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TWO NEW WEST INDIAN HERMIT CRABS OF THE GENUS *PAGURISTES* (CRUSTACEA: DIOGENIDAE)[1]

ANTHONY J. PROVENZANO, JR.
Institute of Marine Science, University of Miami

ABSTRACT

Paguristes starcki, sp. n. is described from a single male collected at Alligator Reef in the Florida Keys. *P. anaryballus,* sp.n. is based upon nine specimens from shallow water at Curaçao, Netherlands Antilles. *P. starcki* is most similar to *P. cadenati* among West Indian congeners and *P. anaryballus* is most similar to *P. anomalus.* Neither of the new species is yet known from more than one locality, but both can be recognized in the field and should be accessible to collectors in shallow reef habitats.

INTRODUCTION

Paguristes, the largest genus in the hermit crab family Diogenidae, is distributed in shallow waters of all tropical and subtropical seas and is well represented in the West Indian faunal region with more than 20 nominal species. In the last decade, three new species of the genus have been described from this area (Forest, 1954; Wass, 1955; Provenzano, 1961a), and continuing studies indicate that the pagurid fauna of the tropical Western Atlantic is still imperfectly known. There are a number of species problems in the genus as it is represented in the West Indies. Some of the nominal species are synonyms, others are so poorly described that they are difficult to identify, and the literature needed to recognize the described species is inadequate and scattered. A review of the Diogenidae of the West Indian region is currently in progress by the writer. One of the results of this study will be an illustrated key for the identification of all known West Indian species of *Paguristes.* As it will be many months before this can be published, the descriptions of two new species are presented here to make names available and to call attention to the species, both of which occur in shallow water in or near reef habitats.

Descriptions, illustrations and original citations of other species referred to herein may be found in Provenano (1959) or in other papers cited.

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Paguristes starcki, sp. n.

Figs. 1 and 2

Material.—HOLOTYPE: male, shield length 6.6 mm; total carapace length, 9.5 mm. Collected approximately one-third mile south-southwest of Alli-

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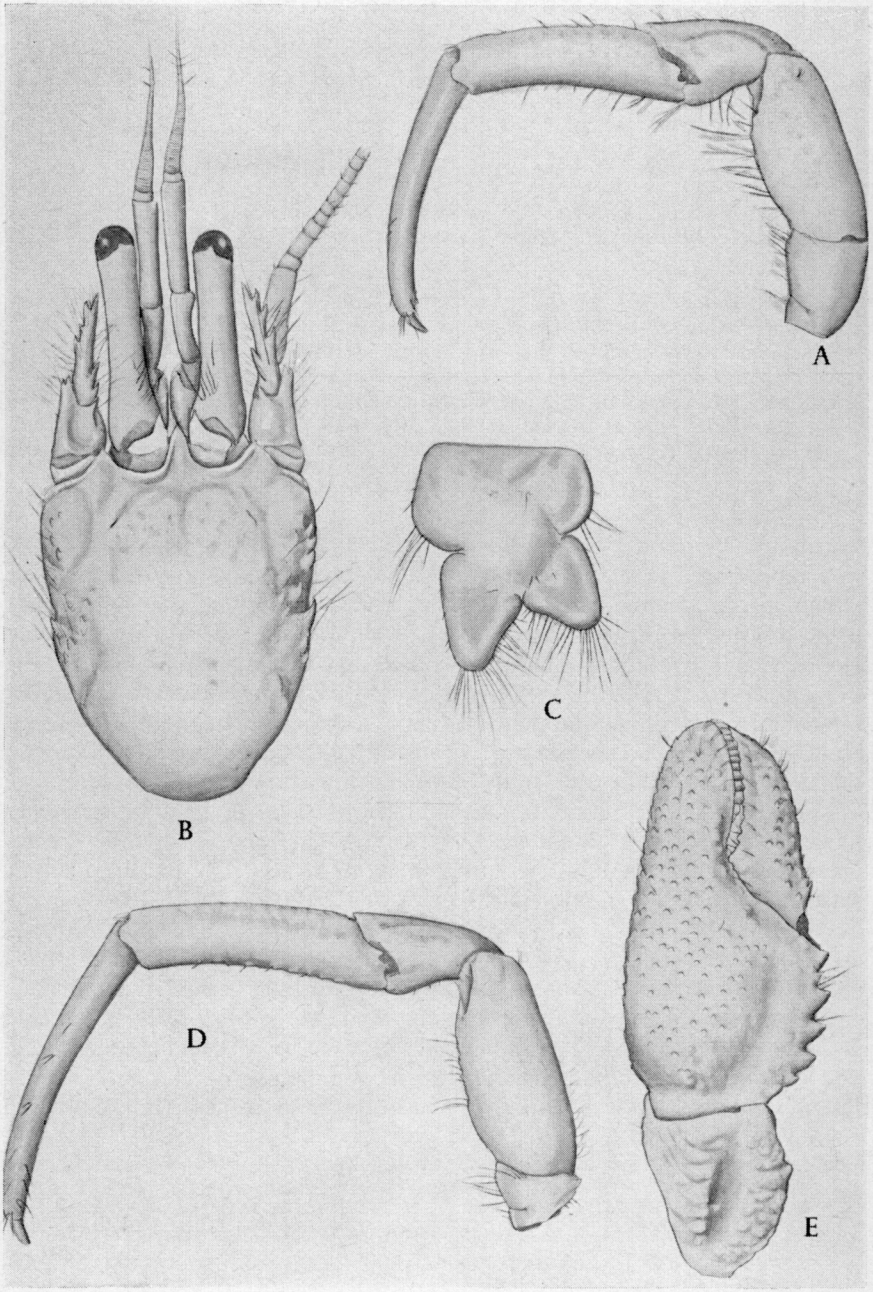

FIGURE 1. *Paguristes starcki,* sp. n., holotype. A. Third left pereiopod, lateral view, X 1.5; B. Anterior carapace, X 2; C. Telson, X 3; D. Second left pereiopod, lateral view, X 1.5; E. Left chela, dorsal view, X 2.

gator Light, Monroe County, Florida, at a depth of 20 feet, between 21:30 and 22:30 hours, 28 April 1962, by W. A. Starck, W. P. Davis and R. E. Schroeder. Taken in company with *Pagurus miamensis* Provenzano, 1959, and *Pylopagurus operculatus* (Stimpson, 1859). To be deposited in the U.S. National Museum.

Diagnosis.—Hard parts very sparsely setose; carpus of chelipeds with a dorsal groove; manus with spines on dorsal surface; dactyls of walking legs longer than propodi; lobes of telson bearing setae only, not spines; color solid red, shield not mottled.

Description.—The shield or anterior carapace is longer than wide, the maximum width being about 0.73 the length from tip of rostrum to cervical groove. The surface is smooth medio-dorsally but there are sharp spines along the lateral margins of the shield. The rostrum extends beyond the acute frontal projections.

The length of the eyestalks is three-fourths the maximum width of the shield. The stalks taper from a slightly swollen base to very slightly dilated corneas. The eye scales or ophthalmic acicles are unidentate.

The antennular peduncles when extended reach beyond the eyes by half the length of the terminal segment of the peduncle.

The antennal flagella are very long but the setae borne on the segments are extremely short, not exceeding the length of the segments of the flagella, thus giving an appearance of naked flagella. The segment of the peduncle bearing the flagellum is long and lacking spines. The basal segment of the peduncle is bidentate laterally. The antennal acicle bears two teeth medially and three or two laterally in addition to the terminus.

The chelipeds are subequal and virtually devoid of setae. The dorsolateral surface of the manus is covered with small, low, forwardly directed spines which give the surface a granulated appearance. The carpus has a very conspicuous groove dorsally, the spinulated ridges of which appear to continue onto the manus. The merus is about as long as the manus, smooth on both sides and bears a few small spinules along its margins.

The second pereiopods are slightly roughened on the medial surface and smooth on the lateral surface. The slender dactyl is nearly as long as the propodus and carpus together and terminates in a corneous spine. The carpus bears a groove dorso-laterally and a spine at the dorso-anterior margin. There are a few very inconspicuous spinules on the dorsal surface of the carpus. The only other armature of this pair of legs is very sparse setation. A series of punctae runs along the lateral surface of the propodus, giving the appearance of a continuation of the groove on the carpus.

The third pereiopods are generally similar, but the dactyl of the third left leg (that of the third right leg is broken) is shorter than the dactyls of the second pair.

The fourth pereiopods bear numerous long simple setae. There are a

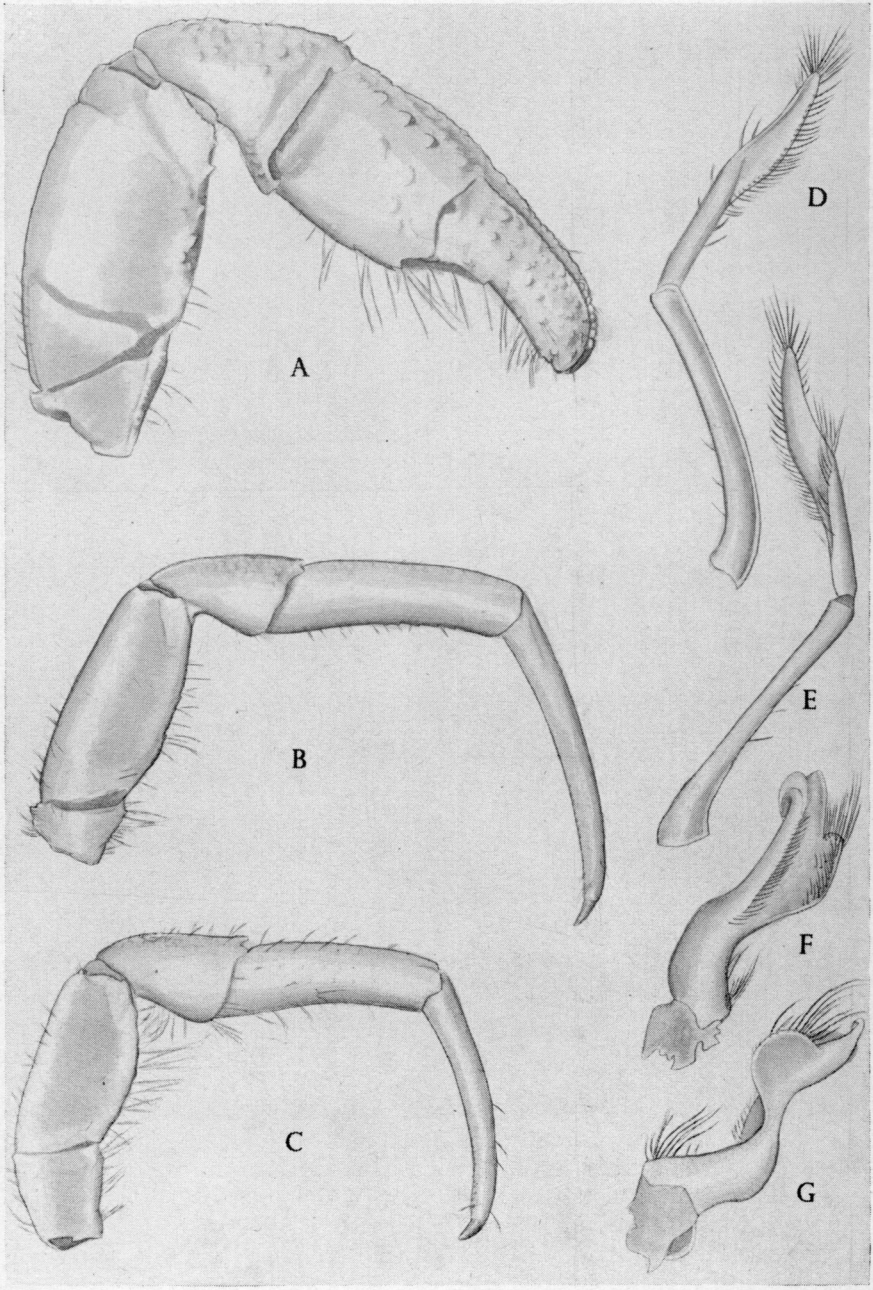

FIGURE 2. *Paguristes starcki,* sp. n., holotype, A. Left cheliped, medial view, X 2; B. Second left pereiopod, medial view, X 2; C. Third left pereiopod, medial view, X 2; D. Gonopod of right side, second abdominal somite, dorsal view, X 4; E. Same, ventral view; F. Gonopod of right side, first abdominal somite, ventral view X 4; E. Same, dorsal view.

very few plumose setae on the ventral surface of the segments. The propodus bears a poorly developed rasp and there are only three corneous granules on the dactyl in addition to the terminus.

The fifth pereiopods are chelate, setose, and there are moderately developed rasps on the dactyl and propodus of each.

The telson is asymmetrically bilobed, the left lobe being the larger. Neither lobe bears spines but both carry long setae.

The sexual appendages of the first and second abdominal somites indicate the holotype is a mature male.

Color.—When examined a few weeks after preservation in formalin the specimen was dull red, almost maroon. After being in alcohol for many months it is now completely faded.

Remarks.—The species is named for the collector, Dr. Walter A. Starck II, who, while making numerous collections of fishes over the past few years, has paid particular attention to crustaceans and other invertebrates, bringing many unusual forms to the attention of specialists. This is the second undescribed species of *Paguristes* he has discovered at Alligator Reef.

In its nearly complete lack of setation, its solid reddish color and the presence of a groove on the carpus, the species bears some resemblance to *P. cadenati* Forest but differs from the latter in coloration of the cephalothorax, which is mottled in *P. cadenati,* in the shape and armature of the shield and chelipeds, and in a few details of the gonopods.

The specimen was collected during a night dive on the reef. According to Starck, the fauna of the reefs appears to be richer at night than in the day. Some species of hermit crabs, very scarce during the day, are seen commonly at night. This is particularly true for *P. cadenati* to which the present species seems to bear closest resemblance. (Since the discovery of the first specimens of *P. cadenati* in Florida (Provenzano, 1961b) it has been taken many times.) The presence of *Pagurus miamensis* and *Pylopagurus operculatus* in the same collection suggests that reef habitats where these forms are known to occur would be likely localities for future collections of *Paguristes starcki.*

Paguristes anaryballus, sp. n.

Figs. 3 and 4

Material.—HOLOTYPE: male, shield length 2.9 mm; total carapace length 3.8 mm. ALLOTYPE: ovigerous female, shield length 2.2 mm. Collected from under a rock at Boca St. Michael, Curaçao, Netherlands Antilles, at a depth of approximately 1 m, 5 August 1963, by Dr. Brian A. Hazlett. To be deposited in the U.S. National Museum.