

UNITED STATES DEPARTMENT OF THE INTERIOR

U.S. FISH AND WILDLIFE SERVICE

BUREAU OF COMMERCIAL FISHERIES

Washington, D.C. 20240

February 1962

Fishery Leaflet 536

(Note.--Revision of FL 366, December 1958, and Sep. No. 242, December 1949.)

RECOGNIZING IMPORTANT SHRIMPS OF THE SOUTH

By William W. Anderson

Fishery Research Biologist
Bureau of Commercial Fisheries
U. S. Fish and Wildlife Service
Brunswick, Georgia

Shrimp occur commonly along the South Atlantic and Gulf coasts of the United States, and a great many people, in addition to fishermen, are interested in knowing "what kind of shrimp could this be?" This leaflet is intended to help in *field identification* of the more frequently taken species of some commercial value. These are all members of one family, Penaeidae, characterized by having the first three pairs of walking legs (of which there are five pairs in all) ending with chelae or small pincers.

Three species are the most abundant and valuable and comprise over 98 percent of the commercial catch. These are the white or common shrimp, *Penaeus setiferus* (Linnaeus), figure 1; the brown shrimp, *Penaeus aztecus* Ives, figure 2; and the pink or brown-spotted shrimp, *Penaeus duorarum* Burkenroad, figure 3. The seabob, *Xiphopeneus krøyeri* (Heller), figure 4, occurs widely over the area but is taken mainly in Louisiana. Rock shrimp, of which there is only one large species, *Sicyonia brevirostris* Stimpson, figure 5, are excellent but seldom are taken in quantities large enough to be marketed. A relative newcomer to the industry is the royal red shrimp, *Hymenopenaeus robustus* Smith, figure 6, from deep water (140 to 300 fathoms) off the Continental Shelf.

A shrimp's body consists of two major parts: (1) the head or cephalothorax, which bears the rostrum or head spine, eyes, antennae or whiskers, mouth parts, and five pairs of walking legs (the last five appendages under the head section), and (2) the abdomen or tail, which has seven segments. There are swimming legs underneath the first five segments of the abdomen,

and the telson or tail spine is on the last segment.

These six species can be separated as follows:

- I. If the shrimp has "teeth" or spines on the underside of its rostrum or main head spine and resembles figures 1, 2, or 3, it is a white, brown, or pink shrimp. (If the shrimp does not have these teeth, go to II.)
 - A. If the shrimp lacks grooves along the top of the head as in "A" in figure 7, it is a white shrimp (*Penaeus setiferus*), figure 1.
 - B. If the shrimp has deep grooves extending along the top of the head almost to its posterior edge as in "B" of figure 7, it is either a brown or a pink shrimp. These are the most difficult species to separate in the field, but there are two field characters that will usually distinguish them.
 1. If the shrimp has a wide open groove (one which a fingernail will readily enter in medium or large specimens) alongside the ridge at the top of the next to last tail segment (position "A" in figure 2), and does not have a brown spot at position "B" in figure 2, it is most likely the brown shrimp (*Penaeus aztecus*).
 2. If the shrimp has a groove almost closed (one which will not allow a fingernail to be inserted in medium or large specimens) alongside the ridge at the top of the next to last tail

segment at position "A" in figure 3, and has a brown spot at position "B" in figure 3, it is most likely a pink or brown-spotted shrimp (*Penaeus duorarum*).

- II. If the shrimp lacks "teeth" or spines on the underside of the rostrum of head spine (but it may have "hairs" or bristles), it could be a rock shrimp, seabob, or royal red shrimp. See figures 4, 5, and 6.
- A. If the shrimp resembles figure 4 in that it has a long recurved head spine and the last walking legs are very long and slender (as "A" in figure 4), it is a seabob (*Xiphopenaeus kroyeri*).
- B. If the shrimp resembles figure 5, having a hard, rough, "sculptured" shell, it is one of the rock shrimp; and if it has the spines arranged on top of the head as in figure 5, it is the species (*Sicyonia brevirostris*).
- C. If the shrimp resembles figure 6 and has a spine (post-orbital) on the side of the head at position "A" in figure 6, it is a royal red shrimp (*Hymenopenaeus robustus*).

Color is not a very reliable means of separating the species of shrimp (owing to the great variation within species) but is of some assistance.

White shrimp are generally a grayish white and are variously tinged about the tail section and appendages with green, red, and blue. Occasionally a diseased condition causes the shrimp to be blue-black. The meat in these shrimp is soft and white, and such specimens are called "cotton" shrimp.

Brown shrimp are usually reddish brown in color, with tinges of blue or purple on the tail section and some of the appendages.

Pink or brown-spotted shrimp vary greatly in coloration with locality. Along the Atlantic coast they are usually lighter in color than brown shrimp; on the Tortugas grounds they are pink, and along the northern Gulf coast they are often lemon yellow. The brown spot on the side of the abdomen or tail is usually present.

Rock shrimp usually are brownish on the dorsal surface and pale on the sides. The underside and appendages are variously colored or tinged with red or purple.

Royal red shrimp are most often a deep red all over but sometimes are only grayish pink in cast.

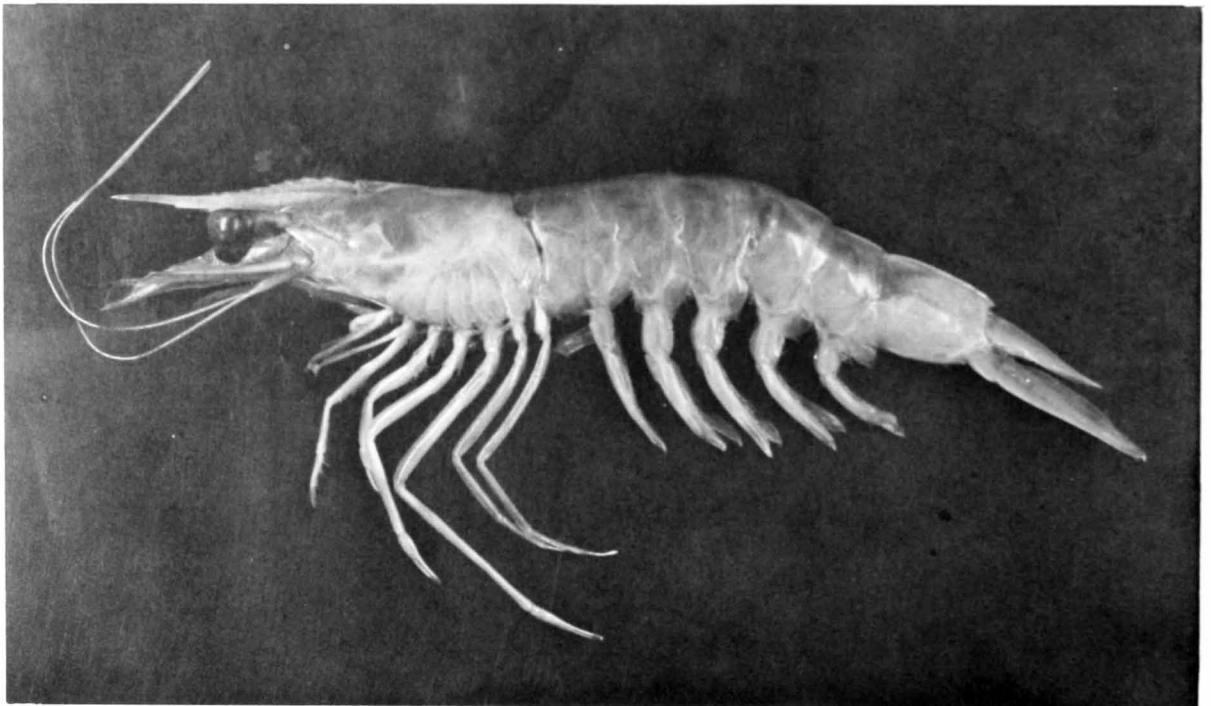


Figure 1.--The white or common shrimp, *Penaeus setiferus*.

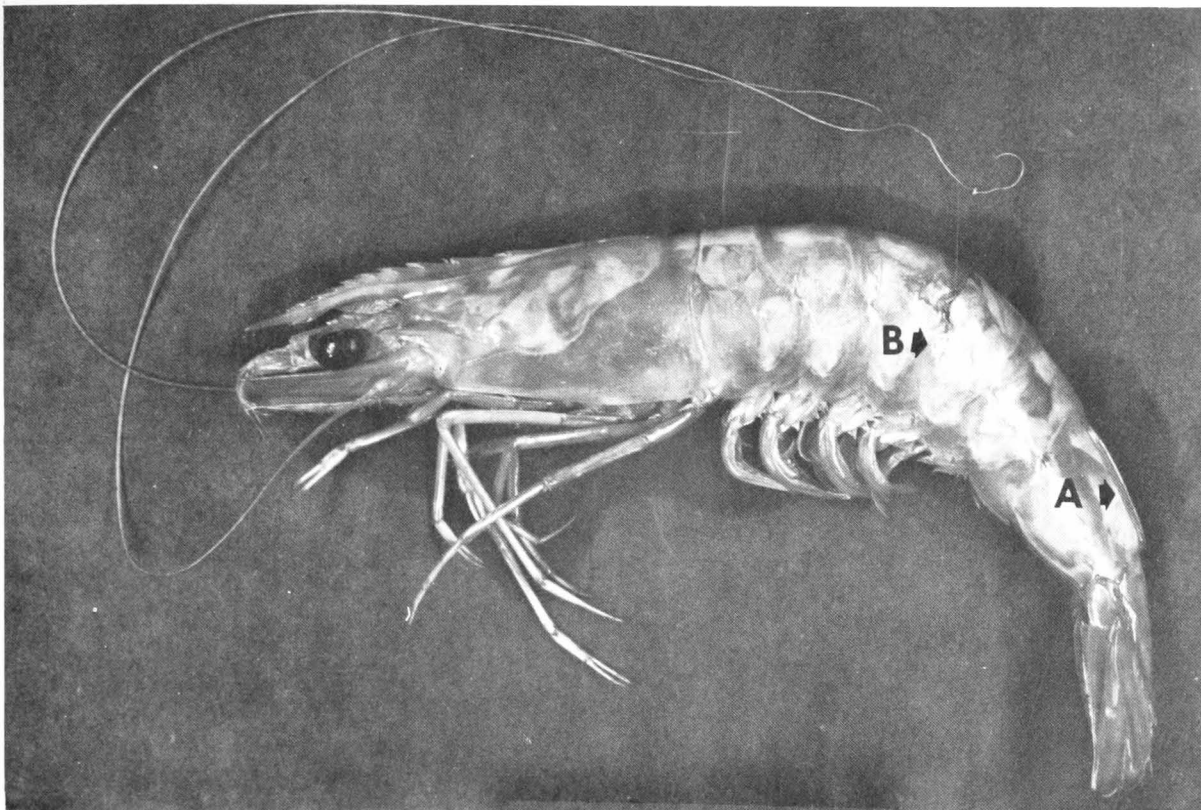


Figure 2.--The brown shrimp, Penaeus aztecus.
A = position of deep open groove, B = lack of brown spot.

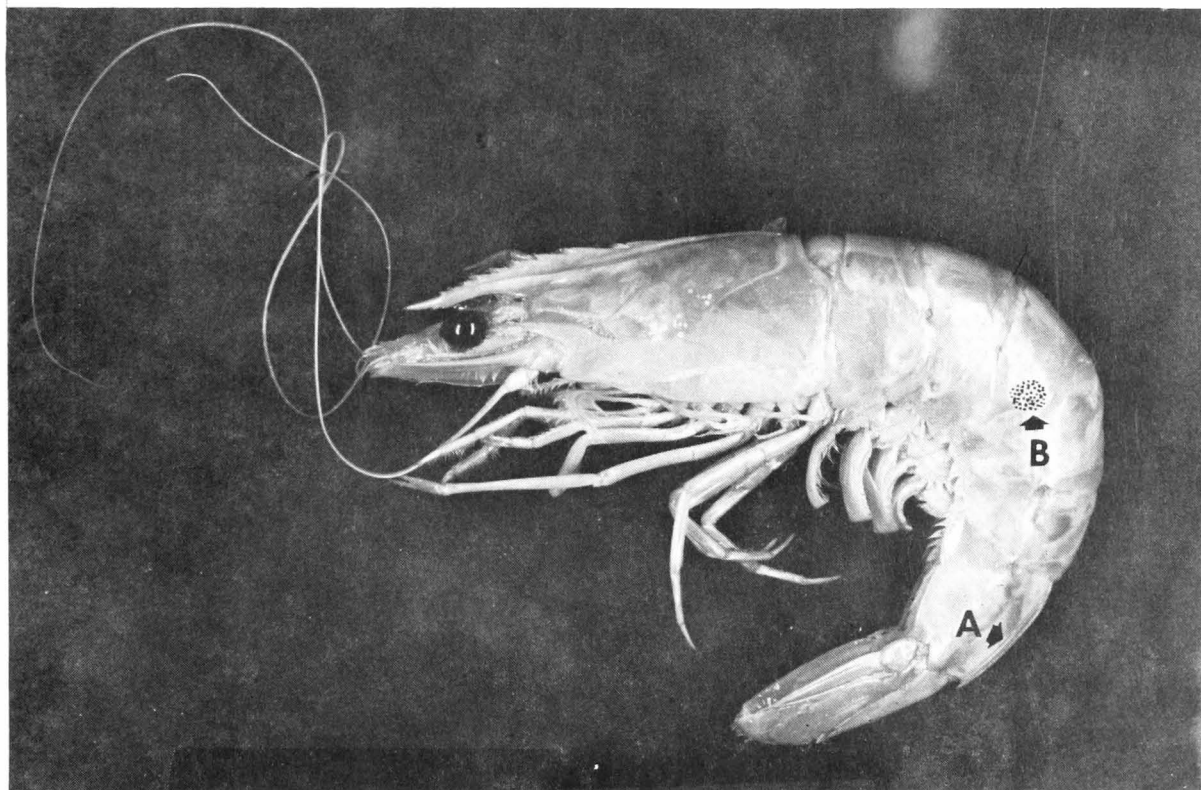


Figure 3.--The pink or brown-spotted shrimp, Penaeus duorarum.
A = position of groove almost closed, B = position of brown spot.

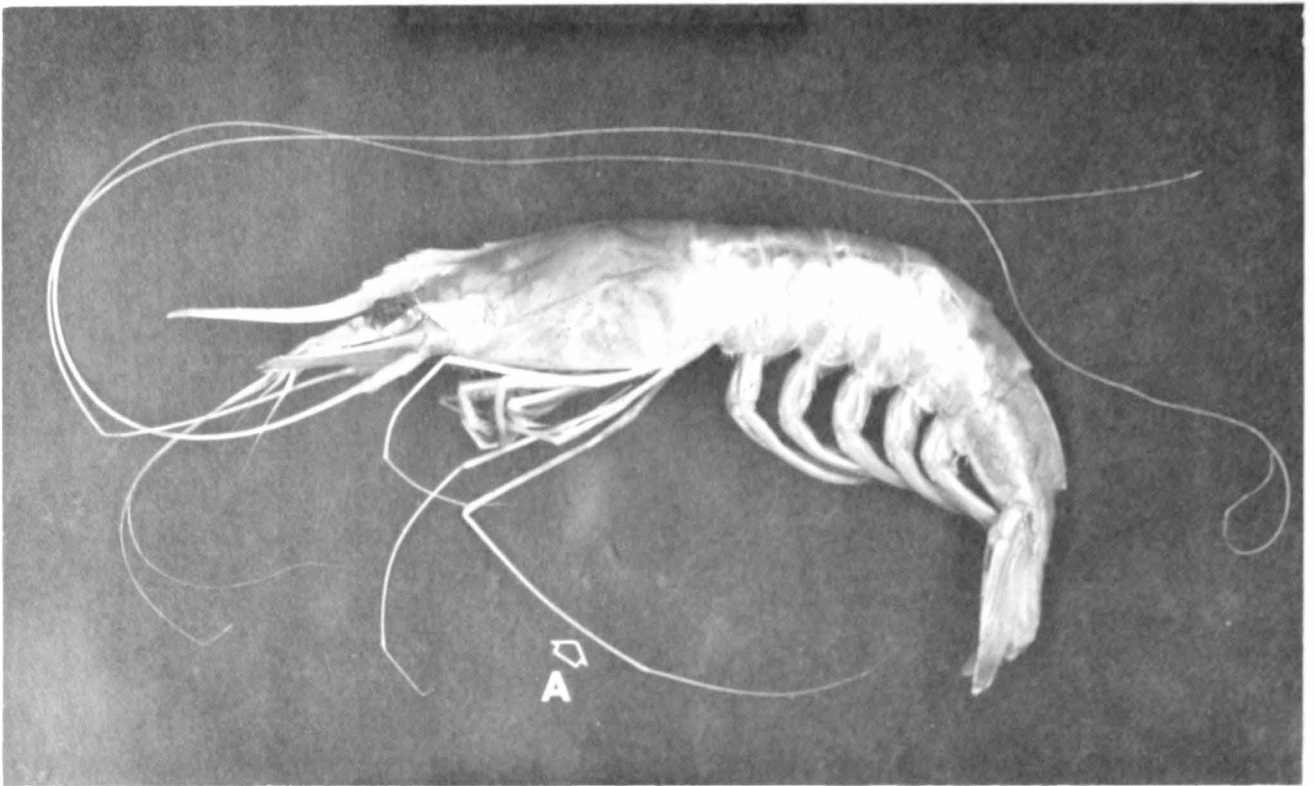


Figure 4.--The seabob, *Xiphopeneus krøyeri*.
A = very long and slender last walking leg.

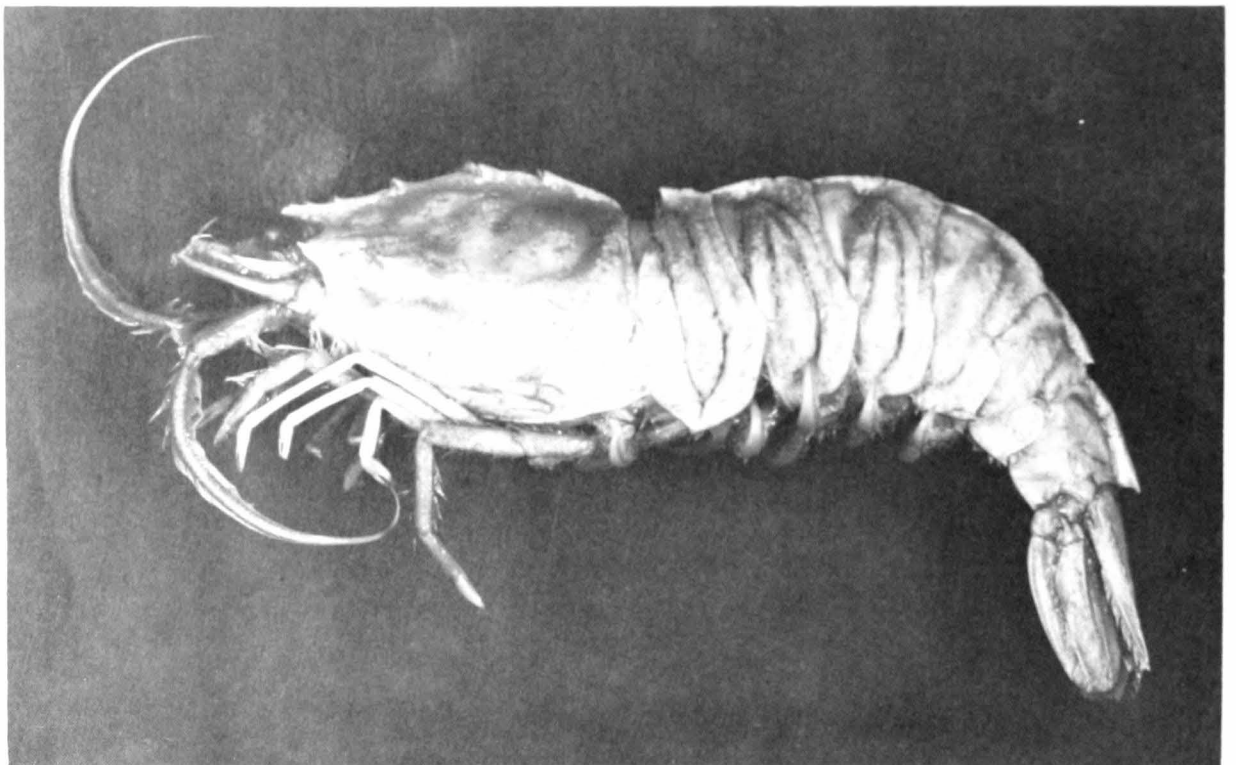


Figure 5.--The rock shrimp, *Sicyonia brevirostris*.

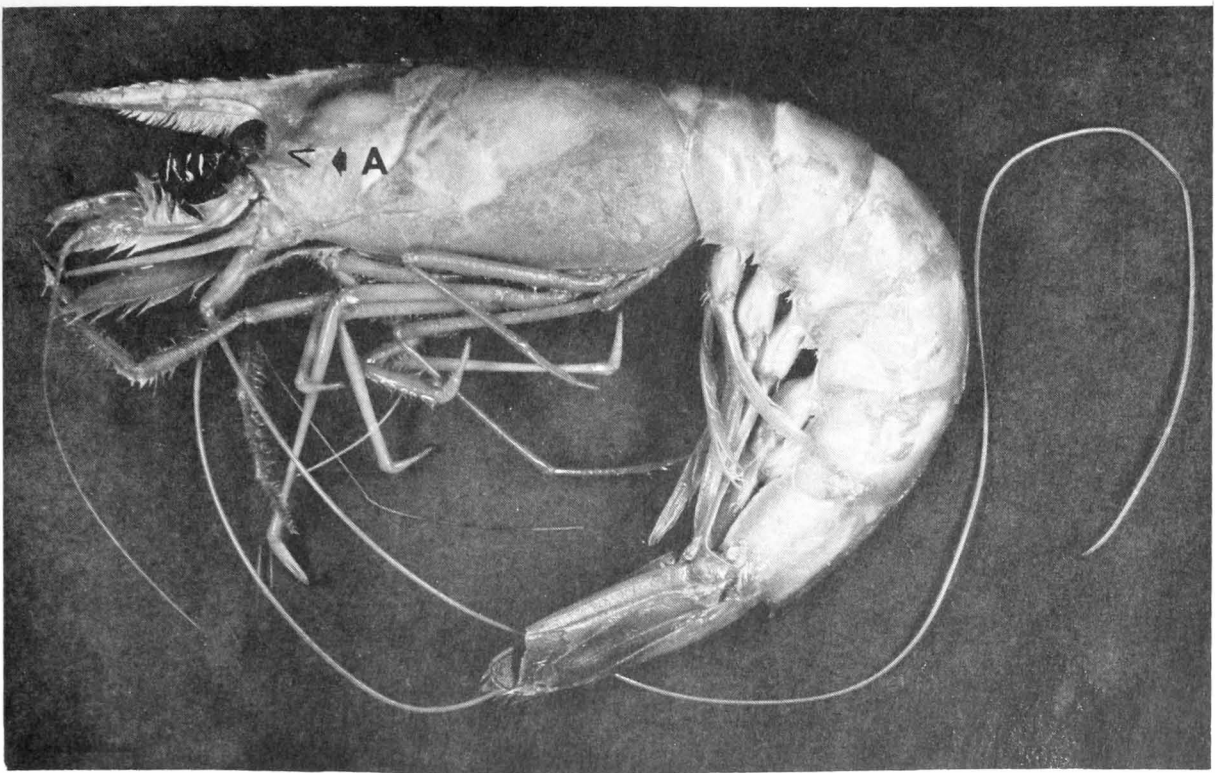


Figure 6.--The royal red shrimp, Hymenopenaeus robustus.
A = position of post-orbital spine.

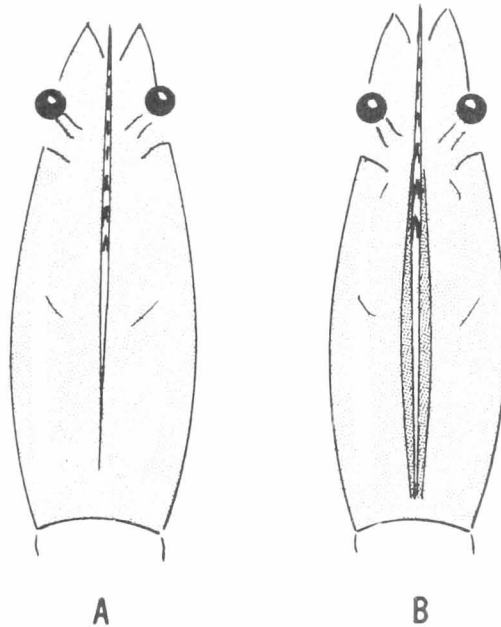


Figure 7.--Dorsal surface of head of a white shrimp
(A) showing lack of grooves, and of a brown and/
or pink shrimp (B) showing deep grooves extend-
ing almost to posterior end of the head.

Reprinted October 1964
December 1968

MS.#1155

GPO 868-020