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TISBE CAYMANENSIS, A NEW SPECIES OF COPEPOD FROM GRAND CAYMAN, B. W. I.

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ABSTRACT

A new species of harpacticoid copepod, *Tisbe caymanensis* is described from male and female specimens collected from a drainage ditch on Grand Cayman, B.W.I. It differs from all described *Tisbe* species in the presence of a single, elongate spine at the end of the first leg endopod and a rudimentary proximal spine on the second leg exopod.

INTRODUCTION

On 16 June 1983, the author collected plankton from drainage ditches emptying into North Sound near Georgetown, Grand Cayman. Collection was made by throwing a 5-inch diameter, fine-mesh plankton net into the ditch water and retrieving it with an attached rope. Water from the surface to a depth of two feet was strained by the net. Included in the net plankton (taken only about 6 meters from North Sound) were males and females of a species unlike any described, but clearly related to and probably of the Genus *Tisbe*. This report describes the species and discusses its taxonomic relationships to typical species of Genus *Tisbe* and to *Tisbella pulchella* (Wilson, 1932), both of which also occur in these drainage ditches.

DESCRIPTIONS

Tisbe caymanensis, new species. Fourteen females and four males were mounted in Masters CMC-9AF mounting media. Some copepods were mounted whole, others were

mashed (to show appendages) by applying slight pressure with forceps on the coverslip, and some were dissected in the mountant, using sharpened minuten insect pins set in a thin stick. All drawings were made with a camera lucida. Nine slides have been deposited in the U.S. National Museum—one female holotype, USNM 204974; one male, allotype, USNM 204975; and seven slides of paratypes, USNM 204976.

FEMALE.

The body length is 0.80 to 0.98 mm not including caudal setae. The prosome is oval in outline, four-segmented (not including last thoracic segment), with a rounded rostrum. The urosome is narrow, tubular, and six-segmented (including last thoracic segment). The caudal rami are very short, length equalling the width at mid section. (Fig. 1a). The inner terminal, well-developed caudal seta is almost as long as the body and about twice as long as the outer terminal, well-developed caudal seta. The innermost terminal caudal seta is about three times as long as outer caudal setae. (Fig. 1b) The first antenna nearly reaches the posterior border of the prosome and is eight-segmented. The fourth segment has a long aesthetasc (Fig. 1c). The form of the second antenna is typical of the genus, with the four segments of the endopod indistinctly separated (Fig. 1e). The exopod of the mandible, unlike that of typical *Tisbe*, bears two instead of three setae (Fig. 1f). In this respect it is like the exopod of *Tisbella pulchella*. The first and second maxillae and maxillipeds are of usual form, within the variation limits of the genus (Fig. 1g, h, i).

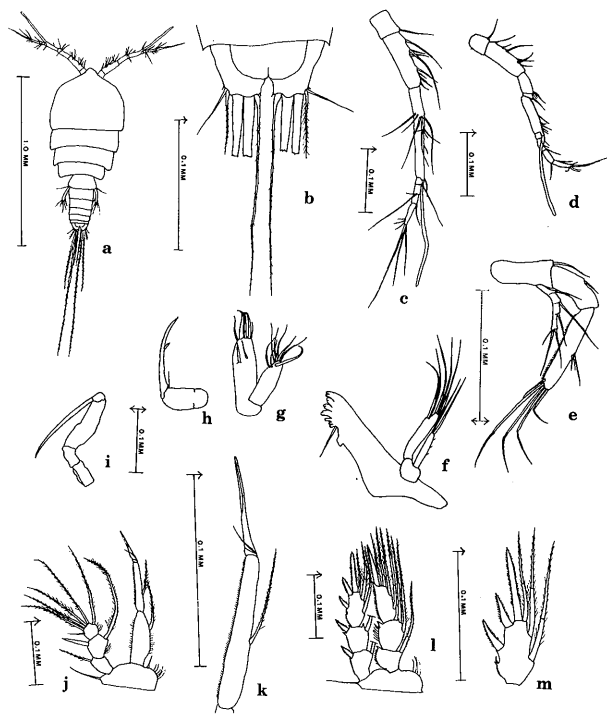


FIG. 1 *Tisbe caymanensis*, new species. a. Female, dorsal view. b. Caudal rami, female. c. First antenna, female. d. First antenna, male. e. Second antenna, female. f. Mandible, female. g. First maxilla, female. h. Second maxilla, female. i. Maxilliped, female. j. First leg, female. k. Distal two segments of endopod of first leg, female. l. Second leg, female. m. Terminal segment of exopod of second leg, female.

The swimming legs are biramous and each ramus is three-segmented. Spines are rigid, often with combs of spinules, and setae are flexible and whip-like, often bearing hairs. Spine formula for terminal segment of the exopods is 1, 4, 4, 4, and setal formula is 4, 3, 4, 4. Spine formula for terminal segment of the endopods is 1, 1, 1, 1 and setal formula is 1, 4, 5, 4. Many of the setae have a joint proximal to the half-length, and setae are easily broken at this joint (Fig. 1 l-m, Fig. 2a-c). The first leg exopod resembles that of *Tisbella pulchella* (Fig. 2i), rather than that of typical species of *Tisbe* (Fig. 2g), but the three segmented endopod (Fig. 1j, k), with elongate second segment and tiny terminal segment is like that of *genus Tisbe* (Fig. 2g). The single, grooved sword-like terminal spine is unique for this species. It is accompanied by a tiny hair-like seta (Fig. 1j, k). Other species of *Tisbe* bear two short, curved spines on this small segment (Fig. 2g). The presence of a very rudimentary proximal spine on the terminal segment of the second leg exopod (Fig. 1l, m, Fig. 2a), instead of a well-developed spine in that position is unique for this species. The fifth leg is rudimentary, the basal segment bearing an outer seta and a single inner seta (placed almost basally), and a terminal segment armed with five setae. Of these setae, the subterminal one is located on the inner side of the segment in both sexes (Fig. 2d, e, f), whereas, the

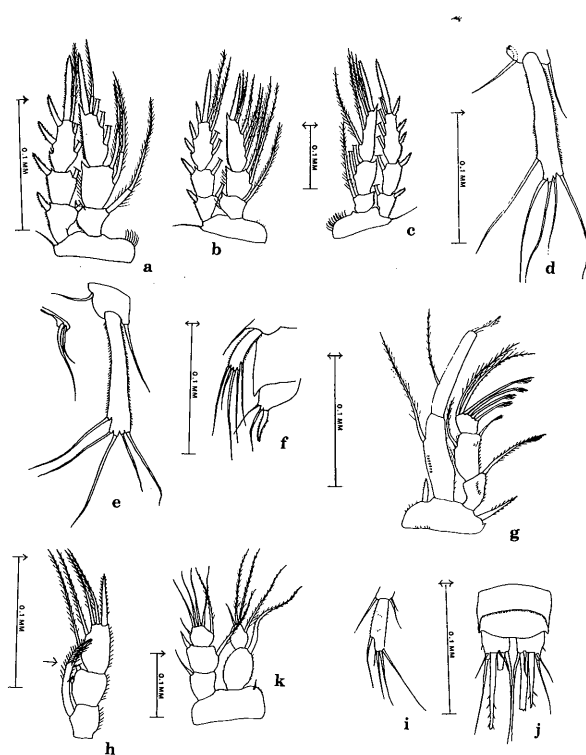


FIG. 2. *Tisbe caymanensis*, new species. a. Second leg, male. b. Third leg, female. c. Fourth leg, female. d. Fifth leg, female. e. Fifth and sixth legs, female. f. Fifth and sixth legs, male. *Tisbe holothuriae* Humes, 1957. g. First leg, male. h. Endopod of second leg, male. i. Fifth leg, male. j. Caudal rami and last two abdominal segments, male. *Tisbella pulchella* (Wilson, 1932). k. First leg, female.

subterminal seta of *Tisbella pulchella* and *Tisbe holothuriae* is on the outer side of the segment (Fig. 2i). This segment is very slender in the female, six and half times longer than wide (fig. 2d, e). The sixth leg consists of two setae on a small projection (Fig. 2e).

MALE.

Body length is 0.68 to 0.70 mm not including the caudal setae. Both first antennae are geniculate, nine-segmented and bear a long aesthetasc on the fifth segment (Fig. 1d). Second antennae, mouthparts, and swimming legs are like those of the female. The inner seta on the basal segment of the second leg endopod is long, but, like that of the female, unmodified in its terminal structure (Fig. 2a). The structure of this seta in males of several species of *Tisbe* is unique (Volkmann-Rocco, 1973). For example, in *Tisbe holothuriae* males, the end of this seta is partially bifurcated (Fig. 2h). The basal segment of the fifth leg bears an outer seta, but no inner seta is visible in my three males. The terminal segment is about four and a third times longer than broad, and bears five setae (Fig. 2f). The sixth