

TWO NEW SPECIES OF COMMENSAL COPEPODS FROM THE WOODS HOLE REGION

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During the summer of 1925 I discovered that the common sea pork, *Amaroucium*, collected in the vicinity of Woods Hole, Mass., contained Harpactid copepods in its branchial chamber.

A dozen pieces of *Amaroucium*, 4 to 5 inches in length, were collected, and after being washed in fresh water and carefully wiped were placed in a dish of strained sea water and cut in pieces. The sea water was strained three times through No. 18 Müller bolting silk. The mesh of this bolting silk is sufficient to remove any copepods which might be present. At the end of a few minutes the contained copepods were carefully picked out of the dish with a small pipette and killed in formalin. An examination revealed two species of Harpactids, both of which were new to science and are described in this paper. Both were in sufficient abundance to well establish the species. Twelve specimens of *Tisbe wilsoni*, including a single male, and 14 specimens of *Amphiascus commensalis*, including three males, were collected.

I wish to express my appreciation to Dr. C. B. Wilson for the helpful assistance he gave me in the identification of these forms.

Genus AMPHIASCUS G. O. Sars, 1905

Generic characters.—Body slender, cylindrical in form with the anterior and posterior divisions not sharply marked from each other. Cephalic segment of moderate size and not deep, rostrum well defined and very mobile. Urosome with the genital segment in female imperfectly divided in the center, and scarcely dilated in front; posterior edge of all the caudal segments finely spinulose on the ventral and lateral faces. Caudal rami generally short; apical setae slender. Anterior antennae of usual structure, and, as a rule, composed of eight articulations, four of which belong to the terminal part. Posterior antennae with the terminal joint dilated distally and armed outside with strong spines, at the tip with slender geniculate setae;

outer ramus very narrow, generally three articulations, middle joint quite short and, in some instances, imperfectly defined. Oral parts normal. First pair of legs with both rami triarticulate, the outer one much shorter than the inner, and in some cases resembling, in structure, that of the genus *Dactylopusia*; inner ramus with the first joint slender and elongated, setae of inner edge attached close to the end. Inner ramus of second pair of legs in male conspicuously transformed, outer two joints confluent. Last pair of legs foliaceous, with the proximal joint expanded inside; those in the male much smaller than in the female.

AMPHIASCUS COMMENSALIS, new species

Specific characters—*Adult male* (Holotype, Cat. No. 61141, U.S.N.M.)—Body proportion about the same as the female; male shorter than the female. First antenna slightly longer than that of female, first joint as long as fourth, second longer than third but shorter than first, terminal portion a little more than one-half the length of the posterior portion. Inner ramus of second pair of legs transformed in the usual manner. Inner ramus of second pair longer than the outer, distal joint produced at the end to a strong mucroniform projection. Last pair of legs much smaller than in the female, with only two setae on the inner expansion of the proximal joint. Distal joint oval, nearly circular in form, provided with five setae of irregular length. The body has a yellowish color.

Adult female.—Body moderately slender, with the posterior divisions slightly narrower than anterior. Cephalic segment practically as long as the four succeeding segments combined. Epimeral parts evenly rounded in front. Rostrum prominent and lanceolate. Urosome about the length of the anterior division and tapering slightly behind. Last segment corresponding approximately in length to the preceding one. Furcal rami shorter than the anal segment, outer and inner apical setae short. Anterior antennae comparatively short and tapered distally, first joint much the longest, third joint slightly longer than the second, and fourth longer than the third, terminal portion about one-half the length of the posterior portion. First pair of legs rather slender, outer ramus as long as the first joint of the inner, all three joints of outer ramus approximately equal in length, terminal joint with two clawlike spines and joints about one-half as long as proximal joint. Last pair of legs with the distal joint not long, oval in form, carrying five unequal setae, inner expansion of proximal joint comparatively short, marginal setae, five, the middle one being the longest. Ovisac extending slightly beyond the center of the urosome.

Total length of female, 0.74 millimeter. Length of anterior body, 0.38 millimeter. Mean width of anterior portion, 0.18 millimeter.

Genus TISBE Lilljeborg 1853 (IDYA, Philippi, 1843, preoccupied)

Generic characters.—Body distinctly depressed, with the anterior and posterior divisions sharply defined. Cephalic segment of moderate size, narrowly produced in front, rostral projection short and obtuse, not defined at the base. Epimeral plates of the three succeeding segments, rather broad, lamellar, obtuse at the tips. Last segment of metasome very small. Urosome moderately slender, with the genital segment in female distinctly divided in the center. Genital tubercles in male each armed with a strong, posteriorly pointing spine. Caudal rami generally short but with some of the apical setae much elongated. Eye normal. Anterior antennae slender and attenuated, eight articulate, sensory filaments of fourth joint fully developed; those of male slightly transformed, subprehensile. Posterior antennae with the outer ramus well developed, four articulate. Anterior lip prominent, tapering distally, terminal edge minutely denticulate. Mandibles with the masticatory part rather slender and coarsely dentated at the tip, palp of comparatively simple structure, though distinctly biramous. Maxillae with the palp slightly lobular, epipodal lobe wholly absent. Both pairs of maxillipeds uncinatate at the tip, the anterior ones biarticulate, with a single slender lateral lobe at the junction of the two joints, the posterior ones distinctly three articulate, with a single apical claw. First pair of legs with both rami three articulate, but rather unequal in size and structure, the inner one much larger than the outer and having the penultimate joint prolonged, the last very small with two comparatively short claws, outer ramus with the spine of the first joint, as a rule, elongated, that of the second joint issuing from near the end, last joint provided at the inner corner with two slender ciliated setae, and along the obliquely truncated end with four outward curving spines gradually increasing in length, and each like that of the second joint, penicillate at the tip, or clothed on one edge with a limited number of long cilia. Natatory legs comparatively well developed, with the rami nearly equal and the joints broad sublamellar, middle joint of inner ramus in all pairs with two natatory setae. Last pair of legs slender, extended laterally, proximal joint very slightly expanded inside, distal joint generally narrow, linear, those in male similar though somewhat smaller than in female.

TISBE WILSONI, new species

Specific characters—*Adult male* (Holotype, Cat. No. 61142, U.S.N.M.).—Body of male grayish white with a dark patch in the epimeral plate on either side of the first four thoracic segments. The first segment being fused with the head, its two patches appear near the posterior margin of the cephalothorax. Eye visible. Body much more slender and elongated than that of female, anterior and pos-

terior portions in the ratio of 5 to 4, genital segment distinctly divided in front of the center, both portions the same width, abdomen with four segments between the genital segment and furca. Segments diminishing considerably in length backward, but only slightly in width. Furca about the same length as the anal segment and like that of the female. First antennae symmetrical, geniculate, terminal portion consisting of the last two joints. Aesthetasc relatively larger than in the female. Appendages corresponding to those of the female.

Total length, 0.70 millimeter. Greatest width, 0.22 millimeter.

Adult female.—Body of female creamy white and fairly transparent. The ovaries and convoluted oviduct of a dark brown color and showing distinctly through the dorsal integument. Body moderately slender, the anterior division quite regularly oval in outline and about twice as long as wide, evenly rounded anteriorly and posteriorly, posterior division considerably less than half the anterior in both length and width. Genital segment distinctly divided at the center, the anterior half swollen laterally, the posterior half with straight lateral margins. Fureal rami longer than the anal segment, outer and inner apical setae short and bent at the base. Anterior antennae long and tapered distally, the second joint longer than the third, the fourth a trifle shorter than the third, terminal portion about twice the length of the fourth joint. Mandible with three proximal teeth increasing in size distally, and a row of five small distal teeth all about the same size; palp distinctly biramose, each ramus tipped with long and stout setae. First maxillae with no epipodal lobe and the palp not lobular, both maxillae and the palp tipped with a tuft of setae. Second maxillae with a curved terminal claw longer than the swollen basal joint and a long slender seta at the base, claw on the inner side. Maxilliped not as stout as second maxilla, its second joint armed with a short spine at the center of the outer margin, and a row of stiff bristles along the inner margin, terminal claw shorter than the second joint and slightly curved with a slender seta inside at its base. First legs with the endopod rather slender and nearly twice the length of the exopod, the second joint slightly longer than the basal one, the terminal joint nearly spherical and tipped with two small claws without plumes, claws on the second and third joints of the exopods showing distinctly at their tips, as well as the tufts of plumes characteristic of this genus. Fifth legs with a short basal joint not much widened, its inner expansion tipped with a long seta and two very short ones, terminal joint broad and lamellate, its width two-fifths of its length, with a very stout spine just beyond the center of the outer margin, three terminal setae, the central one the longest, and a minute spine on the outer margin near the tip.

Total length, 0.94 millimeter. Length of anterior body, 0.60 millimeter. Greatest width (cephalon), 0.35 millimeter. Length of posterior body, 0.34 millimeter. Width (genital segment), 0.15 millimeter.

EXPLANATION OF PLATES

PLATE 1

Amphiascus commensalis, new species

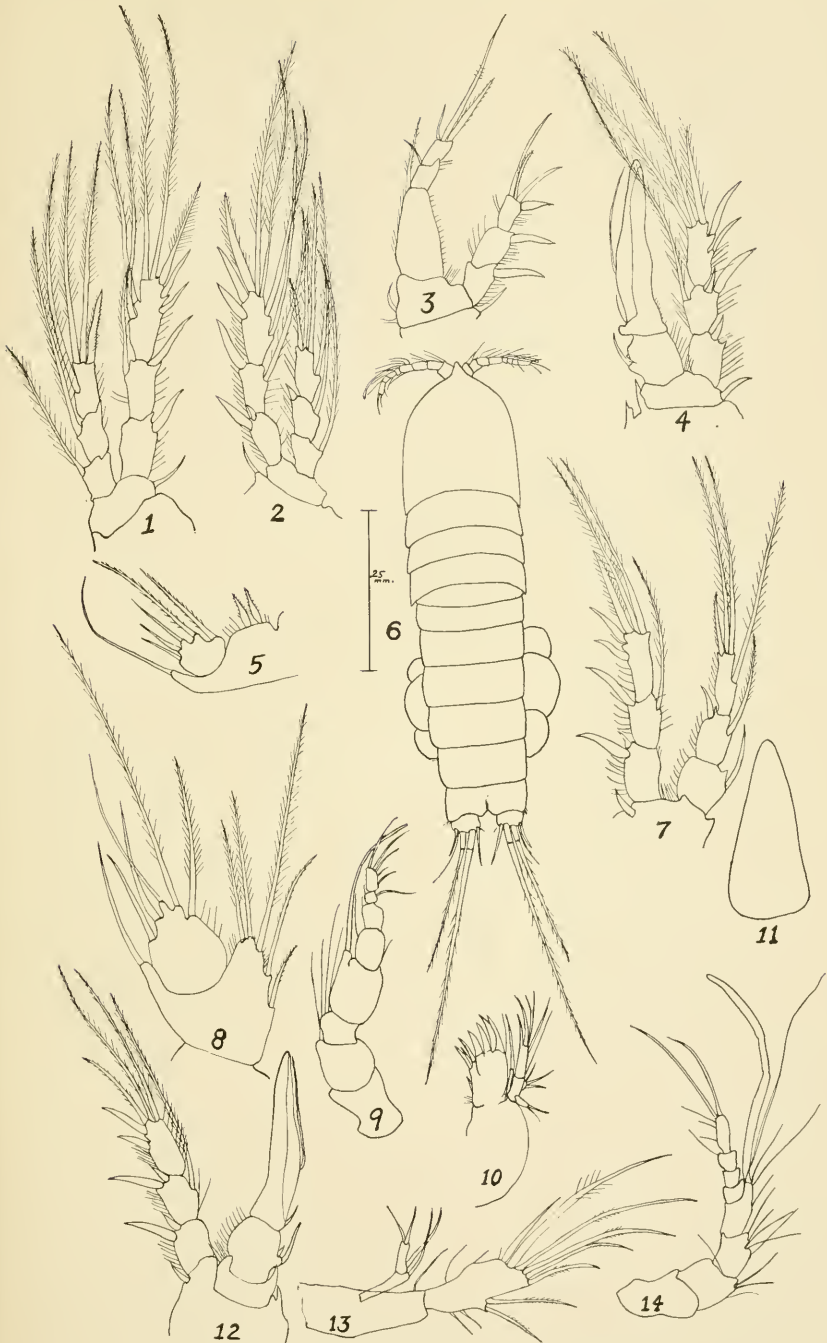
- FIG 1. Female, fourth leg.
2. Male, holotype, fourth leg.
3. Same, first leg.
4. Same, second leg.
5. Same, fifth leg.
6. Female, holotype.
7. Same, second leg.
8. Same, fifth leg.
9. Male, holotype, first antenna.
10. Female, mandible.
11. Same, rostrum.
12. Male, holotype, second leg.
13. Female, holotype, second antenna.
14. Same, first antenna.

PLATE 2

Tisbe wilsoni, new species

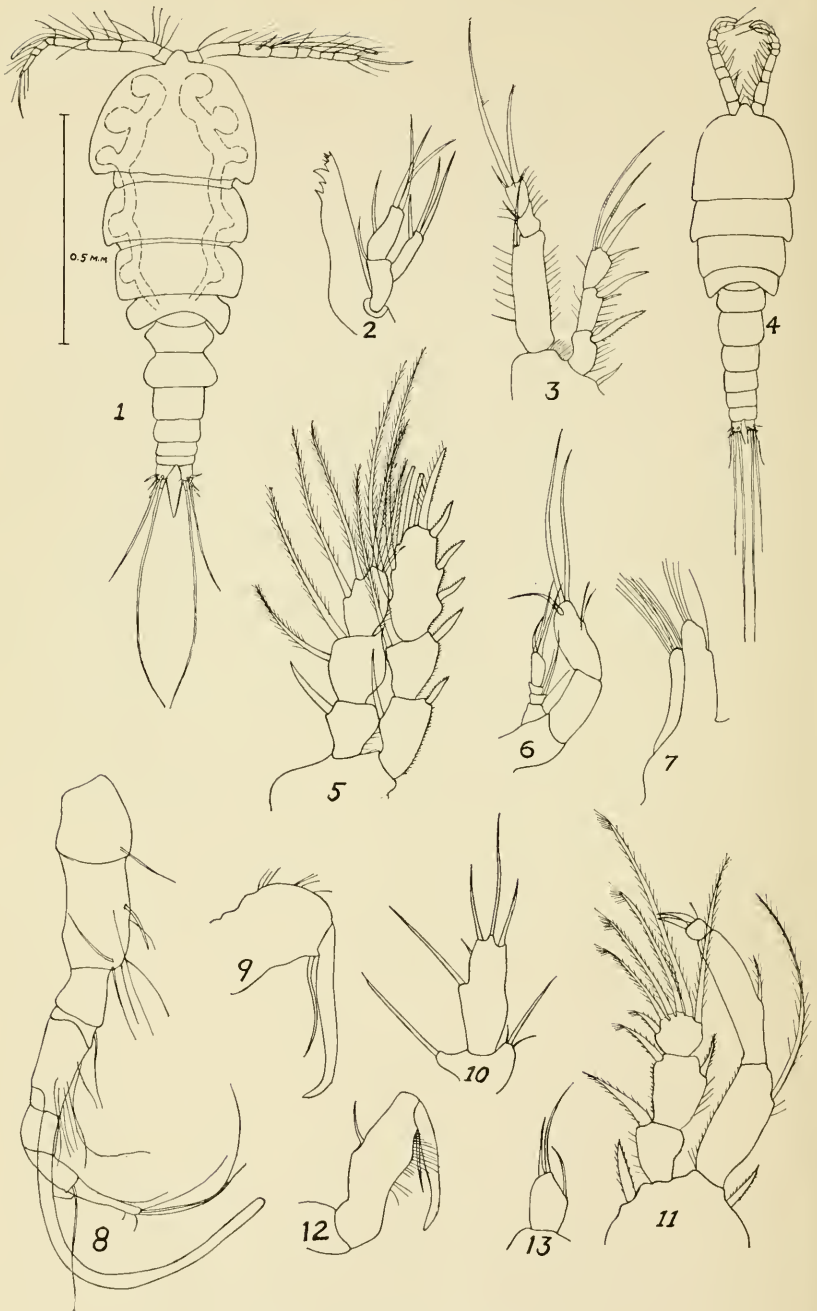
- FIG. 1. Female.
2. Mandible.
3. Female, second leg.
4. Male, holotype.
5. Same, fourth leg.
6. Same, second antenna.
7. Same, first maxilla.
8. Male, holotype, first antenna.
9. Same, second maxilla.
10. Female, fifth leg.
11. Male, holotype, first leg.
12. Same, first maxilliped.
13. Male, holotype, fifth leg.





AMPHIASCUS COMMENSALIS, NEW SPECIES

FOR EXPLANATION OF PLATE SEE PAGE 5



TISBE WILSONI, NEW SPECIES

FOR EXPLANATION OF PLATE SEE PAGE 6