

FIELD GUIDE FOR THE EDIBLE CRUSTACEA OF THE PHILIPPINES



By Hiroshi Motoh, Supervised by Katsuzo Kuronuma

SOUTHEAST ASIAN FISHERIES DEVELOPMENT
CENTER (SEAFDEC)

Aquaculture Department, Iloilo, Philippines

June, 1980

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FOREWORD

The field guide came at a time when aquatic products, particularly crustaceans, have become prized food items exportable to developed countries. Many tropical countries in Asia have gone into their husbandry and more intensive gathering or catching because of good economic returns. Particular interest in crustaceans has developed in many countries and this field guide on edible crustaceans of the Philippines can further assist in enhancing the crustacean interest.

The " Field Guide for the Edible Crustacea of the Philippines " by Mr. Hiroshi Motoh of the Southeast Asian Fisheries Development Center, Aquaculture Department has been a laudable effort which will benefit biologists, fish farmers and laymen. The presentation of the different species of crustaceans in a semitechnical manner, the easy reading style of the field guide and the well done colored photographs and illustrations are assets of the manuscript. Many non-biologists with particular interest in crustaceans as food, as items for culture or farming, and for ecological or identification purposes, will find the guide a useful reference material. Even high school and college biology students will find it useful as a reference book in aquatic biology.

My congratulations to Mr. Motoh and appreciation to Dr. Katsuzo Kuronuma, President Emeritus, Tokyo University of Fisheries, for putting this manuscript into such style and form.



ROGELIO O. JULIANO

Chief

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INTRODUCTION

At present there are approximately 25,000 species of crustaceans in the world (Friese, 1979). Decapoda, which is ranked among the higher crustaceans from the phylogenetic point of view, is characterized by five pairs of legs or ten walking legs including pincers when present. Many of these are economically very important as food items, such as shrimp, prawn, crab and lobster (see systematic list of species, p. 13).

The Philippine waters are rich in crustacean fauna (Estampador, 1959), and many species are of economic importance producing a large amount of food for human consumption. However, our knowledge on the biology and ecology of crustaceans has been of little practical use.

This pictorial handbook describes the common and edible species in freshwater, brackishwater and seawater, and provides a guide for those who are interested in these aquatic animals—nature lovers, students, aquaculturists, amateur scientists and others.

Each species presented in this handbook is discussed under six major topics as follows:

1. Name—Each species is given in scientific name, English and Philippine names. The scientific name consists of three words, the first is called the genus name, always italicized with the initial letter capitalized. The second word is the species name, printed in italics in small letter. Lastly, the surname of the person who first made a description of the animal as a new species is often given in capital. When the genus name is changed subsequently, under the rule in the International Zoological Nomenclature, the original author's name is enclosed by parentheses. The so-called common names, which follow the scientific name, are often different—in case of English names by countries and in case of Philippine names by provinces in the country. The common names are usually

derived from scientific names or based on the peculiarity of the species either in color pattern, general shape or behaviour, etc.

2. The diagnostic characters, by which the species is determined or identified, give main characters of a prawn or crab handled usually covering the external features such as structure of body parts and color pattern as well as the feature which need attention. The description of the diagnostic characters is given in simple language, but various body parts and their structure are noted by technical terms which are illustrated (Figs. 1 to 6) and explained in the glossary (p. 5). The readers of this book should therefore be familiar with the technical terms in order to correctly identify the given species of crab, lobster or prawn.

3. Ecology—This is the information referring to the habitat, behaviour, etc. of each species. The knowledge must be further extended through observations and experiments in order to expect higher crops in the culture ponds and to aim conservation or logical use as natural resources of prawn, lobster and crab.

Easily observed morphological structures and color patterns are used as diagnostic characters for identifying species. However, our knowledge on the ecology of many of the species is poor and needs to be extended through further observations and experiments. This knowledge is essential to increase the production in culture systems and for proper conservation and judicial use of the resources.

4. Distribution— The geographical distribution of each species is cited from known scientific literatures listed in the "References" to show the distribution in the world. Most of the species dealt with here are also found in Hawaii, Japan, Taiwan, and Southeast Asia and westward to the Arabian Gulf, Red Sea and the East Coast of Africa. The area covered is commonly known as the Indo-Pacific Region or Indo-West Pacific Region in zoogeography.

5. Fisheries—Fishing gear and grounds which are known at present are noted.

6. Economy—Economic potential, market retail price in large cities and in rural areas, table quality and quantity are discussed

in this section.

For readers who are interested to gain more information regarding the different species, it is recommended to consult the references listed. Those who desire to learn the classification scheme by which the species arranged in this book may refer to the systematic list of the species on p. 13.

ACKNOWLEDGEMENT

The author would like to express his cordial thanks to Dr. Katsuzo Kuronuma, President Emeritus, Tokyo University of Fisheries, for critical reading of the manuscript, to Dr. Hiroshi Kurata of Nansei Regional Fisheries Research Laboratory for his general advice on crustaceans, Mr. Prasit Buri for his line drawings and Ms. Carmelita Ferrer of the Aquaculture Department, for typing the manuscript. Thanks are also due to Dean Rogelio O. Juliano, Chief, Mr. Kunio Katsutani, Deputy Chief, Dean Domiciano K. Villaluz, former chief, and Dr. Noboru Hoshino, former deputy chief, Aquaculture Department, Southeast Asian Fisheries Development Center (SEAFDEC) and Dr. Joseph C. Madamba, Director of SEAFDEC Institute of Aquaculture (SIA), SEAFDEC, for the encouragement given to the author to publish the present work.

NOTES ON PRESENTATION

1. The orderly arrangement of the sections and families is made based on Tinker (1965) and others from the phylogenetic point of view, and the genera and species in each family are usually given in the order of economic importance.
2. The Philippine names given are those which are commonly used in the Philippines. The names of dialects are shown in parentheses.
3. Line drawings were prepared by Mr. Prasit Buri, Aquaculture

Department of the SEAFDEC.

4. The color photographs of each species inserted were all taken by the present author.
5. For measurements metric system is adopted exclusively.

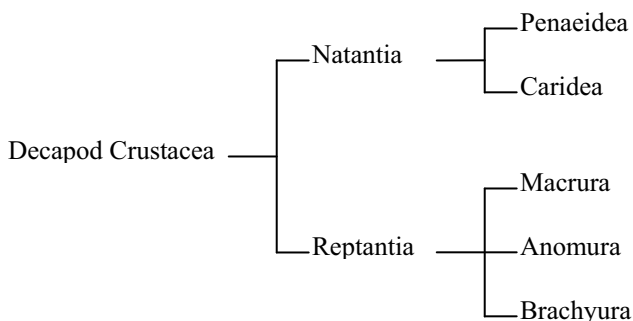
IDENTIFICATION OF SPECIES

The Crustacea means animals bearing hard crust on the outside and characterized by absence of a backbone or vertebra.

The decapod crustaceans are aquatic animals in the form of shrimps, prawns, lobsters, and crabs which are ranked higher and well distinguished from other crustaceans by the presence of five pairs of pereiopods or ten walking legs (*deca*, ten; *pod*, leg).

The body consists of two clearly marked parts; the front part, the cephalothorax, comprising both the head and the thorax, and the remaining part, the abdomen.

The decapod Crustacea is generally divided into the two sub-orders consisting of five sections as follows:



In the Natantia, the locomotion is made by swimming by means of abdominal swimmerets (pleopods), while in the Reptantia, walking or creeping and burrowing by means of the thoracic legs (pereiopods).

Penaeidea are prawns and shrimps having the first three pairs of legs (pereiopods) usually chelate or pincer-like. The pleuron of the second abdomen is not so broadened without overlapping the posterior part of the first pleuron. The female sheds eggs directly

into the sea.

Caridea are prawns and shrimps having the first two pairs of legs (pereopods) usually chelate or pincer-like. The pleuron of the second abdomen is broadened, overlapping the posterior part of the first pleuron. The female carries eggs with pleopods.

Macrura are distinguished by a well-developed large size abdomen which is symmetrical in shape and not folded beneath the body. They are lobsters.

Anomura generally have an abdomen which is more or less bent beneath the body or else spirally coiled in structure and asymmetrical in shape. The last pair of legs (pereopod) are reduced in size, mostly under the carapace. They are hermit crabs.

Brachyura are distinguished from other members by having an abdomen which is reduced to a mere flap and is folded under and against the body. The sixth pair of abdominal appendages are generally absent. They are true crabs.

GLOSSARY OF TECHNICAL TERMS

Abdomen—Posterior part of the body consisting of six segments and a telson.

Adrostral carina—Raised longitudinal ridge on either side of the posterior extension of the rostrum on the carapace.

Antenna—Second antenna consisting of antennal scale, peduncle and flagellum.

Antennal scale—Flattened outer branch of the second antenna arising at the proximal portion of antenna.

Antennal flagellum—Long whip-like flexible portion of the second antenna.

Antennular flagellum—Short whip-like portion of the first antenna.

Antennule—First antenna consisting of antennular peduncle and a pair of flagellum.

Antennular peduncle—Proximal three segments of the first antenna.

Anterolateral teeth—Teeth on antero-lateral margin of carapace including postorbital tooth.

Arm—Merus of cheliped.

Basis—Second segment of a maxilliped or pereopod, counted from proximal portion.

Carapace—Shield or shell enclosing the cephalic and thoracic region.

Carpus—Fifth segment of a maxilliped or pereopod, counted from the proximal portion.

Cheliped—First pair of pereopod, usually stouter than the other pereopods, the two last segments forming a claw.

Coxa—First segment of a maxilliped or pereopod, counted from proximal portion.

Dactyl—Distal segment of a maxilliped or pereopod.

Epigastric tooth—Most posterior tooth located mid-dorsally along the carapace and separated from the preceding rostral teeth by a space somewhat greater than that separating each of the dorsal rostral teeth.

Hepatic carina—Running towards the anterior end of the carapace from beneath the hepatic spine.

Hepatic spine—Sharp triangular spine pointed forward and arising in the anterior third of the carapace.

Ischium—Third segment of a maxilliped or pereopod, counted from proximal portion.

Maxilliped—Three foremost pairs of thoracic appendages arising in front of the five pairs of pereopods, functional for feeding.

Merus—Fourth segment of a maxilliped or pereopod, counted from proximal portion.

Palm—Sixth segment of the cheliped forming the base of the pincer.

Pereopod—Five posterior pairs of thoracic appendages which are used principally in creeping or walking.

Petasma—Male genital organ of Penaeidea, stiff tubular process located at the base of the first pleopod and formed from a fusion of the inner branches of both the right and left anterior

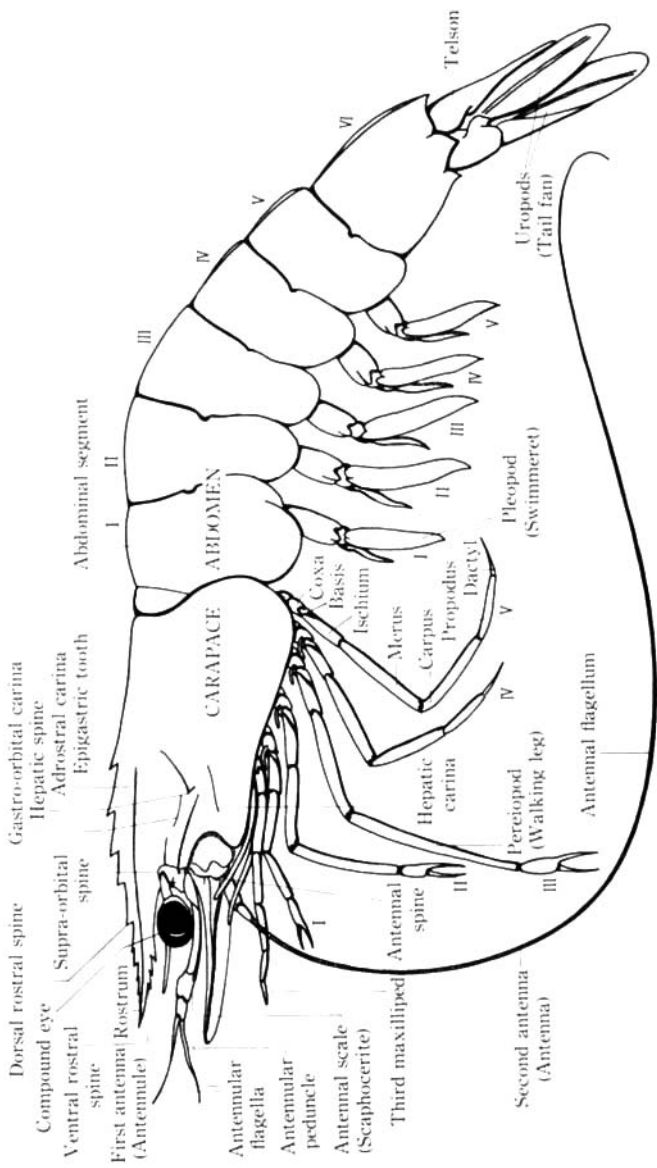


Fig. 1. Lateral view of adult penaeid prawn showing technical terms for various parts of body, which are used in the text to describe each species.

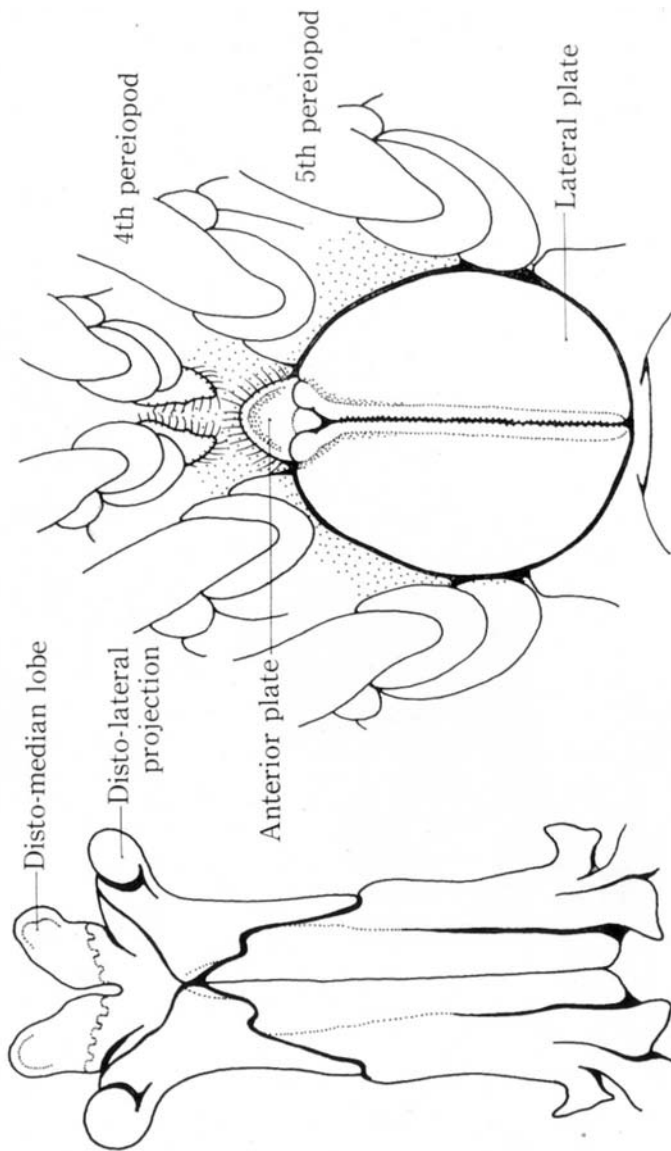


Fig. 2. Petasma of genus *Metapenaeus* (left) and thelycum of genus *Penaeus* (right) giving technical terms for different parts.

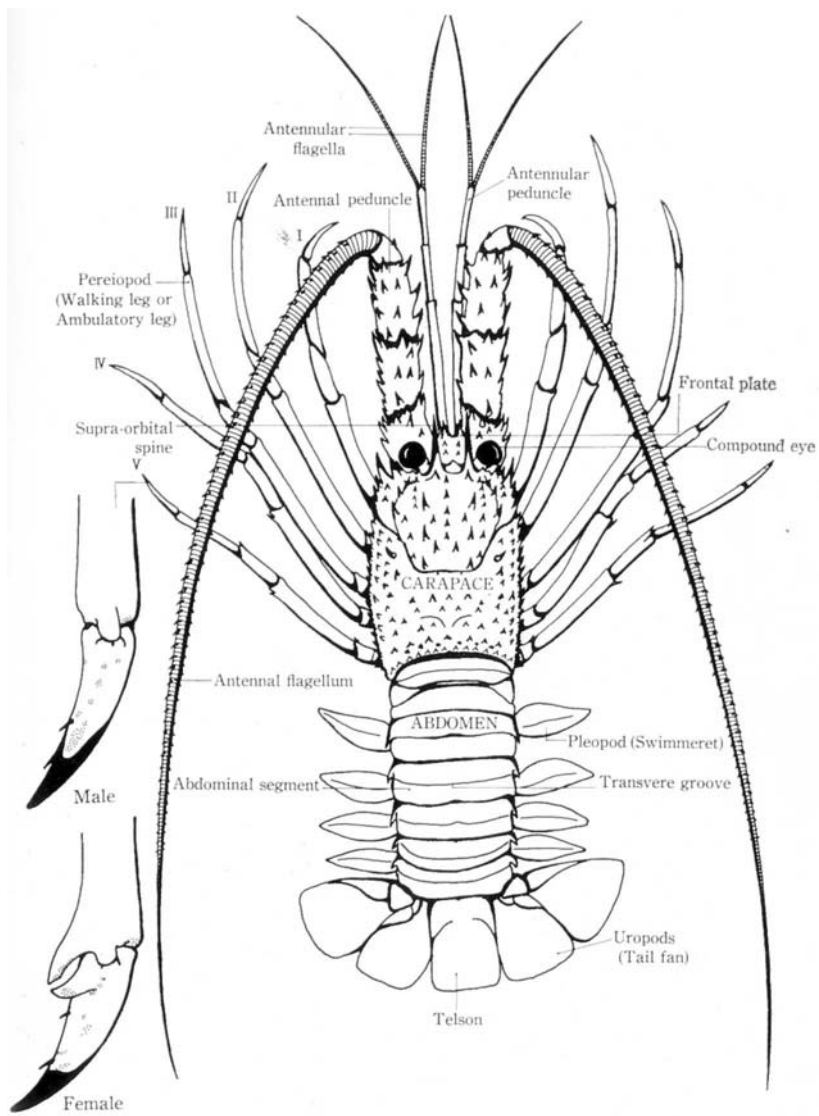
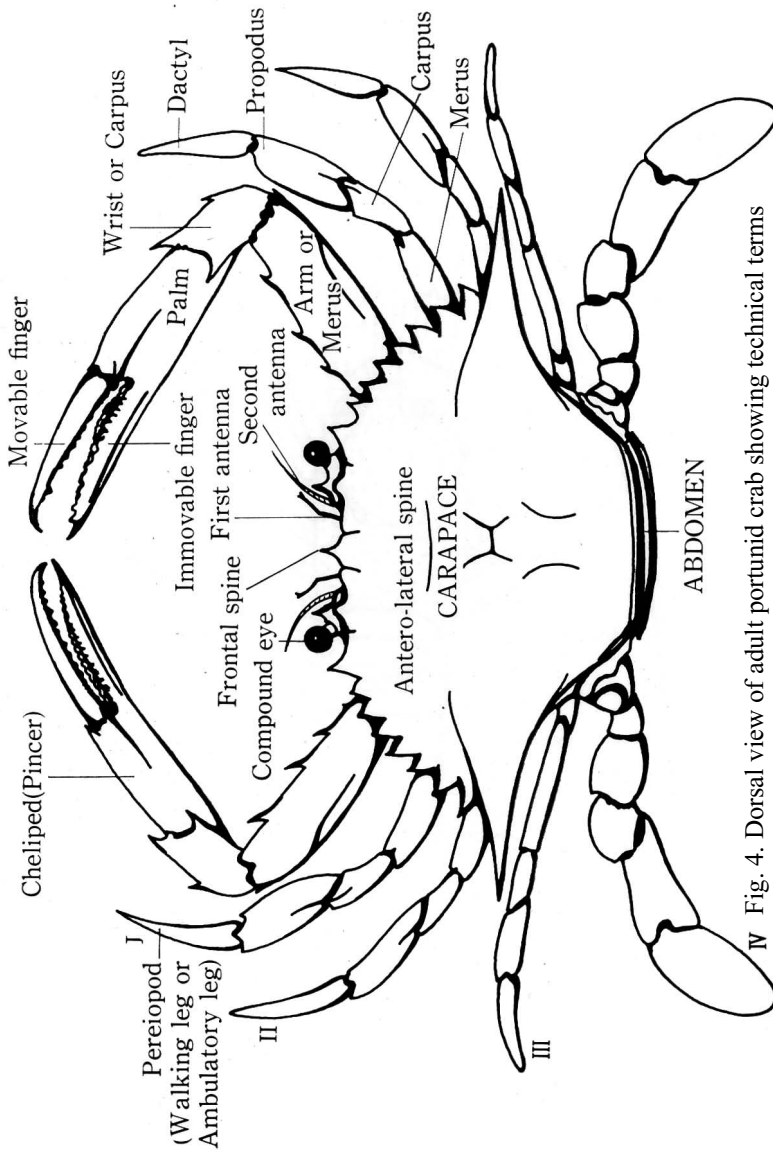


Fig. 3. Dorsal view of adult spiny lobster showing technical terms for various parts of body, which are used in the text to describe each species.



IV Fig. 4. Dorsal view of adult portunid crab showing technical terms for various parts of body, which are used in the text to describe each species.

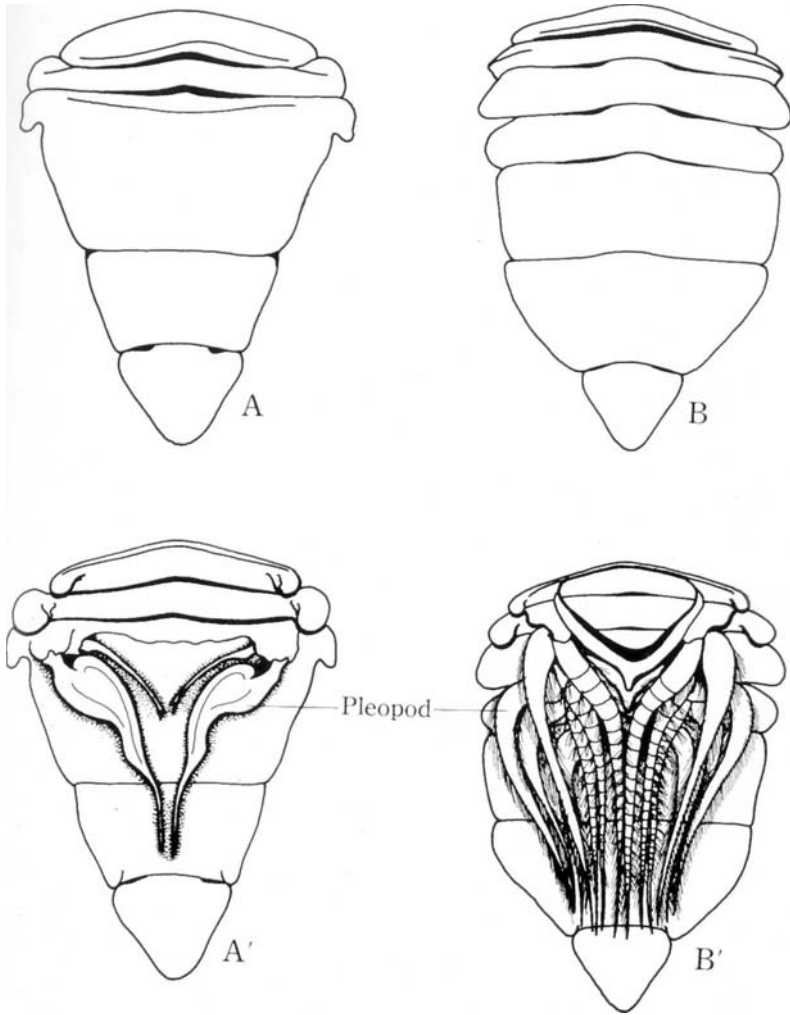


Fig. 5. Abdomen of male (A, outer surface ; A; inner surface) and female (B, outer surface; B; inner surface) of portunid crab.

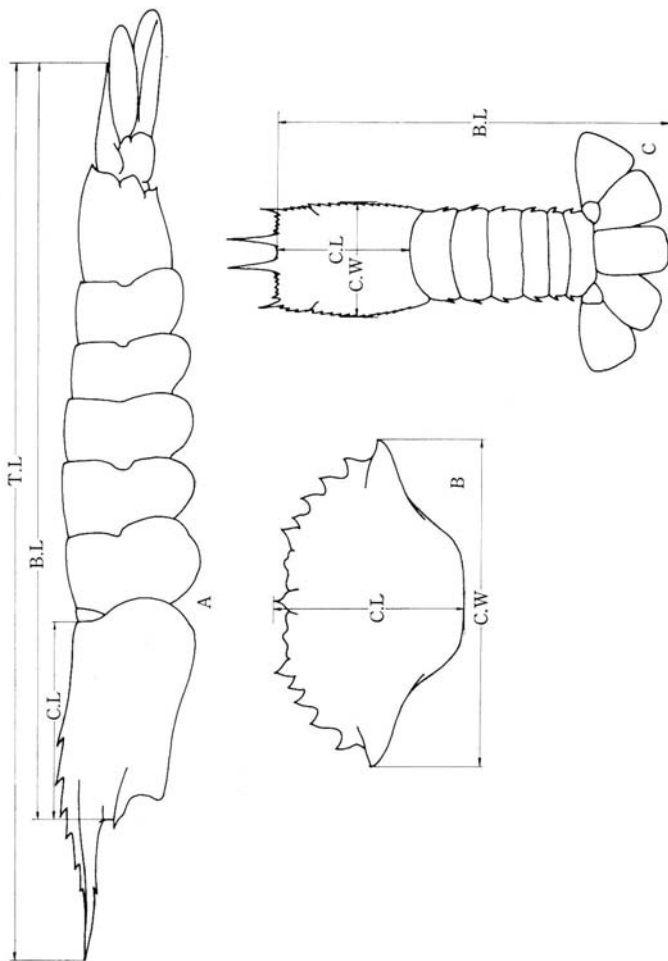


Fig. 6. Measurements of prawn (A), crab (B) and spiny lobster (C): C.L., carapace length; C.W, carapace width; B.L, body length; and T.L, total length.

pleopods, used for copulation.

Pleopod—Paired biramous appendages arising ventrally from the first five abdominal segments, used for swimming or carrying eggs-

Rostrum—Sharp, rigid and usually toothed anterior extension of the carapace.

Telson—Terminal and median tapering section of the abdomen which is the central member of the tail fan.

Thelycum—Female copulatory organ of Penaeidea located ventrally on the thorax between the basis of the two posterior pairs (4th and 5th) of pereopods; it consists of an anterior median plate and posterior lateral plates.

Uropod—Two pairs of flat, paddle-shaped appendages arising from the sixth abdominal segment which are together with the telson forming the tail fan.

Walking leg—First or second to fifth pereopods.

Wrist—Carpus of the cheliped.

LIST OF THE SPECIES, ARRANGED IN SYSTEMATIC ORDER, DESCRIBED AND ILLUSTRATED

Phylum ARTHROPODA or Jointed-legged animals

Class CRUSTACEA or shelled animals

Subclass MALACOSTRACA or Soft-shelled Crustacea

Order DECAPODA or Ten-footed Crustacea

Suborder NATANTIA or Swimming Decapods: Shrimps
and prawns

Section PENAEIDEA (Shrimps and prawns)

Family SERGESTIDAE

Genus *Acetes* H. MILNE-EDWARDS

la. *A. erythraeus* NOBILI

lb. *A. intermedius* OMORI

lc. *A. sibogae* HANSEN

Family PENAEIDAE

Genus *Penaeus* FABRICIUS

2. *P. monodon* FABRICIUS
3. *P. semisulcatus* DE HAAN
4. *P. merguensis* DE MAN
5. *P. indicus* H. MILNE-EDWARDS
6. *P. latisulcatus* KISHINOUE
7. *P. japonicus* BATE

Genus *Metapenaeus* WOOD MASON & ALCOCK

8. *M. ensis* (DE HAAN)
9. *M. endeavouri* (SCHMITT)
10. *M. dalli* RACEK and DALL

Genus *Metapenaeopsis* BOUVIER

11. *M. palmensis* (HASWELL)

Genus *Trachypenaeus* (ALCOCK)

12. *T. fulvus* DALL

Section CARIDEA (Shrimps and prawns)

Family PALAEMONIDAE

Genus *Macrobrachium* BATE

13. *M. rosenbergii* (DE MAN)
14. *M. lar* FABRICIUS

Suborder REPTANTIA or Creeping Decapods

Section MACRURA (Large tailed Decapods: Spiny lobsters and slipper lobsters)

Family PALINURIDAE (Spiny lobsters)

Genus *Panulirus* WHITE

15. *P. ornatus* (FABRICIUS)
16. *P. versicolor* (LATREILLE)
17. *P. homarus* (LINNAEUS)
18. *P. longipes* (A. MILNE-EDWARDS)
19. *P. penicillatus* (OLIVIER)

Genus *Linuparus* (VON SIEBOLD)

20. *L. trigonus* (VON SIEBOLD)

Family SCYLLARIDAE (Slipper lobsters or shovel-nosed lob-

sters)

Genus *Thenus* LEACH

21. *T. orientalis* (LUND)

Genus *Ibacus* LEACH

22. *I. ciliatus* (VON SIEBOLD)

Section ANOMURA (Irregular-tailed Decapods)

Family COENOBITIDAE (Hermit crabs)

Genus *Birgus* LEACH

23. *B. latro* (LINNAEUS)

Family THALASSINIDAE

Genus *Thalassina* LATREILLE

24. *T. anomala* (HERBST)

Section BRACHYURA (Short-tailed crabs)

Family RANINIDAE

Genus *Ranina* LAMARCK

25. *R. ranina* (LINNAEUS)

Family CALAPPIDAE

Genus *Matuta* WEBER

26. *M. lunaris* (FORSSKAL)

Family PORTUNIDAE (Swimming crabs)

Genus *Scylla* DE HAAN

27. *S. serrata* (FORSSKAL)

Genus *Portunus* WEBER

23. *P. pelagicus* (LINNAEUS)

29. *P. sanguinolentus* (HERBST)

Genus *Charybdis* DE HAAN

30. *C. feriata* (LINNAEUS)

31. *C. natator* (HERBST)

Genus *Thalamita* (LATREILLE)

32. *T. crenata* (LATREILLE)

Genus *Podophthalmus* LAMARCK

33. *P. vigil* (FABRICIUS)

Family OCYPODIDAE (Ghost crab)

Genus *Ocypode* WEBER

34. *O. ceratophthalma* (PALLAS)

35. *O. cordimana* DESMAREST

Family GRAPSIDAE

Genus *Varuna* H. MILNE-EDWARDS

36. *V. litterata* (FABRICIUS)

Family GECARCINIDAE

Genus *Cardisoma* LATREILLE

37. *C. carnifex* (HERBST)

Descriptions and illustrations

FAMILY SERGESTIDAE

1. *Acetes* spp.

English name: Kweikung paste shrimps (*A. erythraeus* NOBILI).
Alamang paste shrimp (*A. intermedius* OMORI).
Bubok shrimp (*A. sibogae* HANSEN).

Philippine name: Hipon (Tagalog), Alamang (Tagalog) or Oyap (Cebuano).

These small animals are planktonic in life, one of the primitive species belonging to Family Sergestidae. The maximum size is 4 cm in body length. The rostrum, which is shorter than the eyes, has two dorsal denticles or teeth. The first three pairs of pereopods are elongated, but the fourth and fifth pereopods are entirely lacking. The females are usually larger than the males.

When alive the whole body is almost transparent, but after death, it becomes milky or yellowish white in color. Both larvae and adults are found everywhere in estuarine waters with mangrove. They are caught with triangular nets, lift nets or scoop nets.

The geographical distribution of these species is wide in the whole of the Indo-West Pacific ranging northeastward to Taiwan, southward to Indonesia through Philippines, and for *A. erythraeus*, further westward through India to Africa.

In spite of small size, they are one of the economically important crustaceans in Southeast Asian countries, and their small size is compensated by the great abundance of population, affording big catch.

The species are utilized for making alamang or guinamos, a kind of seasoning in Philippine dishes. They also serve as a viand to low income families. The price in market is about ₱7 (US\$1)/kg.



1. *Acetes* spp.

FAMILY PENAEIDAE

2. *Penaeus monodon* FABRICIUS

English name: Giant tiger prawn, Jumbo tiger prawn, Leader, Blue tiger or Panda.

Philippine name: Sugpo (Tagalog), Lukon (Ilongo), Pansat or Pantat (Cebuano).

This is the largest species among penaeid shrimps and prawns in Southeast Asian waters. One of the largest females caught had a carapace length of 8.2 cm or body length of 27 cm weighing 240 g. The body is uniformly glabrous; carapace with well-developed antennal and hepatic spines. Hepatic carina is horizontal and straight. The rostrum is usually armed with seven or eight dorsal and three ventral teeth.

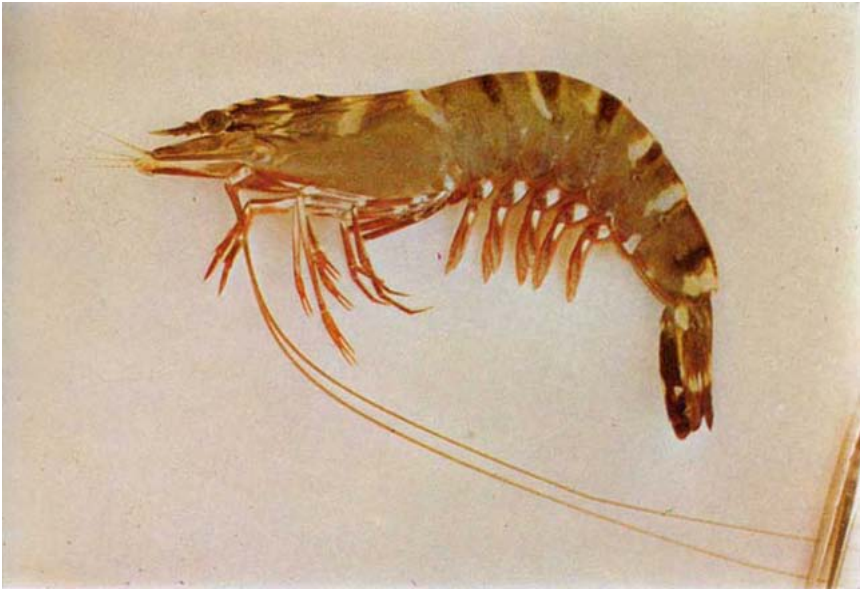
The color of body is reddish with darker bands. Pleopods are brown to blue, and fringing setae reddish. Entering to shallow brackish water or kept in ponds, the color changes to dark brown, often to blackish.

The fry of this species usually abound in shallow water along the shoreline or in mangrove creeks. A big female lays more than 800 thousand eggs. They are collected as seedling for cultivation in these waters and transferred to culture ponds. The annual production of sugpo from commercial trawlers amounts to approximately 2,500 tons in the Philippines. The pond cultivation of the species, still in the initial stage of operation, is not producing enough to be recorded in statistics. However, the species entering into milkfish pond and grown there naturally is believed to afford a certain amount of benefit to pond owners or to pond workers.

The Aquaculture Department of the Southeast Asian Fisheries Development Center (SEAFDEC) located at Tigbauan, Iloilo, Philippines, an international organization consisting of five member countries, is now capable of producing more than 10 million sugpo fry per year by using big concrete hatcheries (200 tons each in capacity) and a small wooden hatchery (1 to 3 tons).

The geographical distribution of the species is wide in the whole of the Indo-West Pacific ranging northward to Japan and Taiwan, eastward to Tahiti, southward to Australia and westward to Africa.

Sugpo, considered to be a delicacy in the Philippines, is an expensive food item. Its retail price is usually ₱60-80 (US \$ 8.6-11.5) 1kg in Manila and ₱50-70 in local areas.



2. *Penaeus monodon* FABRICIUS

FAMILY PENAEIDAE

3. *Penaeus semisulcatus* DE HAAN

English name: Green tiger prawn, Bamboo node prawn or Grooved tiger.

Philippine name: Hipon, Hipon bulik or Hipon windu (Tagalog), Kuyan (Aklanon) or Buktot (Cebuano).

Measuring approximately 22 cm in body length or 25 cm in total length weighing 130 g, this species is another big penaeid prawn. Its appearance resembles *P. monodon* due to relatively large size, rostrum armed with 7 or 8 dorsal and 3 ventral teeth, and reddish color with dark bands. However, the two species are distinguished by the following characters:

1. Hepatic carina is inclined downward anteriorly in *P. semisulcatus*, but is horizontal in *P. monodon* ;

2. White and red transverse stripes are present as bands in the antennae of *P. semisulcatus*, but absent in *P. monodon* ;

3. Rostrum is more or less straight in *P. semisulcatus* but strongly sigmoidal in *P. monodon* ;

4. Adrostral carina reaches well beyond epigastric tooth in *P. semisulcatus* but not in *P. monodon*.

Carapace and abdomen are uniformly glabrous. The body color in life is pale brown with dark brownish red transverse bands, and pleopods pale blue fringed with crimson hairs.

Unlike *P. monodon* it is seldom found in fishponds, therefore the *P. semisulcatus* might prefer pure marine water. A big female lays some 500 thousand eggs.

One of the most common species among the genus *Penaeus* in Philippine waters, it is caught mainly by commercial trawlers from the open sea, also by fish corrals set out in coastal waters.

It is widely distributed in the Indo-West Pacific waters extending to the Red Sea, South Africa and Australia.

There is a great demand for the species for food. Price in market is ₱30-45/kg in Manila, and ₱25-35/kg in rural areas.



3. *Penaeus semisulcatus* DE HAAN

FAMILY PENAEIDAE

4. *Penaeus merguensis* DE MAN

English name: Banana prawn or White prawn.

Philippine name: Puti or Hipon puti (Tagalog), Pasayan (Ilongo), Lunhan (Cebuano), Mestiza (Cebuano) or Putian (Cebuano).

P. merguensis reaches adult size of 10 to 15 cm, or may exceed 17 cm in body length weighing about 50 g. Contrary to the tiger prawns; *P. monodon*, *P. semisulcatus* and *P. japonicus*, the banana prawn has no dark brown transverse bands on the carapace and abdomen. Carapace and abdomen are uniformly glabrous. The proximal part of the rostrum is considerably high, triangular in shape, particularly in fully grown female. Rostrum is usually armed with seven or eight dorsal and five or six ventral teeth. Telson has no lateral spines.

The color in life is cream to yellow, sometimes minutely speckled with brown, olive green or light green pigments. Antennules are banded with brown; brown antennae are not banded; legs and pleopods are yellowish, sometimes tinged with brown or pink; uropods with combinations of yellowish green and brownish shades in color. The upper margin of the rostrum is fringed with brown in fully grown individuals.

This species mainly dwells in shallow open sea or in the mouth of river and bay areas where water is more or less turbid, and sometimes appear in great numbers suddenly. Fishing is done by commercial trawlers or trapped in fish corrals.

Distribution extends in the Indo-Pacific region from the Philippines, Malaysia, Indonesia, Mergui Archipelago, India to New Guinea and Australia.

This species has market value half the price of *P. monodon*.



4. *Penaeus merguensis* DE MAN
(Scale is expressed in inch.)

FAMILY PENAEIDAE

5. *Penaeus indicus* H. MILNE-EDWARDS

English name: White prawn or Banana prawn.

Philippine name: Hipon puti (Tagalog), Pasayan (Ilongo) or Lunhan (Cebuano).

Maximum body length is about 14cm with a body weight of 35 g. Carapace and abdomen are uniformly glabrous. Carapace has hepatic and antennal spines but lacks orbital spine. Rostrum, armed with seven or eight dorsal and five or six ventral teeth, forms a sigmoidal curve. Telson has no lateral spine.

In appearance, this species resembles *P. merguensis* but is distinguished by the following character:

1. Rostrum forms sigmoidal curve in *P. indicus*, but it is almost straight in *P. merguensis*.

2. Rostral crest is elevated but not triangular but shallow convex in shape. In *P. merguensis* it is considerably high and triangular.

3. Adrostral carina reaches epigastric teeth in *P. indicus* but not in *P. merguensis*.

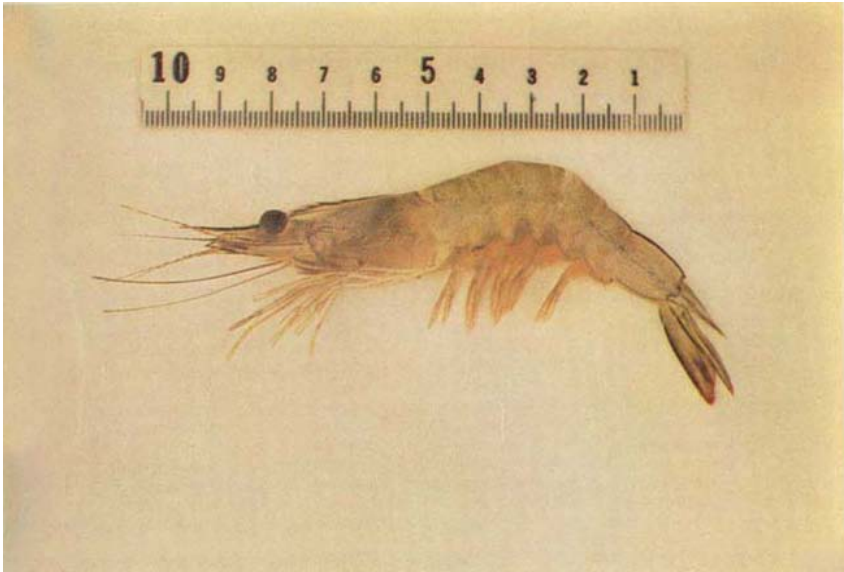
4. Gastro-orbital carina is well defined, occupying 2/3 distance between hepatic spine and margin of carapace in *P. indicus*. It is weakly defined in *P. merguensis* occupying 1/3 or is sometimes absent.

Color in life is almost the same as that of *P. merguensis* but slightly more grayish or dull green. Antennal flagellum is yellow or greenish yellow. Posterior half of uropods is yellowish.

P. indicus are mainly caught by gill nets or fish corrals near the shoreline during the months from November to January together with *P. merguensis*.

This species ranges from Hongkong through the Philippines, Malaysia, Indonesia, India to East Africa and Australia.

P. indicus is sold at the fish market mixed with *P. merguensis* for ₱20-25/kg.



5. *Penaeus indicus* H. MILNE-EDWARDS
(Scale represents 10 cm.)

FAMILY PENAEIDAE

6. *Penaeus latisulcatus* KISHINOUE

English name: Western king prawn, Blue-leg (king) prawn or Furrowed prawn.

Philippine name : Bulik (Cebuano).

This species has a maximum body length of 17 cm with body weight of 60 g. Carapace and abdomen are uniformly glabrous; carapace with well-developed orbital, antennal and hepatic spines. Rostrum is armed with 10 to 12 dorsal and one ventral teeth. Telson has a medium groove and bears three pairs of lateral spines which are fairly long and easily visible.

Live color ranges from fawn to light brown on carapace and abdomen with bluish yellow tinged pereopods and pleopods. The abdominal segments show a lateral faint transverse pattern of darker bands. Antennae are white. Telson is tipped with dark blue and fringed with crimson hairs.

It dwells mostly in open sea areas where bottom consists of sand or muddy sand. This species is primarily caught by commercial trawlers offshore and secondarily by fish corrals in shallow waters.

The geographical distribution of the species is in the Indo-West Pacific region extending to the Red Sea and to Australia.

There is a great demand for the species which sells at approximately ₱ 20-25/kg.



6. *Penaeus latisulcatus* KISHINOUE

FAMILY PENAEIDAE

7. *Penaeus japonicus* BATE

English name: Kuruma prawn or Japanese king prawn.

Philippine name: Hipon bulik (Tagalog) or Bulik (Cebuano).

A body length reaches about 18 cm weighing 80 g. Carapace has well-developed orbital, antennal, and hepatic spines. This prawn resembles in color pattern *P. canaliculatus*. However, in *P. japonicus* telson bears three pairs of spines and in *P. canaliculatus* it has no spine, and well marked transverse bands are slightly narrower in *P. canaliculatus* than in *P. japonicus*.

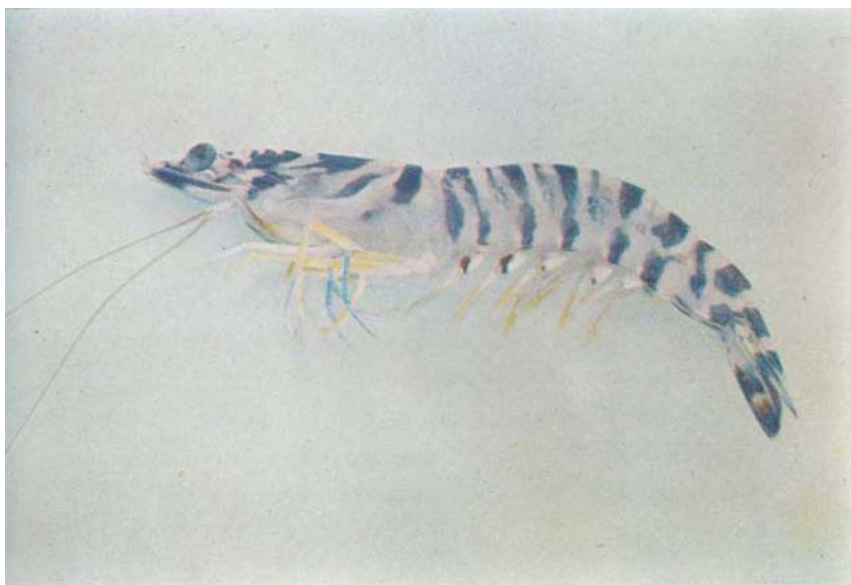
The species is light brown in color distinctly marked by broad reddish brown transverse bands on body. Pereiopods and pleopods are white and bluish yellow, respectively.

It inhabits the open sea where bottom is sandy or muddy sand. This prawn is caught by commercial trawlers but rather rarely.

It is distributed in Japan through Taiwan, Tahiti, Philippines, Malaysia, the Arabian Gulf to South Africa.

The species is of little commercial importance in Philippine waters because of the small number caught.

The market price is the same as for *P. latisulcatus*.



7. *Penaeus japonicus* BATE

FAMILY PENAEIDAE

8. *Metapenaeus ensis* (DE HAAN)

English name: Greasy back shrimp.

Philippine name: Suaje (Tagalog), Hipon suaje (Cebuano) or Batod (Aklanon).

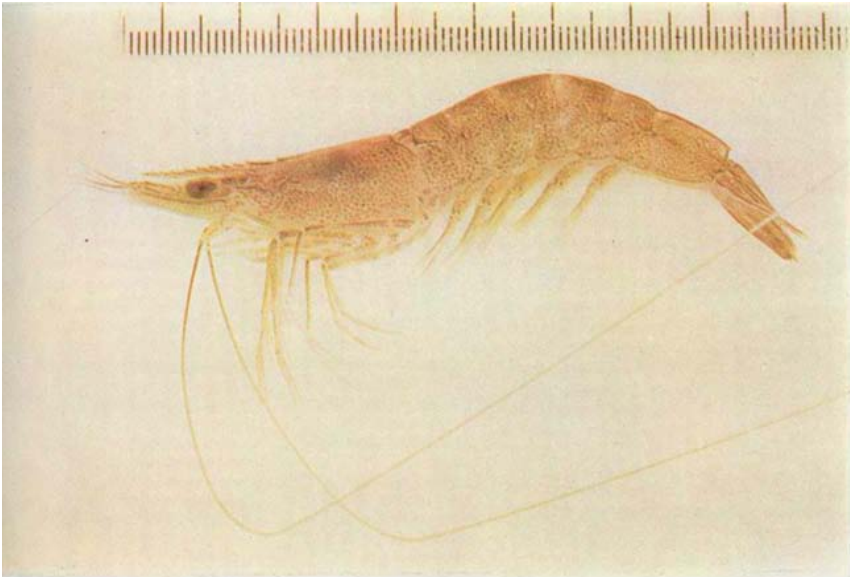
Maximum body length is about 15 cm weighing 18 g. The body has irregular areas bearing fine hairs on the carapace and abdomen. Carapace carries well-developed antennal, orbital and hepatic spines. Rostrum is straight in shape bearing nine to 10 teeth on its back but non ventrally. The telson has a median dorsal groove bearing no lateral spine.

Live color is light gray covered with specks of dark brown pigments. Pereiopods and pleopods are both light yellow or red.

M. ensis is the most ubiquitous species in the Philippines, abundant in both shallow and open waters as well as in brackish fishpond. Sometimes the species is called by the name *M. monoceros* due to taxonomical confusion.

This middle-sized shrimp is found in Japan, Taiwan, Philippines, Malaysia, Singapore and Australia.

It is suitable for rural consumption and sells for ₱ 15/kg.



8. *Metapenaeus ensis* (DE HAAN)
(Small scale is expressed in mm.)

FAMILY PENAEIDAE

9. *Metapenaeus endeavouri* (SCHMITT)

English name : Endeavour prawn.

Philippine name: Batod (Aklanon).

Maximum body length is 15 cm with a body weight of about 17 g. Rostrum is straight, inclined upwards and furnished with 10 to 11 dorsal teeth but without ventral teeth. The pubescence on carapace and abdomen is very prominent. Telson is furnished with three pairs of large lateral movable spines, becoming progressively larger distally. *M. endeavouri* is close to *M. intermedius* (KISHINOUE), although the shape of the petasma (male genital organ) is different with each other, the former having distomedian petasmas with a distinct anterolateral spinous process, but the latter lacking the process.

The whole body is generally yellowish; antennae are bright brown. Rostrum and abdominal carina are dark brown while uropods and telson are light brown to yellowish.

The species inhabits mainly pure marine water, unlike *M. ensis*. This middle-sized shrimp is caught commercially by fish corrals and commercial trawlers together with *M. ensis* from shallow water to depths more than 20 m.

Originally it was believed endemic to Australia, but the species is now known to Australia and Philippines, and the range is likely to be further expanded.

M. endeavouri is sometimes sold at ₱ 15/kg.



9. *Metapenaeus endeavouri* (SCHMITT)

FAMILY PENAEIDAE

10. *Metapenaeus dalli* RACEK & DALL

English name: School prawn or Green tail prawn.

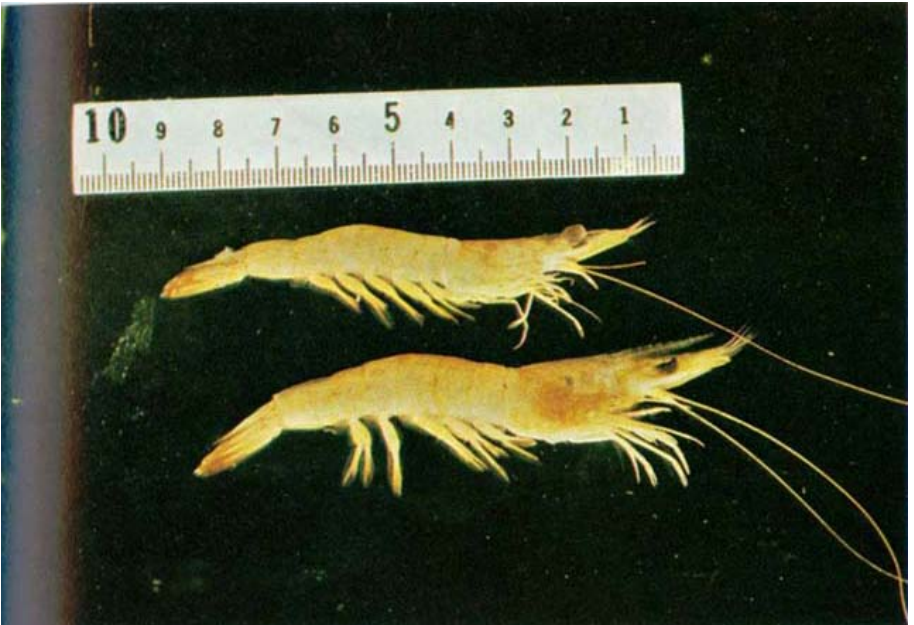
Philippine name: Batod (Aklanon).

Maximum body length reaches 13 cm weighing about 10 g. The rostrum is longer than antennular peduncle. The petasma (male genital organ) of this small shrimp is cross-shaped in general, having a pair of thumb-like projections on the distal median border of the dorsal lobes. The thelycum (female genital organ) consists of a pair of elevations, ox-horn-shaped in outline and flattish on the ventral surface. In general the female is much larger than the male, a feature common to shrimps and prawns belonging to family Penaeidae.

The body color is green or yellowish green. The antennal flagella are dark brown.

This species mostly inhabits shallow brackish waters in fair numbers. They are caught by baby trawlers and skimming netters in shallow waters. As of now, *M. dalli* is found only in Australia and Philippines.

The species is available for local consumption at ₱ 10-15/kg.



10. *Metapenaeus dalli* RACEK & DALL
(Upper, male; lower, female. Scale represents 10 cm)

FAMILY PENAEIDAE

11. *Metapenaeopsis palmensis* (HASWELL)

English name: Southern velvet shrimp.

Philippine name: Kuakit (Tagalog).

This species attains some 10 cm in total length weighing about 6 g. The rostrum is straight or slightly uptilted in the distal two-fifths, reaching the tip of the antennular peduncle and armed with seven or eight dorsal teeth but without ventral teeth.

The whole body is pinkish to reddish brown with irregular dark brown marking. Occasionally, dark mottles and narrow transverse bands are present.

This species inhabits deeper water with high salinity, and seems to have a similar ecological range as *T. fulvus*. They are sometimes caught abundantly by trawl in the open sea.

It is distributed in Japan, Philippines, eastern Borneo and New Guinea to Australia.

It has poor commercial value due to its small size. The number caught by fishermen is limited only for local consumption.



11. *Metapenaeopsis palmensis* (HASWELL)

FAMILY PENAEIDAE

12. *Trachypenaeus fulvus* DALL

English name: Brown rough shrimp or Hardback prawn.

Philippine name: Kuakit (Tagalog, Cebuano) or Bagulan (Cebuano).

Maximum body length is approximately 10 cm weighing about 7 g. It usually has eight to nine dorsal teeth but without ventral teeth. The rostrum is stout and almost straight. The ventral surface is convex, giving the tip a slightly upcurved appearance. The telson has two sub-apical and four minute lateral spines. Antennal scale is extended beyond the tip of the antennular peduncle.

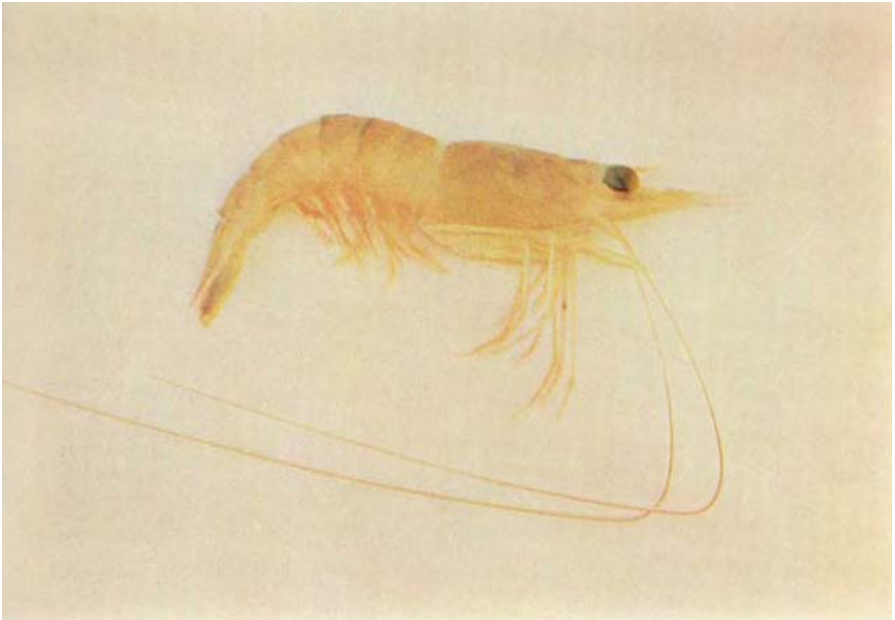
The body is densely pubescent, varying from mid to light to yellowish brown. Pleopods are usually light brown and pereopods are darker.

It mostly inhabits the open sea of high salinity. This species does not play a big part in prawn production.

At present the species is found in Australia and Philippine waters.

Its poor commercial value is due to its small size and the small number caught which makes it available for rural consumption only.

The small size and poor catch consumed only locally give the species low commercial value.



12. *Trachypenaeus fulvus* DALL

FAMILY PALAEMONIDAE

13. *Macrobrachium rosenbergii* (DE MAN)

English name: Giant river prawn, Giant Malaysian prawn or Giant freshwater prawn.

Philippine name: Burok (Ilongo), Pahi (Ilongo), Ulang (Cebuano) or Uwang (Surigaonon).

This species grows up to 25 cm in body length weighing about 250 g. The strong rostrum is armed by 11 to 13 dorsal teeth and 11 ventral teeth. Among the Family Palaemonidae this species is attaining the largest size and is probably one of the biggest freshwater prawns in the world.

Until recently the species has been known under the name of *Palaemon carcinus* which is now invalid. Unlike penaeid shrimps or prawns of which female grows bigger than male, the male of the species has huge, strong pincers or chelipeds and grows larger than female. Females carry more than 120 thousand eggs.

Body color is brown or dark brown and its huge pincers carrying strong spines are also brownish.

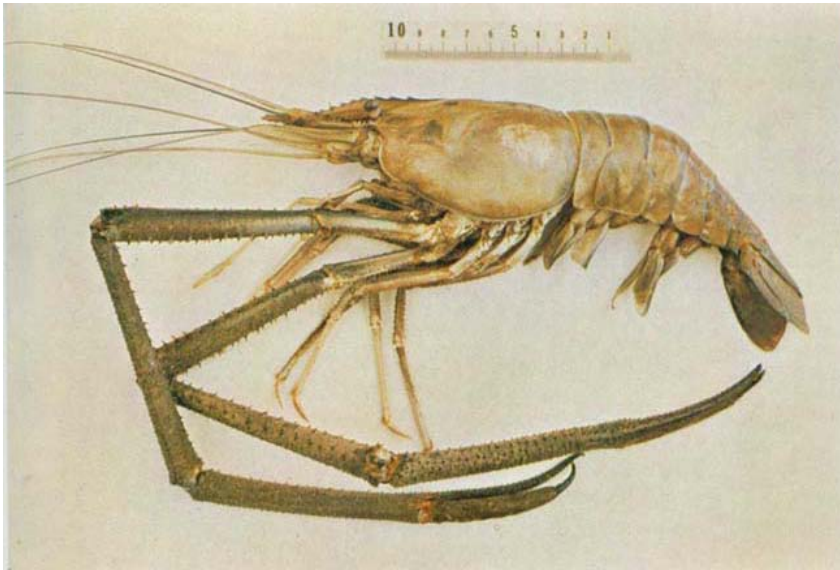
Present in both fresh and brackish waters in the lowland areas, the species occurs the whole year round and inhabits the mouth of big rivers where they are flown with current. It is also present in lakes, reservoirs and irrigation canals.

Local fishermen catch this freshwater prawn with small fish corrals or traps without baits. They harvest more prawns especially just after heavy rain.

The giant prawn is widely distributed in most of the tropical and subtropical areas of the Indo-Pacific Region: India, Malaysia, Singapore, Thailand, Borneo, New Guinea and the Philippines.

It is highly esteemed as food and is well accepted by people of all nations. Pond cultivation of the species has developed in various parts of Asia as well as in the Hawaii Islands.

M. rosenbergii is sometimes sold at ₱ 20/kg in the market.



13. *Macrobrachium rosenbergii* (DE MAN)
(Scale represents 10 cm.)

FAMILY PALAEMONIDAE

14. *Macrobrachium lar* FABRICIUS

English name: Monkey river shrimp.

Philippine name: Ulang (Cebuano) or Uwang (Surigaonon).

Male attains more than 12 cm in body length (14 cm in total length) and about 80 g in body weight. Carapace and abdomen are smooth. Rostrum is nearly straight with a prominent keel on its side, its tip extends slightly beyond the first antennal peduncle, and armed with six to eight dorsal and two to three ventral teeth. The second pair of walking legs having numerous tiny tubercles is well developed in male with both movable and immovable fingers curved at the tip, its length measuring 1 and 1/2 times of total body length. Male is usually larger than female as general case in caridean shrimp.

The lower parts of the carapace and abdomen have brownish mottles on grayish ground color. The huge pincers are grayish brown with an irregular whitish yellow blotches.

Though postlarvae have been found in brackish estuarine water, the species is an inhabitant in freshwater. This prawn is usually caught in non-baited traps at the lower part of rivers.

It is widely distributed throughout the Indo-West Pacific region from the Ryukyu Islands and Micronesia to East Africa.

The prawn is available at the fish market by ₱10/kg, though not all the time in the year.



14. *Macrobrachium lar* FABRICIUS
(Upper, male; lower, female)

FAMILY PALINURIDAE

15. *Panulirus ornatus* (FABRICIUS)

English name: Ornate crayfish or Spiny lobster.

Philippine name: Banagan (Tagalog, Ilongo and Cebuano).

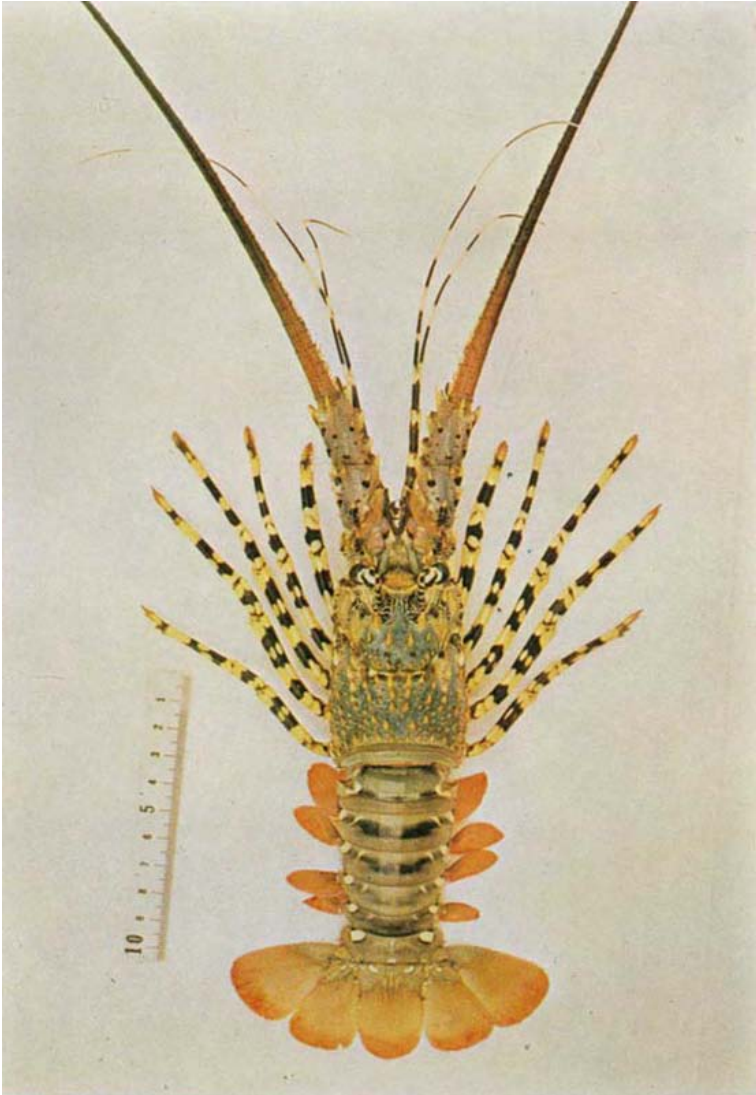
A common species within the Indo-West Pacific region including Australia, this is the biggest spiny lobster in the genus *Panulirus*, the male attaining 43 cm in body length and about 2.8 kg in body weight. The species of the genus *Panulirus* carry cylindrical spiny carapace and abdomen becoming flattened towards the tail. A pair of supra-orbital spines are strong, having six or seven white cross bands. The walking legs are strong; the first pair being the shortest but most robust and the third being the longest. No abdominal somite has transverse groove.

Ground color is greyish brown. The numerous spines on the carapace are orange, and walking legs striped with black and whitish yellow. Each abdominal segment has a pair of lateral white spots which are bigger and more prominent than those on *P. homarus*. Swimmerets and tail fans are orange margined with white.

A large number of them are transported from the Mindanao area to Manila in headless-chilled condition by air for national consumption and exportation. The flesh in the abdomen and proximal portion of the antennae is particularly tasty.

The species is distributed commonly in the Indo-Pacific region.

They are sold at the fish market by retail price of ₱ 35/kg.



15. *Panulirus ornatus* (FABRICIUS)
(Scale represents 10 cm.)

FAMILY PALINURIDAE

16. *Panulirus versicolor* (LATREILLE)

English name: Painted crayfish, Marine crayfish or Spiny lobster.

Philippine name: Banagan (Tagalog, Ilongo and Cebuano).

Reaching as long as 30 cm in body length weighing 950 g, this species has a cylindrical carapace armed with blackish spines of various sizes. Supra-orbital spine is stronger and more curved than in other species of the same genus. Frontal plate is armed with two pairs of spines, the anterior slightly larger.

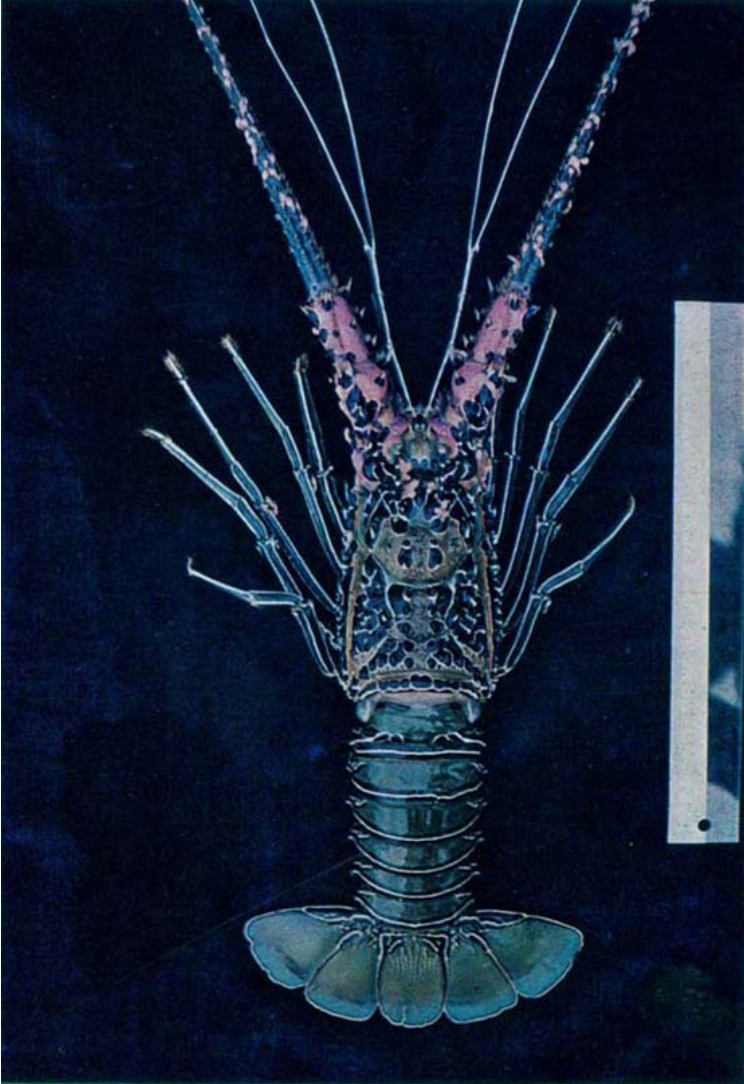
Ground color on carapace is dark blue, decorated with irregular white lines. Dorsal surface of abdomen is colored with a central white band and a marginal dark blue on the posterior margin of each segment. Peduncle of first antenna, walking legs and swimmerets have longitudinal white lines. The tail fans are bluish fringed with white lines.

This beautiful species is mostly found in rocky areas and sheltered edges of protected reefs washed by strong currents of clear water.

The present species follows *P. ornatus* in commercial value and commonly caught by diving.

It inhabits the Indo-West Pacific region eastward to Hawaii, southwards to Australia, and westward to Africa.

The spiny lobster sells for about ₱55/kg in Manila and ₱40/kg in the local areas, and some of them are exported to the U. S. A. and Japan in the headless condition together with *P. ornatus*.



16. *Panulirus versicolor* (LATREILLE)
(Scale represents 30 cm.)

FAMILY PALINURIDAE

17. *Panulirus homarus* (LINNAEUS)

English name: Spiny lobster or Marine crayfish.

Philippine name: Banagan (Tagalog, Ilongo and Cebuano).

They normally grow to a carapace length of 9 cm and have a maximum weight of about 600 g. Carapace is covered with numerous spines and clusters of short hair, which are crowded on the lateral region. Each dorsal abdomen has a transverse groove. Frontal plate has a pair of equally big spines.

Ground color on the entire body is dark green but often varies from yellowish to dirty green. There is a pair of prominent blue lines on the antero-lateral surface of the carapace. The lateral border of each abdomen has a white circular spot.

This is abundantly caught by gill nets particularly after heavy rains which make the seawater turbid.

The species is distributed in the Indo-West Pacific region, eastward to Taiwan and through Philippines westward to Africa.

They sell for ₱ 45/kg in Manila or ₱ 35/kg in local areas.



17. *Panulirus homarus* (LINNAEUS)

FAMILY PALINURIDAE

18. *Panulirus longipes* (A. MILNE-EDWARDS)

English name: Spiny lobster, Tropical spiny lobster, Coral crayfish, Marine crayfish, Tropical rock lobster, or Marine rock lobster.

Philippine name: Banagan (Tagalog, Ilongo and Cebuano).

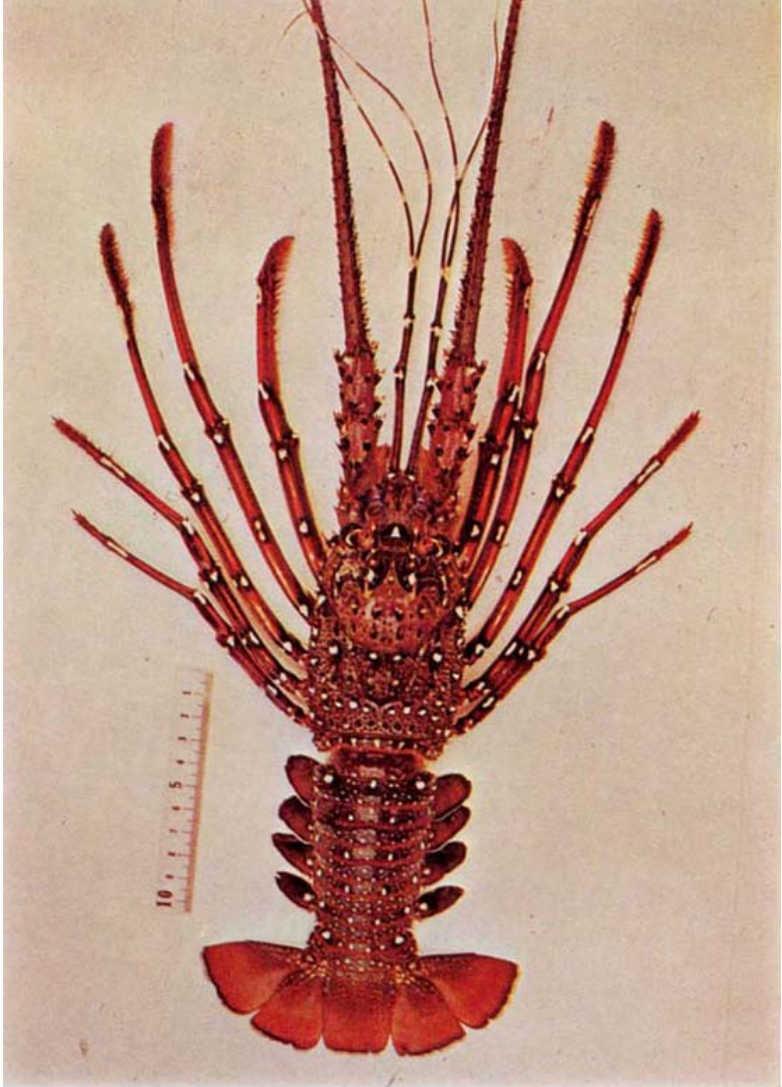
A large lobster attains some 9 cm in carapace length. First pair of walking legs is strongest and the second largest, both having three or four whitish orange longitudinal threads, the one on the dorsal surface the most prominent.

Ground color of body is cobalt or brownish blue. Each abdomen which is divided into two parts with a transverse groove, is set forth with many whitish spots. A large spot is present near the anterior base of the pleuron of each abdominal segment. The telson and uropods or tail fans are brownish fringed with deep blue.

They inhabit limestones, granite and coral reefs far to the edge of the continental shelf, generally at depths of as much as 80 meters. Nocturnal in behavior, these spiny lobsters are caught by gill nets or by divers using underwater light at night.

This species is found in the Indo-West Pacific region, from southern Japan through Christmas Islands, Philippines, Thailand to Mauritius and southwards to Western Australia.

They are sold with a market price similar to those of other spiny lobsters.



18. *Panulirus longipes* (A. MILNE-EDWARDS)
(Scale represents 10 cm.)

FAMILY PALINURIDAE

19. *Panulirus penicillatus* (OLIVIER)

English name: Tufted spiny lobster or Spiny lobster.

Philippine name: Banagan (Tagalog, Ilongo and Cebuano).

This species, attaining about 34 cm in body length, is cylindrical in front and becomes gradually flattened from the abdomen to the tail same as other spiny lobsters. Frontal plate is furnished with four spines, growing very close together at the base. The spines on the entire carapace are somewhat blunt. Each dorsal abdomen is deeply grooved. Like other species, a pair of strong antenna, a whip-like organ which is usually spiny at the base and stout, shorter than in other groups, serve both for sensing enemies and chasing them away.

The carapace is dark brown or dark green and the abdomen reddish brown with numerous minute white spots. The bases of spines on the carapace are white, the middle part orange, and the tip dark brown. A pair of remarkable whitish spots is present on the first abdominal segment. Lateral margin of carapace, first antennular peduncle and walking legs have longitudinal whitish lines. Telson and uropods are fringed with orange margins.

This species seems to prefer clear water with moderate currents and turbulence.

It is quite abundant, commercially much exploited especially in the Mindanao area and exported to foreign countries via Manila. It is captured at night by traps and by divers during the day.

The species is distributed in the Indo-West Pacific region, from Galapagos Islands, Hawaii, Tahiti, through Japan, Taiwan, Philippines, Thailand, India and Sri Lanka to the Red Sea, East Africa and North Australia.

It has ₱ 25/kg retail price in Mindanao.



19. *Panulirus penicillatus* (OLIVIER)
(Scale represents 10 cm.)

FAMILY PALINURIDAE

20. *Linuparus trigonus* (VON SIEBOLD)

English name: Rock lobster—no other names known.

Philippine name: Uson (Ilongo).

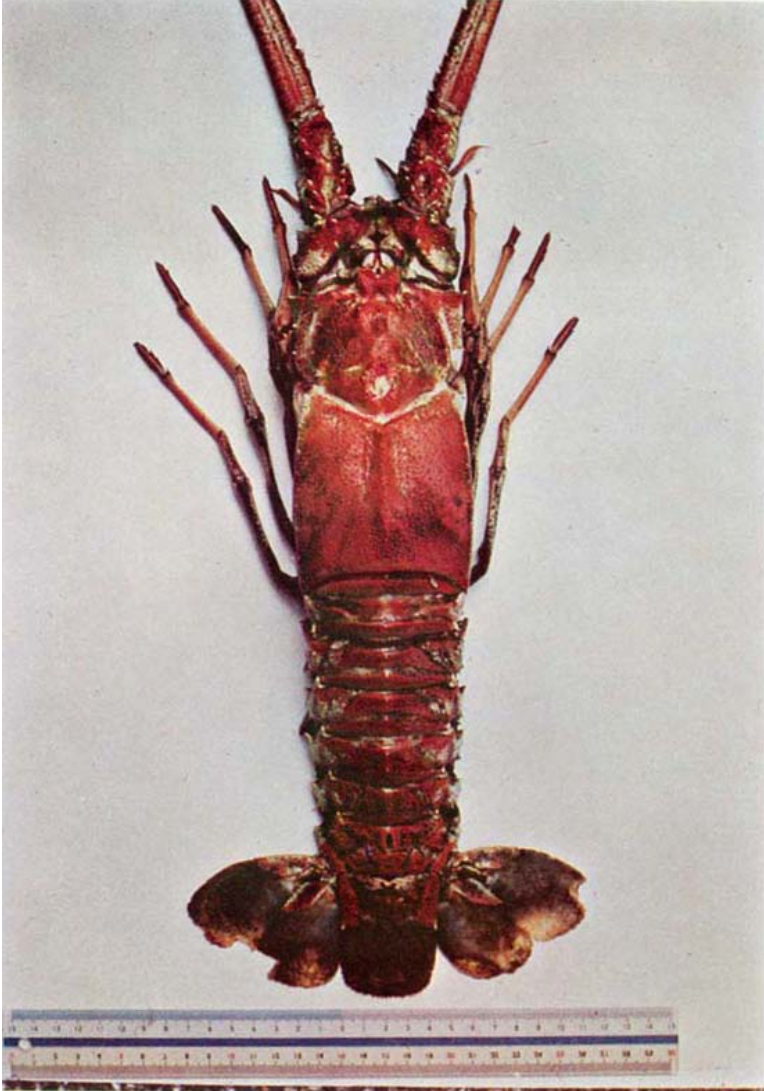
The entire body, covered with granules and tubercles, reaches 40 cm in body length. The carapace, showing pentagonal shape in transverse section, is clearly divided into cephalic and thoracic parts by a V-shaped cervical suture. The eye with robust stalk is not protected by a supra-orbital spine, and the flagellum of the antennule is short, these two characters separate the present from genus *Panulirus*.

Entire body color is brown.

This species inhabits the sandy and mud bottom from depths of 30 to 300 m. It is caught by commercial trawlers.

It is found in the Indo-West Pacific region, from Hawaii through Japan and Philippines to the Indian Ocean.

It is rarely offered for sale in the market.



20. *Linoparus trigonus* (VON SIEBOLD)
(Scale represents 30 cm.)

FAMILY SCYLLARIDAE

21. *Thenus orientalis* (LUND)

English name: Sand lobster, Sand crayfish, Shovel-nosed lobster, Bay lobster or Slipper lobster.

Philippine name: Pitik-pitik (Ilongo and Cebuano) or Cupapa (Surigaonon).

The body usually attains 13 cm in length. The common name shovel-nosed lobster is derived from the extremely flattened antennal plates. The shovel-nosed lobster closely resembles the spiny lobster phylogenetically, but differs in the shape of the antenna and carapace and in the mode of eye protection. The carapace is obviously flattened in the horizontal plane unlike the spiny lobsters. Furthermore, the eyes, which are located on the outer angles anteriorly on the carapace, are protected surrounded by definitely formed sockets, whereas, in the spiny lobster the supra-orbital spines play the role. Like the spiny lobsters, the female carries the eggs underneath the abdomen. The body is covered with tubercles and dark brown in ground color. *Thenus orientalis* is picked by commercial trawls on the muddy and/or sandy bottoms as deep as 100 m in depth.

This species is distributed in the Indo-West Pacific from Japan, through the Philippines to the Arabian Gulf and Australia.

It sells cheaper than spiny lobsters, calling a market price of ₱ 15/kg in local areas.



21. *Thenus orientalis* (LUND)
(Scale represents 16 cm.)

FAMILY SCYLLARIDAE

22. *Ibacus ciliatus* (VON SIEBOLD)

English name: Shovel-nosed lobster.

Philippine name: Pitik-pitik (Ilongo and Cebuano) or Cupapa (Surigaonon).

This species reaches a maximum body length of 20 cm. Carapace is much compressed and convex, its surface covered with granules. The anterior margin of the carapace is armed with 8 to 10 teeth excluding post-orbital spine. An antero-lateral margin of the carapace has two to five teeth, and postero-lateral margin, 11 or 12 teeth. Carapace is roundish in dorsal view measuring widest at the level of the second or third postero-lateral tooth. The protuberances on the median carina are not distinct. The fifth pereopod forms a complete subchela in the female but incomplete in the male.

When alive, the animal is generally toned with reddish brown. The eyes are close together near the midline of the carapace. *Ibacus ciliatus* are found burrowing in the relatively soft substrates, presumably their shovels working for this behaviour.

The species of commercial importance is caught by trawls from muddy fishing grounds together with *T. orientalis*.

The shovel-nosed lobster is distributed in Indo-West Pacific region, eastward to Japan through Philippines and westward to Africa.

The market price is the same as that of *T. orientalis*.



22. *Ibacus ciliatus* (VON SIEBOLD)

FAMILY COENOBITIDAE

23. *Birgus latro* (LINNAEUS)

English name: Coconut crab or robber crab.

Philippine name: Alimangong lupa (Tagalog), Fatus (Cebuano) or Umang (Cebuano and Ilongo).

This hermit crab is the largest land crab in the world, the biggest specimen growing 12 cm in carapace length with a weight of more than 2 kg. Its pincers, the left bigger than the right, and walking legs are hard and strong, except the last pair which is small and hidden underneath the carapace and covered with spines and bristles. The carapace is harder and more calcified than those of most hermit crabs, and the abdomen, which is shortened, shows a leathery texture.

The entire body is brownish purple in color, the carapace having dirty white spots, and appendages with plenty of scale-like ridges. This hermit crab has left the sea and changed to a terrestrial animal. The habit of carrying shell observed in hermit crab also was lost. Its body structure has changed, adjusting to its new environment. They emerge from the hiding place during night or on rainy days for search of carrion, their main food. Movements are deliberate but sometimes fast. The crab climbs coconut trees according to observations of the local people, which the present author also witnessed. Mother crab migrates to the sea for spawning.

The species is distributed in the Indo-West Pacific Region.

This hermit crab is edible and is consumed by the local people, but they are in danger of extinction in the near future.



23. *Birgus latro* (LINNAEUS)

FAMILY THALASSINIDAE

24. *Thalassina anomala* (HERBST)

English name: Mud lobster.

Philippine name: Palatak (Tagalog), Kolokoy or Kulukoy (Tagalog), Oson or Uson (Ilongo), or Mania (Cebuano).

This species may exceed 20 cm in body length with weight of 130 g. The peculiar animal, similar to a scorpion in appearance belongs to Section Anomura like the coconut crab, *Birgus latro*. The sub-chelated pincers are asymmetrical in shape and size. Abdominal part consists of six fragile segments and a telson.

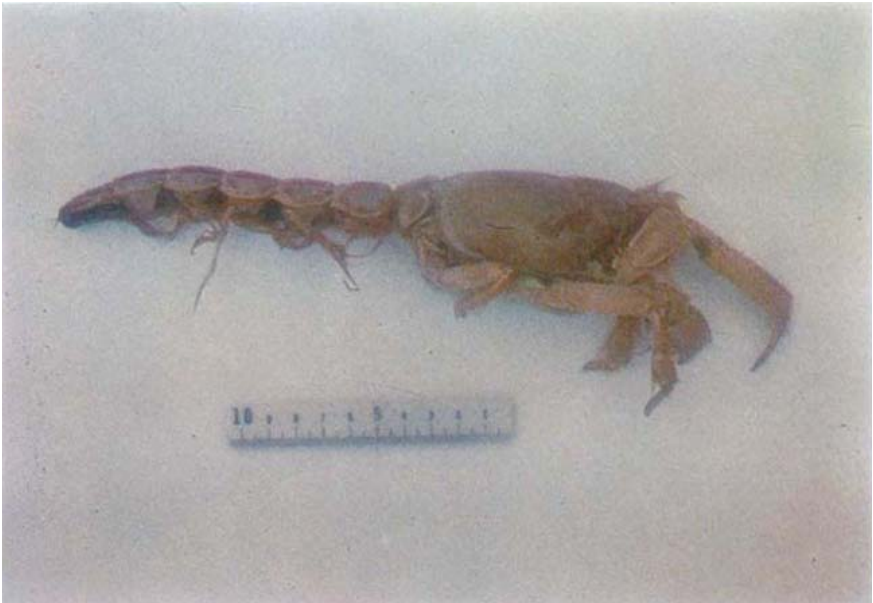
The entire body is brown or reddish brown in color.

They inhabit muddy burrows excavated along the dikes surrounding fishponds and in mangrove swamps. In early morning, newly scavenged mud particles which form muddy mound can be observed in the areas mentioned above. Massive pincers carry out the wet mud from the bottom of the burrows. Slow in moving the species is nocturnal and spends mostly in the burrow, but leave there on rainy days.

There is no specific fishing operation for catching the animal. They are captured only by chance i. e. by fishpond workers scavenging dike or mangrove areas.

This species is distributed in the Indo-Pacific area, from Okinawa (southern Japan) through the Philippines to the Indian Ocean.

It is occasionally sold in fish markets at a retail price of some ₱ 3/kg.



24. *Thalassina anomala* (HERBST)
(Scale represents 10 cm.)

FAMILY RANINIDAE

25. *Ranina ranina* (LINNAEUS)

English name: Kona crab, Red frog crab or Spanner crab.

Philippine name: Mawik (Cebuano), Curacha or Kuracha (Chavacano), Cucuracha (Chavacano), or Bacoco (Surigaonon).

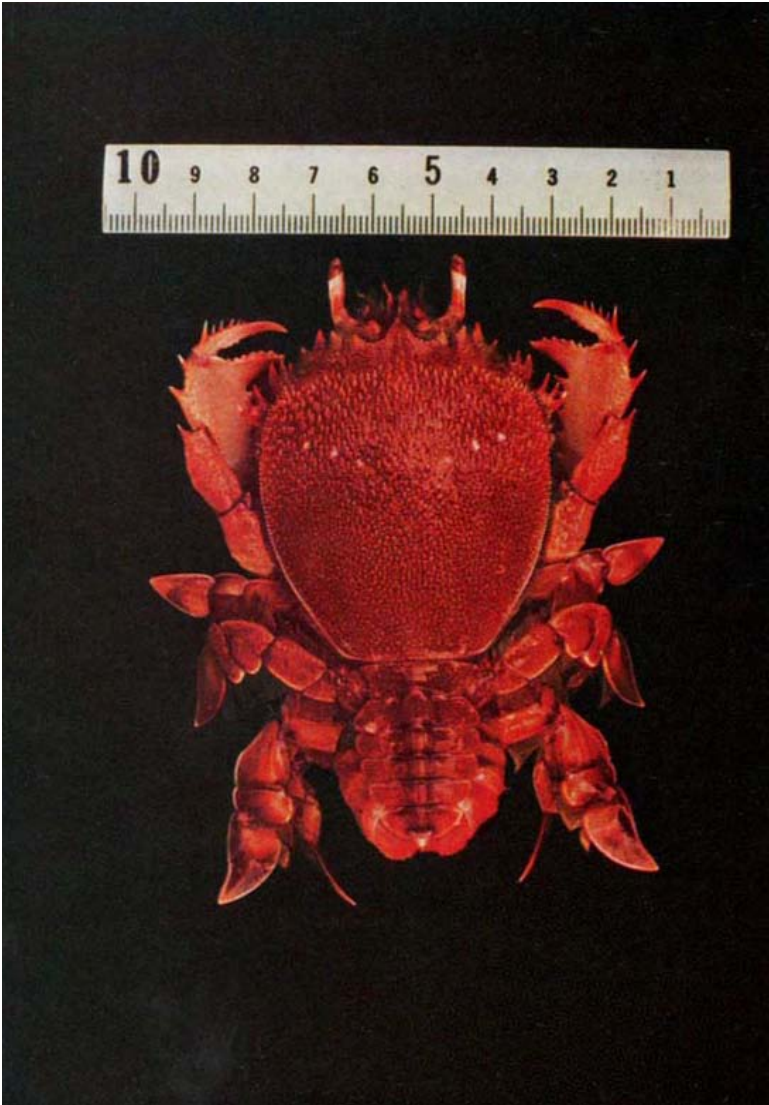
The carapace length in biggest male is almost 14 cm. This red crab is the largest representative species in the genus *Ranina* in tropic and subtropic regions. Carapace, which is nearly completely covered by low rounded scale like spines in large or small numbers, is anteriorly broader. Eye stalks, set vertically, are longer. The cheliped is strong bearing seven or eight teeth. Walking legs are all paddle-shaped and adapted for backward movement in sand, with anterior and posterior borders hairy.

Body is beautiful reddish brown in color with some 10 white spots on anterior part of carapace.

This crab inhabits sandy bottoms ranging from depths of several meters to 30 m or more. This is very palatable and is eaten wherever it is caught by gill net or crab trap. Zamboanga is well noted for this very tasty crab.

The species is widely distributed in the Indo-Pacific region, from Hawaii, Japan, Formosa, Philippines, through the Indonesian Archipelago to East Africa.

The retail price is about ₱50/kg in Manila and ₱40 in Zamboanga.



25. *Ranina ranina* (LINNAEUS)
(Scale represents 10 cm.)

FAMILY CALAPPIDAE

26. *Matuta lunaris* (FORSSKAL)

English name: Armed crab.

Philippine name: Parag-parag (Cebuano).

The body reaches about 4 cm in carapace length. With a pair of long projections from each side the carapace is shining and robust. There is a prominent spine at the outer proximal portion of the pincer. Four pairs of walking legs are adapted for swimming as well as burrowing in the sand.

The ground color of the entire body is pale yellow. The carapace is uniformly colored with small reddish brown spots forming irregular lines.

This species inhabits the shallow sand beach extending up to a depth of 20 m. There is no commercial fishing on this crab.

It is widely distributed in the Indo-Pacific area including Japan, China, Philippines, Red Sea, South Africa and Australia.

Rural people dwelling near the shoreline catch this crab by hand or by beach seine for their own consumption.



26. *Matuta lunaris* (FORSSKAL)
(Scale is expressed in mm.)

FAMILY PORTUNIDAE

27. *Scylla serrata* (FORSSKAL)

English name: Serrated swimming crab. Mud crab or Mangrove crab.

Philippine name: Alimango (Tagalog), Alama (Pangasinan), Rasa (Ilocano), Amorongsod (Ilongo), Malaka, Mulaka (Ilongo), Manguilaud (Ilongo), Lumayagan, Sugasuga (Cebuano), or Kangrejo (Chavacano).

The carapace in large male sometimes measures over 20 cm in width weighing about 1.5 kg with enormously massive chelipeds. Carapace is fan-shaped with smooth surface and bordered along the frontal margin by six spines between the eyes and by nine spines on the antero-lateral margin. There is a H-shaped depression on the central region. Chelipeds are very strong and robust. Like the other member of the family Portunidae, the last pair of leg forming an oar in shape is adapted for swimming.

It is entirely grayish green or purplish brown in color.

This crab inhabits muddy bottoms on brackish water along the shoreline, mangrove areas, and river mouths, hence known by the names mud crab or mangrove crab. It is an active and aggressive species.

They are usually caught by gill net or trap cages baited with fish heads or other trash fish meat and set on the bottom in shallow brackish water. Commercially important the crab is also caught with baited trap known locally as "Bintol".

The species is distributed throughout the Indo-Pacific region from Hawaii, southern Japan, Formosa, Philippines, to Australia, Red Sea and East and South Africa.

This is one of the delicacies in Philippine dishes fetching a market price ₱50-70/kg in Manila or ₱40-45/kg in other places. Females with mature ovaries are particularly expensive and delicious but the males are relatively cheaper regardless of size. The crab is usually sold live in the market all year round. Rattan fiber is used to tie the crab especially its big chelipeds.



27. *Scylla serrata* (FORSSKAL)
(Scale represents 18 cm.)

FAMILY PORTUNIDAE

28. *Portunus pelagicus* (LINNAEUS)

English name: Blue swimmer, Bluey or Swimming crab.

Philippine name: Alimasag (Tagalog), Suga-suga (Cebuano), Kasag (Cebuano), Lambay (Cebuano), Lampay (Cebuano) or Dawat (Cebuano).

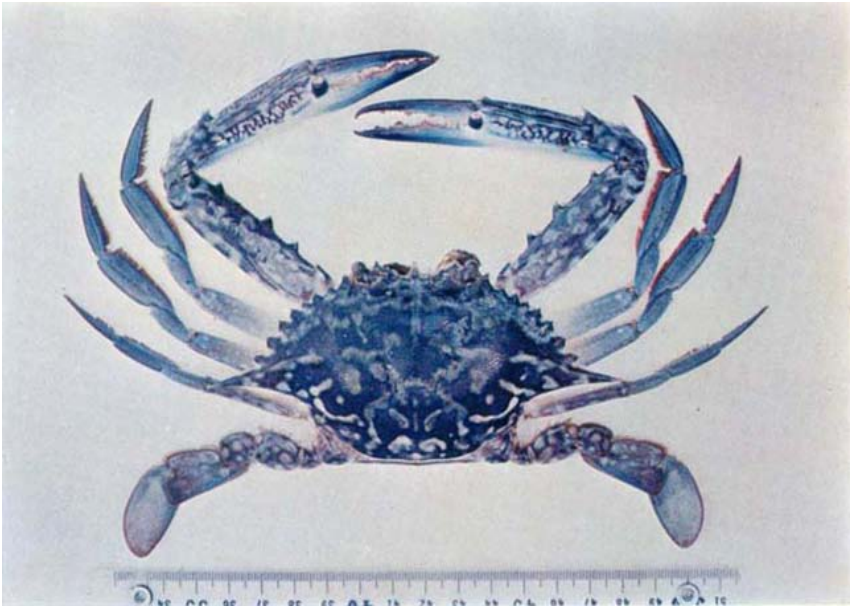
Carapace usually attains 7 cm length and 16 cm in breadth including lateral spines and weighing about 200 g. Carapace is convex and covered with small granules. Frontal margin has four spines in addition to orbital spines, and antero-lateral border is armed with nine sharp spines including post-orbital spines (characteristic of the genus *Portunus*). Chelipeds have strong spines, its surface scabrous. The last pair of legs is flattened for swimming.

A striking difference in color is shown between male and female. When alive the ground color is yellowish green in female and in male it is decorated with an irregular blue network.

The crab lives on sandy or muddy sand bottoms from shallow brackish water to depths beyond 40 m. This edible crab is caught with crab trap, gill net and trawler from the interior portion of a bay to offshore. The crab is also caught with a baited trap called " Bintol ".

The species inhabits the Indo-Pacific waters from Japan, Philippines, Tahiti, Australia westward to Red Sea and East Africa.

It is quite commonly offered for sale in fish markets at ₱ 25/kg.



28. *Portunus pelagicus* (LINNAEUS)
(Scale represents 18 cm.)

FAMILY PORTUNIDAE

29. *Portunus sanguinolentus* (HERBST)

English name: Blood-spotted swimming crab, Blue swimming crab, Red-spotted swimming crab, Sand Crab or Blue swimmer.

Philippine name: Alimasag (Tagalog), Bansaway (Ilocano), Suga-suga (Cebuano), or Kagang (Muslims).

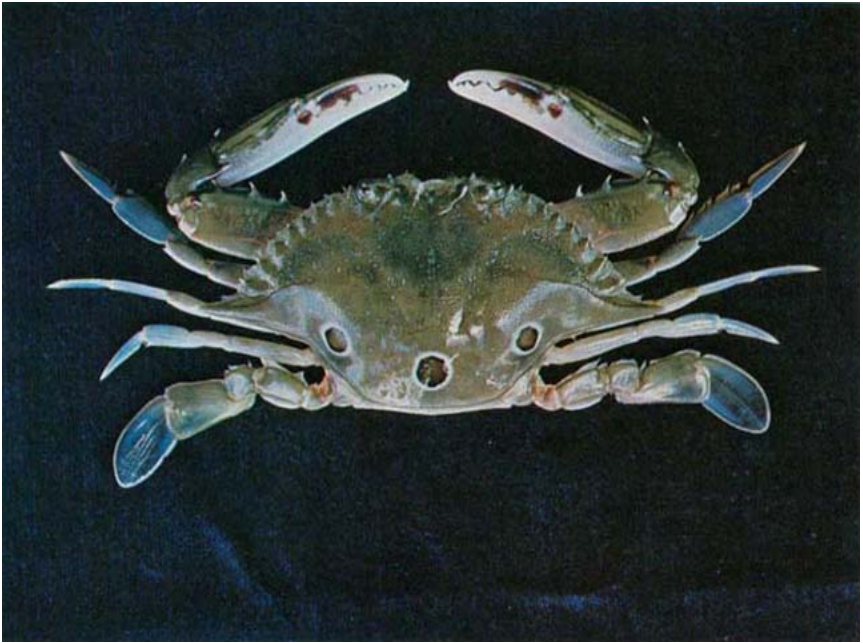
The carapace attaining some 6 cm in length is smooth, slightly convex and covered with small granules, and marked on its lateral border by a pair of very sharp spines. Antero-lateral border is armed with nine teeth, which are not sharply pointed. The posterior half of the carapace is marked by three large conspicuous red spots fringed with white circles.

This species lives on sandy and sandy mud bottoms mostly along the shoreline.

The crab which has lesser commercial value due to poor population and its smaller size than *P. pelagicus* is mainly caught with beach seines.

They range from Hawaii southward to Polynesia, westward, through Micronesia, to Japan, China and the Philippines and East Indies and further to the Indian Ocean and the Red Sea and the coast of Africa.

This edible crab is locally offered for sale in the market at ₱25/kg.



29. *Portunus sanguinolentus* (HERBST)

FAMILY PORTUNIDAE

30. *Charybdis feriata* (LINNAEUS)

English name: Coral crab, Mask crab or Christian crab.

Philippine name: Corosan (Ilongo), Kasag (Cebuano), San Francisco (Cebuano), or Lambay (Surigaonon).

The large males reach 10 cm in carapace length with one kg body weight. On the surface of the smoothly convex carapace there are usually seven longitudinal red markings of different pattern forming "+" and "y" shapes. The antero-lateral border is armed with six teeth (characteristic of the genus *Charybdis*) which are not pointed sharply. Chelipeds are strong: the inner border of the arm bears three large spines and outer border one spine. The ground color is reddish brown with several whitish mottles. A striking color pattern makes this crab easily identifiable.

The crab inhabits the sandy shore during its young stage, but the adult selects its habit in muddy offshore areas.

This species was formerly called *Ch. cruciata* (HERBST), which is a synonym of the present species. It is mainly caught with commercial trawlers offshore. It ranges from Hawaii, Japan, Hongkong to the Philippines, India, Madagascar, and the east coast of Africa.

The crab is often sold in fish market at ₱20/kg.



30. *Charybdis feriata* (LINNAEUS)
(Scale represents 10 cm.)

FAMILY PORTUNIDAE

31. *Charybdis natator* (HERBST)

English name: Swimming crab—no other names known.

Philippine name: Kantugas (Cebuano).

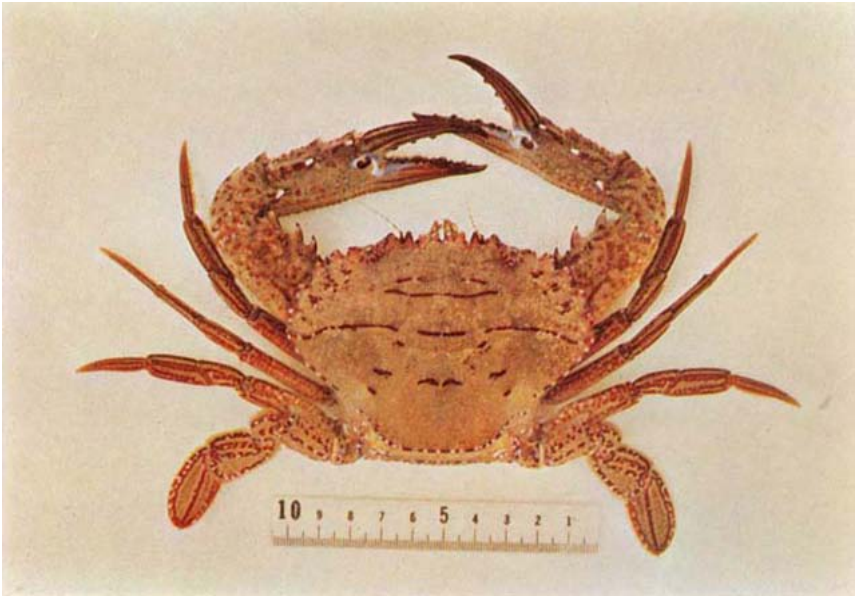
Carapace attaining some 17 cm in length is coated with furry tomenta and marked with several transverse granulated ridges. Chelipeds are considerably strong, covered with tubercles.

The ground color is pale brown added by reddish brown tubercles scattered.

They mostly inhabit the bottoms of pebbles, sand and sometimes rocks with depths from 10 to 40 m where they are caught by commercial trawlers.

This species ranges from Formosa, South China and Australia, westward to India, Madagascar and east coast of Africa.

They are often sold in fish market at ₱ 20/kg.



31. *Charybdis natator* (HERBST)
(Scale represents 10 cm.)

FAMILY PORTUNIDAE

32. *Thalamita crenata* (LATREILLE)

English name: Crenata swimming crab.

Philippine name: Dawat (Cebuano), Suga-suga (Cebuano) or Kagang (Cebuano).

This crab often measures more than 8 cm in carapace breadth. The species is identified by the six rounded lobes, nearly equal in size, along the anterior margin of the carapace between the eyes, and by five fine sharp spines on the antero-lateral margin (the latter, a characteristic of the genus *Thalamita*). The chelipeds or pincers are large and strong.

The color of entire body is dark green.

Their habitat is the mud flat, muddy beach, river mouth, mangrove area, etc. It seems to prefer brackishwater but is seldom found in clear sea water like coral reef.

This middle-sized crab is mostly caught with baby trawlers, skimming netters or crab traps in the inner portion of a bay or mangrove creek.

It is distributed in the entire tropical Indo-Pacific area from Hawaii southward and westward across the tropical western Pacific Ocean, through East Indies and across the Indian Ocean finally reaching the coast of Africa and the Red Sea.

They are caught by crab traps, often sold in fish market for local consumption at ₱10/kg.



32. *Thallamita crenata* (LATREILLE)
(Scale represents 18 cm.)

FAMILY PORTUNIDAE

33. *Podophthalmus vigil* (FABRICIUS)

English name: Red crab or Long-eyed swimming crab.

Philippine name: Kasway (Cebuano) or Kasag (Surigaonon).

The carapace attains some 5 cm in length usually smaller than *Portunus pelagicus*. This crab is quite easily identified by its eyes with extremely long eyestalks. The eyes including the stalks stand erect above the carapace or held horizontally in a long groove or eye sockets along the frontal margin of the carapace. The carapace, smooth, is extremely broadened in front than the posterior edge, and bears a strong spine on its sides. The chelipeds are rather slender and armed with spines. The last pair of legs, as in the other members of this family, are adopted for swimming.

The color of the carapace is dirty green and the chelipeds and walking legs are light violet.

It inhabits soft sand or muddy bottoms in mangrove areas, bays, and river mouths.

This crab is rarely caught by baby trawlers in shallow brackishwaters and also taken rarely by commercial trawlers operating offshore.

The crab is distributed widely in the Indo-Pacific region from Hawaii through the South Pacific, Japan, Philippines westward to the Red Sea and South Africa.

The price in the market is called same as *P. pelagicus*.



33. *Podophthalmus vigil* (FABRICIUS)
(Scale represents 10 cm.)

FAMILY OCYPODIDAE

34. *Ocypode ceratophthalma* (PALLAS)

English name: Horn-eyed ghost crab.

Philippine name: Biokoy (Ilongo), Bayokoy (Ilongo), Agokoy or Agoyokoy (Cebuano) or Alagokoy (Cebuano).

In general the species grows larger than another ghost crab, *O. cordimana* in size. The carapace is rectangular in shape armed by unequal chelipeds or pincers. Eyes bear very long horn at the tip.

The entire body is whitish with some dark brown areas on the carapace with no hair.

They creep back and forth actively across the sand beach during night, hence it is called horn-eyed ghost crab. This species excavates deep burrows on sand beaches in tropical and sub-tropical areas. They are nocturnal in behavior, but are often found on the surface carrying sand out of a burrow during low tide in the early morning.

Local people catch this crab by hand at night with the aid of kerosene torch.

This species is widely distributed throughout the tropical Indo-Pacific region, from Hawaii and Tahiti, southern Japan and the Philippine southward to New South Wales, Australia, westward to the Red Sea, Arabian Gulf, and East and South Africa.

The people living near the shore cook the crab by frying in oil for their own meals.



34. *Ocypode ceratophthalma* (PALLAS)

FAMILY OCYPODIDAE

35. *Ocypode cordimana* (Desmarest)

English name: Ghost crab or Sand crab.

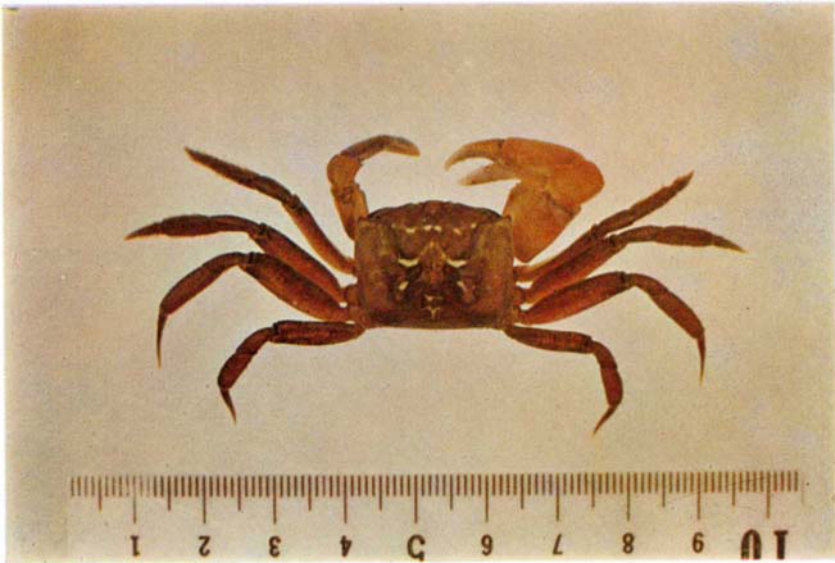
Philippine name: Biokoy (Ilongo), Bayokoy (Ilongo), Agokoy or Agoyokoy (Cebuano).

The carapace, attaining about 3 cm wide, is almost quadrate without any hairs. Chelipeds are unequal in both sexes. The entire body is somewhat yellowish white. They inhabit the sandy beaches. Species of the genus *Ocypode* are called ghost crabs partly because of their pale coloring and partly from their habit of swift running ahead of the observer on a sandy beach particularly at night.

This species is distributed widely throughout the tropical Indo-Pacific, from East Asia, Tahiti to the Red Sea and South Africa.

In rural areas people living near the shore catch the crab by hand with the aid of kerosene torch during night for their own eating.

They are cooked with the same manner as *O. ceratophthalma*.



35. *Ocypode cordimana* (DESMAREST)
(Scale represents 10 cm.)

FAMILY GRAPSIDAE

36. *Varuna litterata* (FABRICIUS)

English name: Shore crab—no other names known.

Philippine name: Talangka (Tagalog), Calampay (Ilongo), Katang (Ilongo), or Kalampay (Cebuano)

The larger specimen attains about 5 cm in carapace length. The carapace is flattish and its frontal margin horizontal. Propodus and dactylus of ambulatory legs are flattened and modified for swimming. Chelipeds are usually asymmetrical.

The ground color of the entire body is brown with numerous blackish spots.

They are sometimes found clinging to floating timber, bamboo and coconut shell, but usually inhabit the mangrove creek, fresh water canal, brackish fishpond or even the rice field. The swarming of megalopa (one of the larval stages) is from time to time observed going upstream through a small or large river mouth.

This small-sized crab is mainly caught with baby trawlers or fish corrals at the mouth of the bay.

This species is distributed from Japan to India, Madagascar, and the east coast of Africa. Regardless of big catch, it has little commercial value because of its small size.

In rural areas the market price is set at ₱ 5/kg.



36. *Varuna litterata* (FABRICIUS)
(Scale represents 11 cm.)

FAMILY GECARCINIDAE

37. *Cardisoma carnifex* (HERBST)

English name : Land crab.

Philippine name: Kuray (Ilongo), Kagang (Cebuano) or Ungkog (Cebuano).

The carapace, attaining some 5 cm in length, is markedly convergent posteriorly, and the dorsal surface is thickly covered with a pavement of microscopic granules. The posterolateral surface is only poorly striate. The chelipeds are asymmetrical.

The big chelipeds and mouth parts are dark purple and carapace is dark brown in color. The distal halves of four pairs of walking legs have coarse hairs.

As ordinary habitat this species hides inside holes with muddy wall, which frequent in mangrove swamps or mud-flats near river mouths. They are nocturnal in habit, but emerge from the hiding places at night or sometimes on rainy days for feeding.

At present there may be no particular way of the catching of the crab.

This Crab is distributed from Tahiti through southern Japan, Formosa, to Timor, Celebes, Andamans, Mozambique and Durban.

This land crab is utilized as food by the people living in rural areas.



37. *Cardisoma carnifex* (HERBST)

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