
Regina Wetzer, Paul M. Delaney, and Richard C. Brusca

**ABSTRACT.** Politolana wickstenae, a new species of cirolanid isopod inhabiting the continental slope (488-600 m) in the northern Gulf of Mexico is described and figured. The genus now contains 7 species, and is restricted to the north and south Atlantic Ocean. The genus Politolana is redescribed, and a key to 6 genera of Bruce's (1986) "Conilera genus-group" is presented (Conilera, Orphelana, Politolana, Dolicholana, Conilorpheus, Natatolana). Oncilorpheus is herein removed from this group.

**INTRODUCTION**

In 1985 M.K. Wicksten of Texas A&M University began a deep-water sampling program utilizing baited traps placed at depths of 400–800 m in the Gulf of Mexico. Wicksten was interested in recovering live specimens of large benthonic crustaceans, particularly crabs and the giant cirolanid isopod Bathynomus giganteus. Along with these crustaceans, her traps also captured numerous specimens of the new isopod described in this paper. This new species belongs to a genus-group of Cirolanidae informally recognized by Bruce (1986) and Botosaneanu et al. (1986), and closely corresponding to the "Conilera-group" of Monod (1930). According to Bruce (1986), this genus-group contains 7 genera: Politolana Bruce, 1981; Conilera Leach, 1818; Conilorpheus Stebbing, 1905; Dolicholana Bruce, 1986; Natatolana Bruce, 1981; Oncilorpheus Paul and Menzies, 1971; and Orphelana Bruce, 1981 (Bruce, 1986). Bruce characterized this genus-group by the following features: antennal peduncle articles 3 and 4 subequal in length; pereopod dactyls without a secondary unguis; anterodistal margins of ischium and merus of pereopods I–III produced; with long spines and setae. Pereopods IV–VII "natatory"; ischium and merus flattened and broadening distally; all articles generally with long setae. Pleon of 5 free somites, plus pleotelson; pleonite 5 with lateral margins overlapped by 4. Pleotelson and uropods with marginal spines.

**SYSTEMATICS**

Order Isopoda

Suborder Flabellifera

Family Cirolanidae

Politolana Bruce, 1981

**Type Species.** Aegapolita Stimpson, 1853 (by designation; Bruce, 1981).

**Diagnosis.** Cirolanidae with short antennules and antennae and large, smooth (unornamented) bodies, 2–6.5 times longer than broad. Eyes often reduced. Pereonite I usually about twice length of pereonite II. Antennule short, peduncle of 4 articles, article 3 longest, article 4 minute. Antenna short, peduncle of 5 articles, articles 1–2 short, 3–5 manifestly longer than 1–2 and progressively longer distally. Frontal lamina usually long and narrow; 2–3 times longer than broad; sessile; clypeus flat. Mouthparts similar to Cirolana. Pereopods I–III "amphulatory." Pereopods I–III ischium and merus produced anterodistally; with long spines and setae. Pereopods IV–VII "natatory"; ischium and merus flattened and broadening distally; all articles generally with long setae. Pleon of 5 free somites, plus pleotelson; pleonite 5 with lateral margins overlapped by 4. Pleotelson and uropods with marginal spines.

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and PMS; uropod peduncle strongly produced medially; lat­
eral (outer) margin of endopod with distal notch; exopod fails
reaching endopodal notch, or extends beyond endopodal notch;
endopod much broader than exopod. Pleopod rami all with
PMS except endopod of pleopod 5; pleopod 1 peduncle about
as long as broad; pleopod 1 endopod half as wide as exopod;
pleopod 2 of male with appendix masculina arising subba­
ually and extended slightly past apex of endopod (appendix
masculina arises submedially in P. exima, Bruce, in litt.).

**Remarks.** Bruce’s (1981) original description of Poli­
tolana did not include a description of the type species. We
have examined types of P. obtusispina (Kensley, 1975) (ho­
lotype and paratypes), P. exima (Hansen, 1890) (syntypes),
and P. impressa (syntypes), as well as nontype material of P.
concharum (Stimpson, 1853), P. polita (Stimpson, 1853), and
P. microphalma (Hoeck, 1882). The emended diagnosis pre­
sented above is based on our examination of this material.

In addition, we note the following. Bruce stated that antennal
peduncle articles 3–5 are subequal, but judging from his fig­
ures, and our examination of specimens, descriptions, and
figures of species in this genus, articles 3–5 are progressively
longer. Bruce described the peduncle of pleopod 1 as being
“as long as broad.” However, some variation in this ratio
occurs, and in P. wickstenae new species the peduncle is
slightly wider than long (width = about 1.14 times length).
In all cases though, the shape is basically squareish, as opposed
to the rectangular shape (width much greater than length) of
this article in most cirolanid genera. Bruce described the body
as 2–3 times as long as broad, but the type species is about
4 times longer than broad, and P. wickstenae is 6–6.5 times
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Bruce (1981) discussed similarities of Politolana to other
genera in the “Conilera genus-group.” Whether or not the
“Conilera genus-group” (sensu Bruce, 1986) is a natural
(monophyletic) group remains to be tested by phylogenetic
analysis of the Cirolanidae, a large family containing ap­
proximately 45 genera and about 300 species. In any case,
Oncilor­pheus should not be considered part of the “Conilera
genus-group,” since it lacks almost all the characters listed
by Bruce that define the group (e.g., the ischium of pereopods
I–III is not produced on the anterodistal margin, abundant
long setae are not present on the posterior pereopods, the
frontal lamina is not narrow). Bruce’s placement of Oncil­
orgeus in the “Conilera-group” was based solely on a review
of the literature (Bruce, in litt.). The frontal laminae of Or­
phelana, Dolicholana, and Conilorpheus also do not fit Bruce’s
genus-group diagnosis; in Orphelana the lamina is short and
triangular, and in the other two genera it is somewhat pro­
jecting (see following key). Natatolana and Politolana may
be paraphyletic genera, because they seem to have no clearly
unique synapomorphies that distinguish them.

Most species in the “Conilera genus-group” have flattened
pereopodal articles, and in many cases these articles bear
long setae, especially on pereopods V–VII. Such pereopods
are typically referred to in the literature as “natatory legs.”

However, in many cases it appears that flattening of the leg
articles is associated with the development of a concave inner
surface, allowing the adjacent distal article to collapse into
the more proximal article(s) in a jackknife fashion. This
arrangement suggests that the pereopods may be folded tight­
ly against the body, perhaps for streamlining when the animal
swims.

**Key to the Genera of the “Conilera Genus-Group.”**

1a. Uropod endopod with notch on lateral (outer) margin;
pereopod VII basis without median longitudinal row of setae along outer surface.......................... 2

1b. Uropod endopod without notch on lateral (outer) margin (except Natatolana variguberna); pereopod VII basis with or without row of setae along outer surface .... 4

2a. Pleopods 1 operculate to all others; pleopod 1 peduncle markedly longer than wide; labrum wider than clypeus .......................................................... Conilera

2b. Pleopods 1 not operculate to others; pleopod 1 peduncle width subequal to length; clypeus as wide or wider than labrum .......................................................... Orphelana

3a. Antennule flagellum shorter than peduncle; frontal lamina small, short, and triangular; body length 2.5–3.0 times width .......................................................... Orphelana

3b. Antennule flagellum longer than peduncle; frontal lamina long and narrow; body length 2.0–6.5 times width .......................................................... Conilopa

4a. Endopods of pleopods 3 and 4 without PMS; frontal lamina projects posteroventrally; antennule peduncle article 4 longest .................................................. Dolicholana

4b. Endopods of pleopods 3 and 4 with PMS; frontal lamina not projecting posteroventrally; antennule peduncle article 3 longest, article 4 minute, often partly fused . . . 5

5a. Peduncle of pleopod 1 width equal to length; frontal lamina projects anteriorly, wide, and multidentate; per­
eopods V–VII without median longitudinal row of long setae along outer face, and without cluster of long setae on posterodistal margin ............. Conilorpheus

5b. Peduncle of pleopod 1 wider than long; frontal lamina flat, not projecting, narrow, and non multidentate; per­
eopods V–VII basis with median longitudinal row of long setae along outer face, and with cluster of long setae on posterodistal margin ............. Natatolana

**Politolana wickstenae** new species

**Material Examined. Holotype** (LACM type No. 3008): Nongravid female 24.75 mm long, NE Gulf of Mexico, 28°22.89’N, 86°14’W, approx. 488 m, 17 May 1985, R/V **Citation**, Coll. M.K. Wicksten & B. Cocke, baited bottom trap. **Paratypes** (LACM type No. 3009): 3 nongravid females, 24.26 mm, 26.07 mm, and 26.57 mm, same collection data as holotype. **Paratypes** (LACM type No. 3010): 2 nongravid females 27.89 mm and 30.53 mm long, NW Gulf of Mexico, May 1985, R/V **Citation**, Coll. M.K. Wicksten. **Paratypes** (LACM type No. 3011): 3 nongravid females 25.41 mm, 27.23 mm, and 27.38 mm, NE Gulf of Mexico, 28°22.89’N,
86°25.20'W, 500–600 m, June 1985, R/V Citation, Coll. M.K. Wicksten and B. Cocke, baited bottom trap. **Paratype**: 1 nongravid female, 32.67 mm, deposited USNM, same data as LACM 3011. **Paratypes** (LACM type No. 3012) 32 females, 2 males (15.80 mm, 18.20 mm), "same general area" as LACM 3011, September, 1986, R/V Citation, Coll. M.K. Wicksten and B. Cocke, baited bottom trap (specimens in poor condition).

**Comparative Material Examined.** *Cirolana (=Politolana) obtusispina*: 2 paratypes, SAfM. *Cirolana (=Politolana) eximia*: 2 syntypes, ZMC; 4 nontype specimens, USNM. *Cirolana (=Politolana) impressa*: 4 syntypes, MCZ; 1 nontype specimen, MCZ; 2 nontype specimens, USNM. *Politolana concharum*: 27 nontype specimens, MCZ; 2 nontype specimens, BMNH; 18 nontype specimens, USNM. *Politolana polita*: 22 nontype specimens, MCZ; 7 nontype specimens, USNM.

**Key Diagnostic Characters.** Large, length to at least 32.7 mm; body 6–6.5 times longer than broad. Eyes greatly reduced, with or without remnants of cuticular ommatidial facets. Frontal lamina 3–4 times longer than broad, constricted medially, in dorsal view not extended anteriorly beyond basal articles of antennules. Clypeus short and broad, 5–6 times wider than long, wider than labrum. Labrum posterior margin markedly concave. Antennules not reaching posterior margin of cephalon. Antennae not quite reaching posterior margin of pereonite I. Coxal plates not visible in dorsal aspect, but large and distinct in lateral and ventral aspects, III–VII extended beyond posterior margins of their respective segments. Pereopods I–III ischium and merus inner distal margins produced as a scoop-shaped process into which adjacent distal articles collapse. Pleonite I entirely covered by pereonite VII. Pleopod 5 endopod of female with large proximal accessory lobe. Pleotelson and uropods with marginal spines and PMS, as figured. Uropod peduncle produced medially, but process shorter than exopod; exopod does not reach endopodal notch; marginal notch of endopod with 1 spine and 1 circumplumose seta; exopod subovate, with 1 large apical spine, 2 spines on inner (medial) margin, and 1 spine on outer (lateral) margin; endopod with 8 apical spines and several blunt outer (lateral) spines near notch. Male appendix masculina arising sub-basally, tapering evenly to the apex.

**Description.** Body elongate, smooth, 6–6.5 times as long as wide. Large, females to at least 32.7 mm, males to at least 18.2 mm in length. Eyes reduced; some specimens with remnants of ommatidia and cuticular facets, others without discrete ommatidia or facets and only with scattered subcuticular pigmentation. Faint suture line on dorsal surface of cephalon between frontal margin and eyes (Figure 1).

Frontal lamina 3–4 times longer than broad, constricted medially, barely visible dorsally, projecting between basal articles of antennules but not extended beyond them; clypeus short and very broad, 5–6 times wider than long; labrum broad but narrower than, and weakly immersed in, clypeus, markedly concave on posterior margin (Figures 3c, 5a–c). Antennules and antennae both separated by frontal lamina.

**Figure 1.** Dorsal view of female holotype (LACM type No. 3008) (setules of PMS on pleotelson and uropods omitted).
Figure 2.  a, maxilliped.  b, maxillule.  c, right mandible.  d, maxilla.  e, pereopod I.  f, pereopod VII.  g, pereopod IV (all from holotype).
Figure 3.  a, antennule. b, antenna. c, frontal lamina, clypeus, and labrum. d, pleopod 1. e, pleopod 2. f, pleopod 3. g, pleopod 4. h, pleopod 5. i, pleopod 2 (male) (a–h from holotype (female); i from male paratype, LACM type No. 3012).
Figure 4. Right uropod, female paratype (LACM type No. 3012).

(Figures 3c, 5a, c). Antennule not reaching posterior margin of cephalon; peduncle of 4 articles, article 4 minute; in dorsal aspect, article 2 appearing to arise at right angle from article 1, this appearance resulting from sub-triangular shape of first article; flagellum longer than peduncle, with 11 articles (Figure 3a). Antennae not quite reaching posterior margin of pereonite I; flagellum of 10-14 articles (Figure 3b).

Both mandibles with prominent tricuspid incisor process, outer cusp markedly longer than others (Figures 2c, 6a); molar process with short stout spines along upper border, short fine setae on lower border, and numerous long setae on flat surface (Figures 2c, 6c, d); lacinia mobilis well developed, with stout spines (Figures 2c, 6b); distal article of palp with apical pectinate setae; middle article of palp longest, with simple setae (Figure 2c). Maxillule lateral (outer) lobe with 10-13 stout apical spines; medial (inner) lobe with 3 robust, circumplumose spines and 0-1 smaller spines (Figures 2b, 7d). Maxilla with simple and plumose setae (Figures 2d, 7f), as figured. Maxilliped slender; basis elongate, palp 5-articulate, all articles with long setae; endite short with 2 small coupling hooks (Figures 2a, 7a, c).

Pereonites IV–VII considerably longer than pereonites II and III; pereonite VII about 2½ times longer than pereonite II. Coxal plates large and compact on pereonites II–VII, not visible in dorsal aspect but distinct and visible in lateral and ventral aspects; coxae increasing in size and acuteness posteriorly, III–VII extending beyond posterior margins of their respective pereonites. Pereopods I–III with abundant long setae, simple and bifid spines; basis concave on medial (inner) margin, receiving ischium; ischium and merus with scoop-shaped distal processes into which adjacent distal articles collapse; carpus very short; dactylus slightly curved (Figures 2e, 7e). Basis of pereopods V–VII somewhat concave on medial (inner) margin (as in I–III); with abundant setae of various sizes; dactylus slightly curved (Figures 2f, g).

Pleon comprising 5 free pleonites plus pleotelson, devoid of tubercles and setae. Pleonite 1 completely overlapped by pereonite VII; 1 and 5 narrower than 2–4. Pleotelson with abundant PMS and a few scattered, minute, spines on margin; number of marginal spines uncertain as most are lost in preserved specimens. Uropodal endopod and exopod with PMS and spines as figured (Figure 4); peduncle produced medially but failing to reach apex of exopod; endopod reaching, or barely exceeding pleotelson apex; exopod short, not reaching notch of endopod; exopod slender subovate, never as broad as endopod; lateral (outer) margin of endopod with distal notch containing 1 spine and 1 circumplumose seta; endopod with 8 apical/subapical spines and several blunt outer (lateral) spines near notch; exopod with 1 large apical spine, 2 spines on inner (medial) margin, and 1 spine on outer (lateral) margin (uropodal setae and spines are easily lost in preserved specimens).

Pleopodal rami undivided (Figures 3d–i). Pleopods 1–4 with 4–6 coupling spines on medial margin of peduncle; pleopod 5 without coupling spines, and with proximal accessory lobe on endopod in female; 2–4 with small lobe on medial and lateral margin of peduncle. Male appendix masculina on pleopod 2 arising sub-basally, long and slender, tapering evenly and extending slightly past endopod apex (Figure 3i); penes separate, flattened, long (about as long as ischium or merus of pereopod VII).

Remarks. Of the 44 specimens in the type series, only 2 are males, and these are markedly smaller than all remaining females in the type series. These data suggest the possibility of protandry in this species.

There are now 7 described species of _Pollolana_. All are offshore benthic creatures taken from depths of 35–640 m. At least 1 (_P. concharum_) has been taken in the water column, indicating that it is capable of swimming. Interestingly, none occur outside the Atlantic Ocean. All previously described North American species have been reported only from the New England coast. The genus now includes: _P. wickstenae_ new species, northern Gulf of Mexico; _P. polita_ (Stimpson, 1853), NW Atlantic (Bay of Fundy to Massachusetts); _P. concharum_ (Stimpson, 1853), NW Atlantic (Bay of Fundy to Massachusetts); _P.
Figure 5. Scanning electron micrographs of female paratype (LACM type No. 3011). a, ventral view of antennules, antennae, frontal lamina, clypeus, and labrum (25 x). b, ventral view of clypeus and labrum (55 x). c, ventrolateral view of antennules, antennae, frontal lamina, clypeus, and labrum (50 x).

concharum (Stimpson, 1853), NW Atlantic (Nova Scotia to South Carolina); P. impressa (Harger, 1883), NW Atlantic (Maryland to New Jersey); P. eximia (Hansen, 1890), Brazil; P. microptalmum (Hoek, 1882), Europe; and P. obtusispina (Kensley, 1975), South Africa. As Bruce (1981) pointed out, species in this genus are all very similar to one another. None of the 6 previously described species has been adequately diagnosed or figured, and types were not designated for any but Kensley's South African P. obtusispina. The type species (P. polita) has never been properly described. When Stimpson (1853) erected P. concharum he did not actually describe it, but simply compared it as an addendum to his description of P. polita. The best available descriptions of the 3 previously described North American species are those of Harger (1883), although it is not clear whether Harger utilized type material in his study. Richardson (1905) and Kussakin (1979) apparently based their interpretations of these species on Harger's descriptions. There have been no subsequent studies of the North American Politolana. Two of us (RCB & RW) are currently undertaking a phylogenetic and biogeographic study of this genus.

Politolana wickstenae is easily differentiated from all other known species of Politolana by its short ovate uropodal exopods, which fail to reach the endopodal notch, the uniformly slender appendix masculina of males, the evenly convex pleotelson margin, the compactness of the coxae (not visible in dorsal aspect), and the unique spination of the legs and uropods. Politolana wickstenae closely resembles P. polita and P. impressa. However, these species differ in shape, setation, and spination of the leg articles, pleotelson, and uropod spination, and the relative length and shape of the uropodal lamellae (see Harger, 1883 for comparisons). The uropods of P. polita and P. impressa differ from those of P. wickstenae in having long, narrow, scimitar-like exopods that are about the same length as the inner process of the peduncle, extending at least to or beyond the endopodal notch. In P. wickstenae the exopod is sub-acutely ovate and shorter, and never extends to the endopodal notch. Other, more subtle differences exist between these species, such as: the body of P. polita is more robust and deeper (in the dorsoventral plane) than that of P. wickstenae; the frontal lamina of P. polita is extremely narrow, but manifestly expanded at its anterior end; the proximal articles of the antennule peduncles of P. polita are so close together as to be touching each other (this close approximation is rare in P. wickstenae); and the lateral (outer) lobe of the peduncle of pleopods 2–4 is large in P. impressa, markedly expanded distally (in P. wickstenae this lobe is small, and primarily expanded proximally).
Figure 6. Scanning electron micrographs of female paratype (LACM type No. 3011). a, mandible (50×). b, lacinia mobilis (200×). c, molar process and lacinia mobilis (100×). d, molar process (100×).

Etymology. Politolina wickstenae is named for M.K. Wicksten, crustacean biologist and professor of marine biology at Texas A&M University who, along with B. Cocke, collected the type material of this species.

Distribution. Gulf of Mexico; so far known only from the vicinity of 28°N, 86°W.

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Figure 7. Scanning electron micrographs of female paratype (LACM type No. 3011). a, maxilliped (50×). b, maxillule, lateral lobe (100×). c, coupling hooks on maxillipedal endite (500×). d, maxillule, medial lobe (200×). e, pereopod I, distal articles (50×). f, maxilla (100×).
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