Sunaristes (Copepoda, Harpacticoida) Associated with Hermit Crabs at Eniwetok Atoll[1]

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ABSTRACT: *Sunaristes* at Eniwetok differ only slightly from *S. dardani* Humes and Ho in Madagascar and are regarded as conspecific with that species. *Dardanus scutellatus* is a new host for *Sunaristes dardani.*

COPEPODS of the genus *Sunaristes* are virtually unknown in the Pacific Ocean, although in the Indian Ocean two species have been described from Madagascar (Humes and Ho, 1969), and I. C. Thompson and A. Scott (1903) found a few specimens of *Sunaristes paguri* Hesse, 1867, in Ceylon. A. Scott (1909) reported a single male of *Sunaristes paguri* from washings of dredged invertebrates collected at Siboga Station 164, lat. 1°42.5′ S, long. 130°47.5′ E, at a depth of 32 meters, near New Guinea. The records of Indo-Pacific *S. paguri* need verification, however, as Humes and Ho (1969) have pointed out.

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All *Sunaristes* collected at Eniwetok belong to a single species, *Sunaristes dardani* Humes and Ho, 1969, although, as will be seen below, there are several minor points of variation in the Eniwetok material. This copepod is here reported from a new host, *Dardanus scutellatus* (H. Milne Edwards).

MATERIAL COLLECTED AT ENIWETOK ATOLL, MARSHALL ISLANDS, IN 1969

From *Dardanus guttatus* (Olivier): three females from one host in *Conus* shell, in 3 m, between Arambiru (Vera) Island and Rojoa (Ursula) Island, June 15.

From *Dardanus megistos* (Herbst): three copepodids from one host in *Terebra*, in 2 m, western side of Eniwetok Island, June 26; two females from two hosts in *Terebra*, in 6 m, west of Eniwetok Island, July 17.

From *Dardanus lagopodes* (Forskål): one female and one male from one host in *Cerithium*, in 2 m, in quarry, northern end of Eniwetok Island, June 27; three females from 11 hosts in *Terebra* and *Cerithium*, in 2 m, western side of reef on northern end of Muti (David) Island, June 29; one male and three copepodids from one host in *Cypraea*, in 2 m, Rigili (Leroy) Island, July 3; *eight females, three males, and two copepodids from 14 hosts in *Terebra* and *Cerithium*, in 4 m, north of Sand Island, north of Eniwetok Island, July 8; one female from three hosts in *Strombus, Cerithium*, and *Terebra*, in 2 m, in quarry, northern end of Eniwetok Island, July 20.

From *Dardanus guttatus* and *Dardanus lagopodes* mixed: six females, five males, and five copepodids from 13 *D. lagopodes* in *Terebra* and one *D. guttatus* in *Conus*, in 3 m, Sand Island, north of Eniwetok Island, June 28.

From *Dardanus scutellatus* (H. Milne Edwards): one male and one copepodid from one host in *Cerithium*, in 2 m, western side of Eniwetok Island, June 26; 11 females and four males from 33 hosts in *Terebra*, in 3 m, western side of northern end of Sand Island, north of Eniwetok Island, June 28; *49 females, 16

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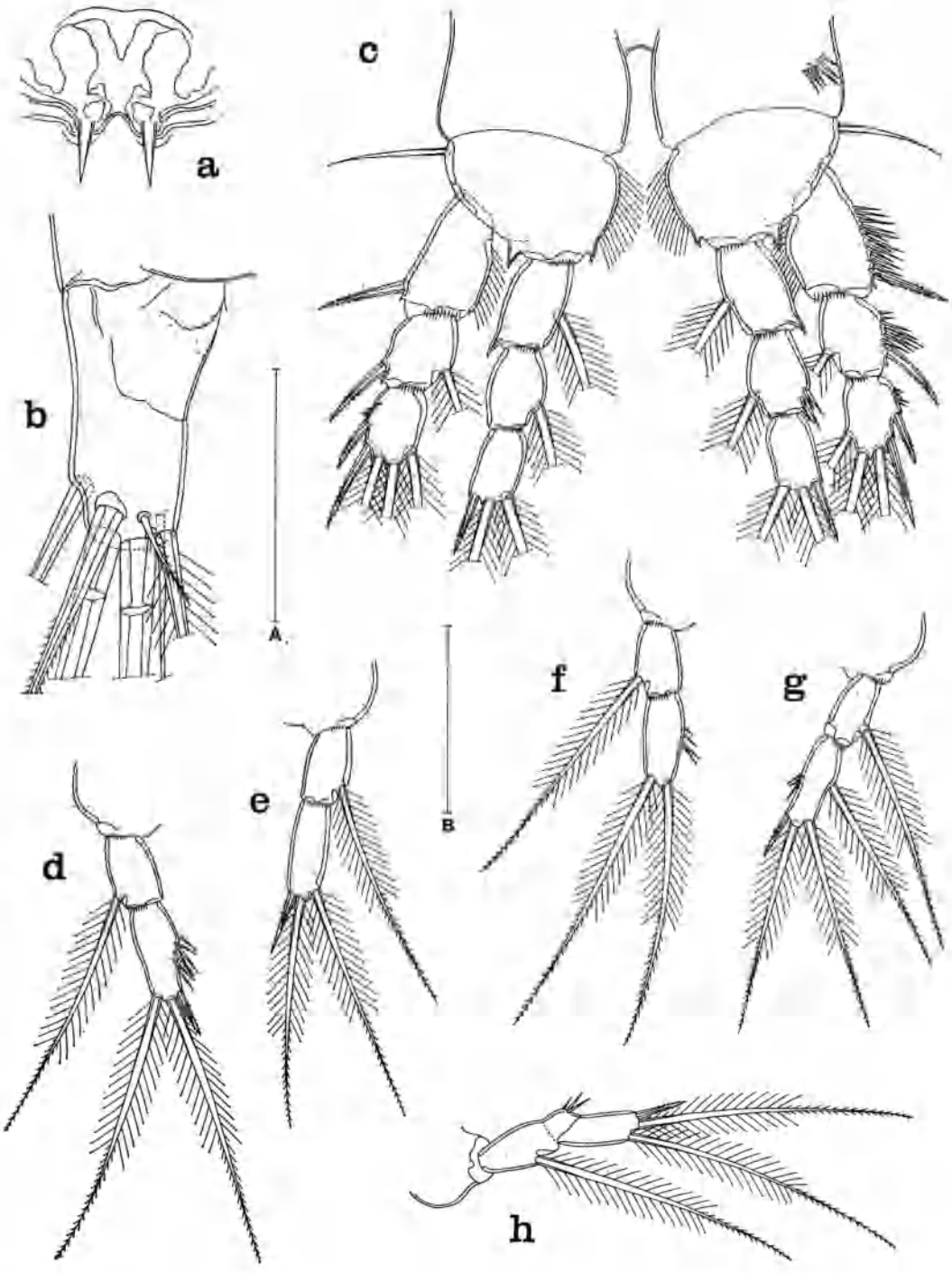
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males, and eight copepodids from 87 hosts in *Terebra*, in 4 m, north of Sand Island, north of Eniwetok Island, July 8.

From *Calcinus latens* (Randall): *four females from three hosts in *Conus* and *Strombus*, in 1 m, in quarry, northern end of Eniwetok Island, June 19; two females and one male from six hosts in *Cerithium*, in 2 m, in quarry, northern end of Eniwetok Island, June 27; one female from five hosts in *Conus* and *Strombus*, in 1.5 m, western side of northern end of Sand Island, north of Eniwetok Island, June 28; one female from five hosts in *Strombus*, in 2 m, western side of reef on northern end of Muti (David) Island, June 29.

The three collections preceded by an asterisk have been deposited in the United States National Museum.

Several features of the Eniwetok specimens differ slightly from the Madagascar and Mauritius specimens. In connection with this study direct comparison has been made with *Sunaristes dardani* from *Dardanus megistos* collected in 1967 at Nosy Bé, Madagascar. Those features not mentioned below may be assumed to be identical with those of *Sunaristes dardani* as described by Humes and Ho (1969).

Female

The dimensions of the body (length and width), 1.74 mm (1.49–2.01 mm) × 0.32 mm (0.30–0.39 mm), are a little smaller than in the Madagascar specimens. The two medial processes on the genital segment (Fig. 1*a*) are spiniform, with sharply pointed rather than bifurcated tips.

The caudal ramus (Fig. 1*b*) is slightly broader proximally than in Madagascar material. Its dimensions (the width taken at the middle) range from 101 × 45 μ to 117 × 55 μ, the ratio being 2.13–2.24:1.

While the armature and ornamentation of legs 1–3 and the exopod of leg 4 are similar to specimens in Madagascar, leg 3 in one female (Fig. 1*c*) showed considerable variation in the arrangement of spinules. The endopod of leg 4 in most specimens is like that shown in Figure 1*d*, with an outer group of spinules on the second segment. One female had abnormal fourth endopods as shown in Figures 1*e* and 1*f*. Two females had the endopod on one leg 4 armed with an extra seta on the second segment (as in Fig. 1*g* of the male).

Male

The dimensions of the body, 1.65 mm (1.43–1.78 mm) × 0.31 mm (0.29–0.34 mm), are also slightly smaller than in the Madagascar specimens. Three males showed on one or both fourth endopods the formula 0–1; I,2,1, as shown in Figure 1*g*. One male had an abnormal fourth endopod as indicated in Figure 1*h*.

COMPARISONS OF ENIWETOK AND MADAGASCAR POPULATIONS

The difference in body size, the acutely pointed processes on the genital area of the female, and the slightly shorter caudal ramus are variations which I interpret as intraspecific and characteristic of the Eniwetok population of *S. dardani*. It may be noted that a large number of Eniwetok specimens came from four hosts already known to harbor *S. dardani* in Madagascar (*Dardanus guttatus, D. megistos, D. lagopodes*, and *Calcinus latens*).

The variations in the armature and ornamentation of leg 3 and particularly in the endopod of leg 4 probably should be regarded only as aberrations. In the Madagascar population comparable variations in the armature and ornamentation of the endopod of leg 4 have been observed (Humes and Ho, 1969).

The minor differences observed in the Eniwetok specimens suggest that widely separated populations of *Sunaristes dardani* vary in certain intraspecific characters. Much more collecting throughout the Indo-Pacific will be neces-

FIG. 1. *Sunaristes dardani* Humes and Ho, 1969, from *Dardanus scutellatus*. Female: *a*, median part of the genital area, ventral (A); *b*, caudal ramus, dorsal (A); *c*, third legs, anterior (B); *d*, left endopod of leg 4, anterior (B); *e*, right endopod of leg 4, anterior (B); *f*, left endopod of leg 4 (same female as in preceding figure), anterior (B). Male: *g*, right endopod of leg 4, anterior (B); *h*, left endopod of leg 4, anterior (B).

SCALE: A = 0.1 mm and B = 0.1 mm.

sary, however, before this can be well documented.

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