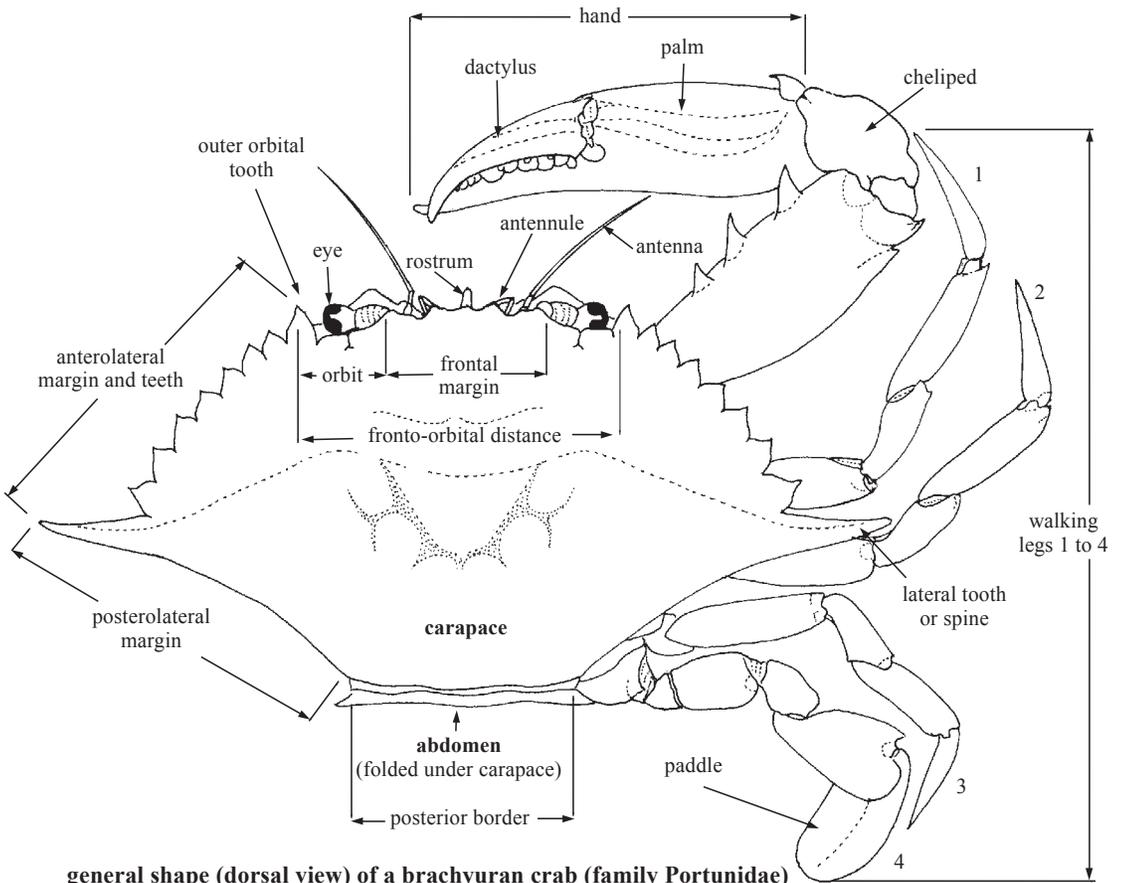


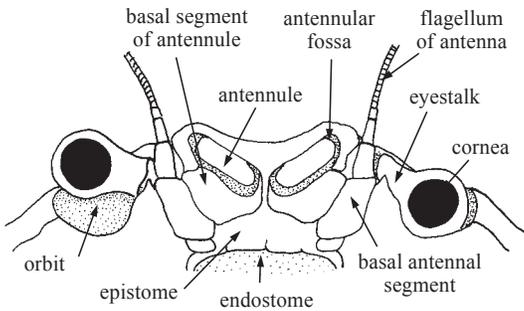
TRUE CRABS

by M. Tavares, Universidade Santa Úrsula, Brazil

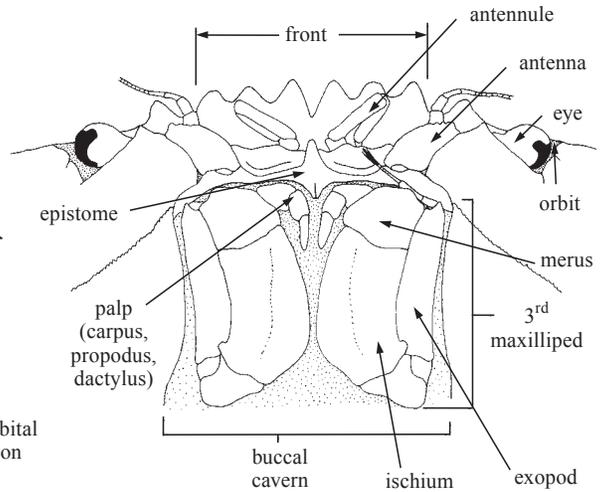
TECHNICAL TERMS AND MEASUREMENTS



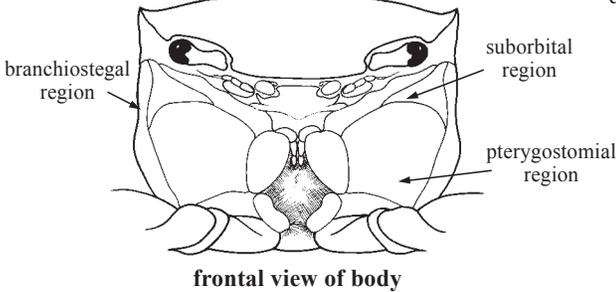
general shape (dorsal view) of a brachyuran crab (family Portunidae)



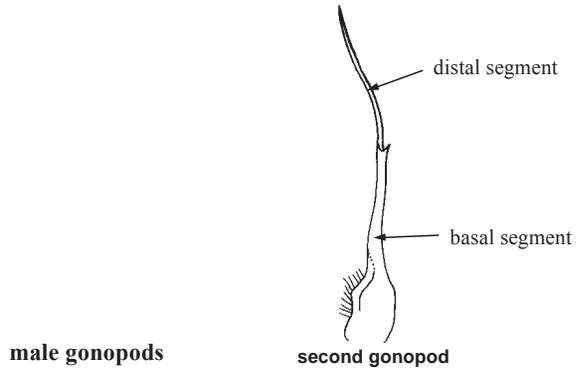
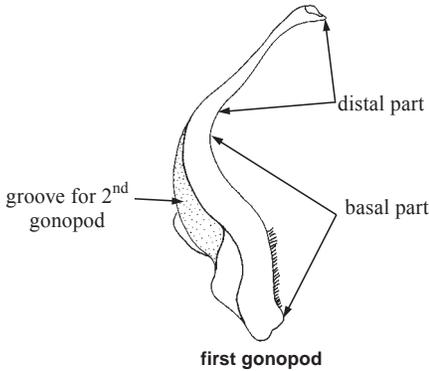
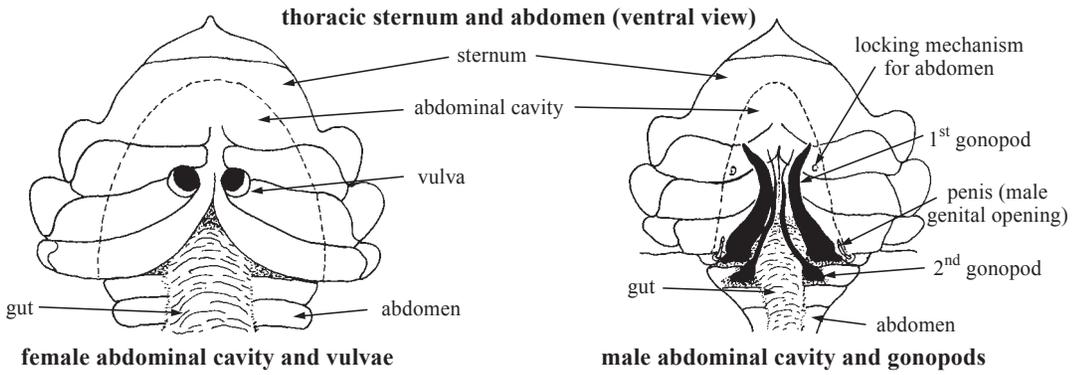
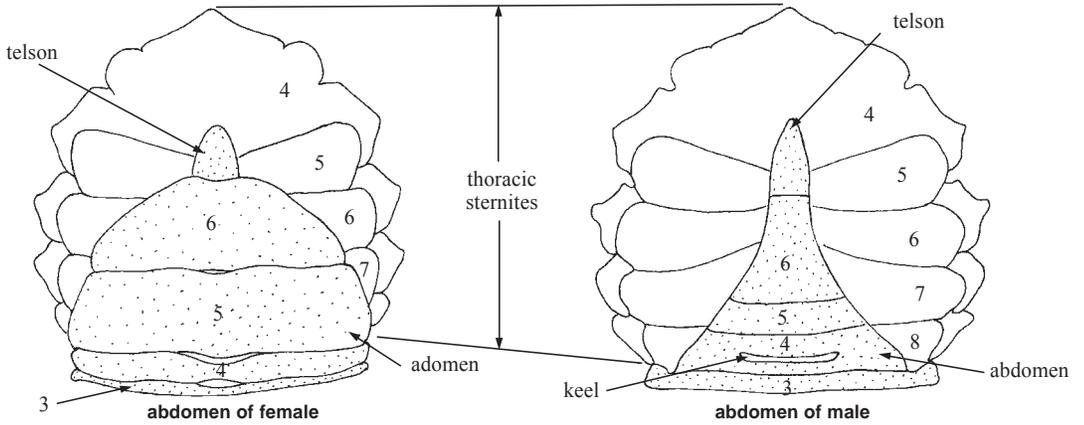
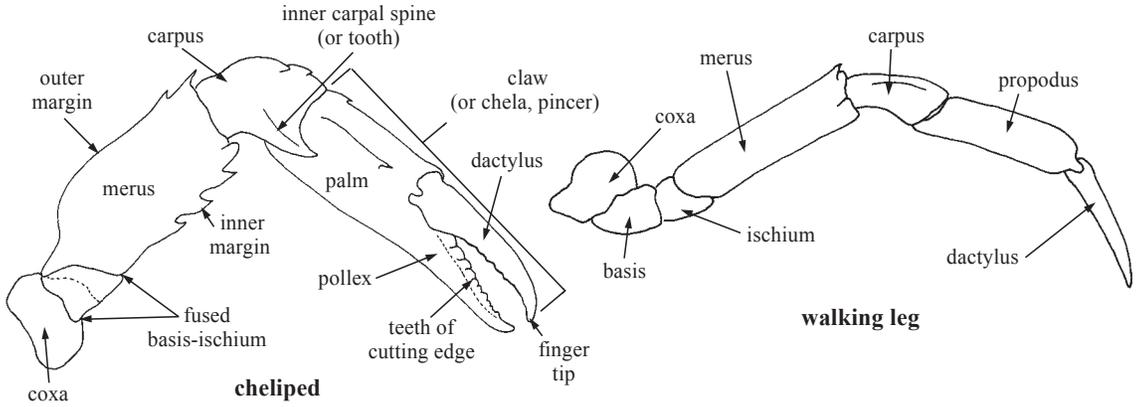
eyes, antennae, and antennules (ventral view)



mouth field



frontal view of body



male gonopods

second gonopod

GENERAL REMARKS

The true crabs (Decapoda: Eubrachyura) have a depressed carapace or cephalothorax and a much reduced, straight, and symmetrical abdomen which is closely bent under the cephalothorax; this abdomen is never used for swimming and lacks biramous uropods; in the female, during the spawning season, the eggs are attached to the abdominal appendages (berried crabs). The cephalothorax has 5 pairs of walking legs, the first of which is chelate (ending in pincers) and nearly always much stronger than the other legs.

Species in Area 31 which contribute substantially to commercial fisheries or may occasionally be found in them belong to only 6 families. Most of these include a large number of genera and species of no economic value; hence, the presentation of keys to genera and comprehensive species lists goes beyond the scope of any practical field identification guide designed for fishery purposes.

From 1984 to 1998 capture production reported from Area 31 totaled 864 901 t (Bahamas: 250 t; Belize: 123 t; Honduras: 110 t; Mexico: 138 352 t; Nicaragua: 263 t; USA: 652 087 t; Venezuela: 73 716 t).

GUIDE TO FAMILIES OF INTEREST TO FISHERIES OCCURRING IN THE AREA

CANCRIDAE

p. 337

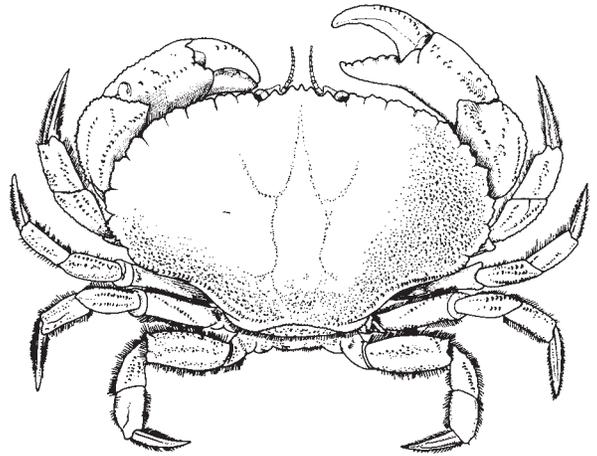
Rock crabs

Carapace broadly oval or hexagonal; front not produced in form of a rostrum but having a central tooth; anterolateral margins toothed (9 quadrangular or pentagonal teeth in species listed herein); lateral spines not strongly developed; antennules folding lengthwise. Found only in northern part of area. This family comprises 1 genus, *Cancer* Linnaeus, 1758, and 4 living species in the Atlantic ocean, 2 of which are eastern Atlantic in distribution (*Cancer bellianus* Johnson, 1861, and *Cancer pagurus* Linnaeus, 1758) and 2 western Atlantic (*Cancer borealis* Stimpson, 1859, and *Cancer irroratus* Say, 1817). Nations' (1979) proposition of dividing the genus *Cancer* into subgenera is followed here.

Two species of interest to fisheries marginally in the area:

Cancer (Cancer) irroratur Say, 1817.

Cancer (Metacarcinus) borealis Stimpson, 1859.



GECARCINIDAE

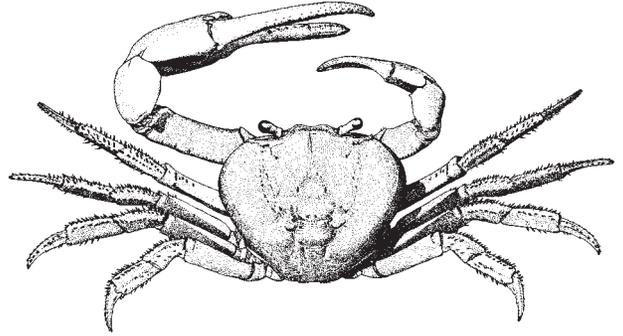
p. 339

Land crabs

Carapace transversely oval, not strongly depressed, anterolateral margins strongly arched, not divided into teeth or lobes; fronto-orbital margin (between outer orbital angles) very much shorter than greatest width of carapace; third maxillipeds gaping noticeably, exposing the mandibles; dactyls of walking legs ridged and spiny. Live on land, always at the reach of the water table.

A single species of interest to fisheries in the area:

Cardisoma guanhumi Latreille, 1828.

**GERYONIDAE**

p. 340

Golden crabs

Carapace hexagonal; dorsal surface relatively smooth to granular; frontal margin with 4 teeth; anterolateral margins distinctly convex, each with 3 to 5 low, sometimes indistinct teeth. Dactylus of walking legs T-shaped in cross-section. Male abdominal segments 3 to 5 fused, functionally immovable, but sutures still visible.

A single species, *Chaceon fenneri* of major interest to fisheries in the area. Also occurring in the area are:

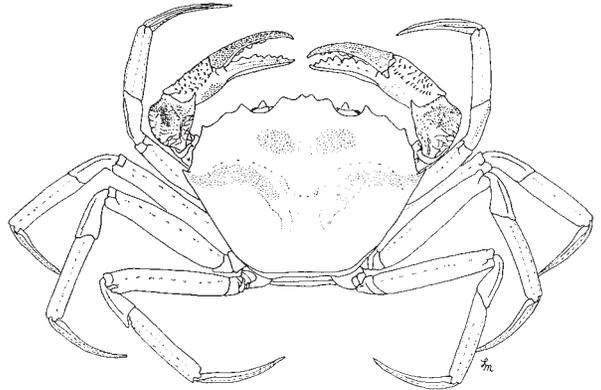
Chaceon eldorado (Manning and Holthuis, 1989).

Chaceon fenneri Manning and Holthuis, 1984.

Chaceon inghami (Manning and Holthuis, 1986).

Chaceon notialis Manning and Holthuis, 1989.

Chaceon quinquedens (Smith, 1879).



(from Manning and Holthuis, 1984)

MENIPPIDAE

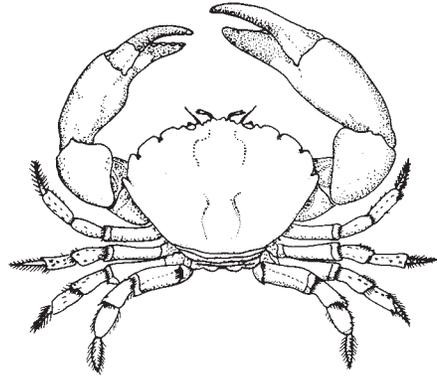
p. 341

Stone crabs

Carapace transversely oval or transversely hexagonal, front broad and notched centrally; never produced in form of a rostrum; anterolateral margin lobate (in the species listed herein) or toothed; antennules folding transversely or obliquely.

A single species of interest to fisheries in the area:

Menippe mercenaria Say, 1818.

**OCYPODIDAE**

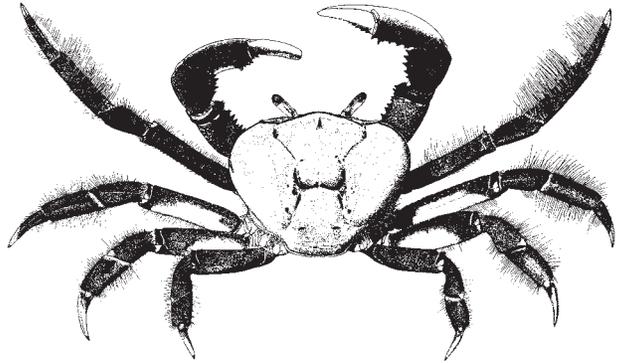
p. 342

Ghost crabs

Carapace usually rectangular or nearly so, or trapezoidal; front relatively narrow and somewhat bent downward; orbits occupying whole anterior border outside front; outer walls of orbits often open, eyestalks long (longer than width of front); third maxillipeds usually completely covering mouth cavity, concealing the mandibles; dactyls of walking legs smooth or ridged but not conspicuously spiny.

A single species of interest to fisheries in the area:

Ucides cordatus (Linnaeus, 1763).

**PORTUNIDAE**

p. 343

Swimming crabs

Carapace broad and flat, with 5 to 9 teeth on anterolateral margin; well-developed lateral spine at greatest width (in the species listed herein); last pair of legs usually distinctly adapted for swimming, flattened and paddle-shaped, but flattened without being paddle-shaped in a few species (not included here).

Ten species of interest to fisheries in the area:

Arenaeus cribrarius (Lamarck, 1818).

Callinectes bocourti A. Milne Edwards, 1879.

Callinectes danae Smith, 1869.

Callinectes exasperatus (Gerstaecker, 1856).

Callinectes larvatus Ordway, 1863.

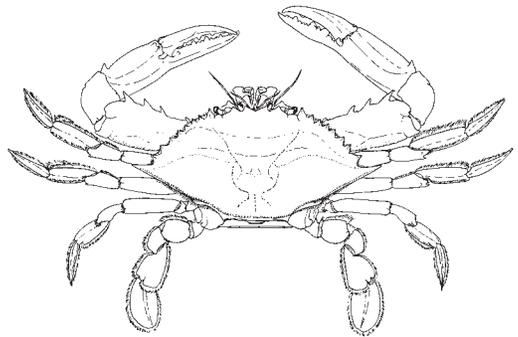
Callinectes maracaboensis Taissoun, 1969.

Callinectes ornatus Ordway, 1863.

Callinectes rathbunae Contreras, 1930.

Callinectes sapidus Rathbun, 1896.

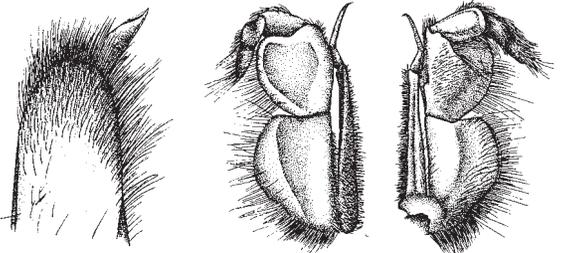
Callinectes similis Williams, 1966.



Key to the genera of Gecarcinidae occurring in the area

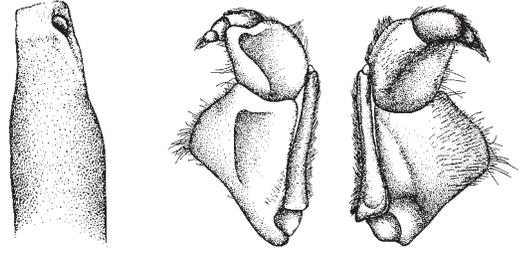
Note: The genus *Discoplax* A. Milne Edwards, 1867 (type species: *Discoplax longipes* A. Milne Edwards, 1867) should no longer be included in the synonymy of *Cardisoma*. This issue, however, is well beyond the scope of the present review and will be dealt with in a separate work.

- 1a. Exopod of the third maxilliped not concealed by ischium; provided with a long flagellum; first gonopod ending in a pectinated tip, gonopod aperture terminal (Fig. 1) *Cardisoma*
- 1b. Exopod of the third maxilliped concealed or not by ischium; flagellum absent or extremely short; first gonopod ending in a pectinated tip, gonopod aperture subterminal → 2



a) gonopod b) maxilliped dorsal c) maxilliped ventral

Fig. 1 *Cardisoma*

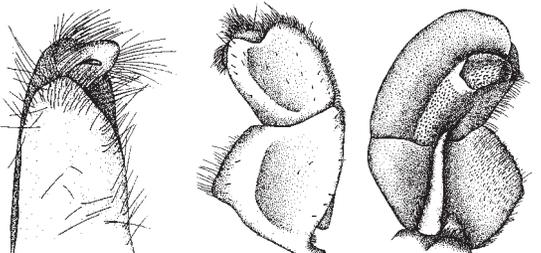


a) gonopod b) maxilliped dorsal c) maxilliped ventral

Fig. 2 *Epigrapsus*

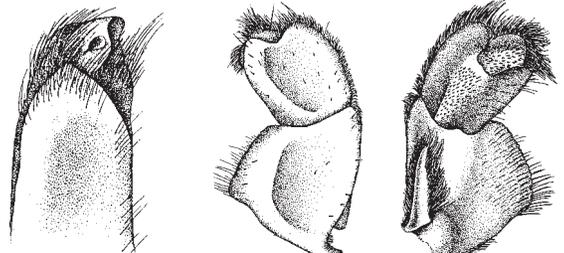
- 2a. Pterygostomian region densely covered with short hairs; exopod of the third maxilliped not concealed by ischium, provided with extremely short flagellum (Fig. 2) *Epigrapsus*
- 2b. Pterygostomian region covered with scattered hairs; exopod of the third maxilliped concealed by ischium, flagellum absent → 3

- 3a. Closed orbit; palp of the third maxilliped concealed by merus; merus and ischium subequal in size (Fig. 3) *Gecarcinus*
- 3b. Open orbit; palp of the third maxilliped exposed; merus much smaller than ischium (Fig. 4) . *Gecarcoidea*



a) gonopod b) maxilliped dorsal c) maxilliped ventral

Fig. 3 *Gecarcinus*



a) gonopod b) maxilliped dorsal c) maxilliped ventral

Fig. 4 *Gecarcoidea*

Key to the genera of Ocypodidae occurring in the area

(adapted from Williams, 1984)

- 1a. Slender eyestalk, with cornea not conspicuously enlarged; chelipeds of male very unequal, of female equal and quite small (Fig. 1) *Uca*
- 1b. Stout eyestalk with conspicuous, enlarged cornea; chelipeds of both sexes well developed and somewhat unequal. → 2

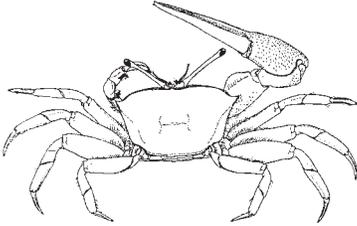


Fig. 1 *Uca*

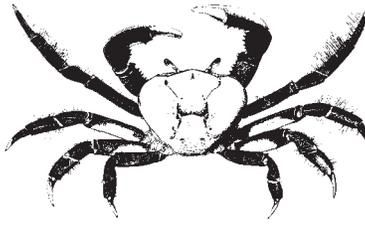


Fig. 2 *Ucides*

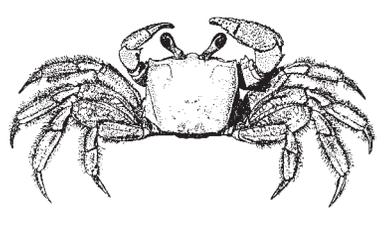


Fig. 3 *Ocypode*

- 2a. Fronto-orbital distance (between outer orbital angles) less than 2/3 of maximum carapace width; tufts of setae between the bases of the third and fourth pereopods lacking (Fig. 2) . . . *Ucides*
- 2b. Fronto-orbital distance (between outer orbital angles) and maximum carapace width almost the same; long tufts of setae between the bases of the third and fourth pereopods (Fig. 3) *Ocypode*

Key to the genera of Portunidae occurring in the area

(modified from Rathbun, 1930)

- 1a. Distal articles of fifth legs not paddle-like *Carcinus*
- 1b. Distal articles of fifth legs paddle-like → 2

- 2a. Carapace anterolateral teeth 3, 5, or 6 (including the outer orbital tooth) → 3
- 2b. Carapace anterolateral teeth 9 to 11 (including the outer orbital tooth). → 7

- 3a. Front subentire; movable portion of antenna excluded from orbit; anterolateral teeth 3 *Coenophthalmus*
- 3b. Front dentate; movable portion of antenna not excluded from orbit; anterolateral teeth 3, 5, or 6 → 4
- 4a. Anterolateral teeth 5, last tooth very long and spiniform, much longer than others *Bathynectes*
- 4b. Anterolateral teeth similar, either dentiform or spiniform; 3, 5, or 6 in number → 5

- 5a. Anterolateral teeth 3, spiniform *Raymmaninus*
- 5b. Anterolateral teeth 5 or 6, dentiform → 6

- 6a. Anterolateral teeth 5 *Ovalipes*
- 6b. Anterolateral teeth 6 *Charybdis*

- 7a. Movable portion of antenna excluded from orbit by a prolongation of its basal article; anterolateral teeth alternately large and small *Cronius*
- 7b. Movable portion of antenna not excluded from orbit. → 8

- 8a.** Chelipeds robust, palm inflated and smooth, not costate *Scylla*
8b. Palm costate and usually armed with spines → **9**
- 9a.** No longitudinal ridge on the palate; superior fissures of orbit open, V-shaped *Arenaeus*
9a. A longitudinal ridge on the palate → **10**
- 10a.** Last 2 articles of palp of third maxillipeds compressed and lamellate; chelipeds of male extremely long and slender *Lupella*
10b. Articles of palp subcylindrical; chelipeds of male and female subequal, not noticeably long and slender → **11**
- 11a.** Carpus of cheliped without mesiodistal spine; male abdomen T-shaped *Callinectes*
11b. Carpus of cheliped with mesiodistal spine; male abdomen triangular → **12**
- 12a.** Pterygostomial region of the carapace without a stridulating ridge *Portunus*
12b. Pterygostomial region of the carapace with a stridulating ridge *Laleonectes*

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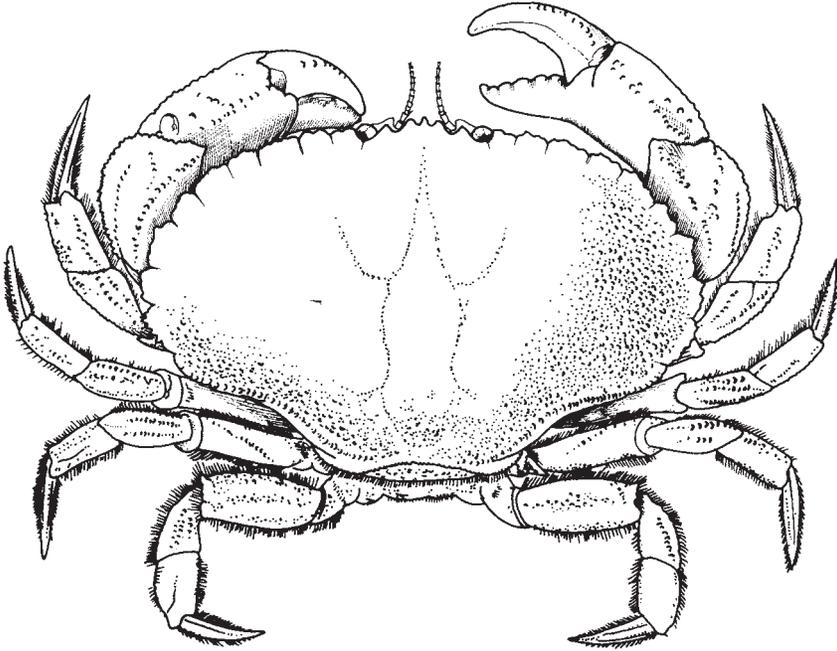
CANCRIDAE

Cancer (Metacarcinus) borealis Stimpson, 1859

CRJ

Frequent synonyms / misidentifications: *Cancer borealis* Stimpson, 1859 / None.

FAO names: En - Jonah crab; Fr - Crabe jona; Sp - Jaiba de roca jonás.

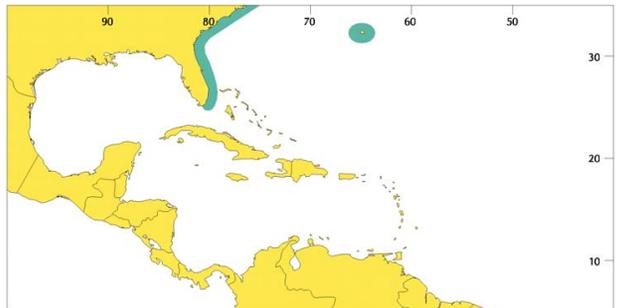


Diagnostic characters: Carapace approximately 2/3 as long as wide, surface coarsely granulate; **front** (excluding inner orbital angles) **with 3 teeth**, middle one exceeding others and depressed (flattened dorsoventrally); anterolateral margins divided into 9 quadrangular lobes or teeth with **margins minutely denticulate**; notches between teeth continued on carapace as short, closed fissures. Pincers stout, nearly as long as second legs, carpus and hand with strong granulose rugae, **upper margin of pincers denticulate**, carpus with sharp inner dorsal spine. **Colour:** red dorsally, yellow ventrally; back with 2 curved lines of yellowish spots and, behind middle, a figure somewhat resembling letter H; legs mottled and reticulated with yellow and red, more or less purplish.

Size: Maximum width: male 175 mm; female 137 mm.

Habitat, biology, and fisheries: This is a cold-water species centred in the region north of Area 31. It ranges from the intertidal zone among rocks to 800 m. Small to medium-sized individuals are found near shore seasonally (especially in the south), while larger ones occur in deeper waters. This species has been found in rocky bottoms in association with *Homarus americanus*. It feeds mainly on molluscs, echinoderms, and other invertebrates. Mainly outer continental shelf and beyond, often caught along with lobsters. Caught with bottom trawls and lobster traps. Marketed fresh. Separate statistics for this species are collected only for Area 21 (catches from 1984 to 1998 totaled 12 196 t).

Distribution: Nova Scotia to South Tortugas, Florida. Southward (Carolinas) only in deep water. There is a doubtful record from Bermuda.

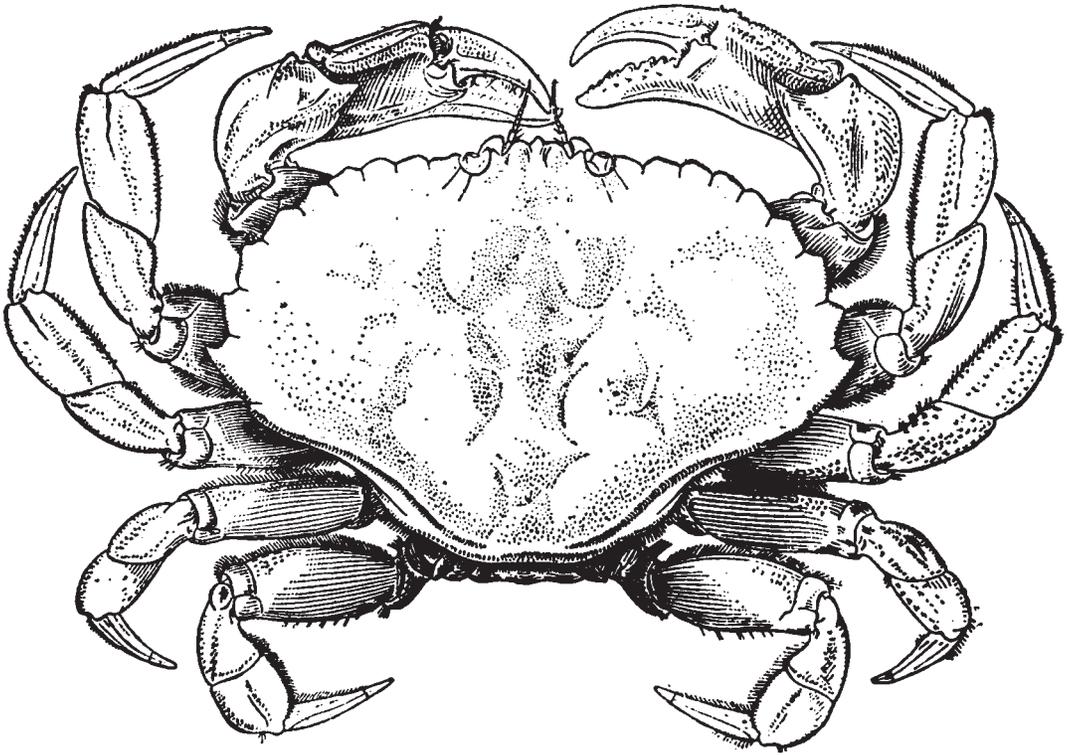


Cancer (Cancer) irroratus Say, 1817

CRK

Frequent synonyms / misidentifications: *Cancer irroratus* Say, 1817 / None.

FAO names: **En** - Rock crab; **Fr** - Tourteau poinclos; **Sp** - Jaiba de roca amarilla.

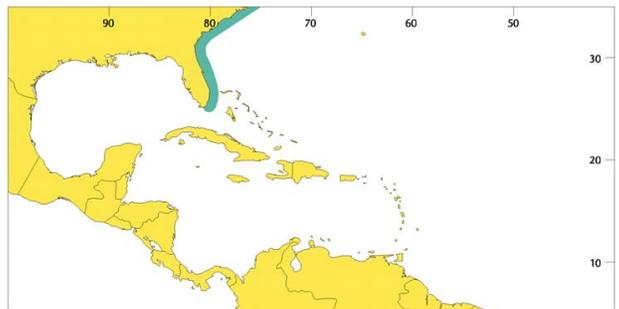


Diagnostic characters: Carapace approximately 2/3 as long as wide, convex, granulated; **front with 3 teeth**, middle one exceeding others and depressed (flattened dorsoventrally); anterolateral margins (excluding inner orbital angles) divided into 9 lobes or teeth with **edges granulate**; notches between teeth continued on carapace as short, closed fissures giving teeth a pentagonal character. Pincers moderate-sized, shorter than second legs, **ridges granulated**, carpus with sharp inner dorsal spine. **Colour:** yellowish, closely dotted with dark purplish brown, becoming reddish brown after death.

Size: Maximum width: male 135 mm; female 113 mm.

Habitat, biology, and fisheries: This is basically a cold-water species centred in the region north of Area 31. It ranges in depth from the low-water mark to 575 m. Small to medium-sized crabs move into shallower depths, especially in winter, whereas larger ones occur in deeper water. Feeds mainly on molluscs, echinoderms, and other invertebrates. Mainly outer continental shelf and beyond, often caught along with lobsters. Caught with bottom trawls and lobster traps. Marketed fresh. Separate statistics for this species are collected only for Area 21 (catches from 1984 to 1998 totaled 10 744 t).

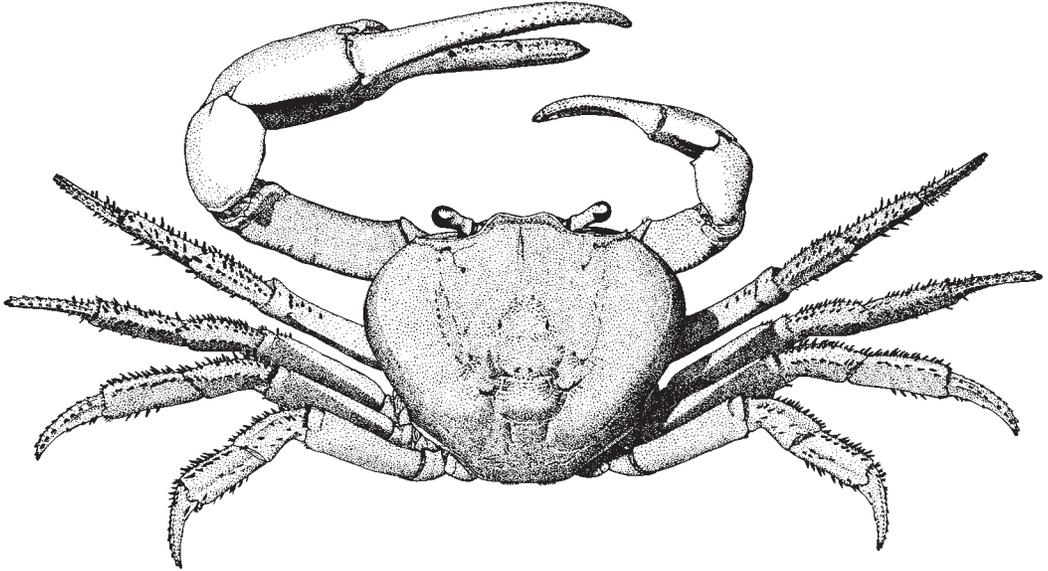
Distribution: From Labrador to off Miami, Florida. Southward (Carolinas) only in deep water.



GECARCINIDAE

Cardisoma guanhumi Latreille, 1828

KDG

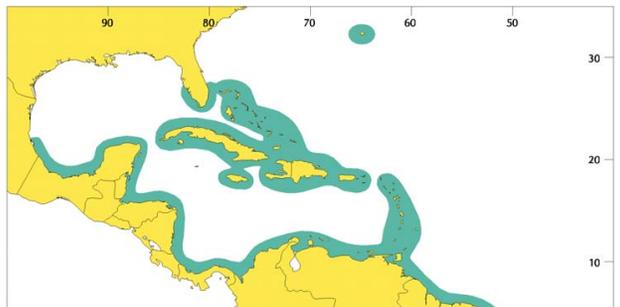
Frequent synonyms / misidentifications: None / None.**FAO names:** En - Blue land crab; Fr - Tombourou matoutou; Sp - Moro de mangle azul.

Diagnostic characters: Carapace broadly egg-shaped, narrow posteriorly and **greatly inflated anterolaterally in adults; lateral margins not sharply defined;** fronto-orbital distance (space between outer orbital angles) about 2/3 of maximum carapace width in adult males, nearly 3/4 in females. Pincers distinctly unequal, relatively smooth; fingers meeting only at tips, more gaping in larger hand, size of larger hand increasing disproportionately with age, especially in males. **Walking legs sparsely hairy on margins, dactyls with 4 rows of spines. Colour:** juveniles dark brown; transitional stage dark purple and orange; adults lavender blue, females change to white or dull yellow at time of ovulation (once attained, colour remains through autumn and winter in Florida population); males sometimes undergo less frequent and usually incomplete colour changes.

Size: Maximum width: male 120 mm; female 110 mm.

Habitat, biology, and fisheries: This is a nearly terrestrial species. It lives in greatest concentration in burrows (to 1.5 m deep) in relatively low lying ground, but also along canals or ditches among rocks and debris. Common in mangrove areas. Burrows may be as far as 8 km from the sea but always where the water table (fresh or salt) can be reached. Crabs normally live subaerially, occasionally wetting the gills, but can survive long periods of immersion and can adapt easily to great variations in water salinity. Females return briefly to the sea where eggs must hatch and larvae undergo developmental changes before transformation to the emergent crab stage. Feeds on a wide variety of plant material, occasionally some carrion. Cannibalism has been reported. Industrialized by some Caribbean countries. It has been reported that it is exported by Venezuela, Colombia, and the Dominican Republic. No separate statistics are collected for this species. Collected at night by hand or trapped and held alive in fenced pens. In some cases captive crabs are 'fattened' on corn for a few days before processing. Marketed alive, frozen, or canned.

Distribution: Bermuda; southern Florida and Texas throughout the Caribbean Sea to Brazil (from Ceará to São Paulo).

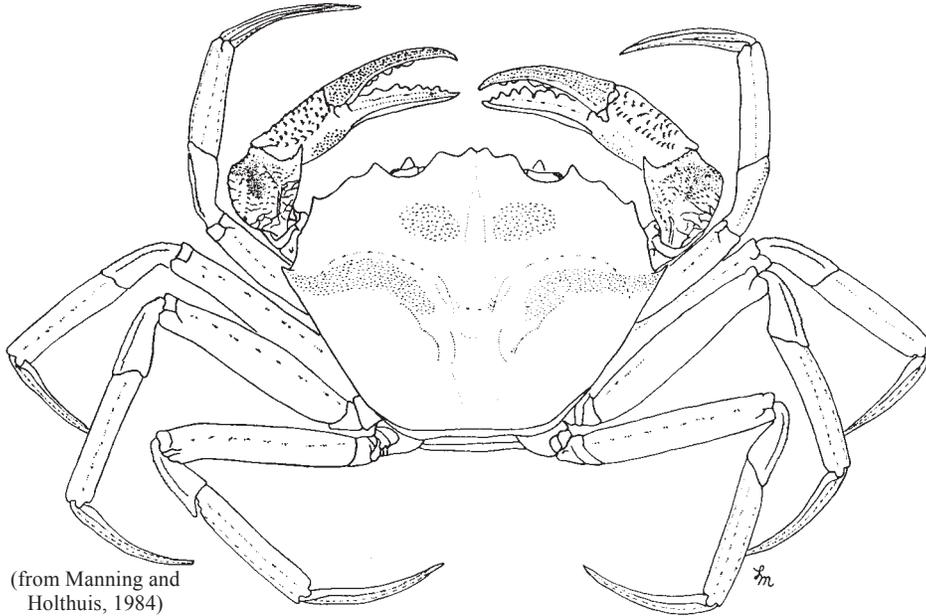


GERYONIDAE

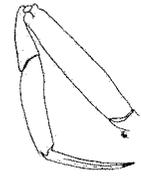
Chaceon fenneri (Manning and Holthuis, 1984)

Frequent synonyms / misidentifications: None / None.

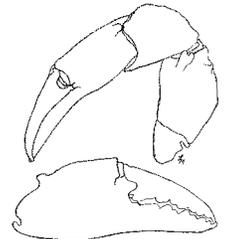
FAO names: En - Gulf of Mexico golden crab.



(from Manning and Holthuis, 1984)



pereiopods



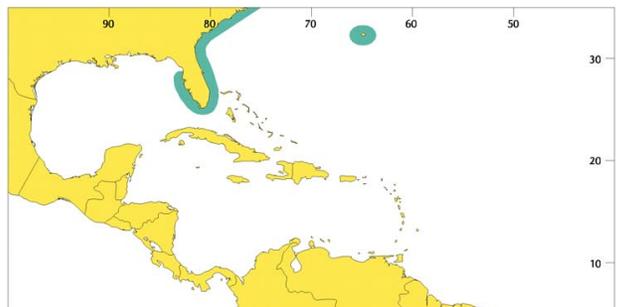
chelipeds

Diagnostic characters: Carapace broader than long. Median pair of frontal teeth separated by a wide sinus, teeth scarcely overreaching obtuse lateral frontal teeth. Orbits usually more than 3/4 frontal width. Anterolateral teeth 5, second and fourth reduced, distance between first and third usually smaller than distance between third and fifth. Cheliped with blunt lobe on upper margin of merus, carpus lacking outer spine, propodus lacking distal dorsal spine. Meri of pereiopods lacking distal dorsal spine. Fifth leg: merus broad, less than 2/3 carapace width; propodus broad, length less than 4.5 times width; propodus and dactylus subequal in length, or dactylus slightly longer. Dactili of pereiopods compressed, narrow, height at midlength much greater than width. **Colour:** tan to cream.

Size: Maximum width: males 185 mm, females 147 mm.

Habitat, biology, and fisheries: Inhabits the continental slope at depths of 247 to 1 468 m, on flat foraminiferan ooze habitat, coral mounds, ripple habitat, dunes, black pebble habitat, rock outcrops, and soft-bioturbated habitat. Bottom water temperature ranging from 7 to 15.5°C (Wenner et al., 1987; Wenner and Barans, 1990). Female crabs collected monthly from the east coast of Florida indicate an annual reproductive cycle. Ovipositions begins in late August and continues through October with eggs retained for 6 months until hatching during March. Size of ovigerous females ranges from 96 to 147 mm of carapace width (Erdman and Blake, 1987). This species supports a newly established commercial fishery in the Gulf of Mexico. Present fishing grounds are located in Florida, Georgia, South Carolina, and Bermuda. It has been estimated that the standing stock off Florida's Gulf Coast to be about 7.8 million crabs, about 13.6 million pounds. Separate statistics for this species are not collected. More biological background for a sustainable fishery is needed. Caught with traps.

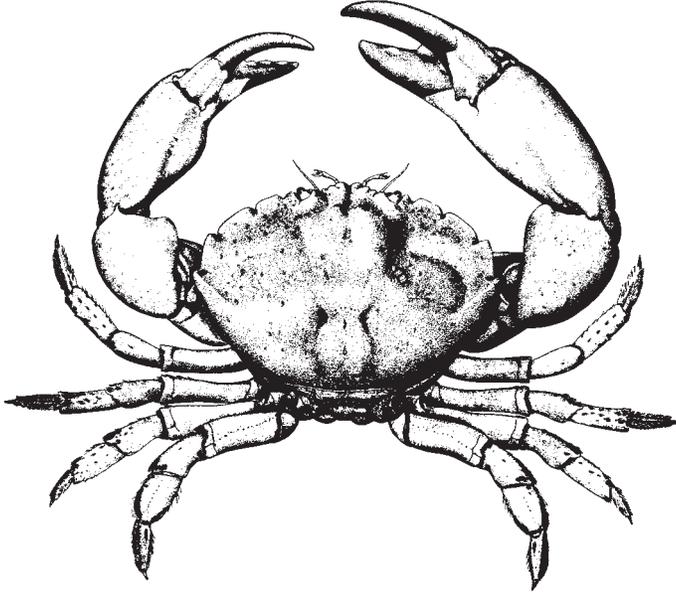
Distribution: Off South Carolina and Florida, Bermuda, Gulf of Mexico.



MENIPPIDAE

Menippe mercenaria (Say, 1818)

STC

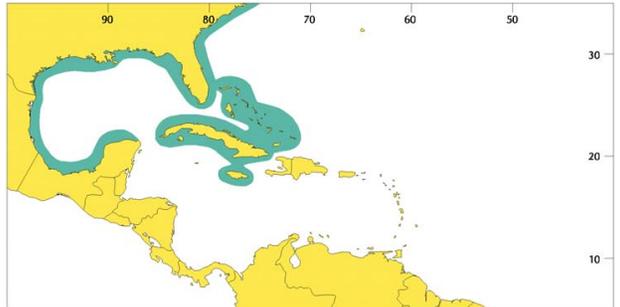
Frequent synonyms / misidentifications: None / None.**FAO names:** En - Stone crab; Fr - Crabe caillou noir; Sp - Cangrejo de piedra negro.

Diagnostic characters: Carapace transversely oval, about 2.3 times as long as wide, **convex, nearly smooth to unaided eye**, minutely granulate and punctate; anterolateral margins (excluding outer orbital teeth) divided into 4 lobes, front (excluding inner orbital angles) with a median notch and a broad tri-lobulate lobe on each side. **Pincers large and heavy, unequal, nearly smooth; inside of hands with patch of fine, oblique, parallel striae**; walking legs stout and hairy distally. **Colour:** juveniles dark purplish blue, very young with legs banded cream and red and a white spot on carpus of pincer. Older individuals become dark brownish red to black or less mottled and spotted with dusky grey; fingers dark; walking legs with reddish and yellow bands.

Size: Maximum width: male 130 mm; female 120 mm.

Habitat, biology, and fisheries: Adult stone crabs live in the depths down to 51 m. They burrow in mudflats just below low-tide mark, among rocks on jetties, on offshore reef areas, under rocks or coral heads and among dead shells or grass clumps. Occasionally burrow in colonies. Tolerant to salinities considerably lower or higher than 35‰. Stone crabs are somewhat active both day and night, greatest activity observed during the evening before dark. Predatory on oysters and other molluscs. Ovigerous females are known from May to September. Larva reared in laboratory conditions developed into the megalopa in 14 days and the first crab stage was attained in 21 days. Crabs grow to maturity in about 2 years and may be beyond this age, although it has been suggested that males reach a terminal molt after which further growth and regeneration ceases. Fishing grounds located mainly along the coasts of Florida and Mexico. The total capture production reported from the area between 1984 and 1998 was 38 699 t (mean captures production 2 579 t/year). Caught with pots and dip nets; also by hand and occasionally in bottom trawls. Marketed fresh.

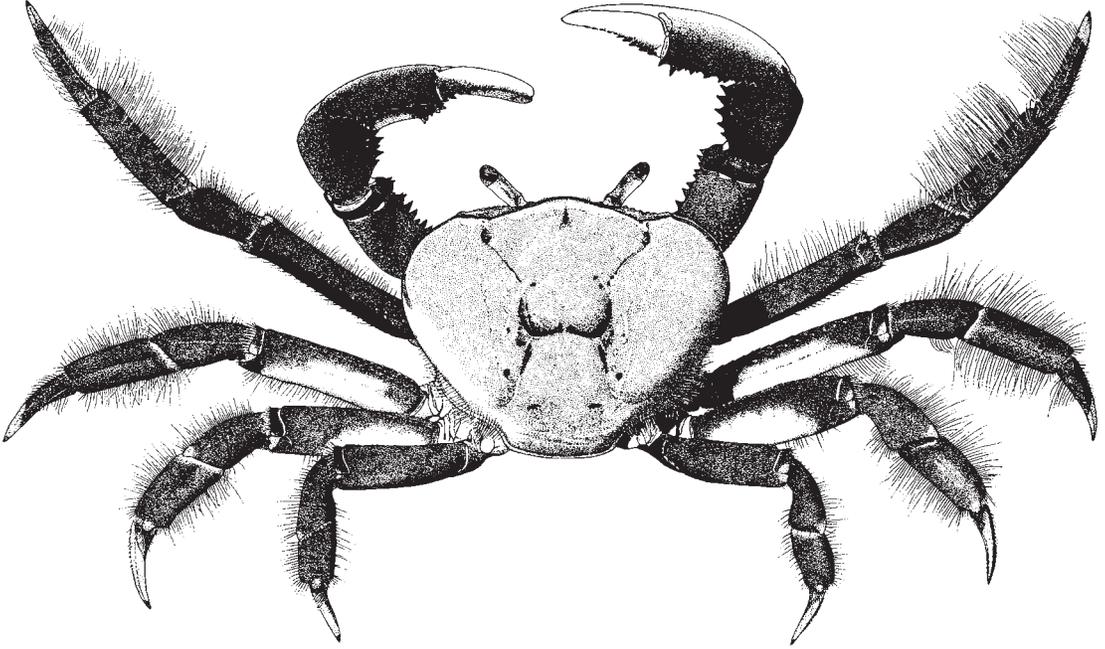
Distribution: North Carolina (Cape Lookout) to Mexico (Yucatán); Bahamas; Cuba; Jamaica.



OCYPODIDAE

Ucides cordatus (Linnaeus, 1763)

UCC

Frequent synonyms / misidentifications: None / None.**FAO names:** En - Ghost crab; Fr - Crabe mantou; Sp - Capuco fantasma.

Diagnostic characters: Carapace broadly egg-shaped, narrow posteriorly, its length slightly less than 4/5 of width, strongly convex longitudinally, nearly subcylindrical in midline, and smooth but with regions well outlined; lateral marginal ridges regularly curved, not divided into lobes, converging posteriorly; **fronto-orbital distance** (space between outer orbital angles) **not more than 2/3 of maximum carapace width in adult males**. Pincers elongate, usually somewhat dissimilar and unequal in both sexes, armed with sometimes strong spines or sharp tubercles on inner margins; fingers of major hand slightly longer than palm; **dactyls of walking legs ridged but not spiny, legs of males bearing very low silky hairs**. **Colour:** carapace usually bluish with some yellowish areas, legs pinkish; hairs on legs grey to almost black, lateral margins of carapace dark in adults.

Size: Maximum width: male 100 mm.

Habitat, biology, and fisheries: Commonly associated with mangroves; lives in burrows as deep as 70 cm, always reaching to the water table, either in open ground or under vegetation; often occurring among burrows of other crabs (*Cardisoma*, *Uca*, and *Goniopsis*). It is by far the most sluggish of the land crabs. This species and *Callinectes bocourti* are the most important species of crabs in Suriname fisheries; also fished intensively in French Guyana. Traditionally collected by hand from burrows. Marketed fresh or cooked. Separate statistics for this species are not collected in the area.

Distribution: From southern Florida throughout the Antilles, and northern coast of South America; southward to Santa Catarina, Brazil.

