀ (ovig.), 10·5 mm (USNM 49837).

Locality: Palawan: North Balabac Strait, St. 5355, 1 specimen.

Habitat: 44 fms, coral sand.

Remarks: This specimen was fully discussed recently (Griffin, 1968 a). Adams & White recorded the species from ' the shores of Mindanao '.

Distribution: Philippine Islands: Palawan and Mindanao.

Achaeus paradicei Griffin

Achaeus paradicei Griffin, 1970 : 108–109, figs. 3 (*b*), 6, 15 (*b*), (*c*).

Material examined: 1 ♂, 5 mm (USNM 49868).

Locality: Sulu Archipelago: near Basilan I., St. 5134, 1 specimen.

Habitat: 25 fms, fine sand.

Remarks: This single small male agrees very closely with the material from Australia originally described. It differs strongly from *A. lorina* (Adams & White), under which name Rathbun identified it, in tuberculation and spinulation.

Distribution: Sulu Archipelago, Philippine Islands; previously known only from north-eastern Australia.

Achaeus villosus Rathbun

(Fig. 1 (*a*))

Achaeus villosus Rathbun, 1916 : 528.

Material examined: 1 ♂ (holotype), 1 mm (USNM 48207).

Locality: Sulu Archipelago: vicinity of Jolo, St. 5139, 1 specimen.

Habitat: 20 fms, coral sand.

Remarks: This species was described in fair detail by Rathbun (1916) from the only known specimen. Rathbun did not mention the following features: the carapace is densely covered by spinules but lacks enlarged spines, there are several rows of spinules on the posterior part of the supraorbital eave and around the posterolateral margin, the fingers of the chelae gape weakly but are toothed. Both of the fourth ambulatory legs are missing.

Distribution: Known only from the Phillippine Islands.

Antilibinia gilloloensis Rathbun

Antilibinia gilloloensis Rathbun, 1916 : 537–538.

Material examined: None.

Remarks: This species is known only from the holotype (♂, 13 mm, Molucca Sea between Gillolo (most widely known as Halmahera) and Makyan Is, St. 5624, 288 fms on fine sandy mud). Rathbun (1918 : 13–14) compared this species with others of the genus.

Distribution: South east of Philippine Islands—Molucca Sea.

(*a*)

(*b*)

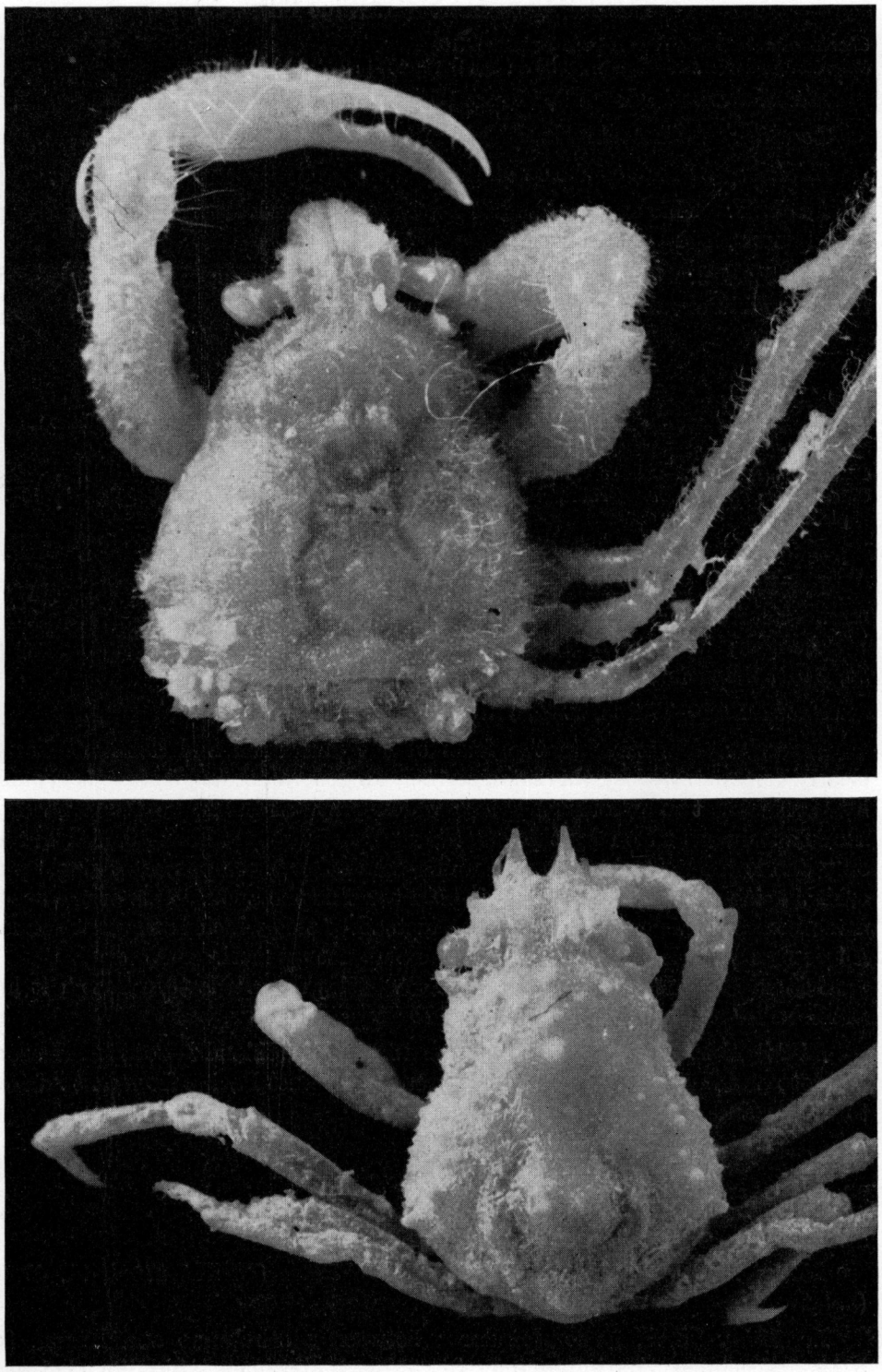

FIG. 1. (*a*) *Achaeus villosus* Rathbun, holotype, male, 1·1 mm, dorsal view. (*b*) *Hyastenus fraterculus* Rathbun, holotype, male, 7·5 mm, dorsal view.

Chlorinoides aculeatus (H. Milne Edwards)

Chorinus aculeata H. Milne Edwards, 1834 : 316.
Chlorinoides aculeatus.—Griffin, 1966 a : 4, 11, 13; 1974 : 7.

Material examined: 1 ♀, 12 mm (USNM 49490).

Locality: Sulu Archipelago: Jolo I. and vicinity, St. 5555, 1 specimen.

Habitat: 34 fms, coarse sand.

Remarks: This species has not been recorded previously from the Philippine Islands.

Distribution: Sulu Archipelago, Philippine Islands; Indo-west Pacific from Bay of Bengal to Japan and northern Australia.

Chlorinoides longispinus (De Haan)

Maja (*Chorinus*) *longispina* De Haan, 1839 : 94–95.
Maja (*Chorinus*) *aculeata*.—De Haan, 1839 : pl. 33, figs. 2, 2 (*a*), 2 (*b*). (Not *Chorinus aculeata* H. Milne Edwards, 1834.)
Chorinus longispina.—Adams & White, 1848 : 12.
Chlorinoides longispinus.—Griffin, 1966 a: 4, 11, 13; Serene, 1969 : 286–288, figs. 3, 13–15, pls. 3A, B.

Material examined: 3 ♂♂, 3 ♀♀, 16–38·5 mm (USNM 49486–89, 49491).

Localities: S.W. Luzon-Mindoro: vicinity of Romblon, St. 5179, 1 specimen. Sulu Archipelago: vicinity of Jolo, St. 5138, 1 specimen; St. 5174, 1 specimen; vicinity of Siasi, St. 5149, 1 specimen; Tawi Tawi Group, St. 5151, 2 specimens.

Habitat: 10–37 fms, sand, coral, shells.

Remarks: Variation in the form of the preorbital and hepatic lobes is clearly demonstrated by this small series. In general, *C. longispinus* is typified by possessing two preorbital spines which may, at most, be fused basally. Three specimens taken by the *Albatross* possess two preorbital spines but in only one is the posterior one recurved. The other three possess a single preorbital spine although in one this is bifid towards the apex. One of the specimens possesses a single hepatic spine instead of two which is the more usual. All possess a single terminal spine on the ambulatory meri.

Adams & White (1848) recorded this species from ' Eastern Seas '; it has not been recorded previously from the Philippine Islands.

Distribution: Northern and southern Philippine Islands—southern Luzon-Mindoro and Sulu Archipelago; widespread Indo-west Pacific from east Africa to Japan and Australia.

Cyrtomaia echinata Rathbun

(Fig. 2.)

Cyrtomaia echinata Rathbun, 1916 : 533–535.

Material examined: 3 ♂♂, 10 ♀♀, 8–66·5 mm (USNM 47302–11, 47305 (holotype)).

Localities: S.W. Luzon-Mindoro: between Marinduque and Luzon, St. 5219, 1 specimen; Marinduque I., St. 5373, 1 specimen. Siquijor: between Siquijor and Bohol Is, St. 5526, 1 specimen. Leyte: Sogod Bay, St. 5201, 2 specimens; between Leyte and Mindanao, St. 5487, 1 specimen (holotype).

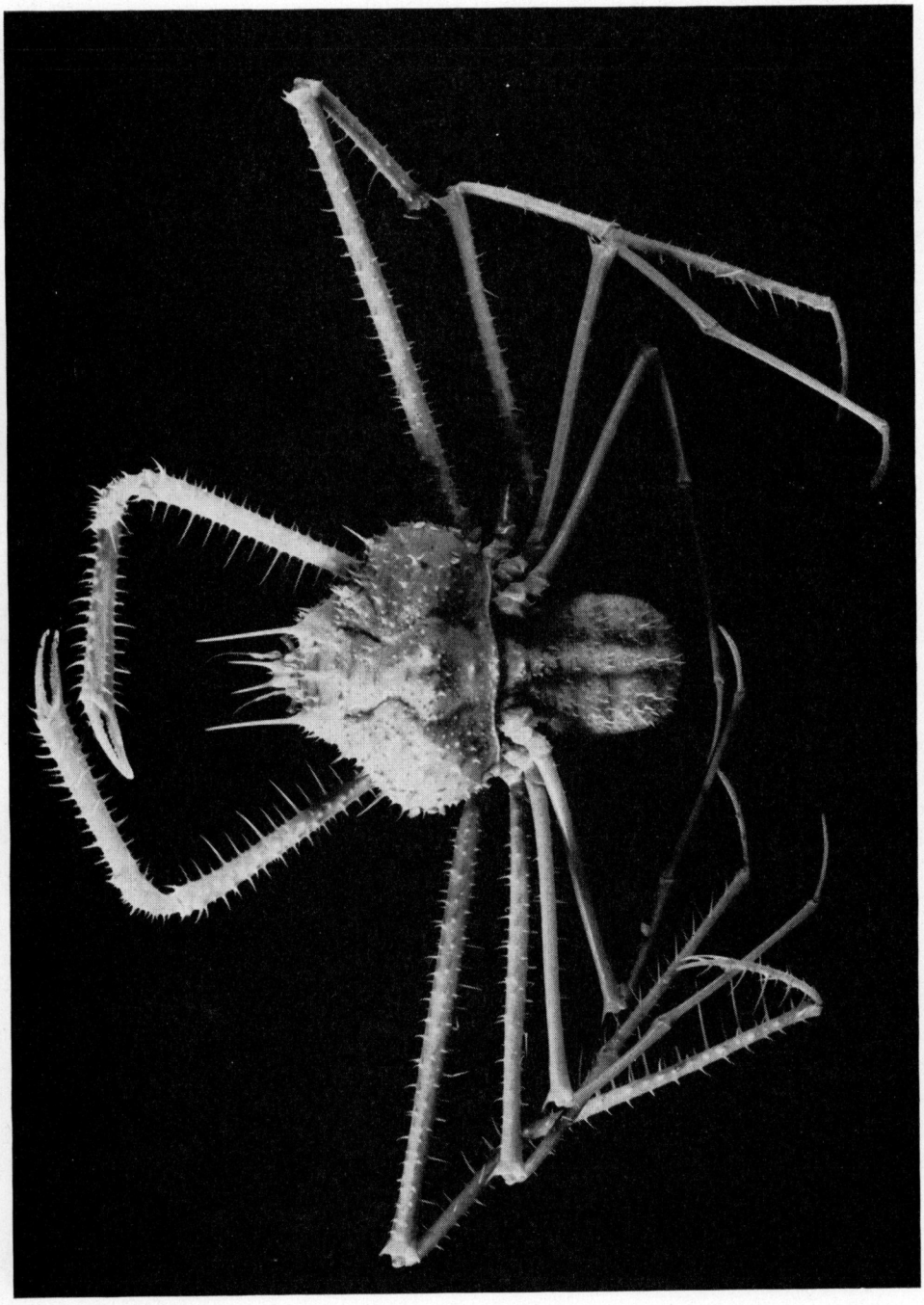

FIG. 2. *Cyrtomaia echinata* Rathbun, holotype, female, 64·3 mm, dorsal view.

N. Mindanao: between Leyte and Mindanao, St. 5492, 2 specimens; N. Mindanao, St. 5510, 1 specimen; St. 5511, 1 specimen; St. 5512, 2 specimens. Sulu Archipelago: Jolo Sea, St. 5423, 1 specimen.

Habitat: 410–805 fms, mud and sand.

Remarks: This species belongs to that group of the genus possessing long slender protogastric spines. The carapace is rather densely covered with small spines. There are seven slender prominent spines in addition to the protogastric ones; these are one mesogastric, two cardiac and four branchial, two on each side above the lateral margin. There are a few spinules on the supraorbital margin.

Distribution: Known only from the Philippine Islands from southern Luzon to the Sulu Archipelago.

Cyrtomaia horrida Rathbun

(Fig. 3)

Cyrtomaia horrida Rathbun, 1916 : 532–533; Sakai, 1938 : 242.
Cyrtomaia horrida pilosa Ihle & Ihle-Landenberg, 1931 : 154–156.

Material examined: 5 ♂♂, 1 ♀, 10·5–60 mm (USNM 47320–23, 47321 (holotype)).

Localities: Negros: between Negros and Siquijor, St. 5536, 2 specimens; St. 5538, 1 specimen (holotype). Molucca Sea: between Gillolo and Kayao Is, St. 5625, 1 specimen; St. 5626, 2 specimens.

Habitat: 230–279 fms, green or grey mud, fine sand, shells.

Remarks: This species, like several others, possesses long protogastric spines but the surface of the carapace is granular, not spinous, there are a few short spines on the branchial region towards the lateral margin and the supraorbital border bears a single spine. The other species with extremely long branchial spines lack spines on the orbital border.

Distribution: Philippine Islands, known only from the region of Negros; Japan.

Cyrtomaia owstoni Terazaki

Cyrtomaia owstoni Terazaki, 1903 : 239, text fig.; Sakai, 1965 a : 71, pl. 31, fig. 2; Takeda & Miyake, 1969 : 500–501, fig. 11 (*d*), (*e*).
Cyrtomaia septemspinosa Rathbun, 1932 : 30.

Material examined: 1 ♂, 16 mm, 1 ♀, 20 mm (USNM 47300–01).

Localities: Palawan: Palawan Passage, St. 5348, 1 specimen. Cebu-Bohol: Jolo Sea, St. 5423, 1 specimen.

Habitat: 375–508 fms, grey mud, coral sand, sand, coral.

Remarks: These two specimens were compared with the holotype of *C. septemspinosa* Rathbun 1932 (USNM 47297—a male, 26 mm, from W. of Koshika Is., Japan) and agree well with that specimen. Sakai (1938 : 240) showed that species to be a synonym of *C. owstoni*.

This species has not previously been recorded from the Philippine Islands.

Distribution: Southern Philippine Islands; southern Japan.

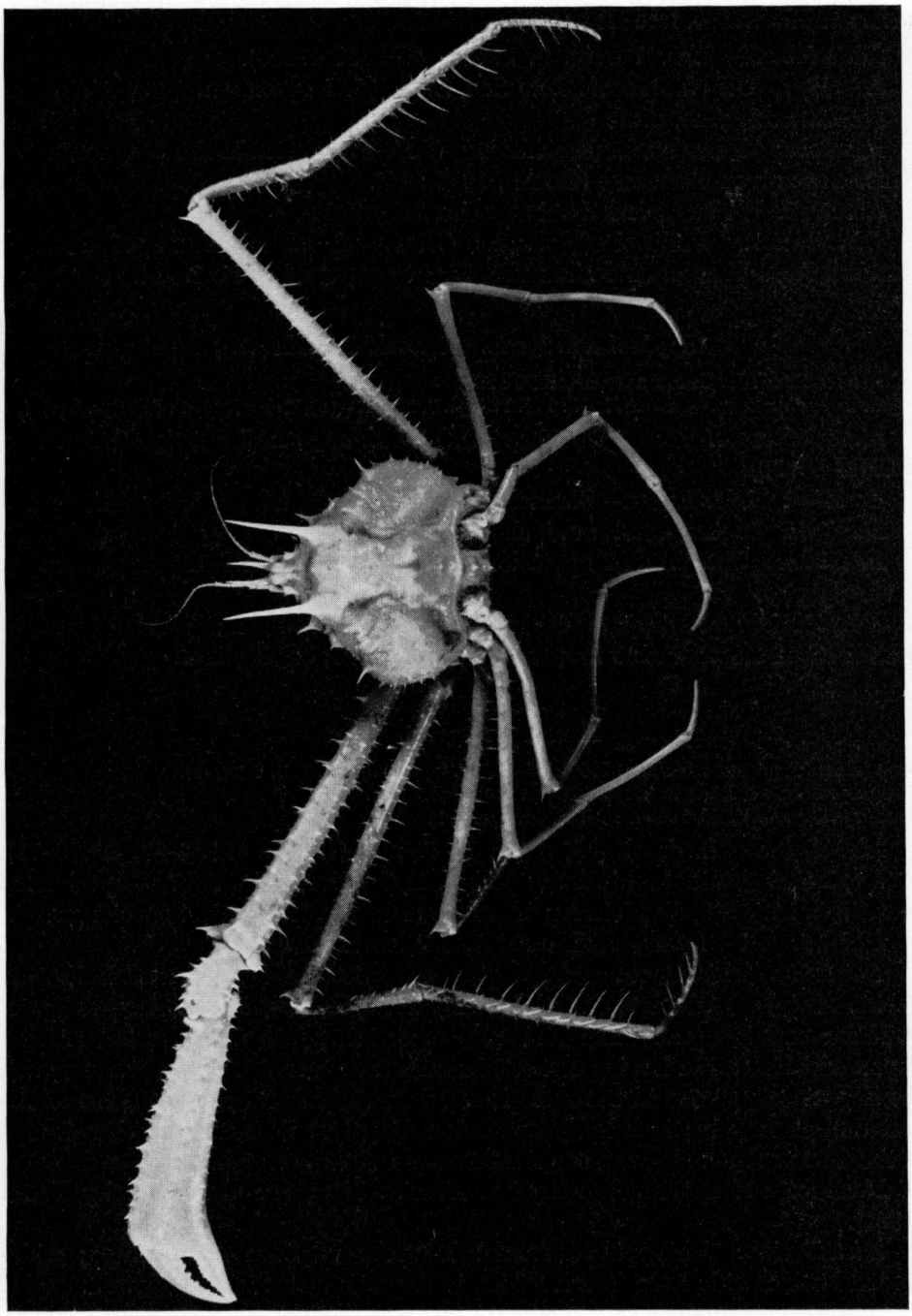

FIG. 3. *Cyrtomaia horrida* Rathbun, holotype, male, 59·0 mm, dorsal view.

Doclea calcitrapa White

Doclea calcitrapa White, 1847 a : 61, 1847 b : 56; Adams & White, 1848 : 7, pl. 1, fig. 2.
Doclea tetraptera Walker, 1890 : 114–115.

Material examined: 1 ovig. ♀, 36 mm (USNM 47368).

Locality: Off N. Borneo: Jolo Sea, St. 5358, 1 specimen.

Habitat: 39 fms, mud.

Remarks: Reasons for considering Walker's species to be a synonym of White's are given elsewhere (Griffin, 1974 : 10).

Adams & White recorded this species from Zebu.

Distribution: Philippine Islands: Cebu and off N. coast of Borneo; northern Indo-Pacific: Andaman Sea, Singapore, Gulf of Thailand.

Gryphachaeus hyalinus (Alcock & Anderson)

Achaeus hyalinus Alcock & Anderson, 1894 : 205.
Gryphachaeus hyalinus.—Alcock, 1895: 177–178, pl. 3, figs. 4, 4 (*a*); Griffin (1974 : 14), figs. 1 (*e*), (*f*).

Material examined: 3 ♀♀ (2 ovig.), 15–18 mm, smaller ovig. ♀ 15·5 mm (USNM 49838).

Locality: S.E. Luzon—Samar: E. of Masbate I., St. 5213, 3 specimens.

Habitat: 80 fms, sand, mud, shells.

Remarks: The present specimens considerably extend the known range of the species.

Distribution: Philippine Islands: E. of Masbate I.; Western Indian Ocean: N. of Mombassa to mouth of Gulf of Aden; off Ceylon.

Huenia proteus De Haan

Maja (*Huenia*) *proteus* De Haan, 1839 : 95–96, fig. G, pl. 23, figs. 4, 5, 6 (*a*), (*b*).
Huenia proteus.—Adams & White, 1848 : 21–23, pl. 4, fig. 5.
Huenia proteus.—Sakai, 1965 a : 75, pl. 34, figs. 1, 2.

Material examined: 5 ♂♂, 3 ♀♀, 10–25 mm (USNM 49566–67, 49570–71).

Localities: Sulu Archipelago: Jolo I. and vicinity, St. 5557, 3 specimens; near Siasi, St. 5149, 1 specimen; Tawi Tawi Group, St. 5159, 4 specimens.

Habitat: 10–21 fms, sand, coral, shells, coral sand.

Remarks: This is among the most characteristic and widespread Indo-west Pacific majids. Adams & White (1848) described three varieties—*elongata*, *heraldica* and *tenuipes*. The *Albatross* material agrees with specimens from Japan and Hawaii in having a short rostrum (less than 1/4 postorbital length), the hepatic expansion in the male is small or absent and the propodus of the first ambulatory leg is broadly expanded distally. In some the dorsal edge of the first propodus bears a small lobe rather than a crest dorsally.

None of the specimens resemble *Huenia brevifrons* described by Ward (1941).

Distribution: Philippine Islands: Mindoro to Sulu Archipelago; widespread Indo-Pacific from South Africa to Japan, Australia and Hawaii.

Hyastenus auctus Rathbun

Hyastenus auctus Rathbun, 1916 : 543; Ward, 1941 : 1; Griffin, 1966 b : 281, pl. 15, fig. (*a*).

Material examined: 5 ♂♂, 6 ♀♀ (2 ovig.), 8–31·5 mm, smaller ovig. ♀ 25 mm (USNM 48214 (holotype), 48262, 49919, 49927, 49934–37, 50694).

Localities: Sulu Archipelago: vicinity of Jolo, St. 5139, 1 specimen; St. 5141, 2 specimens; St. 5145, 1 specimen; St. 5174, 2 specimens; St. 5555, 1 specimen; vicinity of Siasi, St. 5147, 1 specimen; St. 5148, 1 specimen (holotype); Tawi Tawi Group, St. 5151, 1 specimen. Celebes Sea: Buton Strait, St. 5640, 1 specimen.

Habitat: 17–34 fms, coral to coarse sand with shells.

Remarks: This species possesses a single mesogastric tubercle, three branchial tubercles toward the anterolateral margin, the last just forward of the small epibranchial spine, and an intestinal tubercle; these tubercles are generally low or absent. The basal antennal article is broadly expanded laterally in the posterior half, and the anterolateral angle is sometimes produced into a short, uncurved spine. Both the supraorbital and suborbital hiatuses are very narrow. The holotype has been figured recently (Griffin, 1966 b).

Distribution: Sulu Archipelago, Philippine Islands; N.W. Australia.

Hyastenus biformis Rathbun

Hyastenus biformis Rathbun 1916 : 545–546.

Material examined: 8 ♂♂, 6 ♀♀ (4 ovig.), 7·5–12 mm, smallest ovig. ♀ 9 mm (USNM 48217 (holotype), 48258, 49850, 49922, 128936).

Localities: Sulu Archipelago: Tawi Tawi Group, St. 5158, 3 specimens; St. 5159, 5 specimens (including holotype); St. 5160, 6 specimens; vicinity of Sibutu I., St. 5169, 1 specimen.

Habitat: 10–12 fms, sand, coral sand, coarse sand, shells.

Remarks: The rostral spines are very short in this species and the marginal branchial spines are small or absent.

Distribution: Known only from the Sulu Archipelago, Philippine Islands.

Hyastenus convexus Miers

Hyastenus (Chorilia) convexus Miers, 1884 : 196, pl. 18, fig. B, b; De Man, 1902 : 664–666, pl. 22, fig. 32; Balss, 1935 : 123, 124.
Hyastenus tuberculosus Rathbun, 1916 : 543–544.

Material examined: 4 ♂♂, 5 ♀♀ (2 ovig.), 4·5–12·5 mm, smaller ovig. ♀, 11 mm (USNM 48215 (holotype of *H. tuberculosus*), 48228–32, 49900, 129838).

Localities: S. Mindanao: Gulf of Davao, St. 5251, 2 specimens; St. 5253, 1 specimen; Davao Bay, 18.v.1908, 1 specimen. Sulu Archipelago: vicinity of Jolo, St. 5141, 3 specimens (including holotype of *H. tuberculosus*); vicinity of Siasi, St. 5146, 1 specimen; Tawi Tawi Group, St. 5169, 1 specimen.

Habitat: 20–49 fms, coral, coral sand and shells.

Remarks: Balss (1935) has already included Rathbun's *H. tuberculosus* as a synonym of Miers' species. The holotype of '*Hyastenus* (*Chorilia*) *convexus*' (male, 17·8 mm, Port Molle, Queensland, pres. Lords of the Admiralty, BMNH 81.31), differs in only minor features such as relative curvature of the rostral spines. There is very close agreement in details of the orbit, basal antennal article and tuberculation of the carapace.

In all the Philippine series the tubercles of the carapace are very low, the epibranchial tubercle is always blunt and there is sometimes a low protogastric tubercle close to the orbit near the hiatus between the supraorbital eave and the postorbital lobe. The latter possesses a rounded or subacute lobe

on the anterior upper edge and the posterolateral angle of the cave is broadly rounded. The anterolateral angle of the basal antennal article is blunt.

Distribution: Philippine Islands: Gulf of Davao south to Sulu Archipelago; Indo-west Pacific from E. Africa through Malay Archipelago to northern Australia.

Hyastenus fraterculus Rathbun

(Fig. 1 (*b*))

Hyastenus fraterculus Rathbun, 1916 : 546.

Material examined: 1 ♂ (holotype), 7·5 mm (USNM 48291).

Locality: Sulu Archipelago: Tawi Tawi Group, St. 5165, 1 specimen.

Habitat: 9 fms, coral.

Remarks: Rathbun considered this species to be close to *H. biformis*. There are similarities in the orbit above and below, the postorbital lobe having a strong tubercle on the upper anterior edge near the base and the basal antennal article possessing a strong blunt spine on the anterolateral angle and another midway along the lateral margin. However, there are obvious differences, the present species having a much shorter rostrum and a more tuberculate carapace laterally and along the midline.

Distribution: Known only from the Sulu Archipelago, Philippine Islands.

Hyastenus hilgendorfi De Man

Hyastenus hilgendorfi.—Griffin, 1968 b : 103–105, fig. 1, pl. 1; Tirmizi & Serene, 1971 : 25–27 (in discussion), pl. 2, fig. 3.

Material examined: 5 ♂♂, 4 ♀♀ (3 ovig.), 14·5–23 mm, smallest ovig. ♀ 15·5 mm (USNM 48235–6, 49921, 49923).

Localities: S.W. Luzon-Mindoro: Manila Bay, St. 5360, 1 specimen. S. Mindanao: Gulf of Davao, St. 5249, 1 specimen. Sulu Archipelago: vicinity of Jolo, St. 5145, 1 specimen; vicinity of Siasi, St. 5147, 7 specimens.

Habitat: 12–23 fms, coral sand and shells.

Remarks: Although these specimens have the carapace ornamentation typical of this species the anterior corner of the supraorbital eave and the anterolateral lobe of the basal antennal article vary from blunt to subacute.

This species has not been recorded previously from the Philippine Islands.

Distribution: Philippine Islands: Southern Luzon to Sulu Archipelago; Mediterranean Sea and Suez Canal; widespread Indo-west Pacific from E. Africa, Red Sea and Iranian Gulf to Australia and Hawaii.

Hyastenus orbis Rathbun

(Fig. 4 (*a*))

Hyastenus orbis Rathbun, 1916 : 544–545.

Material examined: 3 ♀♀ (2 ovig.), 8·5–10·5 mm, smallest ovig. ♀ 10 mm (USNM 48216 (holotype), 48226–7).

Localities: Sulu Archipelago: Tawi Tawi Group, St. 5165, 1 specimen (holotype); Jolo I. and vicinity, St. 5557, 1 specimen; St. 5558, 1 specimen.

Habitat: 9–15 fms, sand and coral.

Remarks: Rathbun's description is quite adequate. She mentioned a number of tubercles on the midline of the carapace, 3 gastric, 1 cardiac and 1

(*a*)

(*b*)

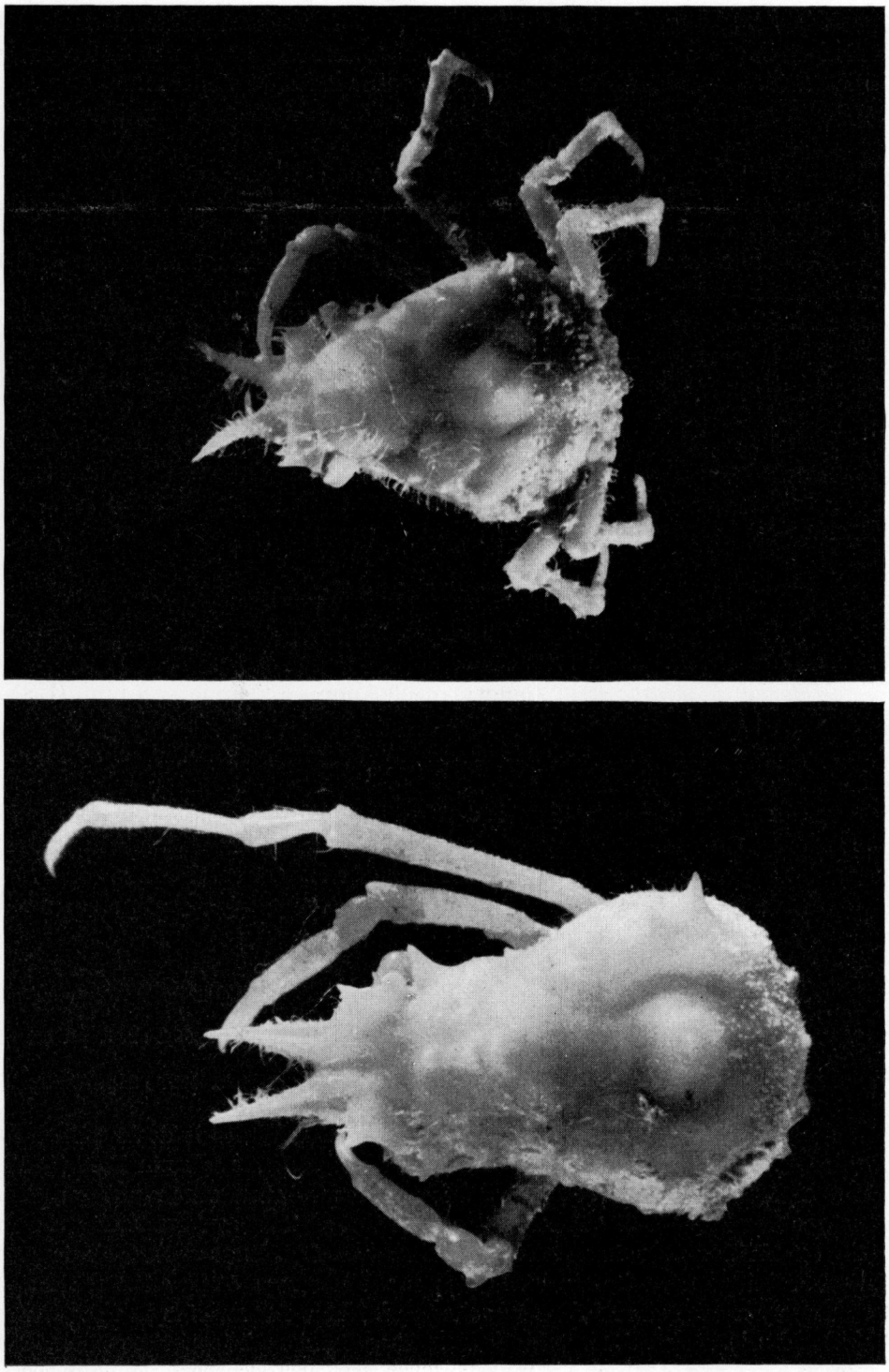

FIG. 4. (*a*) *Hyastenus orbis* Rathbun, holotype, ovigerous female, 10·2 mm, dorsal view.
(*b*) *Hyastenus scrobiculatus* Rathbun, holotype, male, 9·6 mm, dorsal view.

intestinal; these are very low and not obvious. The basal antennal article possesses a strong, forwardly directed spine at the anterolateral angle. In this feature there is a similarity to *H. irami* Laurie which has a smooth carapace and *H. borradailei* (Rathbun) which possesses a longer rostrum.

Distribution: Known only from the Sulu Archipelago, Philippine Islands.

Hyastenus planasius (Adams & White)

Pisa planasia Adams & White, 1848 : 9–10, pl. 2, figs. 4, 5.
Hyastenus planasius.—Chhapgar 1957 : 411–412, pl. 3, figs. (*l*)–(*n*).

Material examined: 10 ♂♂, 7 ♀♀ (4 ovig.), 7·5–15 mm, smallest ovig. ♀ 10 mm (USNM 48240–43, 49898–99).

Localities: Sulu Archipelago: vicinity of Jolo, St. 5141, 1 specimen; St. 5145, 3 specimens; vicinity of Siasi, St. 5146, 1 specimen; St. 5149, 2 specimens; Tawi Tawi Group, St. 5151, 1 specimen; St. 5165, 9 specimens.

Habitat: 9–29 fms, coral sand, shells, sand.

Remarks: This is the first record of this species from the Philippine Islands; Adams & White (1848) described the species from the ' Chinese Seas '.

Distribution: Sulu Archipelago, southern Philippine Islands; Indo-west Pacific—Ceylon, Singapore, Timor, N.E. Australia.

Hyastenus scrobiculatus Rathbun

(Fig. 4 (*b*))

Hyastenus scrobiculatus Rathbun, 1916 : 547.

Material examined: 1 ♂ (holotype), 9·5 mm, 1 ♀ (ovig.), 9 mm (USNM 48218 (holotype), 134419).

Locality: Sulu Archipelago: Tawi Tawi Group, St. 5160, 2 specimens.

Habitat: 12 fms, sand.

Remarks: Rathbun's description is adequate. The ' two triangular, acute teeth ' on the basal antennal article, one on the anterolateral angle and one midway along the lateral edge, are characteristic of this species.

Distribution: Known only from the Sulu Archipelago, Philippine Islands.

Hyastenus sebae White

(Fig. 6 (*a*))

Hyastenus sebae White, 1847 b : 57 (part only—see below); Griffin, 1966 b : 281, pl. 15, figs. (*b*), (*c*) (part only—the female designated as lectotype).
Hyastenus oryx A. Milne Edwards, 1872 : 250, pl. 14, fig. 1; Alcock, 1895 : 214; Buitendijk, 1939 : 244.

Type material: The type material of *H. sebae* White is dealt with below under *H. whitei*. A lectotype was chosen for *Hyastenus sebae* in 1966 (Griffin, 1966 b : 281, pl. 15, figs. (*b*), (*c*)). In fact, five specimens were registered under the one number—43·6. Three males from this series now form the type series of *H. whitei*, one specimen actually belongs to *Hyastenus convexus* Miers and the remaining one, a female, cl. 11 mm, is the lectotype of *H. sebae* White.

The type material of *Hyastenus oryx* A. Milne Edwards is in the Muséum National d'Histoire Naturelle, Paris. It comprises 15 specimens, cl. 8–19 mm, at least five of which are males; all are dry, pasted to pith which in turn is pasted to a large rectangular piece of board. They are clearly labelled ' Types '?, ' auct. det ' and the locality is given as ' Nouvelle Calédonie '.

(*a*)

(*b*)

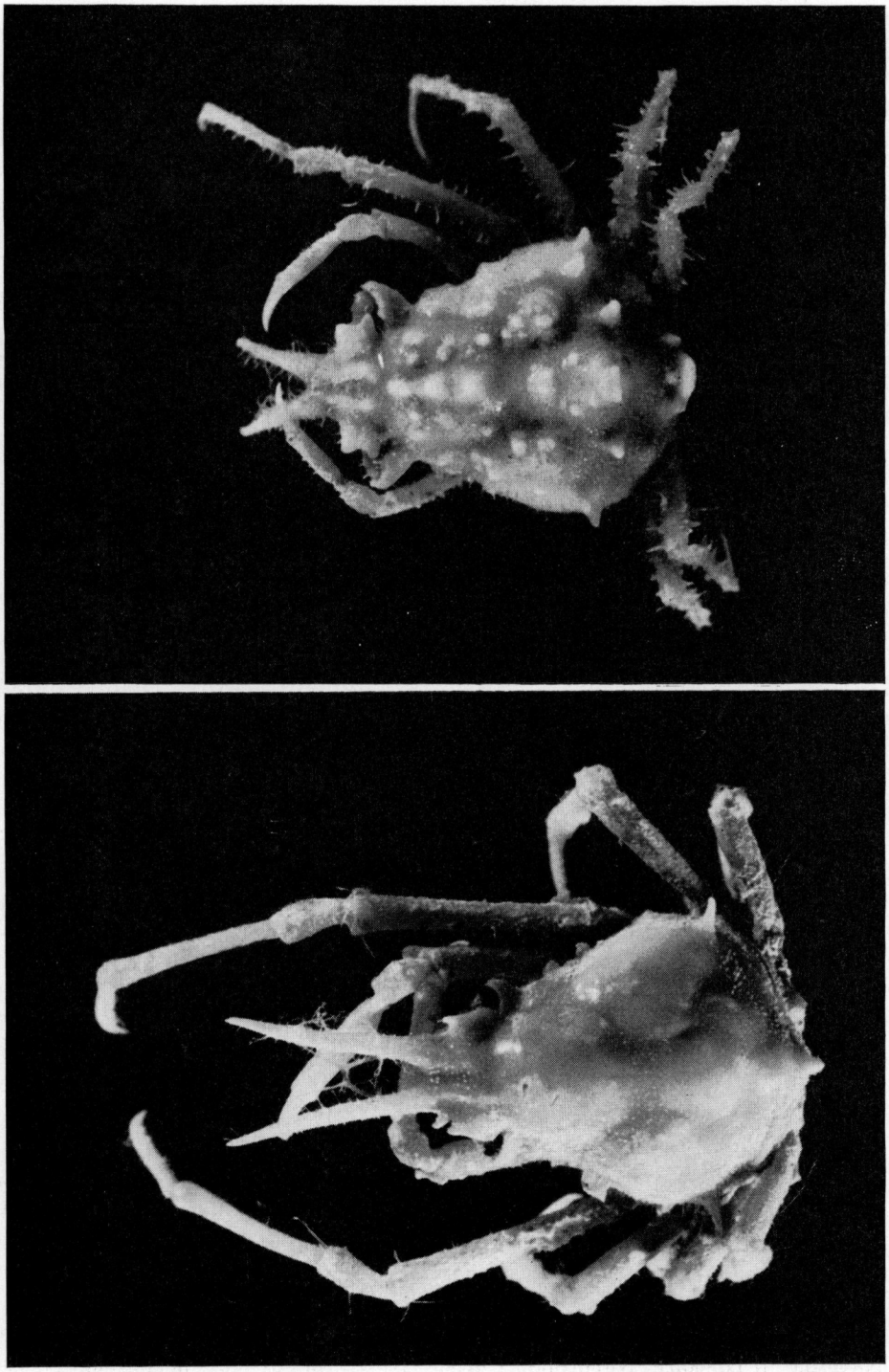

FIG. 5. (*a*) *Hyastenus tinaktensis* Rathbun, holotype, female, 11·5 mm, dorsal view.
(*b*) *Hyastenus trispinosus* Rathbun, holotype, male, 15·9 mm, dorsal view.

Material examined: 16 ♂♂, 8 ♀♀ (3 ovig.), 6–21·5 mm, smallest ovig. ♀ 12 mm (USNM 48239, 49890–95, 49928, 49930–33, 55693).

Localities: S.W. Luzon-Mindoro: Between Burias and Luzon, St. 5218, 1 specimen. S.E. Luzon-Samar: Off W. Samar (Catbalogan-Quinituay Reef beach, 16.iv.1908), 1 specimen. Palawan: Linapacan Strait (Linapacan I., Malcochin Harbour, 18.xii.1908), 1 specimen. Cebu-Bohol: Off N. Cebu (Mactan I., 7.iv.1908), 1 specimen. Sulu Archipelago: Vicinity of Jolo, St. 5145, 3 specimens; Sts. 5557–5559, 4 specimens; Vicinity of Sibutu I., St. 5169, 1 specimen; Tawi Tawi Group. Sts. 5158–5160, 11 specimens; St. 5164, 1 specimen.

Habitat: Intertidal to 23 fms; coral and sand, sometimes with shells, rarely mud.

Remarks: The reason for the change in name of this species is explained below under *H. whitei;* the main differences between this species and *H. whitei* are also set out.

Distribution: Central and southern Philippine Islands; northern Indian Ocean, Indonesia, New Caledonia, northern Australia.

Hyastenus spinosus A. Milne Edwards

Hyastenus spinosus A. Milne Edwards, 1872 : 250; Barnard 1950 : 53–54, fig. 11 (*f*).

Material examined: 13 ♂♂, 14 ♀♀ (3 ovig.), 10·5–54 mm, smallest ovig. ♀ 32·9 mm (USNM 48237–38, 48261, 49842–49, 49887–89, 49896, 49918).

Localities: S.W. Luzon-Mindoro: Manila Bay, St. 5360, 1 specimen. Leyte: vicinity of Surigao Strait, St. 5482, 1 specimen. Mindanao: Sulu Sea, St. 5131, 1 specimen. S. Mindanao: Gulf of Davao, St. 5249, 4 specimens; St. 5252, 2 specimens; St. 5253, 2 specimens; St. 5254, 1 specimen. Sulu Archipelago: vicinity of Jolo, St. 5142, 1 specimen; St. 5144, 1 specimen; St. 5145, 2 specimens; St. 5174, 1 specimen; St. 5555, 1 specimen; vicinity of Siasi, St. 5146, 2 specimens; St. 5147, 4 specimens; Tawi Tawi Group, St. 5163, 1 specimen; St. 5164, 2 specimens.

Habitat: 12–67 fms, coarse sand, broken shells or sometimes sand or coral.

Remarks: This species has not been recorded previously from the Philippine Islands.

Distribution: Central and southern Philippine Islands from Luzon to the Sulu Archipelago; widespread Indo-west Pacific from South Africa and the Red Sea to Australia and Fiji.

Hyastenus tinaktensis Rathbun

(Fig. 5 (*a*))

Hyastenus tinaktensis Rathbun, 1916 : 547–548.

Material examined: 3 ♀♀ (2 ovig.), 11·5–13 mm, smaller ovig. ♀ 11·5 mm (USNM 48221 (holotype), 48259, 128937).

Localities: Sulu Archipelago: Tawi Tawi Group, St. 5159, 2 specimens (including holotype); St. 5160, 1 specimen.

Habitat: 10–12 fms, coral sand, sand.

Remarks: This species is very similar to *H. verrucosipes* (Adams & White) but the carapace is more tuberculate and the cardiac region possesses a flattened lobe instead of a small tubercle.

Distribution: Known only from the Sulu Archipelago, Philippine Islands.

(*a*)

(*b*)

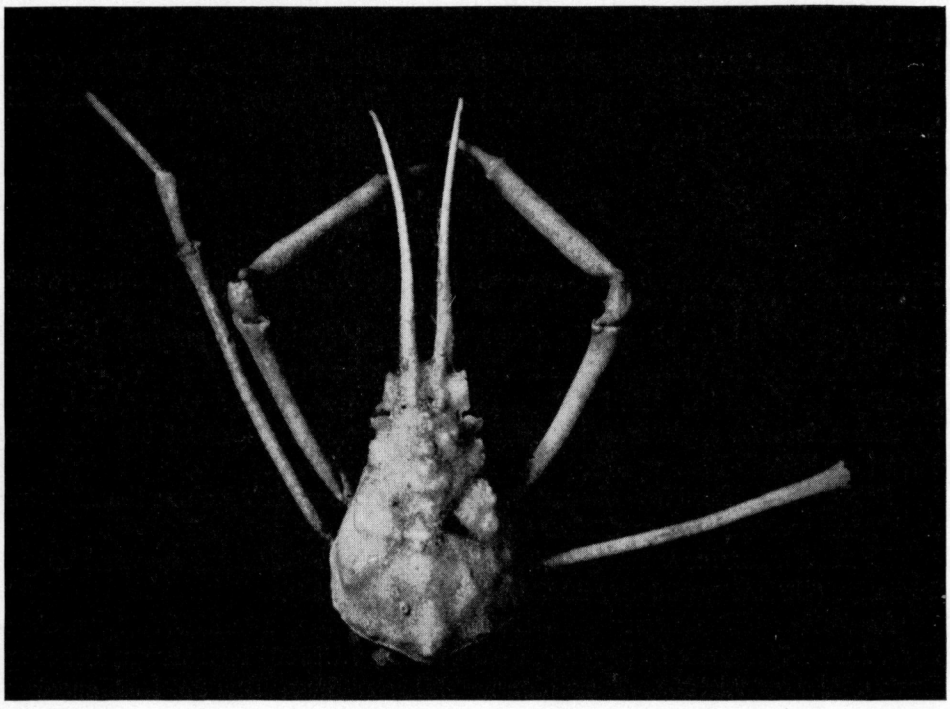

Fig. 6. (*a*) *Hyastenus sebae* White, lectotype, female, ca. 11·5 mm, dorsal view. (*b*) *Hyastenus whitei* sp. nov., holotype, male, 40 mm, dorsal view.

Hyastenus trispinosus Rathbun

(Fig. 5 (*b*))

Hyastenus trispinosus Rathbun, 1916 : 542–543.

Material examined: 1 ♂ (holotype), 16 mm (USNM 48213).

Locality: Sulu Archipelago: Tawi Tawi Group, St. 5159, 1 specimen.

Habitat: 10 fms, coral sand.

Remarks: This species has not been recorded since being taken by the *Albatross*. However, four specimens from Amboina (3 ♂, 1 ♀ (ovig.), 16–20·5 mm *Snellius* Expedition, det. Alida Buitendijk as *H. hilgendorfi*, RML 4306) and one from Singapore (♂, 13 mm coll. Bryant & Palmer, 1909–10, USNM 48265) are almost certainly *H. trispinosus* and extend the known distribution slightly.

Distribution: Sulu Archipelago, Philippine Islands; Singapore and Amboina.

Hyastenus verrucosipes (Adams & White)

Chorinus verrucosipes Adams & White, 1848 : 13, pl. 2, fig. 3.
Hyastenus verrucosipes.—Calman, 1900 : 36–37, pl. 2, figs. 23–24; Griffin, 1966 b : 281 (in key).

Material examined: 1 ♀ (ovig.), postrostral length 11 mm (USNM 48260).

Locality: Sulu Archipelago: Tawi Tawi Group, St. 5165, 1 specimen.

Habitat: 9 fms, coral bottom.

Remarks: The rather broad supraorbital eave with preorbital and antorbital lobes, the subtruncate postorbital lobe and the broad basal antennal article set this species apart from other species of *Hyastenus* except *H. tinaktensis*.

This species was recorded from ' Eastern Seas ' by Adams & White (1848).

Distribution: Philippine Islands; Sulu Archipelago; northern Australia-Torres Strait.

Hyastenus whitei sp. nov.

(Fig. 6 (*b*))

Hyastenus sebae White, 1847 b : 57 (part—see below); Alcock, 1895 : 213–214; Buitendijk, 1939 : 248; Griffin, 1966 b : 281 (part: not pl. 15, figs. (*b*), (*c*)).

Holotype: Male, cl. 40 mm (dry), originally registered as part of BMNH 43·6 and listed in White's manuscript catalogue under the number 851; the locality is given as ' Philippine Islands, purchased of Cumming '. This specimen is now registered as 1972 : 29 in the collections of the Crustacea Division, British Museum (Natural History), London.

Paratypes: The two other males in this series with the same locality data; registered as 1972 : 30 and 1972 : 31.

Material examined: 4 ♂♂, 5 ♀♀ (3 ovig.), 14·5–31 mm, smallest ovig. ♀, 14·5 mm (USNM 48233–34, 49825, 49884–86, 49924).

Localities: N. Luzon: Port San Vicente, seine, 13.xi.1908, 1 specimen. S.W. Luzon-Mindoro: Subig Bay, shore, seine, 7.i.1908, 1 specimen; Olongapo, Luzon, shore, 7.i.1908, 1 specimen; Balayan Bay, St. 5364, 1 specimen. Negros: Guijulugan, shore, 2.iv.1908, 1 specimen. S. Mindanao: Davao, 150 ft, 16.v.1908, 1 specimen. Sulu Archipelago: Tawi Tawi Group, St. 5169, 3 specimens.

Habitat: Intertidal to 10 fms; sand and sometimes gravel.

Remarks: This species has been previously known as *Hyastenus sebae*. It differs from the species up to now known as *H. oryx* A. Milne Edwards, 1872 (see above) in a number of features including particularly the longer rostral spines (almost equal to the postrostral length of the carapace compared to less than 1/2 postrostral carapace length); the anterior part of the outer border of the supraorbital eave is rounded, not produced acutely, the anterolateral corner of the basal antennal article is not produced, and, of the tubercles near the branchial margin, ~~one~~ is enlarged and extends outwards as an (epibranchial) none/ spine.

It appears that the type series of the species described as *H. sebae* by White was split up and rearranged by someone other than White. This probably took place in the latter part of the nineteenth century, possibly by Miers. Four of the original series were relabelled as '*Notolopas sebae*'. In 1965 when Drs. Isabella Gordon and R. W. Ingle sought a specimen of White's series, only one specimen remained labelled as '*Hyastenus sebae*'. This specimen was chosen as the lectotype of *Hyastenus sebae* in 1966 (Griffin, 1966 b : 281, pl. 15, figs. (*b*), (*c*)) with the intention of avoiding further confusion with *H. oryx*. Unfortunately, re-examination of this specimen, an adult female, cl. 11 mm, originally registered as 43 : 6 in the collections of the Crustacea Section, British Museum (Natural History), shows that it is conspecific with what has up till now been understood as *Hyastenus oryx*.

In future, the name *Hyastenus sebae* will have to be applied to the species previously known as *Hyastenus oryx* since White's name predates Milne-Edwards' by 30 years. The name *Hyastenus whitei* will have to be applied to the species previously known as *H. sebae*.

Distribution: Throughout the Philippine Islands; northern Indian Ocean to western Pacific—Philippines and northern Australia.

Leptomithrax sinensis Rathbun

Leptomithrax sinensis Rathbun, 1916 : 555–556.

Material examined: None.

Remarks: Rathbun's original description is fairly detailed. She considered the species close to *L. edwardsii* De Haan, which occurs in Japan.

Rathbun's single dried specimen of this species was taken near Hong Kong, St. 5311, in 88 fms on a bottom of coarse sand and shells.

Distribution: Known only from the East China Sea off Hong Kong.

Maja bisarmata Rathbun

(Fig. 7 (*b*))

Maja bisarmata Rathbun 1916 : 554.

Material examined: 2 ♂♂, 25·5, 44 mm (USNM 48220 (holotype), 49696).

Locality: S.W. Luzon-Mindoro: Verde I. Passage, St. 5367, 1 specimen. N. Mindanao: northern Mindanao and vicinity, St. 5519, 1 specimen (holotype).

Habitat: 180–182 fms, sand.

Distribution: Known only from central Philippine Islands.

Maja gibba Alcock

Maja gibba Alcock, 1895 : 239–240, pl. 4, figs. 5, 5 (*a*); Kemp & Sewell, 1912 : 31.

Material examined: 1 ♂, 56 mm (USNM 48509).

Locality: Negros: Between Negros and Siquijor, St. 5536, 1 specimen.

Habitat: 279 fms, green mud.

Remarks: The single male is more tuberculate than shown in Alcock's illustration but the gastric regions are deeply separated from the branchial regions.

This species has not previously been recorded from the Philippine Islands.

Distribution: Central Philippine Islands; Andaman Sea.

Maja linapacanensis Rathbun

Maja linapacanensis Rathbun, 1916 : 553–554.

Material examined: None.

Remarks: This species was described from a carapace taken north of Palawan in Linapacan Strait, St. 5335, in 46 fms on sandy mud. Rathbun compared this species with *Leptomithrax compressipes* Miers from Canton.

Distribution: Known only from Palawan, Philippine Islands.

Maja suluensis Rathbun

(Fig. 7 (*a*))

Maja suluensis Rathbun, 1916 : 552–553.

Material examined: 1 ♂, 3 ♀♀, 14·5–50·5 mm (USNM 48224 (holotype), 48507, 49697).

Localities: Sulu Archipelago: Tawi Tawi Group, St. 5163, 1 specimen; Jolo I., St. 5557, 2 specimens; St. 5165, 1 specimen (holotype).

Habitat: 9–28 fms, sand, coral and coral sand.

Remarks: This species is distinguished by the very long mid-dorsal and marginal spines.

Distribution: Known only from the Sulu Archipelago, Philippine Islands.

Menaethius monoceros (Latreille)

Pisa monoceros Latreille, 1825 : 139–140.
Menaethius subserratus Adams & White, 1848 : 18–19, pl. 4, figs. 1, 2.
Menaethius monoceros.—Sakai, 1965 a : 74–75, pl. 33, fig. 4.

Material examined: 1 ♀, 8·5 mm (USNM 49563).

Localities: Sulu Archipelago: Marongas Sound, shore station, 10.ii.1908, 1 specimen.

Habitat: Intertidal, from coral head.

Remarks: This is among the most characteristic and widely distributed Indo-west Pacific majids. A list of the synonyms is given by Sakai (1965 a).

Distribution: Sulu Archipelago, Philippine Islands; Indo-west Pacific from East Africa to the Paumotus.

(*a*)

(*b*)

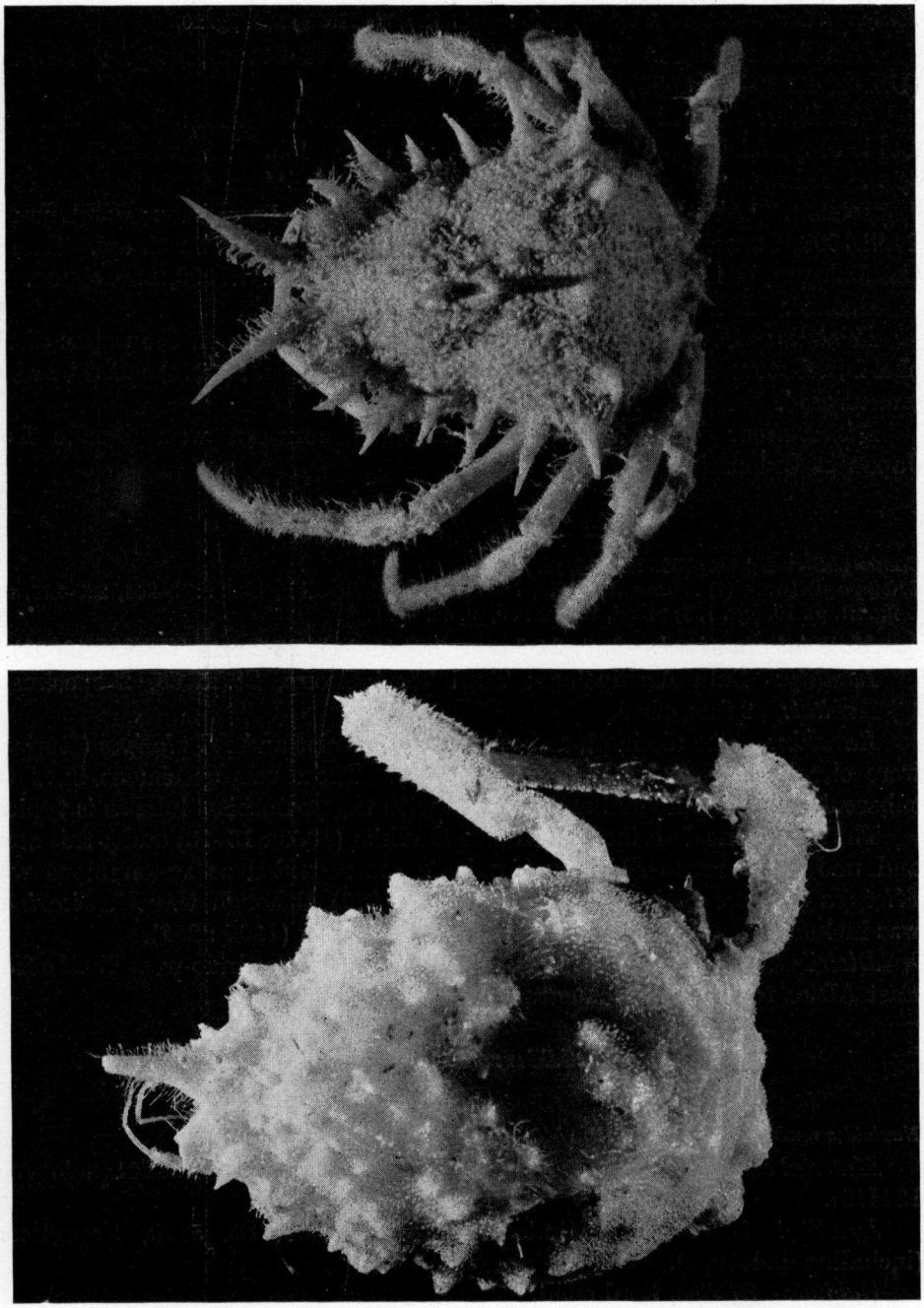

FIG. 7. (*a*) *Maja suluensis* Rathbun, female, 50·3 mm, dorsal view, USNM 49697, Sulu Archipelago, Tawi Tawi group. (*b*) *Maja bisarmata* Rathbun, male, 43·9 mm, dorsal view, USNM 49696, Verde Island Passage.

Micippa cristata (Linnaeus)

Cancer cristata Linnaeus, 1758 : 629.
Micippe cristata.—H. Milne Edwards, 1834 : 330.
Micippa cristata.—Adams & White, 1848 : 16; Buitendijk, 1939 : 252, fig. 20.

Material examined: 7 ♂♂, 7 ♀♀ (1 ovig.), 15–61 mm, ovig. ♀ 24·5 mm (USNM 49680–88, 50547).

Localities: 'Philippines', 1 specimen. S.W. Luzon: Port Binanga, Lubic Bay, 8.i.1908, 3 specimens; Tilig, Lubang Island, 14.vii.1908, 1 specimen. Palawan: Verde del Sur I., 6.iv.1909, 1 specimen; Cuyo Is., 9.iv.1909, 1 specimen. Cebu-Bohol: Cebu market, 29.viii.1909, 1 specimen; Pandanon I., 24.iii.1909, 3 specimens. Leyte: Port Dupon, 17.iii.1909, 1 specimen. Samar: Catabalogan, 16.iv.1908, 1 specimen; Atulayan Bay, 17.vi.1909, 1 specimen.

Habitat: Intertidal, 1 specimen taken from jellyfish.

Remarks: Several of the specimens possess granules on the palms of the chelae, a feature supposedly characterising what Zehntner (1894) called 'variety *granulipes*'.

Distribution: Central Philippine Islands; northern west Pacific from Japan to Indonesia.

Micippa philyra (Herbst)

Cancer philyra Herbst, 1803 : 51–52, pl. 58, fig. 4.
Micippa philyra.—(?) Adams & White, 1848 : 15–16; Buitendijk, 1939 : 253–254, 255–256, text fig. 21, pl. 10, figs. 1, 3; Sakai, 1965 a : 90, pl. 42, fig. 1.

Material examined: 1 ♂, 24·6 mm, 1 ♀ (ovig.), 25·2 mm (USNM 49691).

Locality: Sulu Archipelago: Tawi Tawi Group, St. 5165, 2 specimens.

Habitat: 9 fms, coral.

Remarks: The distinctions between this species and *M. platipes* (Ruppell) were clearly set out by Buitendijk (1939). These two specimens have the tuberculate basal antennal article fused with the postorbital lobe as is typical.

The specimens described by Adams & White (1848 : 15–16) under this name and under the name *Micippa bicarinata* are regarded as synonymous with *Micippa platipes* Ruppell by Buitendijk (1939) although the *M. bicarinata* was included as a synonym of *M. philyra* by Alcock (1895 : 258).

Distribution: Sulu Archipelago, Philippine Islands; Indo-west Pacific from East Africa to Japan and Australia.

Naxioides rombloni Rathbun

(Fig. 8)

Naxioides rombloni Rathbun, 1916 : 549–551.

Material examined: 2 ♂♂, 1 ♀, 1 juv., 7·5–14·5 mm (USNM 48201 (holotype), 134418).

Locality: S.W. Luzon-Mindoro: near Romblon, St. 5179, 4 specimens (including holotype).

Habitat: 37 fms, hard sand.

Remarks: This species is distinguished by the extremely long, weakly outwardly curved rostral spines which exceed the length of the postrostral portion of the carapace.

Distribution: Known only from the Philippine Islands.

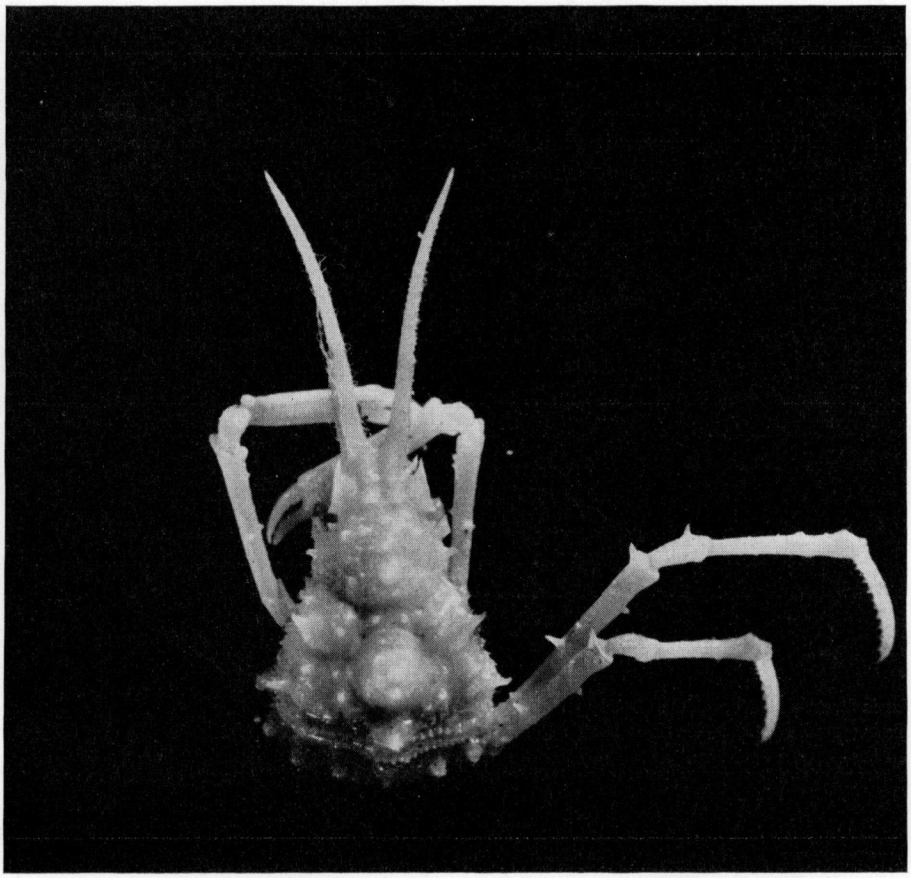

FIG. 8. *Naxioides rombloni* Rathbun, holotype, male, 14·6 mm, dorsal view.

Naxioides spinigera Borradaile

Naxioides spinigera Borradaile, 1903 : 687, pl. 47, figs. 3 (*a*) –(*c*); Rathbun, 1911 : 253, pl. 20, fig. 8.

Material examined: 1 ♂, 6 ♀♀ (3 ovig.), 15–32·5 mm, smallest ovig. ♀ 15 mm (USNM 49507, 49547–48, 49564).

Localities: S.W. Luzon-Mindoro: vicinity of Romblon, St. 5179, 1 specimen. S. Mindanao: Gulf of Davao, St. 5253, 3 specimens. Sulu Archipelago: Tawi Tawi Group, St. 5163, 1 specimen; St. 5164, 2 specimens.

Habitat: 18–73 fms, sand, green mud, and coral.

Remarks: This species differs from *N. taurus* Pocock mainly in having more erect spines on the carapace. In *N. taurus* the antorbital and intercalated spines are slightly more flattened and the intestinal region is rounded posteriorly in the midline with a tubercle or blunt spine close to the edge. These differences may prove to be of little significance. Both species have a longer rostrum —about 1/2 postrostral length—than *N. investigatoris* (Alcock) in which the rostrum is about 1/3 postorbital length.

Distribution: Central and southern Philippine Islands from southern Luzon to the Sulu Archipelago; previously known from the western Indian Ocean, Maldive Islands, Gulf of Aden.

Phalangipus filiformis Rathbun

Phalangipus filiformis Rathbun, 1916 : 551; Griffin, 1973 : 172–175, figs. 1 (*b*), 3 (*e*), (*f*), 6 (*b*), 7 (*b*), 8 (*g*), (*h*).

Material examined: 15 ♂♂, 15 ♀♀ (6 ovig.), 8·5–24·5 mm, smallest ovig. ♀ 15 mm (USNM 48223 (holotype), 49651–57, 49659–62, 49666–69).

Localities: Vicinity of Hong Kong: China Sea, St. 5304, 3 specimens; St. 5305, 1 specimen. W. Luzon-Lingayen Gulf: Manila Bay to Lingayen Gulf, St. 5442, 10 specimens. S.W. Luzon-Mindoro: China Sea, St. 5097, 1 specimen; St. 5100, fragments; St. 5104, 1 specimen; St. 5276, 1 specimen. Palawan: Linapacan Strait, St. 5335, 1 specimen; E. Palawan and vicinity, St. 5426, 1 specimen. Leyte: off W. Samar, St. 5206, 1 specimen; St. 5207, 1 specimen; E. of Leyte, St. 5478, 2 specimens (including holotype). N. Mindanao: E. coast of Mindanao, St. 5235, 1 specimen. W. Mindanao: Sulu Sea, St. 5131, 1 specimen. Sulu Archipelago: Tawi Tawi Group, St. 5164, 1 specimen. Off N. Borneo: Jolo Sea, St. 5358, 3 specimens.

Habitat: 18–57 fms, mud or sand, sometimes with shells or pebbles.

Remarks: This species is fully dealt with elsewhere (Griffin, 1973).

Distribution: Throughout the Philippine Islands; Maldive Islands, South China Sea, Indonesia to northern Australia.

Phalangipus hystrix (Miers)

Naxia hystrix Miers, 1886 : 60–61, pl. 6, fig. 4.
Phalangipus hystrix.—Griffin, 1973 : 175–179, figs. 5 (*a*)–(*e*), 6 (*i*), 7 (*i*).

Material examined: 14 ♂♂, 3♀♀ (1 ovig.), 13–34·5 mm, ovig. ♀ 29·5 mm (USNM 49674–79).

Localities: W. Luzon-Lingayen Gulf: Manila Bay to Lingayen Gulf, St. 5442, 11 specimens. Palawan: E. Palawan and vicinity, St. 5432, 1 specimen. Leyte: between Samar and Leyte, St. 5481, 1 specimen; St. 5482, 1 specimen; St. 5483, 2 specimens; St. 5484, 1 specimen.

Habitat: 45–76 fms, sand, mud, shell, gravel or broken shells.

Remarks: This species is described and illustrated elsewhere (Griffin, 1973). The present series represents the first record from the Philippine Islands.

Distribution: Northern and central Philippine Islands, from Luzon to Palawan and Leyte; widespread Indo-west Pacific from the Red Sea to Japan and north-western Australia.

Phalangipus longipes (Linnaeus)

Cancer longipes Linnaeus, 1758 : 629.
Phalangipus longipes.—Griffin, 1973 : 182–186, figs. 1 (*c*), 3 (*c*), (*d*), 6 (*d*), 7 (*d*), 8 (*a*), (*b*).

Material examined: 4 ♂♂, 7·5–10·5 mm (USNM 49663–65).

Localities: Sulu Archipelago: near Basilan Is, St. 5134, 1 specimen; vicinity of Jolo, St. 5174, 1 specimen. Celebes Sea: Buton Strait, St. 5640, 2 specimens.

Habitat: 20–25 fms, fine to coarse sand and broken shells.

Remarks: This species is dealt with elsewhere (Griffin, 1973). It appears to be an extremely rare species in the Philippine Islands. The species recorded by Adams & White (1848 : 7) as *Egeria longipes* is *Phalangipus retusus.*

Distribution: Philippine Islands: Sulu Archipelago and Celebes Sea; Bay of Bengal to China Sea and through Malay Archipelago to northern Australia.

Phalangipus retusus Rathbun

Egeria longipes.—Adams & White, 1848 : 7. (Not *Cancer longipes* Linnaeus, 1758.)
Phalangipus retusus Rathbun, 1916 : 552; Griffin, 1973 : 190–192.

Material examined: 4 ♂♂, 2 ♀♀ (1 ovig.) 15–26 mm, ovig. ♀, 26 mm (USNM 48222 (holotype), 49670–71, 49673, 134417).

Localities: S.W. Luzon-Mindoro: Manila Bay, St. 5360, 1 specimen; Subig Bay, Olongopas, 7.i.1908, 1 specimen; Cebu Market, 28.iii.1909, 1 specimen. Sulu Archipelago: Tawi Tawi Group, St. 5157, 3 specimens (including holotype).

Habitat: 12–18 fms, beach, fine sand, or hard bottoms.

Remarks: This species is dealt with elsewhere (Griffin, 1973). Rathbun correctly suggested that the specimen referred to by Adams & White (1848 : 7) as *Egeria longipes* is in fact *P. retusus*.

Distribution: Throughout Philippine Islands from S.W. Luzon to the Sulu Archipelago; northern Bay of Bengal and Malay Archipelago.

Platymaia bartschi Rathbun

Platymaia bartschi Rathbun, 1916 : 529–530; Sakai, 1965 b : 39, 43.

Material examined: 18 ♂♂, 15 ♀♀ (1 ovig.), 26 juveniles, 8–75 mm, ovig. ♀, 80 mm (USNM 47319 (holotype), 47325, 47330, 47332–34).

Localities: Vicinity of Hong Kong: vicinity of Formosa, St. 5317, 1 specimen. S.W. Luzon-Mindoro: Balayan Bay-Verde I. Passage, St. 5118, 1 specimen; Verde I. Passage–Batangas Bay, St. 5268, 4 specimens; St. 5366, 1 specimen; vicinity of S. Luzon, St. 5282, 6 specimens; St. 5289, 26 specimens; St. 5290, 2 specimens; St. 5293, 4 specimens; St. 5297, 7 specimens (including holotype); vicinity of Luzon, St. 5296, 2 specimens. S.E. Luzon-Samar: E. coast of Luzon, St. 5459, 1 specimen. Sulu Archipelago: Tawi Tawi Group, St. 5162, 3 specimens; vicinity of Jolo, St. 5172, 1 specimen.

Habitat: 118–318 fms, coarse to fine sand and mud with shells or pebbles.

Remarks: This species is similar to *P. wyvillethomsoni*. In *P. bartschi* the interantennular spine is almost three times as long as the rostral spines (about twice as long in *P. wyvillethomsoni*). The carapace in the adult bears a few low tubercles, the basal antennal article bears three spines close to the lateral edge, the chelae in the males are relatively longer and less inflated and the tip of the first pleopod of the male is straight and not curved beyond the aperture. In juveniles the carapace bears numerous spines including six lateral branchial spines, two on each protogastric, mesogastric, cardiac (submedial), epibranchial and mesobranchial regions.

Distribution: Philippine Islands from north of Luzon to the Sulu Archipelago; Tosa Bay, off Mikawa and Kominato, Japan.

Platymaia fimbriata Rathbun

(Fig. 9)

Platymaia fimbriata Rathbun, 1916 : 531–532; Ihle & Ihle-Landenberg, 1931 : 149–152; Takeda & Miyake, 1969 : 497–498.

Material examined: 2 ♂♂, 6 ♀♀ (1 ovig.), 14·5–54·5 mm, ovig. ♀, 39·5 mm (USNM 47170–76, 47177, holotype).

Localities: S.W. Luzon-Mindoro: Verde I. Passage-Batangas Bay, St. 5269, 1 specimen. S.E. Luzon-Samar: San Bernadino Strait–San Miguel Bay, St. 5445, 1 specimen; St. 5460, 1 specimen; St. 5469, 1 specimen. Palawan: Palawan Passage, St. 5348, 1 specimen. North coast of Borneo: Sibuko Bay, Borneo, St. 5587, 1 specimen (holotype); St. 5589, 1 specimen. Celebes Sea: Gulf of Boni, St. 5656, 1 specimen.

Habitat: 170–608 fms, fine sand, grey or green mud with pebbles.

Remarks: This species is distinguished by the densely spinulous carapace. The aperture of the first pleopod of the male is at the apex.

Distribution: Philippine Islands from S.W. Luzon to Sulu Archipelago; Moluccas, Japan.

Platymaia wyvillethomsoni Miers

Platymaia wyville-thomsoni Miers, 1886 : 13–14, pl. 2, fig. 1; Rathbun, 1918 : 7–9, pls. 3, 4, 14; Ihle & Ihle-Landenberg, 1931 : 148–149.
Platymaia remifera Rathbun, 1916 : 530–531; syn. nov.
Platymaia alcocki.—Takeda & Miyake, 1969 : 498–500, figs. 10, 11 (*a*)–(*c*). (Not *Platymaia alcocki* Rathbun, 1916.)

Material examined: 28 ♂♂, 28 ♀♀ (2 ovig.), 10–48 mm, smaller ovig. ♀ 34 mm (USNM 43159, 47145–58 (holotype of *P. remifera* USNM 47156), 47160–65, 47327–29).

Localities: W. Luzon-Lingayen Gulf: W. coast of Luzon, St. 5440, 2 specimens. S.W. Luzon-Mindoro: Balayan Bay–Verde I. Passage St. 5117, 3 specimens; St. 5118, 2 specimens; between Marinduque and Luzon, St. 5221, 1 specimen; vicinity of Marinduque I., St. 5372, 1 specimen; off E. Mindoro, St. 5265, 2 specimens; Balayan Bay, Luzon, St. 5363, 3 specimens; St. 5364, 3 specimens. S.E. Luzon-Samar: E. coast of Luzon, St. 5453, 2 specimens; St. 5454, 9 specimens. Palawan: Balabac Strait, St. 5353, 1 specimen. Negros: between Negros and Siquijor, St. 5536, 2 specimens; St. 5537, 1 specimen; St. 5538, 1 specimen. Cebu-Bohol: vicinity of W. Bohol, St. 5198, 1 specimen; between Leyte and Cebu, St. 5409, 2 specimens; between Cebu and Bohol, St. 5419, 1 specimen (holotype of *P. remifera*). N. Mindanao: vicinity of N. Mindanao, St. 5502–03, 1 specimen; St. 5541, 4 specimens. Sulu Archipelago: vicinity of Jolo I., St. 5173, 1 specimen; between Jolo and Tawi Tawi, St. 5566, 1 specimen. Molucca Sea: off Maykaa͡n Is., St. 5623, 7 specimens; St. 5624, 3 specimens; between Gillolo and Kayoa Is., St. 5626, 1 specimen.

Habitat: 50–288 fms, green to grey mud, Globigerina ooze or fine sand with shells.

Remarks: Examination of material from Japan, Indonesia, and Australia leads me to consider *P. remifera* a synonym of *P. wyvillethomsoni*. Some of this material comes from other expeditions which will be reported on elsewhere.

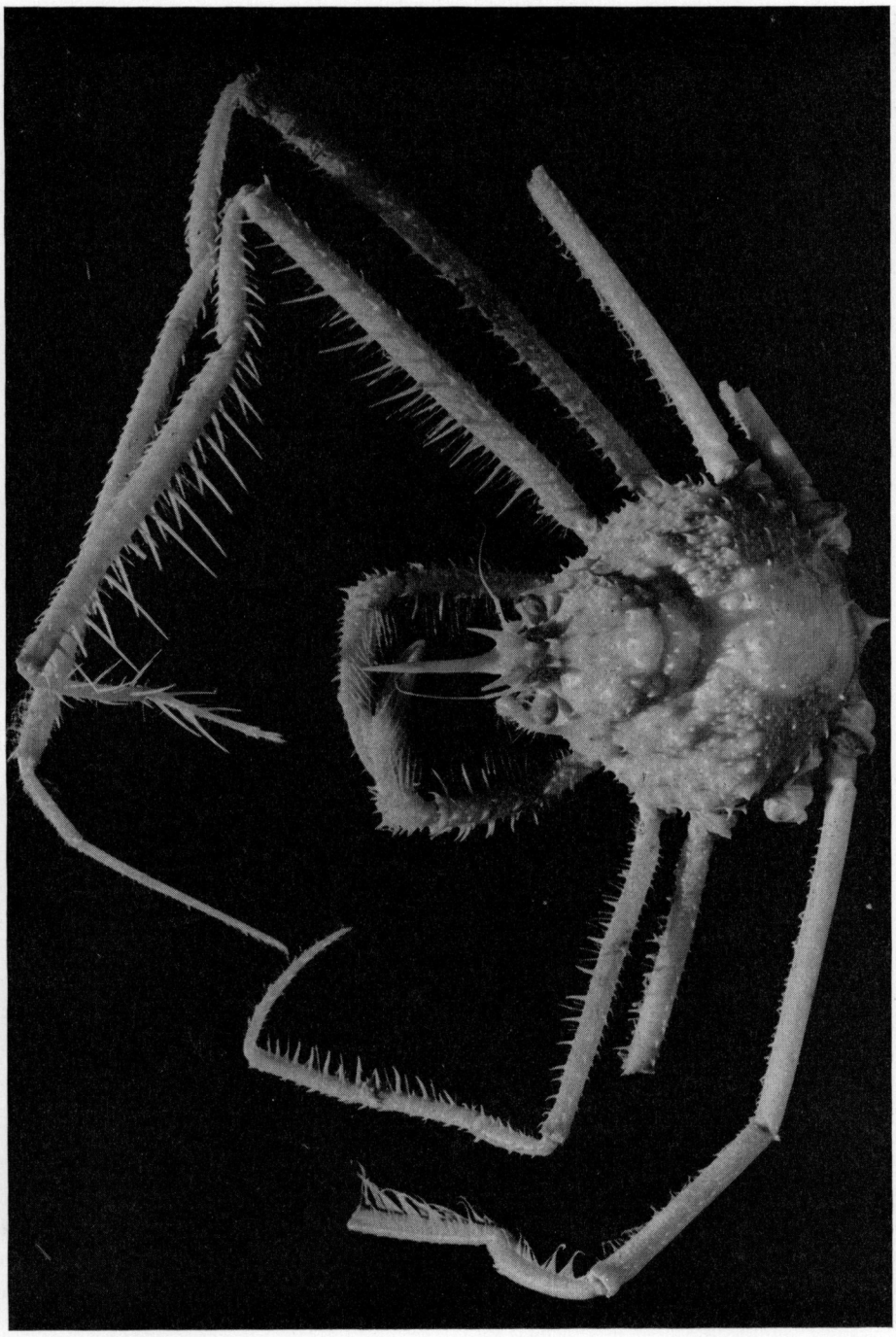

FIG. 9. *Platymaia fimbriata* Rathbun, female, 54·3 mm, dorsal view, USNM 47176, Gulf of Boni.

However, it is clear that there is considerable variation in the tuberculation and spinulation of the carapace in this species. Most particularly this concerns the orbit and the posterior and posterolateral portions of the carapace. Mostly there are a number of tubercles and low spines on the branchial regions, especially laterally and there is sometimes a small tubercle or spine on the supraorbital border. Sometimes the carapace is relatively smooth and the supraorbital border is smooth. There is variation also in the spinulation of the abdomen in both sexes.

There is general agreement between all the specimens, including those collected by the *Albatross* and all identified as *P. remifera* by Rathbun in the following features:

1 mesogastric region with two medial spines or tubercles;

2 cardiac region with a transverse pair of spines or tubercles;

3 lateral branchial margin with five or more short spines or tubercles;

4 basal antennal article with a small spinule towards the distal end;

5 first abdominal segment with three spines in a transverse row;

6 chelae in the male robust, dorsal and ventral surfaces convex and spinous, outer surface with a longitudinal row or group of spines;

7 male pleopod slender and weakly curved outwards distally, the opening oval and subdistal, the tip blunt and curved.

Distribution: Throughout Philippine Islands; West Pacific from South Australia through Indonesia to Japan.

Pleistacantha moseleyi (Miers)

Echinoplax moseleyi Miers, 1886 : 32–33, pl. 4, figs. 2, 2 (*a*)–(*c*).
Pleistacantha moseleyi.—Doflein, 1904 : 76–78, pl. 24, figs. 5, 6, pls. 15, 16; Grindley, 1961 : 127–128, fig. 1; Griffin, 1974 : 27–28.

Material examined: 8 ♂♂, 8 ♀♀ (1 ovig.), 20–97 mm, ovig. ♀ 97 mm (USNM 47125, 47127–30, 47132, 47134–36, 47141–42).

Localities: N. Luzon: off N. Luzon, St. 5325, 3 specimens. S.W. Luzon-Mindanao: between Marinduque and Luzon, St. 5221, 1 specimen; vicinity of S. Luzon, St. 5279, 1 specimen; St. 5280, 1 specimen; between Burias and Luzon, St. 5388, 1 specimen. Leyte: between Leyte and Cebu, St. 5403, 2 specimens; Dupon Bay (Leyte) and vicinity, St. 5406, 2 specimens; St. 5407, 1 specimen. N. Mindanao: vicinity of N. Mindanao, St. 5519, 2 specimens; St. 5541, 1 specimen. Sulu Archipelago: vicinity of Jolo, St. 5172, 1 specimen.

Habitat: 50–350 fms, mud, fine sand and shells.

Remarks: This moderately large series possesses the features typical of this large deepwater species. In only four specimens is the interantennular spine single beyond the distal half; in the rest it is bifid for at least the distal two-thirds. Only a few spines on the mesogastric rgeion are larger than the others.

This species was originally taken in the Philippine Islands by the *Challenger* (Miers, 1886).

Distribution: Throughout the Philippine Islands; South Africa, east Africa, Andaman Sea, Japan.

Pleistacantha oryx Ortmann

Pleistacantha oryx Ortmann, 1893 : 39; Sakai, 1965 a : 69–70, text figs. 10 (*a*), (*b*), (*d*), pl. 30, fig. 2; Griffin, 1974: 28.

Material examined: 6 ♂♂, 2 ♀♀, 18·5–40 mm (USNM 47124, 47126, 47133, 47137, 47139–40).

Localities: S.W. Luzon-Mindoro: Balayan Bay-Verde I. Passage, St. 5118, 1 specimen. S.E. Luzon-Samar: E. coast of Luzon, St. 5453, 1 specimen. Cebu-Bohol: vicinity of W. Bohol, St. 5198, 2 specimens; between Cebu and Bohol, St. 5418, 1 specimen; St. 5419, 1 specimen. Leyte: between Samar and Masbate, St. 5395, 1 specimen. N. Mindanao: vicinity of N. Mindanao, St. 5506, 1 specimen.

Habitat: 118–262 fms, mud or sometimes sand.

Remarks: This species is now considered to be distinct from *P. moseleyi*. The differences between the two are dealt with by Sakai (1965 a) and by Griffin (1974). All of the *Albatross* series have the carapace ornamented with a few large spines as well as many small spines and the interantennular spine is bifid apically only. The rostral spines in all are straight and contiguous in their proximal half and outwardly curved and upturned distally.

This species has not been recorded previously from the Philippine Islands.

Distribution: Central Philippine Islands from S.W. Luzon to N. Mindanao; off N.E. Africa, Andaman Sea, East China Sea, Japan.

Pleistacantha sanctijohannis Miers

Pleistacantha sancti-johannis Miers, 1879 : 24–25, pl. 1, fig. 1; Sakai, 1965 a : 70–71, pl. 30, fig. 3.

Material examined: 2 ♂♂, 2 ♀♀ (1 ovig.), 2 juveniles, 19–23 mm, ovig. ♀ 21·5 mm (USNM 47131, 47168).

Localities: S.W. Luzon-Mindoro: Vicinity of Marinduque I., St. 5369, 4 specimens; St. 5371, 2 specimens.

Habitat: 83–106 fms, black sand, green mud.

Remarks: This species is readily distinguished from its congeners by the rostral spines which are contiguous until near the tips which diverge. In the present series the rostral spines diverge 1/2 to 1/3 of their length from the tip and are generally upcurved apically. The arrangement of spines on the carapace and around the orbit is as previously described and illustrated. The spines on the ambulatory meri are longer than those on the propodi.

This species has not previously been recorded from the Philippine Islands.

Distribution: Philippine Islands: Mindoro region; Japan.

Prosphorachaeus suluensis (Rathbun)

Achaeopsis suluensis Rathbun, 1916 : 535.
Prosphorachaeus suluensis.—Takeda & Miyake, 1969 : 490–491, fig. 8.

Material examined: 1 ♀ (holotype), 4·5 mm (USNM 48203).

Localities: Sulu Archipelago: Tawi Tawi Group, St. 5159, 1 specimen.

Habitat: 10 fms, coral sand.

Remarks: Takeda & Miyake removed this species from *Achaeus* where it had been placed by Sakai (1938, 1965 a) because of the very unusual form of the first pleopod of the male.

Distribution: Philippine Islands: Sulu Archipelago; Japan.

Pugettia leytensis Rathbun

Pugettia leytensis Rathbun, 1916 : 539.

Material examined: None.

Remarks: This species is known only from the holotype (ovig. ♀, 24 mm, USNM 48209) taken between Leyte and Cebu, St. 5403, in 182 fms on green mud.

Distribution: Known only from Leyte, central Philippine Islands.

Pugettia mindanaoensis Rathbun

Pugettia mindanaoensis Rathbun, 1916 : 538–539.

Material examined: 1 ♀, 9 mm (USNM 48244).

Localities: Sulu Archipelago: Vicinity of Jolo, St. 5172, 1 specimen.

Habitat: 318 fms, sand.

Remarks: The small female from Jolo I. differs little from the holotype (♀, 15 mm, off N. Mindanao, St. 5543, 162 fms, sand, USNM 48208).

Distribution: Southern Philippine Islands.

Rochinia pulchra (Miers)

Anamathia pulchra Miers, 1886 : 26–27, pl. 4, figs. 1 (*a*)–(*c*).
Scyramathia pulchra.—Alcock, 1895 : 202–203; Rathbun, 1911 : 250.
Rochinia pulchra.—Sakai, 1938 : 278–279, text fig. 35, pl. 37, fig. 4.

Material examined: 7 ♂♂, 4 ♀♀ (2 ovig.), 13–39 mm, smaller ovig. ♀ 28·5 mm (USNM 49492–49500).

Localities: S.W. Luzon-Mindoro: E. coast of Mindoro, St. 5123, 2 specimens; S.E. Mindoro, St. 5260, 1 specimen; vicinity of S. Luzon, St. 5282, 1 specimen; St. 5283, 1 specimen; Marinduque I. and vicinity, St. 5378, 1 specimen. S.E. Luzon-Samar: N. Samar, St. 5444, 1 specimen. Siquijor: N. Mindanao and vicinity, St. 5527, 2 specimens; St. 5528, 1 specimen. N. Mindanao: N. Mindanao and vicinity, St. 5513, 1 specimen.

Habitat: 234–505 fms, soft muds or occasionally ooze or sand.

Remarks: This species typically possesses 18 spines on the carapace including two mesogastrics, two pairs of protogastrics, one cardiac, one on the posterior intestinal margin, one on the hepatic margin, two on each branchial region anteriorly and one on each branchial margin at the widest part of the carapace.

In Japanese specimens the dorsal and subdorsal spines are extremely long (see Sakai, 1938 : text fig. 35) and erect and give the animal a thorny appearance. In many of the specimens in the *Albatross* series, however, these spines are quite short.

This species was originally taken in the Philippine Islands by the *Challenger* Expedition (Miers, 1886).

Distribution: Central Philippine Islands: Mindoro and southern Luzon to northern Mindanao; East Africa, Andaman Sea, Japan.

Rochinia riversandersoni (Alcock)

Scyramathia rivers-andersoni Alcock, 1895 : 203–204; Alcock & Anderson, 1896 : pl. 22, figs. 2, 4, 4 (*a*).
Scyramathia Rivers-Andersoni.—Doflein, 1904 : 84–85, pl. 27, figs. 8–11.

Material examined: 1 ♂, 2 ♀♀, 17·5–36·5 mm (USNM 49501–03).

Localities: Palawan: Palawan Passage, St. 5348, 1 specimen. Cebu-Bohol: Jolo Sea, St. 5423, 1 specimen. Leyte: Sogod Bay, S. Leyte I., St. 5201, 1 specimen.

Habitat: 375–554 fms, coral, sand and mud.

Remarks: The very long slender rostral and epibranchial spines immediately distinguish this species from its congeners. Unlike *R. pulchra* the other spines on the carapace are short.

The present series have been compared with four syntypes (2 ♀♀, 15, 17 mm, BMNH Reg. No. 96.5.14.13–14; 2 ♂♂, 1 ♀, 17·5–21·5 mm, ZSC 9901–3/9) and agree closely with them.

Distribution: Philippine Islands: Palawan and Leyte; previously known from off East Africa and southern Indian coasts.

Sargassocarcinus sublimis (Rathbun)

Peltinia sublimis Rathbun, 1916 : 536.
Sargassocarcinus sublimis.—Sakai, 1965 a : 76, text fig. 11 (*c*).

Material examined: 1 ♂ (holotype), 12 mm (USNM 48247).

Locality: Sulu Archipelago: Tawi Tawi Group, St. 5136, 1 specimen.

Habitat: 22 fms, sand and shells.

Remarks: This species is known only from the holotype which was figured by Sakai (1965 a). The other species of the genus, *S. cristatus* (Balss), occurs in Japan and according to Sakai, also in Australia (recorded as *S. foliatus* by Ward in 1933). The two differ in the acuteness of the hepatic and branchial expansions. The presence of a species in both Australia and Japan distinct from a congeneric species in the Philippine Islands is extremely unusual.

Distribution: Known only from the Sulu Archipelago, Philippine Islands.

Sphenocarcinus auritus Rathbun

(Fig. 10 (*b*))

Sphenocarcinus auritus Rathbun, 1916 : 540–541.

Material examined: 1 ovig. ♀ (holotype), 17·1 mm (USNM 48211).

Locality: S.E. Luzon-Samar: E. coast of Luzon, St. 5444, 1 specimen.

Habitat: 308 fms, green mud.

Remarks: This species is distinguished by the short flattened, apically rounded rostrum, the two lobes being separated by a narrow slit; the cardiac plate is in the shape of an upside down anchor.

Distribution: Known only from the Philippine Islands.

Sphenocarcinus luzonicus Rathbun

(Fig. 11 (*a*))

Sphenocarcinus luzonicus Rathbun, 1916 : 539–540.

Material examined: 2 ♂♂, 27·5, 30 mm (USNM 48210 (holotype), 49520).

Localities: S.E. Luzon-Samar: E. coast of Luzon, St. 5475, 1 specimen (holotype). Sulu Archipelago: Jolo I. and vicinity, St. 5561, 1 specimen.

(*a*)

(*b*)

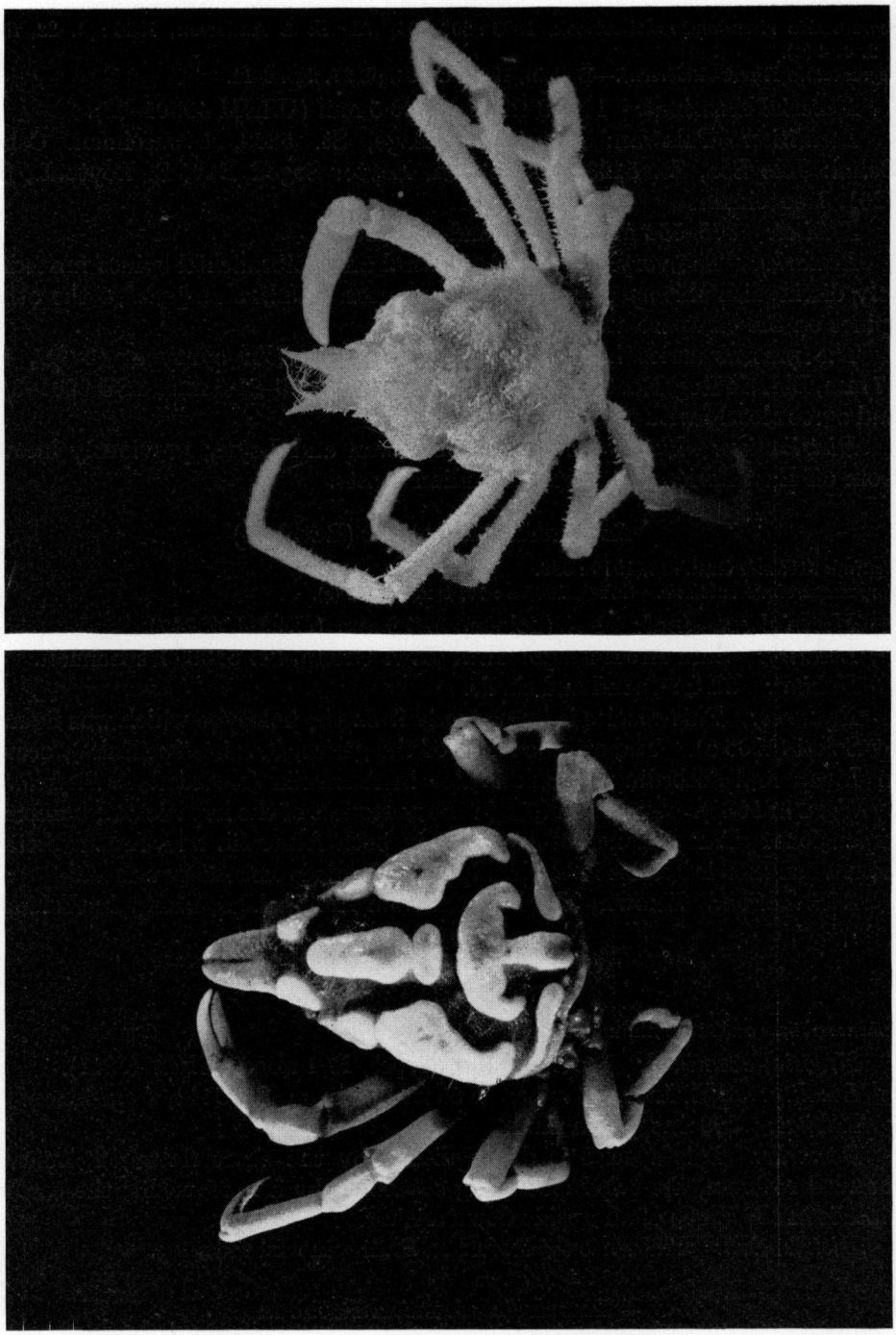

FIG. 10. (*a*) *Sphenocarcinus nodosus* Rathbun, male, 18·9 mm, dorsal view, USNM 49509, Northern Mindanao and vicinity. (*b*) *Sphenocarcinus auritus* Rathbun, holotype, ovigerous female, 17·1 mm, dorsal view.

Habitat: 195 fms, shells.

Remarks: In this species the rostral spines are long and straight and the plates on the carapace are large, the epibranchial ones being subtriangular and extending outwards beyond the margin of the carapace.

Distribution: Confined to the Philippine Islands.

Sphenocarcinus nodosus Rathbun
(Fig. 10 (a))

Sphenocarcinus nodosus Rathbun, 1916 : 541–542.

Material examined: 5 ♂♂, 4 ♀♀ (2 ovig.), 18·5–26 mm, smaller ovig. ♀, 20 mm (USNM 48212 (holotype), 49508–12, 49514).

Localities: Negros: Between Negros and Siquijor, St. 5536, 1 specimen (holotype). Leyte: Sogod Bay, S. Leyte I., St. 5202, 1 specimen. N. Mindanao: N. Mindanao and vicinity, St. 5504, 1 specimen; St. 5516, 2 specimens; St. 5518, 2 specimens; St. 5519, 1 specimen; St. 5542, 1 specimen.

Habitat: 175–502 fms, mud, sometimes with globigerina ooze, infrequently sand and broken shells.

Remarks: In all specimens in the series the hepatic and two marginal branchial plates are very large. The dorsal tubercles are generally small and situated on prominent elevations covered by hair.

Four specimens (USNM 120726) from W. Ashizuri Peninsula, Japan taken in 300 m in March 1966 extend the known range of this species.

Distribution: Central Philippine Islands: northern Mindanao; Japan.

Sphenocarcinus sphenocarcinoides (Rathbun), **comb. nov.**
(Fig. 11 (*b*))

Chorilia sphenocarcinoides Rathbun, 1916 : 548–549.

Material examined: 2 ♂♂, 1 ♀, 15·5–20·5 mm (USNM 48202 (holotype), 49826, 49861).

Localities: Negros: between Negros and Siquijor, St. 5536, 1 specimen (holotype). N. Mindanao: N. Mindanao and vicinity, St. 5517, 1 specimen; St. 5518, 1 specimen.

Habitat: 169–279 fms, grey to green mud, Globigerina.

Remarks: This species possesses flattened plates on the posterior part of the carapace as is typical of species of *Sphenocarcinus* but not of species of *Chorilia*. Further, the first pleopod of the male is of the ' pisoidiform ' type with a truncate tip and simple terminal aperture as opposed to the ' scyriform ' kind found in *Chorilia longipes* Dana (see Garth, 1958 : 263, pl. P, figs. 4, 5). Other known species of *Sphenocarcinus* have a pisoidiform pleopod and I therefore have no hesitation in transferring Rathbun's species to *Sphenocarcinus*. *S. sphenocarcinoides* is most similar to *S. velutinus* Miers, also known from the Philippine Islands.

Distribution: Known only from the central part of the Philippine Islands.

(*a*)

(*b*)

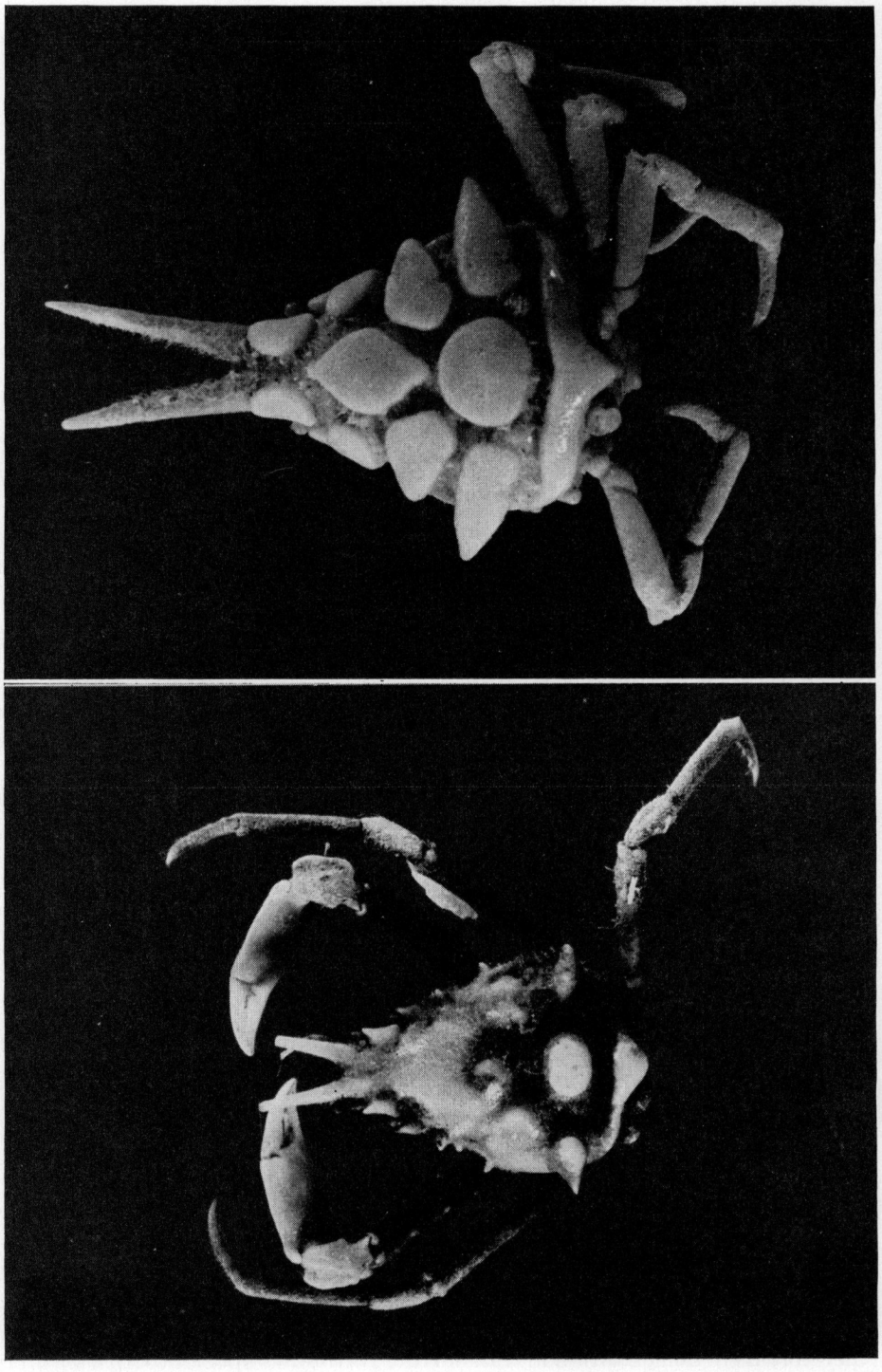

FIG. 11. (*a*) *Sphenocarcinus luzonicus* Rathbun, holotype, male, 30·2 mm, dorsal view. (*b*) *Sphenocarcinus sphenocarcinoides* (Rathbun), holotype, male, ca. 20·4 mm, dorsal view.

Sphenocarcinus stimpsoni (Miers)

Oxypleurodon stimpsoni Miers, 1886 : 38–39, pl. 6, figs. 1, 1 (*a*), 1 (*b*).
Sphenocarcinus stimpsoni.—Sakai, 1938 : 286–287, pl. 29, fig. 3.

Material examined: 9 ♂♂, 4 ♀♀ (3 ovig.), 8–23 mm, smaller ovig. ♀, 16·5 mm (USNM 49513, 49515–16, 49521-23, 49636).

Localities: N. Mindanao: N. Mindanao and vicinity, St. 5516, 1 specimen; St. 5519, 1 specimen. Negros: between Negros and Siquijor, St. 5536, 1 specimen. Cebu-Bohol: between Cebu and Leyte, St. 5409, 6 specimens. Leyte: Dupon Bay, vicinity of Leyte, St. 5404, 1 specimen; between Leyte and Cebu, St. 5403, 1 specimen. Molucca Sea: Dodinga Bay, Gillolo I., St. 5617, 2 specimens.

Habitat: 131–229 fms, globigerina ooze, sand and mud.

Remarks: *S. stimpsoni* belongs to that group of species of *Sphenocarcinus* with a few large, flattened, irregularly-shaped plates on the carapace. These are *S. luzonicus*, *S. cuneus* and *S. aurorae*. *S. stimpsoni* is distinguished from *S. luzonicus*, the other species of the four having the rostral spines distinct, by the fewer number of plates on the carapace.

The most noticeable variation in the present series concerns the rostral spines. Typically, there are outwardly curved but in two specimens they are parallel or weakly convergent apically. There is also variation in the extent to which the postorbital plate is confluent with the hepatic plate and in the shape of the hepatic plate.

This species was originally taken in the Philippine Islands by the *Challenger* Expedition (Miers, 1886).

Distribution: Central Philippine Islands, Leyte to Moluccas; Kii I., Japan.

Sphenocarcinus velutinus (Miers), comb. nov.

Pugettia velutina Miers, 1886 : 41–42, pl. 6, figs. 2, 2 (*a*), 2 (*b*); Alcock, 1895 : 206 (note only).
Pugettia veltima (sic.).—Yokoya, 1933 : 153.
Pugettia veltina (sic.).—Sakai, 1938 : 278.

Material examined: 2 ♀♀, 9·5, 12 mm (USNM 49524).

Localities: Cebu-Bohol: Between Cebu and Bohol, St. 5415, 2 specimens.

Habitat: 88 fms, fine sand.

Remarks: Alcock (1895) suggested that the correct position of this species was in the genus *Scyramathia* (now *Rochinia*). *S. velutinus* possesses flattened plates laterally and tuberosities dorsally. *S. carbunculus* Rathbun from Hawaii and *S. nodosus* Rathbun from the Philippine Islands are similar in this regard as well as having relatively short, separate rostral spines. There are general similarities as to orbital details. *S. velutinus* differs from *S. nodosus* and *S. carbunculus* in having a subtriangular, flattened, epibranchial plate.

There are no major differences between the present specimen and the original illustration and description provided by Miers.

This species has not been recorded previously from the Philippine Islands.

Distribution: Philippine Islands; Kii Islands; Japan.

Tiarinia angusta Dana

Tiarinia angusta Dana, 1852 : 113; 1855 : pl. 3, figs. 7 (*a*), (*b*); Sakai, 1938 : 322.
Tiarinia spinosirostris Haswell, 1880 : 448.

Material examined: 2 ♂♂, 9 ♀♀, 3 ovig., 9–39·5 mm, smallest ovig. ♀, 38·5 mm (USNM 47373–74, 49560, 49695).

Localities: Sulu Archipelago: Tawi Tawi Group, St. 5159, 3 specimens; St. 5160, 1 specimen; Marongas I., Shore Stn, 10.ii.1908, 6 specimens. Celebes Sea: Great Tubea I., Buton Strait, 14.xii.1909, 1 specimen.

Habitat: Intertidal to 12 fms, among coral heads in tide pools.

Remarks: This species is easily distinguished from its congeners by the presence of accessory lateral spines on the rostrum.

This species was first taken in the Philippine Islands (' Sooloo ' Sea) by the U.S. Exploring Expedition (Dana, 1852).

Distribution: Philippine Islands: Gulf of Davao to Sulu Archipelago; Japan, Indonesia, northern Australia.

Tiarinia cornigera (Latreille)

Pisa cornigera Latreille, 1825 : 141.
Pericera cornigera.—Adams & White, 1848 : 18.
Tiarinia cornigera.—Alcock, 1895 : 256–257; Sakai, 1965 a : 91, pl. 42, fig. 2.

Material examined: 3 ♂♂, 6 ♀♀ (4 ovig.), 11·5–19·5 mm, smallest ovig. ♀, 11·5 mm (USNM 47361–62, 47364–66, 49564, 49863).

Localities: S.W. Mindoro: Tara I., 15.xii.1908, 1 specimen. S.E. Luzon: Batan I, 5.vi.1909, 2 specimens. Cebu-Bohol: E. side of Tagbilaran Strait, 9.iv.1908, 1 specimen. Leyte: Mahinog River, Camiguin I., 3.~~vii~~.viii.1909, 1 specimen. Basilan: Pilas I., 12.~~viii~~.ix.1909, 1 specimen. Sulu Archipelago: Tawi Tawi Group, 20.ii.1908, 2 specimens; St. 5165, 1 specimen.

Remarks: Alcock (1895) tentativley included *Pericera setigera* and *P. tiarata*, both described by Adams & White (1848), as synonyms of *Tiarinia cornigera*. *Tiarinia tiarata* is generally regarded as a valid species.

Habitat: Intertidal to 9 fms, among coral in tide pools.

Distribution: Central and southern Philippine Islands from Mindoro to the Sulu Archipelago; Indo-West Pacific from east Africa to Japan and Australia.

Tiarinia gracilis Dana

Tiarinia gracilis Dana, 1852 : 111–112; 1855 : pl. 3, figs. 6 (*a*)–(*d*); Buitendijk, 1939 : 259–264, text fig. 26, pl. 11, fig. 2.

Material examined: 2 ♂♂, 1 ovig. ♀, 12–27 mm, ovig. ♀, 21·5 mm (USNM 47245, 47349, 47351).

Localities: Palawan: Verde del Sur I., 6.iv.1909, 1 specimen. Negros: Guijulugan, 2.iv.1908, 1 specimen. W. Mindanao: Pilas I., S. of Zamboanga, 12.~~viii~~.ix.1909, 1 specimen.

Habitat: Shore, tide pool.

Remarks: The three specimens have the short rostral spines, flattened carapace tubercles and three large posterior longitudinal tubercles characteristic of the species.

This species was originally taken in the Philippine Islands (' Sooloo Sea ') by the U.S. Exploring Expedition (Dana, 1852).

Distribution: Central and southern Philippine Islands; Nicobar I., Singapore, Indonesia, eastern Australia.

Discussion

The collections made by the *Albatross* have brought to 71 the total number of majid spider crabs known from the Philippine Islands (see table 2). Most of the species (51) are known from the central and southern islands of the archipelago. Twenty-one species contained in the present collections are known only from off the southern islands of the Archipelago. Despite the rather intensive collecting by the *Albatross* only 21 species of the 61 in the collection from the Philippine Islands are known from more than four localities.

The majority of species are known from the continental shelf. Of the 45 species occurring subtidally to the upper part of the continental slope (over 100 fms), 14 occur in depths of less than 20 fms and 14 are known only between 20 fms and 100 fms; nine species are found across most of the shelf and three species extend from the shelf to upper slope depths. Typical species of this group are those of the genera *Achaeus*, *Naxioides*, *Chlorinoides*, *Hyastenus*, *Phalangipus* and *Pugettia*. Eighteen species are confined to deep water. These include typical deep water forms such as species of *Cyrtomaia*, *Platymaia*, *Pleistacantha*, *Rochinia* and *Sphenocarcinus*.

A total of 12 species occur in intertidal or shallow subtidal waters; five of these extend into depths up to 20 fms and one occurs in deeper water. Again, these are typical intertidal forms such as *Camposcia retusa*, *Huenia proteus*, *Menaethius monoceros*, species of *Micippa* and *Tiarinia*.

The spider crab fauna of the Philippine Islands is clearly an outlier of the Indo-west Pacific. The largest genera, *Hyastenus*, *Achaeus*, *Sphenocarcinus*, *Tiarinia*, *Maja* and *Phalangipus* are typical Indo-west Pacific genera; only *Maja* and *Sphenocarcinus* are known outside the Indo-west Pacific. A total of 26 genera are represented; 15 of these are represented by two or more species and contain 60 species among them. In general, these 15 genera are represented in about the same proportion as in the Indo-west Pacific as a whole.

A quite high proportion, however, almost 30% (19–20 species) are not known outside the Philippine Islands. Most of these restricted species are contained in the largest genera—five in the genus *Hyastenus* and three each in the genera *Sphenocarcinus* and *Maja*. Not a single genus is confined to the Philippines.

Twenty-five species (more than 35%) are widespread Indo-west Pacific forms; most of these are shallow water species. A similar number are west Pacific species; most of these, especially species of *Platymaia*, are deep water forms shared with Japan or to a lesser extent with Australia. However, apparent isolation of the Philippines is shown by the fact that 29 species found in tropical and sub tropical Australia as well as Japan are not found in the Philippines. Notable absences are some species of *Achaeus*, *Eurynome*, *Micippa*, *Perinia tumida* and *Xenocarcinus* species.

The Philippine Islands are generally considered faunistically as part of Indonesia (Ekman, 1953). Whilst this is probably true more information is needed on the fauna of other parts of Indonesia and of the Philippine Islands before any clear picture will emerge.

Table 2

List of majid spider crabs from the Philippine Islands showing bathymetric and geographic distribution

Species Name	Philippine Dist.‡			Depth (fms)				Japan	Australia	Indian O.	Pacific O.	Indonesia
	N	C	S	⩽5	6–20	21–100	>100					
*Achaeus akanensis[1]	+					+		+				
*A. brevirostris[1]			+			+						+
A. lorina[1]		+	+			+						
*A. paradicei[1]			+			+			+			
A. villosus[1]			+	+								
Aepinus indicus[5]			+			+			+	+		
†Antilibinia gilloloensis[1]							+					+
Camposcia retusa[2]		?	+	+	+			+	+	+		
*Chlorinoides aculeatus[1]			+			+		+	+	+		
*C. longispinus[1]	+		+		+	+		+	+	+		
Cyrtomaia echinata[1]	+	+	+				+					
C. horrida[1]		+	+				+	+				
*C. owstoni[1]		+					+	+				
Doclea calcitrapa[1]		+				+				+		+
*Gryphachaeus hyalinus[1]		+				+				+		
Huenia brevifrons[4]			+	+								
Huenia proteus[1]			+		+			+	+	+	+	+
Hyastenus auctus[1]			+		+	+						+
H. biformis[1]			+		+							
H. borradailei[4]			+	+	+				+	+		
*H. convexus[1]			+			+			+	+		+
H. fraterculus[1]			+		+							
*H. hilgendorfi[1]	+	+	+		+	+			+	+	+	+
H. orbis[1]			+		+							
H. planasius[1]			+		+	+			+	+		+
H. scrobiculatus[1]			+		+							
H. sebae[1]	+	+	+	+	+	+			+	+		+
*H. spinosus[1]	+	+	+		+	+			+	+	+	
H. tinaktensis[1]			+		+							
H. trispinosus[1]			+		+							+
*H. verrucosipes[1]			+		+				+			+
*H. whitei[1]	+	+	+	+	+				+	+		
†Leptomithrax sinensis[1]						+						+
Maja bisarmata[1]	+	+					+					
*M. gibba[1]		+					+			+		
M. linapacanensis[1]		+				+						
M. suluensis[1]			+		+	+						
Menaethius monoceros[1]			+	+				+	+	+	+	+
Micippa cristata[1]	+	+		+				+				+
M. philyra[1]			+		+			+	+	+		+
Naxioides hirta[3]			+		+					+		
N. rombloni[1]	+					+						
*N. spinigera[1]	+	+	+		+	+				+		
Oncinopus neptunus[2]		+			+				+	+		+
Phalangipus filiformis[1]	+	+	+		+	+			+	+		+
*P. hystrix[1]	+	+				+		+	+	+		
P. longipes[1]			+			+			+	+		+
P. retusus[1]	+	+	+	+						+		+

Table 2.—(*continued*)

Species Name	Philippine Dist.‡			Depth (fms)				Japan	Australia	Indian O.	Pacific O.	Indonesia
	N	C	S	⩽5	6–20	21–100	>100					
Pisa sinope[2]		?	?									
Platymaia bartschi[1]	+	+	+				+	+				+
P. fimbriata[1]	+	+	+				+	+				+
*P. wyvillethomsoni[1]	+	+	+			+	+	+	+			+
Pleistacantha moselyi[1]	+	+	+			+	+	+		+		
*P. oryx[1]	+	+					+	+		+		+
*P. sanctijohannis[1]	+					+	+	+				
Prosphorachaeus suluensis[1]			+		+			+				
Pugettia leytensis[1]		+					+					
P. mindanaoensis[1]		+	+				+					
Rochinia pulchra[1]		+					+	+		+		
*R. riversandersoni[1]		+					+			+		
Sargassocarcinus sublimis[1]			+			+						
Schizophrys aspera[2]		+	+	+	+			+	+	+	+	+
Sphenocarcinus auritus[1]		+					+					
S. luzonicus[1]		+					+					
S. nodosus[1]		+					+	+				
S. sphenocarcinoides[1]		+					+					
S. stimpsoni[1]		+	+				+	+				+
*S. velutinus[1]		+				+		+				+
Tiarinia angusta[1]			+	+	+			+	+			+
T. cornigera[1]		+	+	+	+			+	+	+		+
T. gracilis[1]		+		+					+	+		+
T. tiarata[2]		?	+	+								+
Tylocarcinus styx[4]			+	+				+	+	+	+	

*New record; †recorded by Rathbun (1916) from outside the Philippines; [1]this report; [2]Adams and White (1848); [3]Miers (1886); [4]Ward (1941); [5]Griffin (1972).

‡N is the area north of Mindoro (approx. 13°30′N); S is the area south of Negros-N. Mindanao (approx. 9°N); C is the central area between 9° and 13°30′N including the island of Palawan to the west.

Summary

The Philippine cruise of the U.S. Fisheries Steamer *Albatross* 1907–10 collected 61 species of spider crabs from the Philippine Islands bringing the total number of species known from the area to 71; 28 new species were described by Rathbun and the present report records 19 species not previously known from the area; included are nine widespread Indo-west Pacific forms, four previously known from Japan and four Indian Ocean species.

Hyastenus sebae White is renamed *H. whitei* and the former name is applied to *H. oryx* A. Milne Edwards. *Hyastenus tuberculosus* Rathbun is confirmed as a synonym of *H. convexus* Miers, *Platymaia remifera* Rathbun is reduced to synonomy with *P. wyvillethomsoni* Miers and *Chorilia sphenocarcinoides* Rathbun is transferred to the genus *Sphenocarcinus*.

The majority of species (51) occur around the central and southern islands of the archipelago and most of these (35 species) occur at varying depths on the continental shelf. Twelve species occur intertidally and 21 species are known from depths over 100 fms, some occurring as deep as 800 fms.

The spider crab fauna is clearly part of the Indo-west Pacific, 25 species being widespread ones; 26 species are shared with Japan, 24 with Australia

and 31 with the Indian Ocean. However, 20 species appear to be confined to the Philippine Islands. The relationships of the Philippine fauna with that of the rest of Indonesia is not yet clear

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