

New Species of *Dantya* from
the Indian Ocean (Ostracoda:
Sarsiellidae: Dantyiinae)

LOUIS S. KORNICKER

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ABSTRACT

Kornicker, Louis S. New Species of *Dantya* from the Indian Ocean (Ostracoda: Sarsiellidae: Dantyiinae). *Smithsonian Contributions to Zoology*, number 383, 18 pages, 10 figures, 1983.—Three new species of the genus *Dantya* (*D. fossula*, *D. piercei*, *D. benthedi*) are described from the western Indian Ocean (Mozambique Channel and on the continental shelf of the Somali Republic). The genus had been known previously only from the Caribbean Sea. A supplementary description is given of *Nealella muelleri*, and the known range of the species is extended from the continental shelf off Tanzania to the shelf off the Somali Republic.

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New Species of *Dantya* from the Indian Ocean (Ostracoda: Sarsiellidae: Dantyninae)

Louis S. Kornicker

Introduction

The subfamily Dantyninae Kornicker and Cohen, 1978, comprises 2 genera: *Dantya* Kornicker and Cohen, 1978, and *Nealella* Kornicker and Carion, 1980. Kornicker and Carion (1980, fig. 2) concluded that a species having a primitive 5th limb like that of *Dantya* was the ancestor of *Nealella*, and that the distribution of both genera (*Dantya* in the Caribbean Sea, and *Nealella* in the Indian Ocean and seas in the vicinity of Indonesia and Australia) suggested that species having a primitive 5th limb were once widespread, but after South America drifted away from Africa the population having the primitive 5th limb remained extant only in the vicinity of America. The study of additional samples collected in the western part of the Indian Ocean in the vicinity of the Glorioso Islands and on the continental shelf east of the Somali Republic revealed 3 new

species of *Dantya*, showing that the genus remains widespread. In addition to descriptions of the new species of *Dantya*, a supplementary description of *Nealella muelleri* Kornicker and Carion, 1980, is presented herein.

ACKNOWLEDGMENTS.—I wish to thank Dr. M. Segonzac, Centre National de Tri d'Océanographie Biologique (CENTOB, Brest, France) for the specimens from the Mozambique Channel collected during the French expedition *Benthedi* (Chief Scientist: Dr. Bernard Thomassin, Station Marine d'Endoume, Marseille). The specimens from the continental shelf off the Somali Republic were collected during the International Indian Ocean Expeditions, with the support of the National Science Foundation. I am grateful to several people who assisted in the preparation of this paper: Mrs. Carolyn Gast rendered the shaded drawings of the carapaces; Mrs. Kathryn Schroeder made many camera lucida drawings of appendages; Mrs. A.C. Cohen and Dr. T.E. Bowman criticized the manuscript. My appreciation also to J. Korytowski, Smithsonian Institution Press, for editing and preparing the manuscript for publication.

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SARSIELLIDAE Brady and Norman, 1896

Key to the Subfamilies of the Sarsiellidae

(females and juvenile males)

- Carapace with prominent rostrum; 2nd and 3rd joints of endopodite of mandible with at least 2 stout claws **DANTYINAE**
 Carapace without rostrum or with minute rostrum; mandible with no more than 1 stout claw on 2nd and 3rd joints of endopodite **SARSIELLINAE**

DANTYINAE Kornicker and Cohen, 1978

Because of the presence of only 1 stout claw on the 1st endopodial joint of the mandible of *Dantya piercei*, new species described herein, it is necessary to emend the diagnosis of the subfamily given by Kornicker and Cohen (1978:492) to include species having only 1 stout claw on the 1st endopod-

dial joint of the mandible, but 2 or more stout claws on the 2nd and 3rd endopodial joints.

Dantya Kornicker and Cohen, 1978

TYPE-SPECIES.—*Dantya magnifica* Kornicker and Cohen, 1978.

Key to the Species of *Dantya*

(females)

1. Ventral margin of rostrum forming right angle with anterior margin of valve ventral to rostrum; surface of valves with numerous minute knob-like processes ***D. magnifica*** Kornicker and Cohen
 Ventral margin of rostrum forming acute angle with anterior margin of valve ventral to rostrum; surface of valves without knob-like processes 2
2. Longest ventral claw of 1st endopodial joint of mandible with 3 stout teeth and without slender teeth and spines .. ***D. benthedii***, new species
 Longest ventral claw of 1st endopodial joint of mandible with slender teeth and spines and without 3 stout teeth 3
3. 2nd endopodial joint of mandible with 5 claws .. ***D. piercei***, new species
 2nd endopodial joint of mandible with 2 claws .. ***D. fossula***, new species

***Dantya fossula*, new species**

FIGURES 1-3

ETYMOLOGY.—The specific name from the Latin *fossula* diminutive of *fossa*, meaning ditch, in reference to the numerous fossae on the carapace.

MATERIAL.—Station 110, R/V *Benthédi*; 12°-25'36"S, 46°16'12"E; south part of Zélé Bank, Mozambique Channel; 10 Apr 1977; depth 24 m; collected with suction device equipped

with 1 mm net by Centre National de Tri d'Océanographie Biologique (CENTOB), France; received from Dr. Michael Segonzac: holotype, adult female on slide and in alcohol; unique specimen; deposited in the Muséum National d'Histoire Naturelle, Paris, France.

DESCRIPTION OF ADULT FEMALE (Figures 1-3).—Carapace elongate, with narrow rostrum overhanging incisur, and with projecting caudal process (Figure 1).

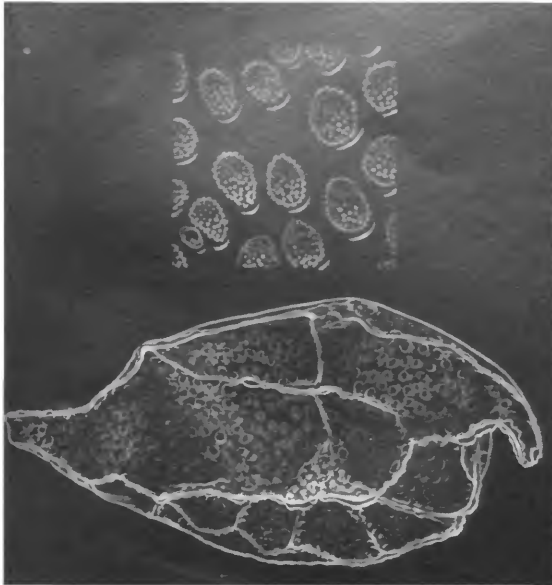


FIGURE 1.—*Dantya fossula*, holotype, adult female, lateral view of complete carapace and detail of fossae (carapace length 1.01 mm).

Ornamentation (Figures 1, 2a): Each valve with several ribs: dorsal rib extending from upper edge of rostrum to posterodorsal corner of valve; upper lateral rib extending from lower margin of rostrum to posterodorsal corner of valve; lower lateral rib extending from anteroventral corner of valve to lower edge of caudal process; upper and lower lateral ribs connected by vertical rib midway between incisur and central adductor muscle attachment; slender vertical rib extending from vicinity of central adductor muscle attachment to dorsal rib; narrow, crenulate, ventral ridge extending from upper lateral rib in vicinity of incisur to caudal process; 3 or 4 radial ribs connecting ventral rib with lower lateral rib (Figure 1). Surface with abundant shallow fossae containing minute pustules; two minute bristles present at inner end of incisur (Figure 2a); bristles sparsely distributed over valve surface and more numerous along ventral margin; 2 bristles present on inner side of rostrum near its ventral margin (Figure 2a).

Infold (Figure 2a,b): Rostral infold with 3 spinous bristles forming row along edge of valve that lies near posterior end of rostrum (Figure 2a); infold of caudal process with 8 broad spinous bristles forming row along edge of lip near anterior part of process, and 2 small bare bristles near posterior edge of process (Figure 2b); anteroventral infold with short bristle.

Selvage (Figure 2a,b): Wide lamellar prolongation along anteroventral and ventral margins; prolongation bearing long streamers in vicinity of anteroventral corner but not elsewhere; anteroventral selvage terminating near ventral bristle on infold of rostrum; margin of selvage between ventral bristle and anteroventral corner of valve with narrow fringe but no long streamers; dorsal selvage extending from anterodorsal corner of rostrum to anterior juncture of hingement broad with marginal fringe; lamellar prolongation absent at bases of 3 bristles on rostral infold; posterior edge of caudal process without lamellar prolongation.

Size: Holotype, length 1.01 mm, height 0.50 mm.

First Antenna (Figure 2c): 1st joint bare. 2nd joint with dorsal midbristle. 3rd joint short, not separated from 4th joint by suture, with 2 bristles (1 ventral, 1 dorsal); 4th joint elongate, with 3 spinous bristles (2 ventral, 1 dorsal). 5th joint elongate; sensory bristle with 4 marginal filaments and minute process at tip. 6th joint minute, fused to 5th joint; medial bristle longer than 5th joint and with faint marginal spines. 7th joint: a-bristle about twice length of 5th joint, with spines along ventral margin; b-bristle about same length as a-bristle, with short filament distal to middle and minute process at tip; c-bristle same length as sensory bristle of 5th joint, with 4 marginal filaments and minute process at tip. 8th joint: d- and e-bristles bare, about same length as c-bristle, with blunt tips; f-bristle shorter than c-bristle, with 2 proximal filaments, 2 smaller spine-like distal filaments, and minute process at tip; g-bristle about same length as c-bristle, with 5 marginal filaments and minute process at tip. Filaments on sensory bristle and on b-, c-, f-, and g-bristles with spine-like, drawn-out tips.

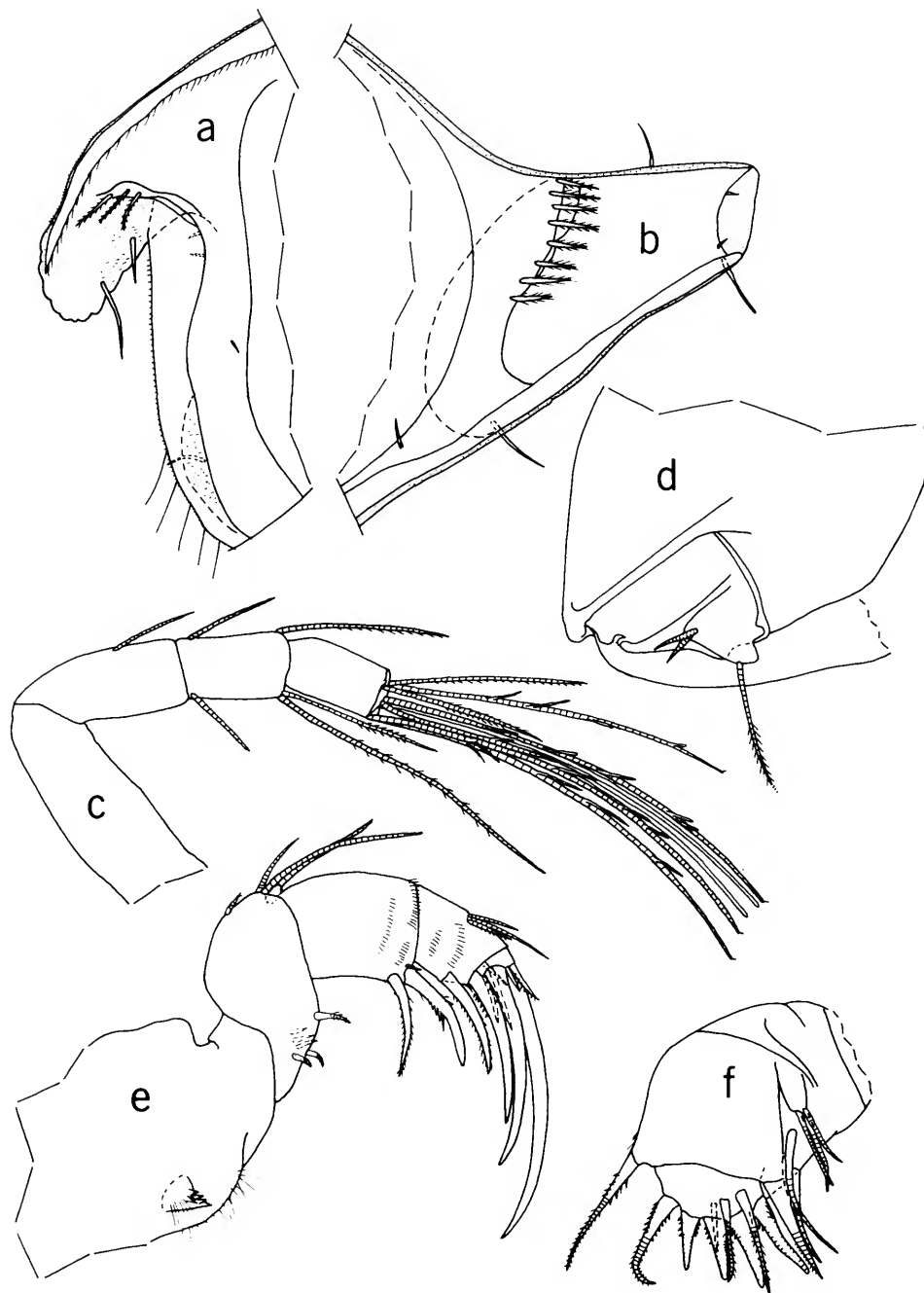


FIGURE 2.—*Dantya fossula*, holotype, adult female: *a*, rostrum, inside view; *b*, caudal process, inside view; *c*, left 1st antenna, medial view; *d*, protopodite, endopodite, and part of 1st joint of exopodite of right 2nd antenna, medial view; *e*, left mandible, medial view; *f*, left maxilla, lateral view.

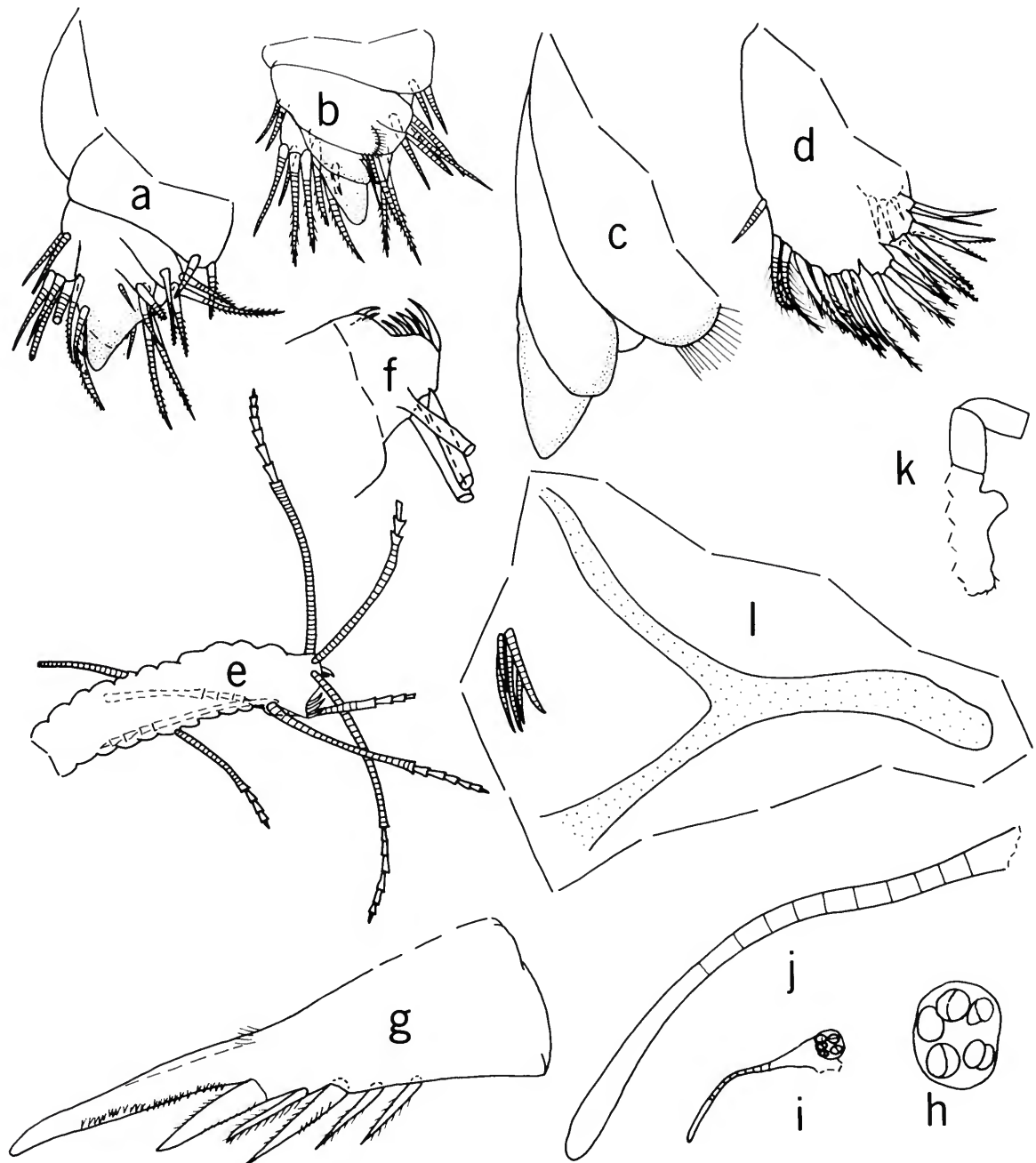


FIGURE 3.—*Dantya fossula*, holotype, adult female: *a*, distal end of left 5th limb, posterior view; *b*, distal end of right 5th limb, anterior view; *c*, detail from *b*; *d*, 6th limb; *e*, 7th limb; *f*, detail from *e*; *g*, left lamella of furca; *h*, lateral eye; *i*, left lateral eye and bellonci organ; *j*, bellonci organ; *k*, anterior of body showing proximal 2 joints of right 1st antenna, and upper lip; *l*, Y-sclerite and brush-like organ.

Second Antenna (Figure 2d): Protopodite bare. Endopodite 2-jointed: 1st joint with 2 short proximal anterior bristles; 2nd joint small with 1 fairly long spinous bristle (tip of bristle broken off on illustrated limb). Exopodite: 1st joint elongate with minute terminal recurved bristle; 2nd joint with fairly long medial spines forming 2 fan-like arrangements on distal margin; similar spines forming single fan-like arrangements on joints 3–7; joints 4–8 with basal spine (spines similar in size, except that of joint 4 being slightly smaller); basal spine of 8th joint longer than small 9th joint; bristle of 2nd joint with slender proximal ventral spines and few smaller slender distal spines on both ventral and dorsal margins; bristles of joints 3–8 with stout proximal ventral spines, proximal dorsal hairs, and distal natatory hairs on both margins; 9th joint with 2 bristles (longer of these only slightly longer than combined lengths of joints 2–9; smaller bristle about half that length; longer bristle with few small, proximal spines).

Mandible (Figure 2e): Coxale endite consisting of stout pointed process with long proximal hairs and stout distal spines; ventral margin of coxale with long hairs. Basale: dorsal margin with 1 short ringed bristle distal to middle and 2 terminal bristles (1 long, 1 short); medial side with 2 small bristles near ventral margin; lateral side with 3 small bristles near ventral margin; ventral margin with 1 small proximal bristle. Exopodite minute, with 1 terminal bristle reaching well past middle of dorsal margin of 1st endopodial joint. 1st endopodial joint: dorsal margin with terminal spines forming row; ventral margin with 1 small bristle and 2 stout claws (proximal claw spinous; distal claw with about 9 slender teeth). 2nd endopodial joint: dorsal margin with 3 bristles near middle; ventral margin with 2 stout claws (proximal of these spinous; other with proximal ventral teeth); medial side with spines forming rows; minute spines present on ventral margin at base of distal claw; lateral side with small bristle near base of distal claw; medial surface with spines forming rows. 3rd endopodial joint with 2 long stout claws with proximal teeth on ventral margin, 2 ringed lateral bristles near ventral margin,

1 short spinous dorsal claw, and 1 small faint medial spine-like bristle adjacent to short dorsal claw.

Maxilla (Figure 2f): 3 endites with total of about 16 claws and bristles. Basale with bristle near middle of distal medial margin (not shown on illustrated limb). Exopodite with 3 bristles (2 long, 1 slightly shorter). Endopodite: 1st joint with distal anterior spines and a spinous alpha- and beta-bristle (alpha-bristle more slender than beta-bristle); end joint with 1 small medial c-bristle, 2 fairly long, spinous a-bristles, and 5 short, stout, terminal bristles (outer of these with slender proximal teeth and distal spines, others with stout proximal teeth).

Fifth Limb (Figure 3a-c): Epipodial appendage with 37 bristles. Three endites present: endite I with 2 short bristles; endite II with 4 spinous bristles; endite III with 4 or 5 bristles. Exopodite: 1st joint with small proximal inner lobe (with small bristle), and large rounded tooth; 2nd joint with large triangular tooth and about 4 bristles (3 along proximal outer edge, 1 close to inner edge); 3rd joint with 2 short bristles on outer lobe (no inner lobe observed); 4th and 5th joints fused, with total of 4 bristles.

Sixth Limb (Figure 3d): 4 endites present: endite I with 3 short bristles; endite II minute, with 2 bristles; endite III with 5 bristles; endite IV with 3 or 4 bristles; end joint with 7 bristles (4 anterior bristles with short marginal spines; followed by 2 bristles with long proximal hairs and short distal spines; posterior 2 bristles with long marginal hairs); a single ringed bristle on posterior margin interpreted as being epipodial bristle; medial surface of limb hirsute.

Seventh Limb (Figure 3e,f): Each limb with 3 proximal bristles, each with up to 4 bells, and 6 terminal bristles (3 on each side) with up to 6 bells; terminus consisting of comb with about 5 teeth opposite 2 short faint pegs.

Furca (Figure 3g): Each lamella with 6 claws; claw 4 stouter than claw 3; claw 1 fused to lamella, remaining claws separated from lamella by suture; teeth along posterior margin of claw 1 consisting of 3 sets, each with 6–10 teeth (not all shown on Figure 3g) increasing in length distally;

the 3 sets of teeth followed by about 12 small teeth of equal length; anterior margin of lamella and medial surface proximal to claw 1 with long hairs forming clusters; remaining claws with teeth along anterior and posterior margins. (Number of teeth on claws not shown accurately in illustrated lamella.)

Bellonci Organ (Figure 3i,j): Elongate, with about 10 proximal sutures; tip rounded.

Eyes: Lateral eyes small, each with 5 light amber, divided ommatidia (Figure 3h,i). Medial eye about same size as lateral eye, unpigmented (Figure 3i).

Upper Lip (Figure 3k): Rounded with minute spines.

Brush-like Organ (Figure 3l): Consisting of about 5 minute bristles in vicinity of genitalia.

Y-Sclerite (Figure 3l): Branching distally.

Eggs: Holotype with 1 egg in marsupium.

COMPARISONS.—The new species *D. fossula* differs from *Dantya magnifica* Kornicker and Cohen, 1978:493, in having a rostrum that overhangs the incisur, forming an acute angle with the anterior margin of the valve ventral to the rostrum, not a right-angle as on *D. magnifica*. Also, the surface of *D. magnifica* bears reticulations and knob-like processes absent on *D. fossula*.

Dantya piercei, new species

FIGURES 4-6

ETYMOLOGY.—The species is named for the collector, Dr. E.L. Pierce.

MATERIAL.—Station 9-446, R/V *Anton Bruun*, cruise 9; 09°41'N, 51°03'E; continental shelf east of Somali Republic; 16 Dec 1964; depth 60-70 m; collected with E.L. Pierce dredge (small metal dredge that collects from upper layer of sediment) by E.L. Pierce assisted by L.S. Kornicker: holotype, USNM 158331, adult female in alcohol; unique specimen.

DESCRIPTION OF ADULT FEMALE (Figures 4-6).—Carapace elongate with narrow, overhanging rostrum and broad, projecting, caudal process (Figure 4); lateral overhang at anteroventral corner of valve (Figure 5a).

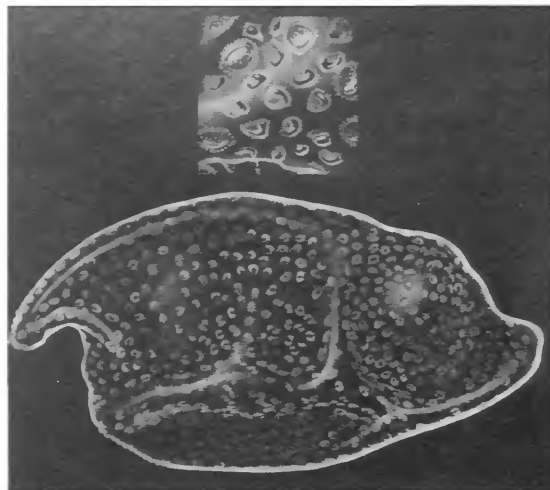


FIGURE 4.—*Dantya piercei*, holotype, adult female, USNM 158331, lateral view of complete specimen and detail of fossae (carapace length 1.31 mm).

Ornamentation (Figure 4, 5a): Valve surface with both minute fossae and raised processes, both bearing minute papillae (Figure 4), and with scattered bristles, some divided. An indistinct horizontal rib present between valve midheight and ventral margin, with vertical riblet extending dorsally from point just posterior to valve mid-length (Figure 4); narrow lateral rib present along ventral margin of rostrum; posterodorsal part of valve with slight bulge. Medial side of rostrum with 2 bristles near ventral margin (Figure 5a).

Infold: Outer edge of rostral infold located near posterior end of rostrum; edge delimited by 3 spinous bristles forming row; inner side of rostrum anterior to bristles not part of infold and bearing 2 bristles near ventral edge (Figure 5a); 1 small bristle present near middle of infold ventral to rostrum (Figure 5a); infold of caudal process forming "pocket" with broad spinous bristles forming row along outer edge (8 of these dorsal to, and separated by space from, 2 or 3 smaller bristles) (Figure 5b); anteroventral infold with about 7 parallel ridges; 2 or 3 small bristles present along inner edge of ventral infold anterior to caudal process.

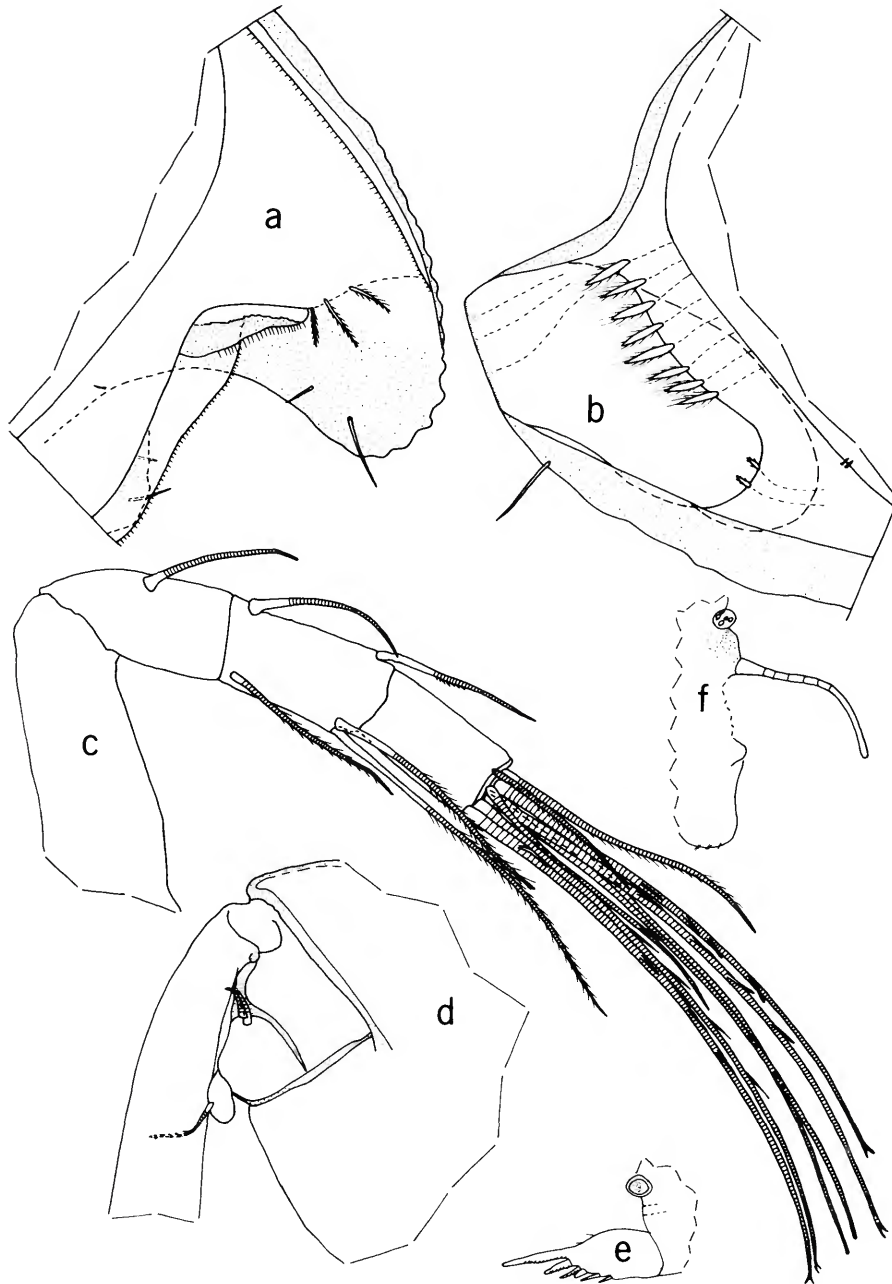


FIGURE 5.—*Dantya piercei*, holotype, adult female, USNM 158331: *a*, rostrum, inside view; *b*, caudal process, inside view; *c*, left 1st antenna, medial view; *d*, distal part of protopodite, endopodite, and part of 1st joint of exopodite of right 2nd antenna, medial view; *e*, left lamella of furca, left genital organ, and anal tube (dashed lines); *f*, anterior of body showing right lateral eye, medial eye and bellonci organ, anterior process, and upper lip.

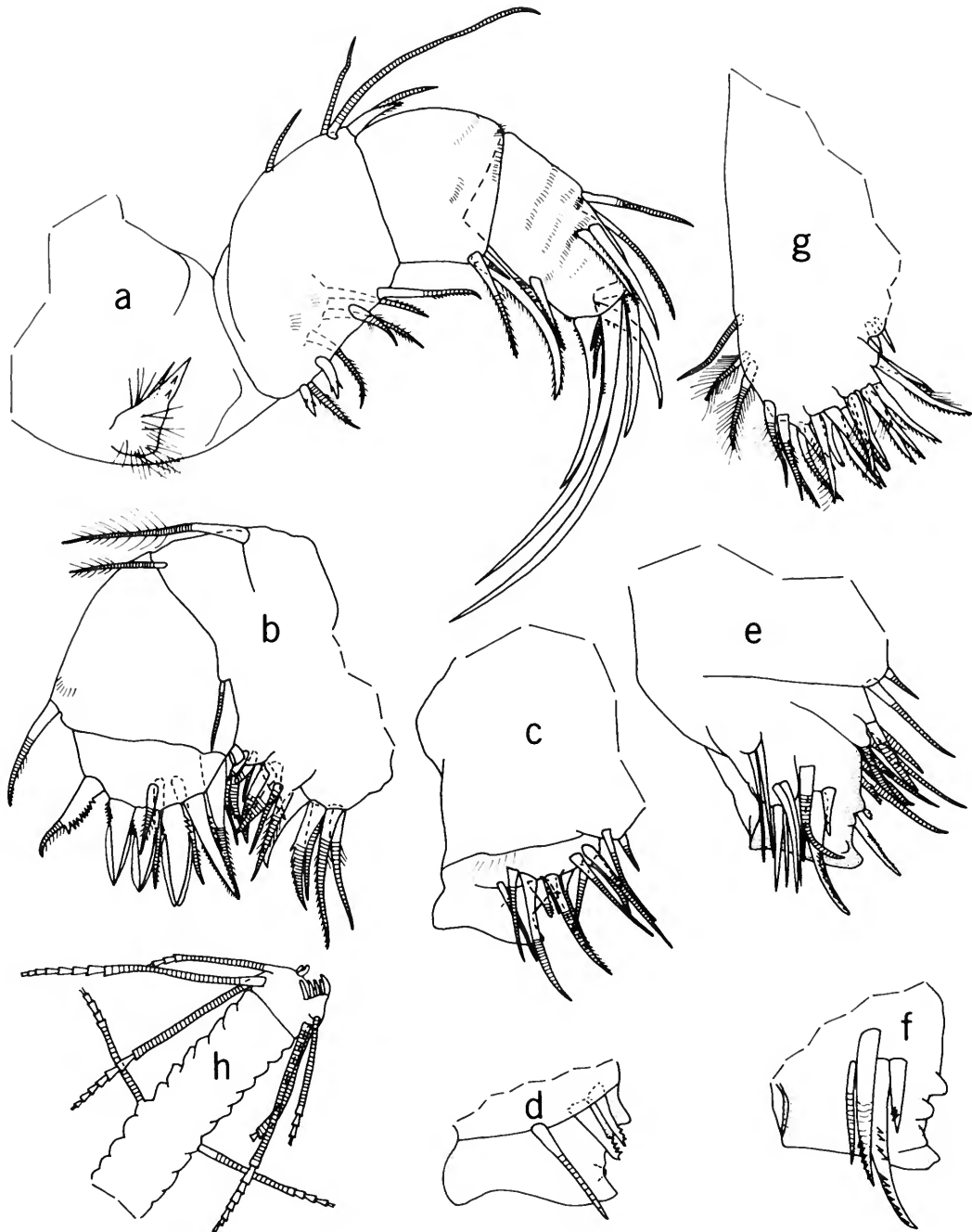


FIGURE 6.—*Dantya piercei*, holotype, adult female, USNM 158331: *a*, left mandible, medial view; *b*, right maxilla, medial view; *c*, distal part of right 5th limb, anterior view; *d*, detail from *c* showing 1st and 2nd exopodial joints; *e*, distal part of left 5th limb, posterior view; *f*, detail from *e* showing 2nd exopodial joint; *g*, 6th limb; *h*, 7th limb.

Selva: Broad lamellar prolongation with marginal fringe present along anterodorsal margin and extending onto dorsal margin of rostrum (anterior end of selva marks anterior end of rostral infold); broad lamellar prolongation present along anteroventral and ventral margins of valves; prolongation fringed along outer edge except in vicinity of caudal process; prolongation divided in vicinity of inner end of incisur (Figure 5a); small segment of prolongation with long marginal fringe present just ventral to the 3 spinous bristles at outer edge of rostral infold.

Size: USNM 158331, length 1.31 mm, height 0.70 mm.

First Antenna (Figure 5c): 1st joint bare. 2nd joint with dorsal midbristle and lateral spines, some forming row along distal margin. 3rd and 4th joints fused; 3rd joint with 1 bare dorsal bristle and 1 ventral bristle (either bare or with faint spines); 4th joint with 3 spinous bristles (1 dorsal, 2 ventral). Sensory bristle of elongate 5th joint with 4 marginal filaments and bifurcate tip. 6th joint minute, fused to 5th joint, with spinous medial bristle slightly longer than 5th joint. 7th joint: a-bristle spinous, about twice length of 5th joint; b-bristle about same length as a-bristle, with 1 distal filament and minute spine at tip; c-bristle same length as sensory bristle of 5th joint, with 4 marginal filaments and bifurcate tip. 8th joint: d- and e-bristles bare, about same length as c-bristle, with blunt tips; f-bristle shorter than c-bristle, with 4 marginal filaments and bifurcate tip; g-bristle with 4 marginal filaments and bifurcate tip. Marginal filaments on bristles of 7th and 8th joints with spine at tip.

Second Antenna (Figure 5d): Protopodite bare. Endopodite 2-jointed: 1st joint with 2 short proximal anterior bristles; 2nd joint elongate, with ventral bristle with few marginal spines. Exopodite: 1st joint elongate with small terminal medial bristle; 2nd joint with long medial spines forming 2 fan-like arrangements on distal margin; similar spines forming single fan-like arrangements on joints 3–7; joints 4–8 with small basal spine (spines similar in length except that of joint 4 being slightly smaller than others); basal spine of 8th joint about same length as small 9th joint;

bristle of 2nd joint with slender proximal ventral spines, and distal natatory hairs on both margins; bristles of joints 3–8 with proximal stout ventral spines, and distal natatory hairs; 9th joint with 2 bristles (longer of these about three-fourths length of bristle of 8th joint, with proximal ventral spines, and distal natatory hairs; smaller bristle about one-half length of longer bristle and with few small marginal spines.

Mandible (Figure 6a): Coxale endite stout pointed, with long proximal hairs and stout distal spines (1 of spines near middle long and ringed): few long hairs along ventral margin of coxale near endite. Basale: dorsal margin with 1 short ringed bristle near middle and 2 terminal bristles (1 long, 1 short): medial side with 3 small bristles near ventral margin; lateral side with 3 rather long bristles about half way between midheight of joint and ventral margin; ventral margin with 2 small proximal bristles (smaller of these with base on medial side). Exopodite about one-third length of dorsal margin of 1st endopodial joint, with few distal hairs and 1 terminal bristle about same length as exopodite. 1st endopodial joint: dorsal margin with terminal spines forming row; ventral margin with 1 small ringed bristle, 1 longer ringed bristle with marginal spines, and 1 long spinous claw (proximal spines on claw longer than distal spines); medial surface of joint with spines forming rows. 2nd endopodial joint: dorsal margin with 2 ringed bristles near middle; medial side near dorsal margin with 2 spinous claws, and with numerous spines forming rows; ventral margin with 1 spinous claw just distal to middle, and 2 terminal claws (1 medial with few small, faint, proximal spines; 1 lateral, curved, about one-half length of medial claw, with few proximal spines on ventral margin); 3rd endopodial joint with 3 stout claws (with at most few proximal teeth on or near ventral margin) and 3 small bristles (2 near ventral margin, 1 near dorsal claw).

Maxilla (Figure 6b): Endites I and II each with total of 6 claws and bristles (not all shown in Figure 6b); endite III with total of 7 or 8 claws and bristles (not all shown in Figure 6b). Coxale with 1 long, hirsute, dorsal bristle. Basale with 2 short bristles (1 dorsal, 1 near inner edge). Exo-

podite obscure but consisting of short lobe with 3 (possibly only 2) terminal bristles. Endopodite: 1st joint with dorsal spines and a spinous alpha and beta-bristle (alpha bristle more slender than beta bristle); end joint with 1 short medial c-bristle with few marginal spines, 2 moderately long a-bristles with long proximal and shorter distal spines, and 5 stout terminal bristles (outer and inner of these with stout proximal teeth and slender distal spines; margins of others with stout proximal teeth and distal flanges; only outer bristle with rings).

Fifth Limb (Figure 6 c-f): 3 endites present: endite I with 2 bristles (1 about twice length of other); endites II and III each with 4 or 5 spinous bristles (not all shown in Figure 6c,e). Exopodite: 1st joint with 2 short, stout, pectinate bristles; 1 anterior bristle present near middle of distal margin (Figure 6d); 2nd joint consisting of sclerotized squarish tooth with 4 small processes along inner margin; posterior side with 4 bristles (3 forming row, and 1 slightly proximal to row) (Figure 6f); 3rd joint with 2 bristles on outer lobe and possibly 1 bristle on inner lobe (obscure); fused 4th and 5th joints with 4 bristles. Marginal spines not shown on many of illustrated bristles.

Sixth Limb (Figure 6g): 4 endites present: endite I with 2 small bristles; endite II minute with 2 bristles; endite III with 5 bristles; endite IV with 5 bristles; end joint with 7 bristles (anterior 4 either all with short marginal spines, or with only 3 having short spines and 1 with long proximal hairs and short distal spines; following 2 bristles with long proximal hairs and short distal spines; posterior 2 bristles with long marginal hairs); a single ringed bristle on posterior margin interpreted as being epipodal bristle; medial surface hirsute.

Seventh Limb (Figure 6h): Each limb with 2 proximal bristles (each with up to 4 bells) and 6 terminal bristles (3 on each side) each with up to 7 bells; terminus consisting of comb with 9 alate teeth opposite 2 pegs.

Furca (Figure 5e): Each lamella with 6 claws; claw 1 fused to lamella, claws 2-6 separated from lamella by suture; claws 1, 2, 4 stout, claws 3, 5, 6 slender; anterior margin of both lamellae with

several spines; claws 1-3 with teeth along posterior margin; teeth on other claws not observed at low magnification (20 × objective). Right claw 1 anterior to left claw 1, both claws with medial spines in rows perpendicular to anterior edge.

Bellonci Organ (Figure 5f): Elongate, with about 6 proximal sutures and rounded tip.

Eyes (Figure 5f): Lateral eyes small, each with 5 light amber ommatidia. Medial eye larger than lateral eye, with light brown pigment.

Upper Lip (Figure 5f): Rounded with few faint ventral spines.

Y-Sclerite: Typical for genus.

Genitalia (Figure 5e): Consisting of oval process on each side of body anterior to furca.

Eggs: USNM 158331 with 2 eggs in marsupium.

COMPARISONS.—The new species *D. piercei* differs from previously described species in the relatively short caudal process of the carapace, and in many characters of the mandible: for example, 3 long rather than short lateral bristles on the basale, only 1 ventral claw on the 1st endopodial joint, 2 medial claws near the dorsal margin of the 2nd endopodial joint, and a relatively large recurved lateral terminal claw on the same joint.

Dantya benthedi, new species

FIGURES 7-9

ETYMOLOGY.—The specific name from the R/V *Benthédi* on which the specimens described herein were collected.

MATERIAL.—Station 8, R/V *Benthédi*; 11°29'12"S, 47°18'12"E; west of the Îles Glorieuses (Glorioso Islands), Mozambique Channel; depth 250 m; collected in rock dredge on 19 Mar 1977; bottom of coarse coralline sand with abundant living brachiopods, gorgonians, and echinoderms: holotype, 1 adult female in alcohol, deposited in the Muséum National d'Histoire Naturelle, Paris; paratypes, USNM 158580, 1 ovigerous female in alcohol and on slide; USNM 193009, 20 specimens including ovigerous females; 28 specimens including ovigerous females deposited in the Muséum National d'Histoire Naturelle, Paris. Station 104, R/V, *Benthédi*; 11°26'24"S, 47°22'18"E;

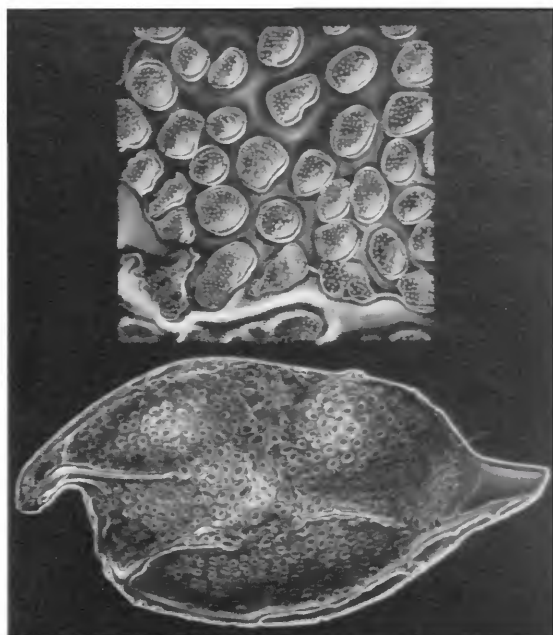


FIGURE 7.—*Dantya benthedi*, paratype, adult female, USNM 158580, lateral view of complete specimen and detail of fossae (carapace length 1.37 mm).

north of Île du Lys, Îles Glorieuses; depth at beginning and end of rock dredge haul 550–330 m; collected on 9 Apr 1977; bottom of coralline sand: paratypes USNM 158579A,B, 1 adult female and 1 A-1 male, respectively. Station 120, R/V *Benthédi*; 11°30'S, 47°24'42"E; southeast of Îles Glorieuses; depth at beginning and end of sediment dredge haul 335–390 m; collected on 12 Apr 1977; bottom of coralline sand: paratypes, USNM 193008, 1 A-1 male and 5 juveniles.

DESCRIPTION OF ADULT FEMALE (Figures 7–9).—Carapace elongate with narrow rostrum overhanging incisur and projecting caudal process (Figure 7).

ORNAMENTATION (Figures 7, 8a): Each valve with short, horizontal rib extending posteriorly from rostrum; 2nd rib extending from anteroventral corner of each valve to area occupied by adductor muscle attachments where it terminates; this rib continues on posterior edge of muscle attachments and terminates in postero-

ventral part of valve; 3rd rib extends from middle of ventral margin to caudal process; minute process on posterior margin of valve about 1/3 length of valve measured from posterior end of caudal process. Surface with numerous shallow fossae containing minute pustules; rim of fossae with minute spines forming row; bristles of various lengths sparsely distributed over valve surface, more numerous along anterior half of ventral margin; 2 bristles present on inner side of rostrum near its ventral margin (Figure 8a).

Infold: Rostral infold with 4 spinous bristles forming row along edge of valve that lies near posterior end of rostrum (Figure 8a); infold of caudal process with 9 broad, spinous bristles forming row along edge of lip near anterior part of process (Figure 8b); anteroventral infold with short bristle.

Selvage: Wide lamellar prolongation on anteroventral and ventral margins and also along anterior part of dorsal margin; selvage not evident at base of 4 bristles forming row on inner side of rostrum (Figure 8a); anterodorsal and anteroventral lamellar prolongation with marginal, hirsute fringe; hairs of fringe short in vicinity of incisur (in Figure 8a lamellar prolongation is shown folded inwards); lamellar prolongation absent along end of caudal process.

Central Adductor Muscle Attachments: Consisting of about 23 individual oval attachment scars.

Size: USNM 158580, length 1.37 mm, height 0.77 mm; holotype, length 1.28 mm, height 0.63 mm; USNM 158579A, length 1.37 mm, height 0.68 mm; USNM 193009, 2 specimens, length 1.38 mm, height 0.69 mm, length 1.25 mm, height 0.64 mm.

First Antenna (Figure 8c): 1st joint bare. 2nd joint with 1 midbristle on dorsal margin. 3rd joint short, not separated from 4th joint by suture, with 2 spinous bristles (1 ventral, 1 dorsal); 4th joint elongate, with 3 spinous bristles (2 ventral, 1 dorsal); medial surface with few faint spines. 5th joint elongate; sensory bristle with 4 or 5 marginal filaments and minute process at tip. 6th joint minute, fused with 5th joint; medial bristle about 1¼ times length of 5th joint, with marginal spines. 7th joint: a-bristle slightly longer than

twice length of 5th joint, with marginal spines; b-bristle about same length as a-bristle, with short filament distal to middle; c-bristle slightly longer than sensory bristle of 5th joint, with 4 or 5 marginal filaments and minute process at tip. 8th joint: d- and e-bristles bare, about same length as, or slightly shorter than, sensory bristle, with blunt tips; f-bristle shorter than c-bristle, with 4 marginal filaments and minute process at tip; g-bristle shorter than c-bristle, with 4 marginal filaments and minute process at tip. Filaments on sensory bristle and on b-, c-, f-, and g-bristles with spine-like drawn-out tips.

Second Antenna (Figure 8*d*): Protopodite bare. Endopodite 2-jointed; 1st joint with 2 short, proximal, anterior bristles; 2nd joint small, with 1 long bristle with short marginal spines (spines not shown on illustrated limb). Exopodite: 1st joint elongate with minute, curved, medial, terminal bristle; joints 2–7 with slender spines along distal margin (spines longer on proximal joints); joints 3–8 with basal spine; basal spine on joints 3 and 4 smaller than others; basal spine of joint 8 slightly longer than 9th joint; bristle of 2nd joint with 6 stout proximal ventral spines, and distal natatory hairs; bristles of joints 3–8 with proximal ventral spines and dorsal hairs and distal natatory hairs; distal ventral spine longer than others; 9th joint with 3 bristles (longest of these with proximal ventral spines and distal natatory hairs; middle size bristle about same length as combined lengths of joints 3–9, with few marginal hairs; shortest bristle bare, about same length as joints 8 and 9 combined).

Mandible (Figure 9*a*): Coxale endite consisting of stout pointed process with few proximal hairs and stout distal spines; ventral margin of coxale with long hairs. Basale: dorsal margin with 1 short bristle distal to middle and 2 terminal bristles (1 long, 1 short); ventral margin with 1 small ringed bristle; medial and lateral sides each with 3 small bristles near ventral margin; medial side with proximal hairs forming 2 rows. Exopodite small, with 1 terminal bristle reaching past middle of dorsal margin of 1st endopodial joint. 1st endopodial joint: dorsal margin with terminal spines forming row extending onto medial surface

of joint; medial surface with spines forming several rows; ventral margin with 1 small ringed bristle and 2 claws (medial claw with short marginal spines; lateral claw larger than medial claw and with 3 stout teeth). 2nd endopodial joint: dorsal margin with 4 bristles near middle forming row extending onto medial and lateral sides of joint; ventral margin with 2 stout claws (proximal of these with short marginal spines; other with few, proximal, ventral teeth); medial side with spines forming rows; lateral side with short bristle near base of distal claw; minute spine or spines present on ventral margin at base of distal claw. 3rd endopodial joint with 2 long stout claws with proximal teeth on ventral margin, 1 short spinous claw located medial to longest claw, 2 ringed bristles located lateral to other long claw, and 1 faint spine-like bristle ventral to short claw. Claws bearing spines could be considered pectinate because of spines being quite stout and tooth-like.

Maxilla (Figure 9*b*): 3 endites bearing total of about 15 ringed bristles and stout pectinate claws (not all bristles and claws shown on illustrated limb); coxale with fringe of hairs along dorsal margin and 1 stout dorsal bristle. Basale with dorsal hairs and 1 bristle near middle of medial margin. Exopodite with 3 bristles (2 long, 1 slightly shorter). Endopodite: 1st joint with distal, anterior spines and a spinous alpha- and beta-bristle (alpha-bristle more slender than beta-bristle); 2nd joint with 1 small spinous medial c-bristle, 2 fairly long spinous a-bristles, and 5 short stout terminal bristles (outer of these with slender proximal teeth and distal spines, others with stout proximal teeth).

Fifth Limb (Figure 9*c,d*): Epipodial appendage with 42 bristles. Endite I with 2 short, spinous bristles; endite II with 4 spinous bristles; endite III with 6 terminal bristles, and long hairs near anterior surface. Exopodite: 1st joint with inner lobe bearing 2 distal pectinate bristles, 1 long spinous terminal bristle, and 1 short proximal bristle; 2nd joint with 2 large squarish teeth (proximal of these with 2 bristles); 3rd joint with 2 small bristles on outer lobe and 1 long spinous bristle on inner lobe (the latter bristle could be interpreted as being on 2nd joint); 4th and 5th

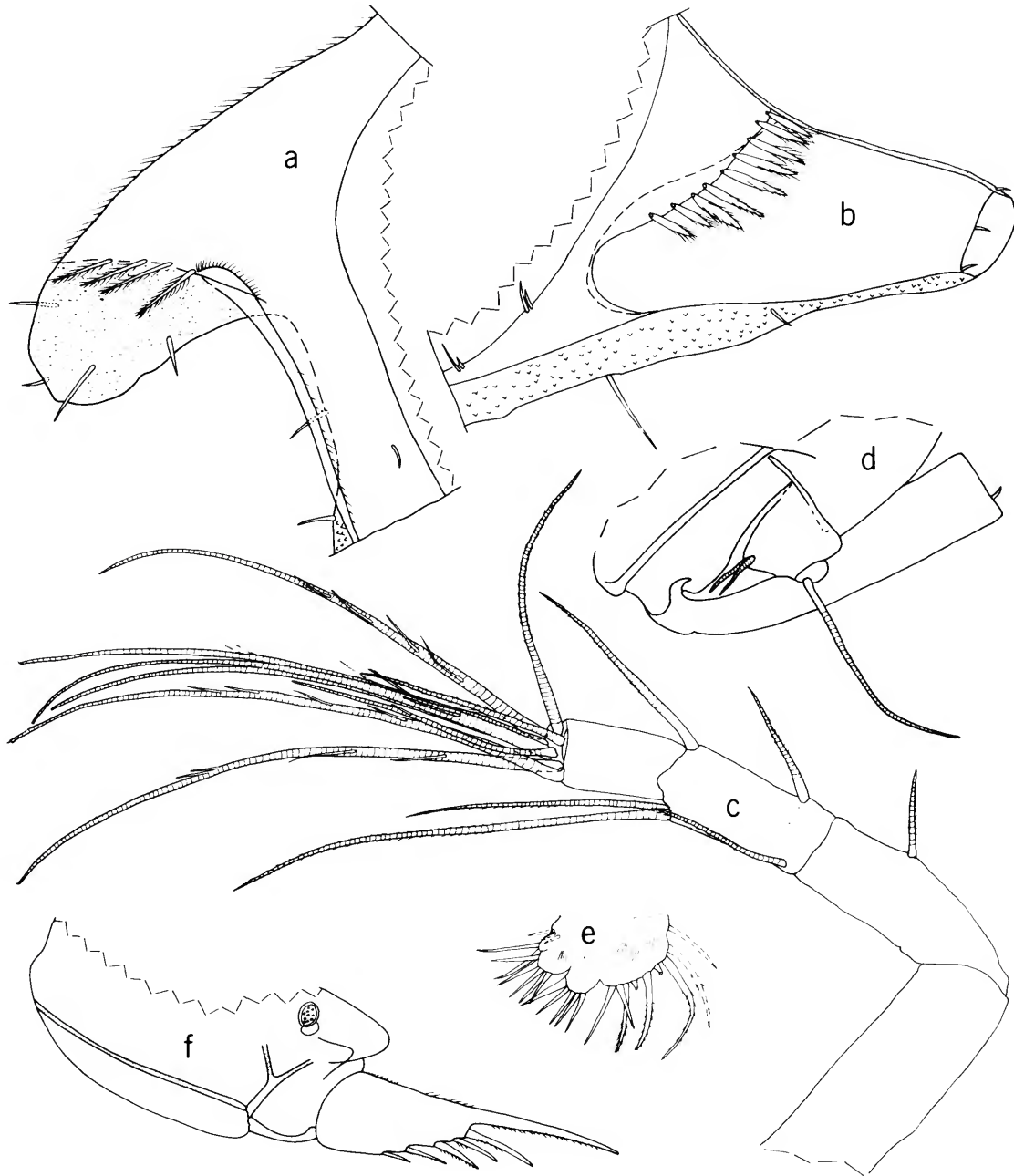


FIGURE 8.—*Dantya benthedi*, paratype, adult female, USNM 158580; *a*, rostrum, inside view; *b*, caudal process, inside view; *c*, right 1st antenna, medial view; *d*, distal part of protopodite, endopodite, and 1st joint of right 2nd antenna, medial view; *e*, 6th limb; *f*, posterior end of body showing right lamella of furca, right genital organ, right Y-sclerite, and right side of girdle (latter 2 characters stippled).



FIGURE 9.—*Dantya benthedii*, paratype, adult female, USNM 158580: *a*, left mandible, medial view; *b*, right maxilla, lateral view; *c*, distal end of right 5th limb, posterior view; *d*, distal part of left 5th limb (bristles not shown), anterior view; *e*, 7th limb; *f*, anterior of body showing right lateral eye, medial eye and bellonci organ (hairs not shown), and upper lip; *g*, medial eye and bellonci organ, ventral or dorsal view; *h*, lateral eye.

joints fused, with total of 6 bristles. (In previous descriptions I have interpreted the proximal tooth of 2nd exopodial joint described above to be part of 1st exopodial joint. Additional study is needed to interpret the morphology of the 1st and 2nd joints.)

Sixth Limb (Figure 8e): Endite I with 3 short bristles; endite II small, with 2 spinous bristles; endites III and IV broad, each with 5 spinous bristles; end joint with 7 or 8 spinous or hirsute bristles; a single ringed bristle on posterior margin interpreted as being epipodial bristle; surface of limb hirsute. (Not all spines on bristles shown on illustrated limb.)

Seventh Limb (Figure 9e): Each limb with 3 or 4 proximal bristles, 1 or 2 on each side, and 6 terminal bristles, 3 on each side; proximal bristles with 3 or 4 bells; terminal bristles with 3–7 bells; terminus consisting of comb with 6 or 7 alate teeth opposite 2 pegs.

Furca (Figure 8f): Each lamella with 6 claws; claw 4 stouter than claw 3; claw 1 fused to lamella, remaining claws separated from lamella by suture; teeth present along posterior edge of all claws; spines present along anterior margin of lamella (distal spines longer than proximal spines).

Bellonci Organ (Figure 9f, g): Elongate, with 11 sutures on proximal three-quarters; long hairs forming row present just proximal to each suture; tip of organ with minute tooth-like spines.

Eyes: Lateral eyes small, each with 4 light amber, divided ommatidia (Figure 9f, h). Medial eye larger than lateral eye, pigmented brown (Figure 9f, g).

Upper Lip (Figure 9f): Rounded, bearing spines.

Y-Sclerite (Figure 8f): Branching distally.

Genitalia (Figure 8f): Consisting of oval process on each side of body anterior to furca.

Parasites: A choniostomatid copepod observed in marsupium of 1 adult female (USNM 193009).

Eggs: USNM 158580 with 2 eggs in marsupium; holotype with 2 large, unextruded eggs.

COMPARISONS.—The rostrum of *D. benthedi* overhangs the incisur, forming an acute angle with the anterior margin of the valve ventral to the

incisur. The angle is about the same as that of *D. piercei*, less than that of *D. magnifica*, but greater than that of *D. fossula*. The carapace of *D. benthedi* bears fewer ridges than the carapaces of *D. magnifica* or *D. fossula*. The mandible of *D. benthedi* differs from previously described species of the genus in having 3 extremely stout teeth on the longest claw on the ventral margin of the 1st endopodial joint of the mandibles of the adult female and the late instars of both sexes (adult male unknown).

Nealella Kornicker and Caraion, 1980

TYPE-SPECIES.—*Nealella monothrix* Kornicker and Caraion, 1980

The genus *Nealella* comprises 3 species, *N. ornithoides* (Brady, 1902:189), *N. monothrix* Kornicker and Caraion, 1980:5, and *N. muelleri* Kornicker and Caraion, 1980:12, plus 1 species left in open nomenclature, *Nealella* species A Kornicker and Caraion, 1980:17. The original description of *N. muelleri* was based on a single adult female collected on the continental shelf off Tanzania. An additional adult female collected on the shelf east of the Somali Republic permits extension of the range of the species and also some additional information on its morphology. The holotype as well as the Somali female was used to provide a supplementary description of the species.

Nealella muelleri Kornicker and Caraion, 1980

FIGURE 10

Nealella muelleri Kornicker and Caraion, 1980:12, figs. 10–13, pls. 4–7.

HOLOTYPE.—USNM 157412, 1 ovigerous female.

TYPE-LOCALITY.—Near the marine biology station of Dar es Salaam University, Dar es Salaam, Tanzania.

MATERIAL.—USNM 157412, Holotype. Station 9-466, R/V *Anton Bruun*, cruise 9; 18 Dec 1964; 11°38'N, 51°27'E; continental shelf east of Somali Republic; depth about 75 m; collected in E.L. Pierce Dredge by E.L. Pierce assisted by L.S.

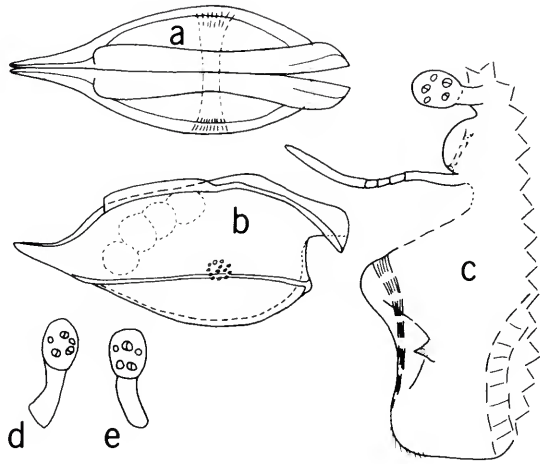


FIGURE 10.—*Nealella muelleri*, adult female, USNM 158970A: *a, b*, dorsal and lateral views of complete specimen (carapace length 1.98 mm); *c*, anterior of body showing left lateral eye, medial eye and bellonci organ, sclerotized triangular process, upper lip, and anterior section of esophagus (dashed); *d, e*, left and right lateral eyes.

Kornicker; USNM 158970A,B, 1 ovigerous female and juvenile, respectively.

SUPPLEMENTARY DESCRIPTION OF ADULT FEMALE (Figure 10).—Carapace of USNM 158970A in lateral view (Figure 10*b*) similar to that of

holotype (Kornicker and Caraion, 1980, fig. 10). In dorsal view widest part at about midlength in vicinity of central adductor muscles (Figure 10*a*).

Size: USNM 158970A, length 1.98 mm, height 0.82 mm.

Central Adductor Muscle Attachments: Consisting of about 13 individual oval scars (Figure 10*b*).

*Bellonci Organ (Figure 10*c*):* USNM 158970A with 4 well-developed sutures near middle.

*Lateral Eyes (Figure 10*c–e*):* With 5 ommatidia. (In description of holotype Kornicker and Caraion (1980:15, fig. 13k) reported lateral eyes with only 2 ommatidia. Reexamination of the slide bearing a lateral eye of the holotype revealed that the wall of the eye of the holotype had split open allowing 3 ommatidia to escape from within the wall.)

*Upper Lip (Figure 10*c*):* With small, slender spines forming rows.

*Anterior of Body (Figure 10*c*):* A sclerotized triangular process present on each side of body dorsal to upper lip and set back from anterior margin of body. (Reexamination of holotype supported the presence of the processes.)

*Eggs (Figure 10*b*):* USNM 15870A with 4 eggs in marsupium and also with smaller, unextruded eggs. The extruded eggs were pink when animal was alive.

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