

EURYTE VERECUNDA, NEW SPECIES
(COPEPODA: CYCLOPOIDA), ASSOCIATED WITH
THE CORAL *PORITES LOBATA* ON THE
PACIFIC COAST OF PANAMA

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Abstract.—A cyclopoid copepod, *Euryte verecunda*, is described from 12 m in the Bay of Panama where it is associated with the scleractinian coral *Porites lobata*. Association of *Euryte* with a coral has been reported previously only in the case of *Euryte bellatula*, a closely related species, with *Montipora* in New Caledonia.

The scleractinian coral *Porites lobata* Dana, 1846, is widespread in the tropical Pacific from the Nicobar Islands east to Panama (Glynn et al. 1972, Veron 1986). Several poecilostomatoid copepods are associated with this coral: *Kombia incrassata* Humes, 1984b, and *Monomolgus torulus* Humes, 1984b, at Moorea, and *Hemicyclops columnaris* Humes, 1984a, in Panama.

A new species of the cyclopoid genus *Euryte* is now reported associated with *Porites* in Panama. Although most species of *Euryte* are free-living, one species, *Euryte bellatula* Humes, 1991, has been found associated with six species of the coral genus *Montipora* in the southwest Pacific.

Order Cyclopoida Burmeister, 1834
Family Cyclopidae Dana, 1853
Genus *Euryte* Philippi, 1843
Euryte verecunda, new species
Figs. 1, 2, 3

Type material.—25 ♀♀, 7 ♂♂ from *Porites lobata* Dana, 1846, in 12 m, north side of Uraba Island, near Taboga Island, Bay of Panama, 08°47'N, 79°32'W, 29 Oct 1981. Holotype ♀ (USNM 257115), allotype, (USNM 257116), and 25 paratypes (20 ♀♀, 5 ♂♂) (USNM 257117) deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D.C. Re-

maining paratypes in the collection of the author.

Other specimens (all from *Porites lobata* at the type locality in 1991).—30 ♀♀, 1 ♂, 29 Oct; 4 ♀♀, 4 ♂♂, 30 Oct; 28 ♀♀, 1 ♂, 5 Nov; 27 ♀♀, 3 ♂♂, 5 Nov.

Female.—Body (Fig. 1a) moderately slender and elongate. Length (not including setae on caudal rami) 0.77 mm (0.74–0.81 mm) and greatest width 0.26 mm (0.24–0.26 mm), based on 10 specimens in lactic acid. Greatest dorsoventral thickness 0.20 mm. Ratio of length to width of prosome 1.82:1. Ratio of length of prosome to that of urosome 1.28:1.

Segment bearing leg 5 (Fig. 1b) 34 × 94 μm in dorsal view. Genital segment elongate, 99 μm long, 78 μm wide at slight anterior expansions, 56 μm wide posteriorly. Lateral spiniform process on both sides almost midlength of segment (Fig. 1c). Genital areas, both with 2 minute setae, located far forward dorsolaterally at widest part of segment (Fig. 1b), both connected by duct to single midventral copulatory pore (Fig. 1d). Three postgenital segments from anterior to posterior 43 × 52, 31 × 49, and 42 × 45 μm.

Caudal ramus (Fig. 1e, f) elongate, in specimen drawn 81 × 13 μm, ratio 6.23:1 ($n = 56$, average 81.3 × 13.9 μm, ratio 5.85:1). Range of length 73–91 μm, range of width 13–15 μm. Outer lateral seta 15 μm, dorsal

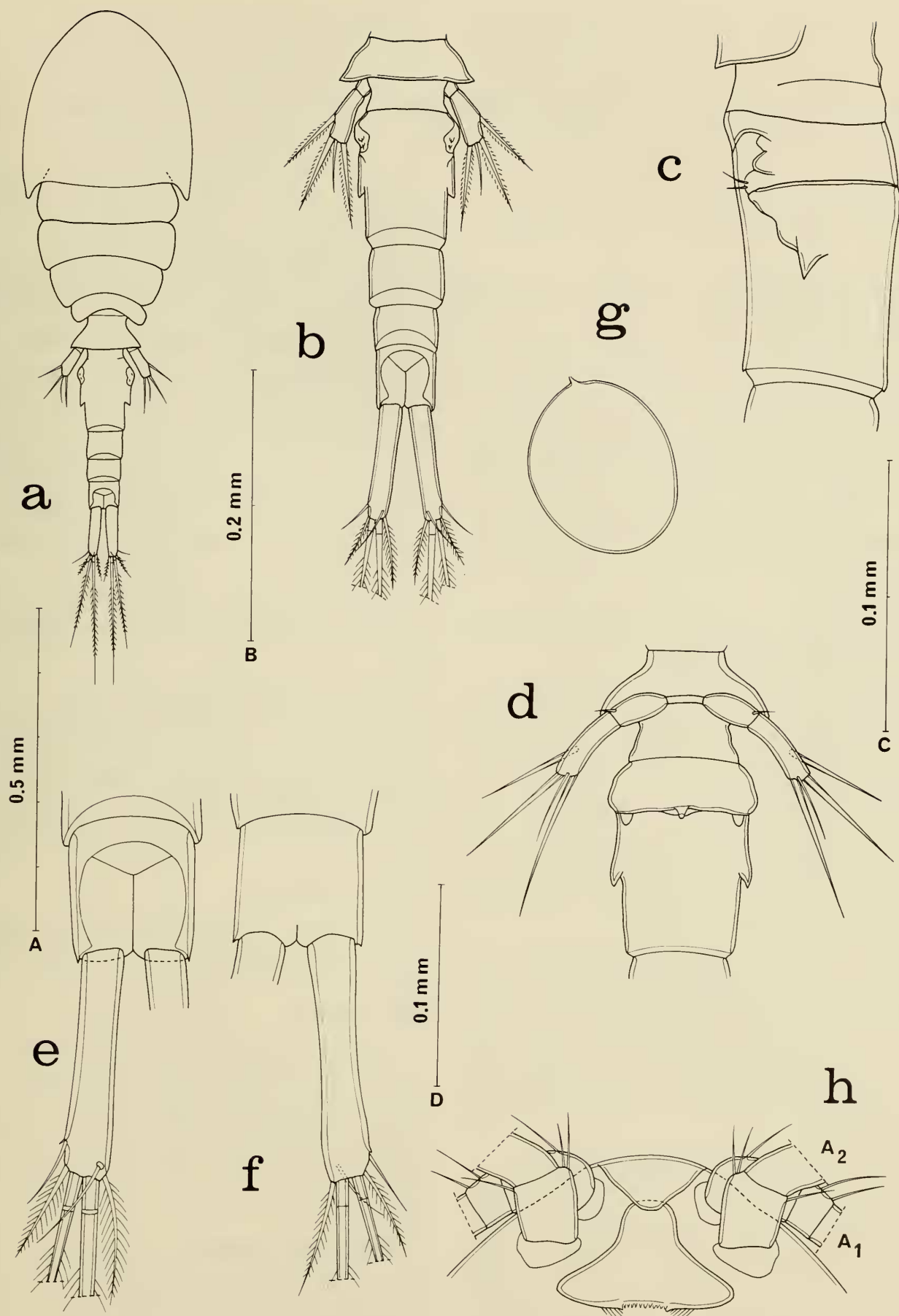


Fig. 1. *Euryte verecunda*, new species, female. a, dorsal view (scale A); b, urosome, dorsal (B); c, genital segment, lateral (C); d, segment bearing leg 5 and genital segment, ventral (C); e, anal segment and caudal ramus, dorsal (C); f, anal segment and caudal ramus, ventral (C); g, egg sac, inner (B); h, rostrum and labrum, ventral (D). A₁ = first antenna, A₂ = second antenna.

seta 44 μm , both smooth. Outermost terminal seta 47 μm , innermost terminal seta 65 μm , and 2 long median terminal setae 180 μm (outer) and 234 μm (inner), all with lateral setules. Frequently caudal ramus slightly constricted as in Fig. 1f, 80 \times 13 μm , ratio 6.15:1, width distally 16 μm .

Body surface lacking visible ornamentation.

Egg sac (Fig. 1g) in 22 females containing 1 egg, 128 \times 104 μm .

Rostrum (Fig. 1h) broadly linguiform. First antenna (Fig. 2a) 250 μm long, 21-segmented. Lengths of segments (measured along their posterior nonsetiferous margins): 35 (47 μm along anterior margin), 21, 10.5, 8, 8, 8, 8, 8, 9, 10.5, 11, 9, 9, 9, 10.5, 9, 9, 9, 13, 15.5, and 18 μm , respectively. Formula for armature: 8, 3, 2, 2, 2, 2, 2, 2, 2, 1, 1, 1, 1, 0, 1, 1, 1, 1, 2, 2, and 8. All setae smooth.

Second antenna (Fig. 2b) with 3 of 6 setae on last segment geniculate.

Labrum (Figs. 1h, 2c), mandible (Fig. 2d), first maxilla (Fig. 2e), second maxilla (Fig. 2f), and maxilliped (Fig. 2g) resembling those of *Euryte bellatula*.

Legs 1–4 (Figs. 2h, 3a–c) segmented and armed as in *E. bellatula*. Leg 1 with inner spine on basis 36 μm . Third segment of exopod of leg 4 with terminal spine 55 μm and adjacent outer spine 29 μm .

Leg 5 (Fig. 1d) with first segment 23 \times 13 μm in ventral view, its seta 5 μm . Second segment 39 \times 10.5 μm , its 4 setae from outer to inner 45, 60, 32, and 68 μm . In flat view, second segment 39 \times 17 μm (Fig. 3d).

Leg 6 represented by 2 small setae on genital area (Fig. 1b, c).

Color of living specimens unknown.

Male.—Body (Fig. 3e) with general form resembling that of female. Length 0.62 mm (0.59–0.64 mm) and greatest width 0.19 mm (0.18–0.19 mm), based on 4 specimens in lactic acid. Greatest dorsoventral thickness 0.14 mm. Ratio of length to width of prosome 1.81:1. Ratio of length of prosome to that of urosome 1.32:1.

Segment bearing leg 5 (Fig. 3f) 31 \times 68 μm . Genital segment in dorsal view 52 \times 60 μm , slightly wider than long with rounded lateral margins. Four postgenital segments from anterior to posterior 34 \times 42, 29 \times 39, 24 \times 36, and 29 \times 34 μm .

Caudal ramus similar to that of female but shorter, 62 \times 13 μm , ratio 4.77:1.

Body surface smooth as in female.

Rostrum like that of female. First antenna (Fig. 3g) approximately 225 μm long, 15-segmented, slightly modified. Lengths of segments (measured along their posterior nonsetiferous margins): 23 (42 μm along anterior margin), 18, 13, 6.5, 4.5, 5.5, 11, 15, 3, 26, 13, 10, 23, 28, and 33 μm , respectively. Formula for armature: 8, 3, 2, 2 + 1 aesthete, 2, 2, 2, 2, 2, 1, 2 + 1 aesthete, 2, 1, 3, and 8 + 1 aesthete. Second antenna as in female.

Labrum, mandible, first maxilla, second maxilla, maxilliped, and legs 1–4 as in female.

Leg 5 resembling that of female.

Leg 6 posteroventral flap on genital segment bearing 1 spiniform seta with slightly swollen base and 2 slender setae (Fig. 3f).

Spermatophore (Fig. 3h), attached to female, elongate 36 \times 18 μm , not including neck.

Color unknown.

Etymology.—The specific name *verecunda*, Latin meaning modest or retiring, alludes to the moderately expressed features of this species.

Remarks.—*Euryte verecunda* resembles *E. bellatula* Humes, 1991, in several respects, such as body form, segmentation of the first antenna, structure of the second antenna, labrum, mouthparts, and legs 1–4, but differs from that species as in Table 1.

Additional measurements of the caudal ramus of six female paratypes of *E. bellatula* are: average 65 \times 18 μm , ratio 3.61:1, range of length 61–73 μm .

Distinctions between *E. verecunda* and *E. bellatula* in some cases are more clearly ex-

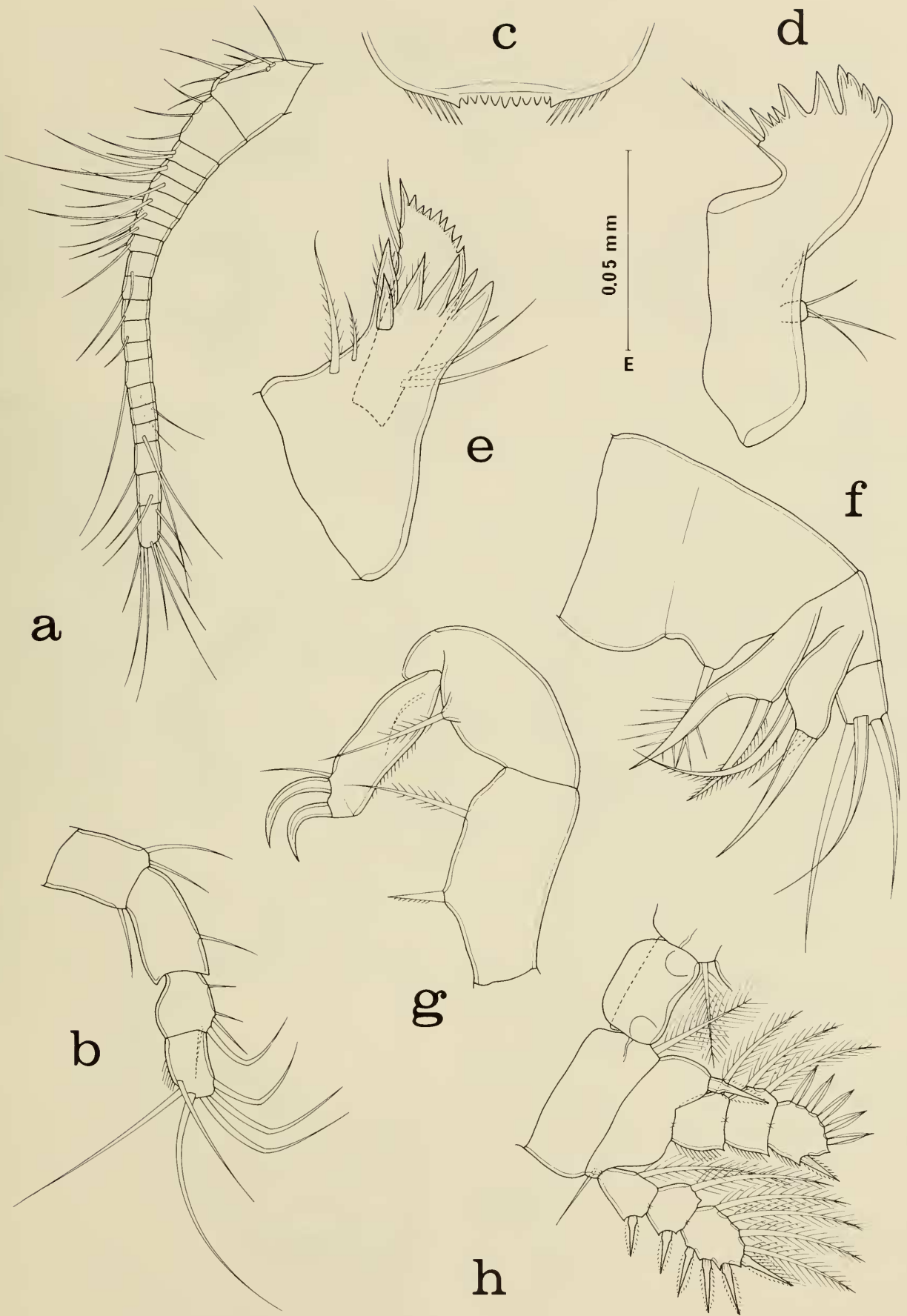


Fig. 2. *Euryte verecunda*, new species, female. a, first antenna, posteroventral (scale D); b, second antenna, antero-outer (D); c, posteroventral edge of labrum, ventral (D); d, mandible, inner (E); e, first maxilla, inner (E); f, second maxilla, outer (D); g, maxilliped, inner (E); h, leg 1 and intercoxal plate, anterior (D).

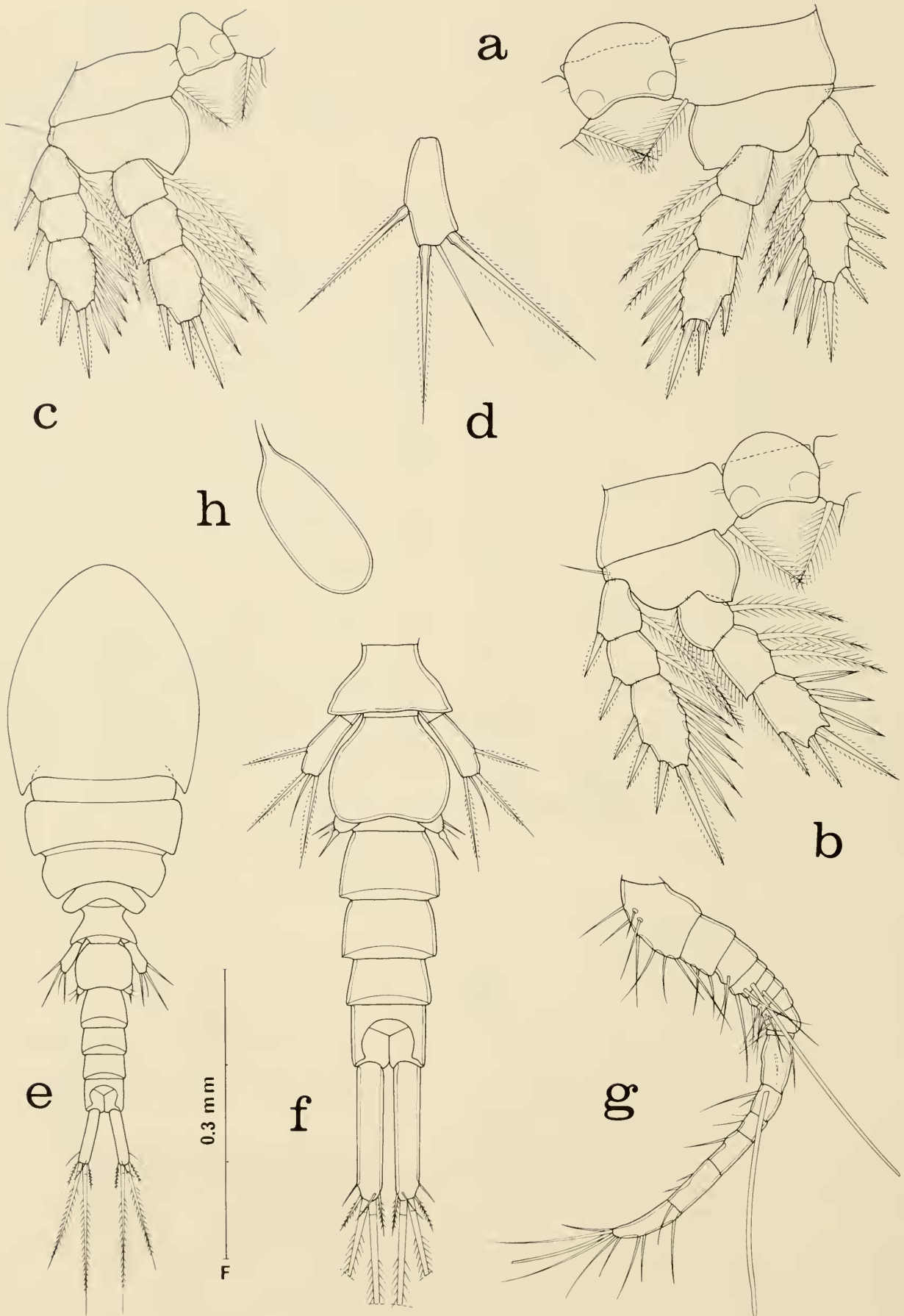


Fig. 3. *Euryte verecunda*, new species. Female: a, leg 2 and intercoxal plate, anterior (scale D); b, leg 3 and intercoxal plate, anterior (D); c, leg 4, anterior (D); d, second segment of leg 5, flat outer view (C). Male: e, dorsal view (F); f, urosome, dorsal (D); g, first antenna, ventral (D); h, spermatophore, attached to female, lateral (E).

Table 1.—Comparison of *Euryte bellatula* with *E. verecunda*.

	<i>E. bellatula</i>	<i>E. verecunda</i>
Length of body (♀) (mm)	0.83 (0.80–0.87)	0.77 (0.74–0.81)
Prosome, ratio of length : width (♀)	1.52:1	1.82:1
Caudal ramus, ratio of length : width (♀)	3.6:1	5.85–6.23:1
Ratio of length of caudal ramus to that of anal segment (♀)	1.64:1	1.93:1
Leg 4 exopod 3, ratio of length of terminal spine: adjacent outer spine (♀)	1.57:1 (55:35 μm)	1.90:1 (55:29 μm)
Host	<i>Montipora</i>	<i>Porites</i>

pressed by ratios rather than by absolute measurements. Careful study is necessary to distinguish these species, preferably involving a series of specimens. One feature of the new species that is of interest when compared with congeners is that in the new species and in *E. bellatula* the first antenna is 21-segmented, while in other species it has 20 or 21 segments, in one case 18 segments (Sars 1913, Scott 1912, Sewell 1949, Vervoort 1964).

Euryte verecunda is a frequent associate of *Porites lobata* in Panama. The copepod was found in considerable numbers on fragments of five different colonies of the coral. This is the second species of *Euryte* known to be coral-inhabiting, the first being *E. bellatula* associated with several species of *Montipora* in New Caledonia, on the Great Barrier Reef, and at Banda in the Moluccas (Humes 1991).

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