A NEW SPECIES OF *RHEUMATOBATES* FROM FLORIDA  
(*HEMIPTERA, GERRIDAE*)

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The new species, *Rheumatobates crinitus*, described below represents the first published record for the genus from salt water. The species was first collected in Lake Worth, Palm Beach County, Florida, by the writer in June 1947 and belongs to the group with unmodified antennae and hind legs. All of the other members of this group are known from outside the United States. They are *R. clavis* Drake and Harris, described from Rio Grande, British Honduras in 1932, *R. minitus* Hungerford 1936 from Yucatan, Mexico (Merida, Niagara Cenote), and *R. vegaicus* Drake and Harris 1942 from the Isle of Pines, Cuba. The description of *vegatus* is quite short so it appeared at first that *crinitus* was that species. However, Dr. Carl J. Drake carefully compared three of my specimens with the single male type of *vegatus* and pointed out the differences to the writer. There is sufficient material in the three series of *crinitus* to show that the Florida form is distinct.

In view of the constant differences in the proportions of the middle legs, slight differences in the number of hairs on the genital segment as well as the location of the black spines on the front legs of the male, I feel justified in according specific rank to the Florida form.

*Rheumatobates crinitus* sp. nov.  
(Plate 1)

DIAGNOSIS: This species may be distinguished from *R. vegatus* by the length and proportions of the middle legs. In *vegatus* the middle leg is longer than in *crinitus*, ratio\(^1\) (femur : tibia : tarsi) is 67.5 : 57.5 : 41.5 and that of *crinitus* is 60 : 52 : 37 in the holotypic male. In sixty-two other specimens measured from Lake Worth, Perrine and Big Pine Key, the intermediate femur varies in length from 57 to 64 units, with a mean of 59.7. The intermediate tibia varies 46 to 53 units, with a mean of 50.1, and the tarsal segments vary in length from 33 to 37 units with a mean of 34.3. The hind femur in both species is about the same (40 units). In other specimens of *crinitus* the range

\(^1\) One unit = .0298 mm. for leg measurements; for the antennae, one unit = .0157 mm.
Plate I

*Rheumatobates crinitus*, n. sp.

Holotype male
is from 37 to 41 with a mean of 39.0. Further, there appears to be a few more hairs on the genital segment of the male of *crinitus*, and the spines on the anterior femur are perhaps faintly shorter and slightly farther apart than in *vegatus*.

The female of *crinitus* can be distinguished from *R. clanis* and *R. minutus* by having the fourth antennal the longest, and can also be distinguished from the latter by being much larger. The color pattern is also quite distinct.

**Description of Apterous Form, Male.** Length 2.24 mm. **Head:** Nearly as broad between the eyes as long. A stout hair between the eye and base of antennae, two hairs directed forward from the posterior margin of each eye, and two shorter hairs on each side of lateral margin of head above anterior margin of eyes. Tylus fairly prominent. Beak smooth and hairless, **Antenna:** First joint nearly as long as the head; slender, without long hairs. Second short, about one-half as long as first; third slender, with two strong slender setae on the apical one-third, one slender spine on basal-half and a few fine, long hairs. Fourth, the longest, slender at base, swollen at apex. **Antennal formula** (I: II: III: IV) : 20: 10: 15: 22. **Thorax:** Pronotum narrow at middle. Lateral lobes greatly prolonged, almost three times as long as the length of pronotum at middle. Mesonotum somewhat broader than long, about six times as long as pronotum, not defined from the pleura. Metanotum about two-thirds as long as mesonotum. **Anterior legs:** Ratio (Femur: tibia: tarsus) : 22: 10: 10. Femur swollen at middle, posterior margin with a double row of black setae occupying the middle of femur, the basal and apical one-quarter being devoid of spines. The most dorsal row contains about 12 triangular pointed spines, varying from 10 to 13 in the other specimens. This row preceded at base by a slender long seta. The ventral row of 5 slender setae longer than the spines. Tibia with 2 long hairs on apical one-third. Tarsal claws long, slender, almost straight, slightly curved at apex. **Intermediate legs:** Coxa provided with long hairs at the apex. Femur and tibia provided on inner margin with short, curved hairs. Tibia approximately 5/6ths the length of femur. Basal joint of tarsus 2½ times as long as apical joint. **Ratio** (femur: tibia: tarsus) : 60: 52: 37. **Hind legs:** Straight, reaching almost to the basal 2/5ths of intermediate tibia. Femur provided on inner margin with a row of very fine, pale hairs which taper in length from base to apex of femur; those on the base longer than the diameter of the segment. Tibia about 3/5ths the length of the femur. Tarsus ½ the length of the tibia. Basal joint of the tarsus shortest, 2/3rds the length of second joint. **Ratio:** 40: 23: 11. **Genital segments:** First genital segment expanded at base, constricted near the middle, then sides parallel to apex. A patch of long curved hairs on sides reaching to apex of first genital segment. These hairs arise on each side of the middle of the dorsal surface and on the lateral margin of the segment. The ventral surface is free of long hairs. **Genitalia:** The dorsal and ventral shafts of crinitus exist as two separate pieces. The ventral shaft is long and slender and terminates in a finely coiled thread.

COLORATION: The following description, based primarily on the holotype and allotype, was made while these two specimens were in alcohol. Comparisons were made with dried specimens and there is very little difference. The dried specimens tend to be slightly more silvery, especially on the areas of the body that are clothed in fine pubescence, and the gradations from light brown to rich dark brown are not as distinct—their general coloration appearing slightly darker. Re-immersion in alcohol restores the color gradations.

COLORATION OF MALE: Abdomen, anterior tibia, tarsus, tylus and fourth antennal segment dark brown, almost black. The remainder of the head medium brown with a broad U-shaped stripe following the posterior and lateral margins of the head, light yellowish brown. This stripe ends just beyond the anterior margin of the eyes. The prothorax has a median rectangle of clear yellow, the remainder of prothorax medium brown, margined by a lighter stripe. On the mesothorax, there is a middorsal stripe of yellow extending from the prothorax and fading into pale brown on the posterior margin of the mesothorax. This stripe bordered by pale brown on each side. Remainder of dorsal surface of mesothorax dark fuscous brown. There are two irregular shaped patches of light yellow-brown on each pleura. The patches tend to merge into one large patch on each side in the other specimens. Basal segment of antennal yellow, tipped with light brown at apex. Remaining antennal segments dark brown, lighter at their bases. Anterior coxae and trochanter pale yellow. Base and apex of femur brown, that on the apex extending along anterior and posterior margin as a narrow stripe. Remainder of anterior femur yellow. Coxae of middle legs light yellow ringed with black at the apex. Trochanter light, darker toward apex. Femur pale brown at base, remainder of femur, tibia and tarsus dark brown. Posterior coxa, trochanter, and basal half of femur pale. Remainder of leg dark brown. Entire sternum, coxa and ventral side of head pale yellow. A ragged yellow stripe along the outside of the connexivum. Venter dusty brown. Eyes dark ruby red. Beak shining, light brown with apical segment dark brown, almost black.

COLORATION OF FEMALE: The coloration of female is almost identical with that of the male. The stripe on the mesothorax of the allotype is much narrower than that of the holotype. In some of the other specimens

2In Schroeder's work on the genitalia of the Genus Rheumatobates (1931), he reports that in the forms studied, the shafts are completely fused so that no joint is perceptible.
the stripe is approximately the same width. The yellow stripe on the outside margin of the connexivum in the female is over twice as wide as on the male. There is also an oval yellow to light brown spot on the dorsal surface of the genital segment. The entire ventral surface of the female is pale yellow except the caudal half of the genital segment and the lateral margins of the venter which are brown.

Comparison of Coloration with that of R. vecatus. The coloration is quite similar to that of vegatus. The general color pattern is much lighter in the Florida form. The line on the mesothorax of the holotype is much more prominent and slightly wider than in vegatus. The spot on the pronotum is more yellowish and the legs beneath toward the base are pale, while in vegatus the legs are light brown. The front legs of crinitus are brownish yellow, much darker in vegatus.

Generally, the coloration of crinitus is somewhat variable. In the series taken from Big Pine Key, Florida, the yellow coloration is quite prominent. The stripe on the mesothorax is at least twice as wide as on the Lake Worth and Perrine, Florida series. This may be due to the ecological conditions of the habitat, since the Big Pine Key specimens were taken in the brilliant sunlight of the Gulf, while those from Perrine and Lake Worth were in more or less densely shaded mangrove swamps. I can determine no structural differences between this series and the other specimens.

Material Examined: 365 specimens: 130 males, 235 females, all from Florida as follows: Palm Beach County, Singer Island in Lake Worth T42S, R43E, NE ¼ of S27, 115 males, 220 females (including holotype, allotype, paratypes) June 11, 1947. Dade County, 2.5 miles southeast of Perrine in Biscayne Bay, 8 males, 12 females (paratypes) April 8, 1948, E. D. McRae, Jr. and the author. Monroe County, southwest end of Big Pine Key in the Gulf of Mexico, approximately 35 miles northwest of Key West, 7 males, 3 females. November 27, 1947, E. D. McRae, Jr.

Holotype, allotype, and paratypes in the museum of Zoology, University of Michigan; additional paratypes in the Carl J. Drake collection, Roland F. Hussey collection, and in the author's collection.

Ecological Notes

Rheumatobates crinitus was collected in salt water only. At one time there was a continuous series of lagoons along the entire east coast of Florida, but now most of them are connected by narrow passages through mangrove swamps and salt marshes, through which wander crooked tidal rivers. It was from such coastal marshes that R. crinitus was collected. The first locality, Lake Worth in Palm Beach County, is a straight lagoon about 22 miles long and approximately ½ mile wide, and is connected with the ocean on the east by Palm Beach Inlet, which separates Singer Island from Palm Beach proper. The Island is bordered on the Lake Worth side by extensive growths of mangroves, where, in small tidal rivulets winding under the aerial roots,
R. crinitus was taken in great numbers. They congregated in compact schools, moving only fast enough to keep their position and not be washed away by the tide. When disturbed, they scattered for a short time but soon returned to form colonies. The only other hemipteran taken in this area was Rhagovelia plumbea Uhler. Adults of this species were seen zigzagging in and out of the groups of crinitus and many nymphs were taken with the series of crinitus.

The second collection of crinitus was made on the gulf side of Big Pine Key in Monroe County. Here, they were found in the still water of a shallow mangrove swamp bordering Big Pine Channel. In this swamp the mangrove is much more sparse and the water receives full sunlight for most of the day. Adults and nymphs of Rhagovelia plumbea Uhler were taken with crinitus.

The third series was collected in a roadside canal in a mangrove swamp southeast of Perrine. This canal connects by means of a dense mangrove swamp with Biscayne Bay.

It appears that Rheumatobates crinitus is limited to the mangrove swamps of South Florida since fairly extensive collecting in the freshwater situations throughout the state and the salt marshes of North Florida have not revealed this species.

LITERATURE CITED

