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Part R, Revised, Volume 1:  
Systematic Descriptions: Additions to  
Sections Homoloida, Dakoticancroida, Cyclodorippoida,  
and Raninoida

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PART R, REVISED, VOLUME 1, TREATISE ONLINE 184:  
SYSTEMATIC DESCRIPTIONS: ADDITIONS TO  
SECTIONS HOMOLOIDA, DAKOTICANCROIDA,  
CYCLODORIPPOIDA, AND RANINOIDA

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Over the course of the intervening years during which a number of Treatise Online chapters on podotrematous crabs were published, new knowledge has accumulated and reclassifications and new taxa have been recognized within the the podotrematous sections. The following are changes in classification and generic and family additions covering 2012 to December 2022 for the sections Homoloida, Dakoticancroida, Cyclodorippoida, and Raninoida. They are updates to the following systematic descriptions chapters: Treatise Online 52, 96, 97, and 113. They will be listed separately at the beginning of References, p. 7.

**Section HOMOLOIDA Karasawa,  
Schweitzer, & Feldmann, 2011**

[Updates to Treatise Online 52]

**Additions to**

**Family HOMOLIDAE De Haan, 1839  
in 1833–1850**

**Ariecornibus** FRANTESCU, 2014, p. 229 [\**A. schweitzeriae*, p. 230, fig. 7; OD]. Intralinear carapace longer than wide, with extra-lineal portion a little wider than long, rectangular, well ornamented with granules and tubercles; small, triangular, downturned rostrum; mesogastric region with strong, arcuate posterior ridges; protogastric regions with well-defined, arcuate groove, concave laterally; large pentagonal cardiac region; deeply concave thoracic sternum with complete suture 6/7; well defined, rectangular sterno-coxal depressions, bounded by low, rounded, ridges; pereopod 5 reduced in size, carried dorsally. [Emended

from FRANTESCU, 2014, p. 230.] *Lower Cretaceous (Albian)*: USA (Texas).—FIG. 1, 1. \**A. schweitzeriae*, holotype, USNM 558963, scale bar 1 cm (new; photo by O. Frantescu, University of Pittsburgh at Bradford, Pennsylvania, USA).

**Cherphilomola** MARANGON & DE ANGELI, 2020, p. 75 [\**C. italica*, p. 75, pl. 1; OD]. Carapace longitudinally quadrangular, as long as wide; regions nearly smooth, slightly raised, with sinuous *linea homolica*; rostrum acute; a pair of pseudorostral, infra-orbital, hepatic and anterolateral spines and two pairs of posterolateral spines present. [Emended from MARANGON & DE ANGELI, 2020, p. 75.] *Oligocene (Rupelian)*: Italy.—FIG. 1, 4. \**C. italica*, holotype MCZ 5759, scale bar 1 cm (new; photo by A. De Angeli, Associazione Amici del Museo Zannato, Montecchio Maggiore, Vicenza, Italy).

**Lindahomola** GARASSINO, WEAVER, PORTELL, & VEGA, 2019, p. 249 [\**L. longispina*, p. 250, fig. 206; OD]. Intralinear carapace longer than wide, ornamented with spines; rostrum poorly known, apparently downturned and bilobed; orbits rimmed, with three short upper orbital spines; *linea homolica* appearing to intersect carapace just distal to orbit; extralinear carapace with stout subhepatic spine, which is itself spinose, stout anterolateral spine at position of epibranchial region; carapace regions moderately defined, with broad swellings topped by spines. *Upper Cretaceous (Maastrichtian)*: USA (North Carolina).—FIG. 1, 2. \**L. longispina*, paratype, UF 305717, scale bar 1 cm (new; photo by R. Portell, Florida Museum of Natural History, Gainesville, Florida, USA).

**Nogarhomola** DE ANGELI & ALBERTI, 2012, p. 64 [\**N. aurorae*, p. 66, pl. 1; OD]. Carapace longer than wide, ovate, granular overall; rostrum long, bifid a tip; pseudorostral spine longer than rostrum; orbits with intra-orbital and post-orbital spines; anterolateral margins of extralinear portion of carapace spinose, spines long; *linea homolica* sinuous, intersecting orbit near

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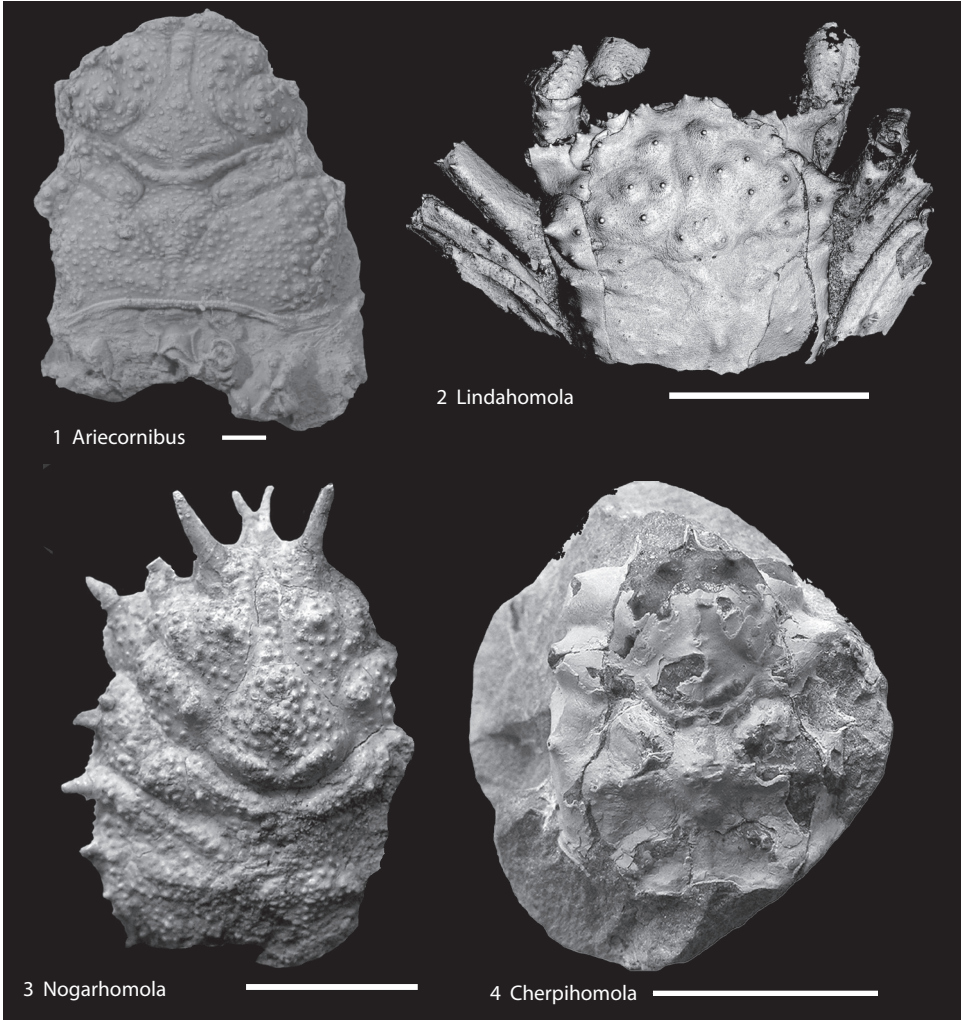


FIG. 1. Homolidae (p. 1–2).

intra-orbital spine; carapace regions well defined. *Eocene (Lutetian)*: Italy.—FIG. 1,3. *\*N. aurovae*, holotype, MCZ 3386-I.G.336924, scale bar 1 cm (new; photo by A. De Angeli, Associazione Amici del Museo Zannato, Montecchio Maggiore, Vicenza, Italy).

**Additions to  
Family LATREILLIIDAE  
Stimpson, 1858**

**Belos** FRANȚESCU, 2014, p. 231 [*\*B. trispinae*, p. 232, fig. 8; OD]. Carapace triangular, longer than wide, widest in branchial region, gastric regions elongated to form a “neck” (*sensu* CASTRO & others, 2003); inflated branchial regions; spinose gastric regions; carapace not covering coxae of pereopods;

coxae large, with acute spine on ventral surface. [Emended from FRANȚESCU, 2014, p. 232.] *Lower Cretaceous (Albian)*: USA (Texas).—FIG. 2,1. *\*B. trispinae*, holotype, USNM 558969, scale bar 1 cm (new; photo by O. Franțescu, University of Pittsburgh at Bradford, Pennsylvania, USA).

**Ripleycarcinus** SCHWEITZER, FELDMANN, PHILLIPS, & ARMSTRONG, 2019, p. 160 [*\*R. primaevus*, p. 160, fig. 12; OD]. Carapace triangular, longer than wide, gastric regions elongated to form a “neck” (*sensu* CASTRO & others, 2003); possibly a bifid rostrum; orbits directed laterally or anteriorly, with long fissure; inflated branchial regions, with broad longitudinal keel. *Upper Cretaceous (Maastrichtian)*: USA (Mississippi).—FIG. 2,2. *\*R. primaevus*, holotype, MMNS IP-4108, scale bar 1 cm (new).

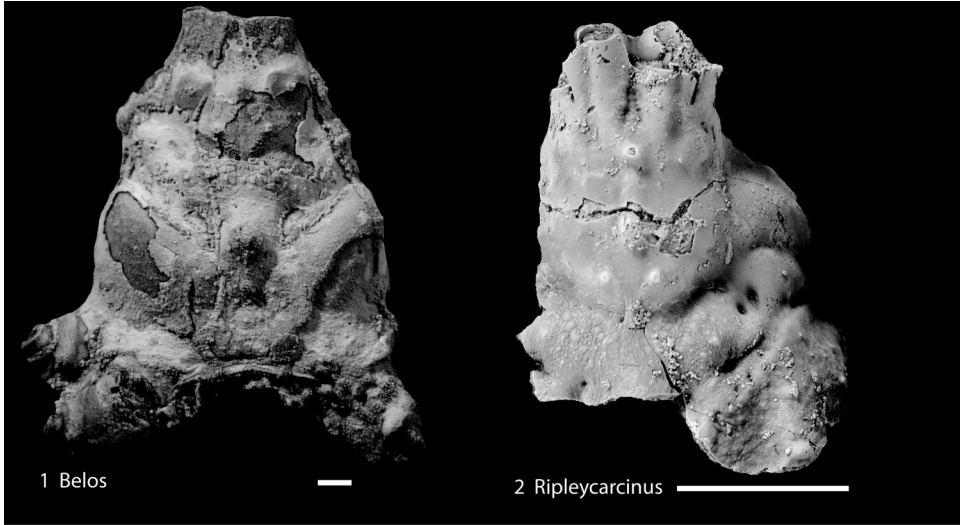


FIG. 2. Latreilliidae (p. 2).

**Section DAKOTICANCROIDA**  
**Karasawa, Schweitzer, &**  
**Feldmann, 2011**

[Updates to Treatise Online 96]

**Additions to**

**Family IBERICANCRIDAE**

**Artal, Guinot, van Bakel, & Castillo 2008**

**Paredonius** VEGA & GARASSINO, 2022, p. 135 [\**Sodakus mexicanus* VEGA, FELDMANN, & VILLALOBOS-HIRIART, 1995, p. 245, fig. 4; OD]. Carapace longer than wide, rectangular, widest at approximately mid-length; front and orbits forward directed; carapace regions moderately marked; branchiocardiac groove deep; epibranchial region ovate with axial lobe obliquely directed at cardiac region; sternum overall narrow, longer than wide, sternites 1–3 apparently fused, sternites 4 and 5 long, deeply and narrowly, sternite 6 short, directed posterolaterally. *Upper Cretaceous (Maastrichtian)*: Mexico.—FIG. 3, 1. \**P. mexicanus* (VEGA, FELDMANN, & VILLALOBOS-HIRIART), holotype, IGM-6777, 1a, dorsal; 1b, ventral, scale bars 1 cm (new; photo by R. Feldmann).

**Tropicarcinus** SCHWEITZER, FELDMANN, PHILLIPS, & ARMSTRONG, 2019, p. 171 [\**T. mcannallyae*, p. 172, fig. 20; OD]. Carapace approximately as long as wide; anterolateral margin with single blunt inflation; strong oblique keels on epibranchial and branchial regions; cardiac region strongly inflated; sternum with sternites 1–4 fused, deeply axially excavated; sternites 5 and 6 wider, less deep axially; sternites 7 and 8 directed strongly posteriorly; spermatheca on sternite 7, large, rimmed; female

sternum with slightly wider sternal excavation. [Emended from SCHWEITZER & others, 2019, p. 172.] *Upper Cretaceous (Campanian, Maastrichtian)*: USA (Mississippi).—FIG. 3, 2. \**T. mcannallyae*, holotype, MMNS IP-4098, Campanian, Mississippi, USA, scale bar 1 cm (new; photo by R. Feldmann).

**Section CYCLODORIPPOIDA**  
**Ahyong & others, 2007**

[Updates to Treatise Online 97]

**Addition to**

**Family QUADRATOPLANIDAE**  
**Frantescu, 2014**

**Gyroplanus** SCHWEITZER, FELDMANN, PHILLIPS, & ARMSTRONG, 2019, p. 175 [\**G. sapphirinus*, p. 175, fig. 22; OD]. Carapace approximately as wide as long, regions moderately defined by grooves, and distinctive circular, apical tubercles; rostrum triangular, orbits circular; anterolateral margins with at least three blunt spines; branchial regions with two longitudinal ridges, one near the axis and one approximately centrally. *Upper Cretaceous (Maastrichtian)*: USA (Mississippi).—FIG. 4, 1. \**G. sapphirinus*, holotype, MMNS IP-3285, scale bar 1 cm (new; photo by R. Feldmann).

**Addition to**

**Family CYMONOMIDAE** Bouvier, 1897

**Eonomus** NYBORG, GARASSINO, & SLAK, 2017, p. 190 [\**E. californianus*, p. 192, fig. 2; OD]. Carapace approximately as wide as long, widest in branchial regions; rostrum with axial spine and lateral

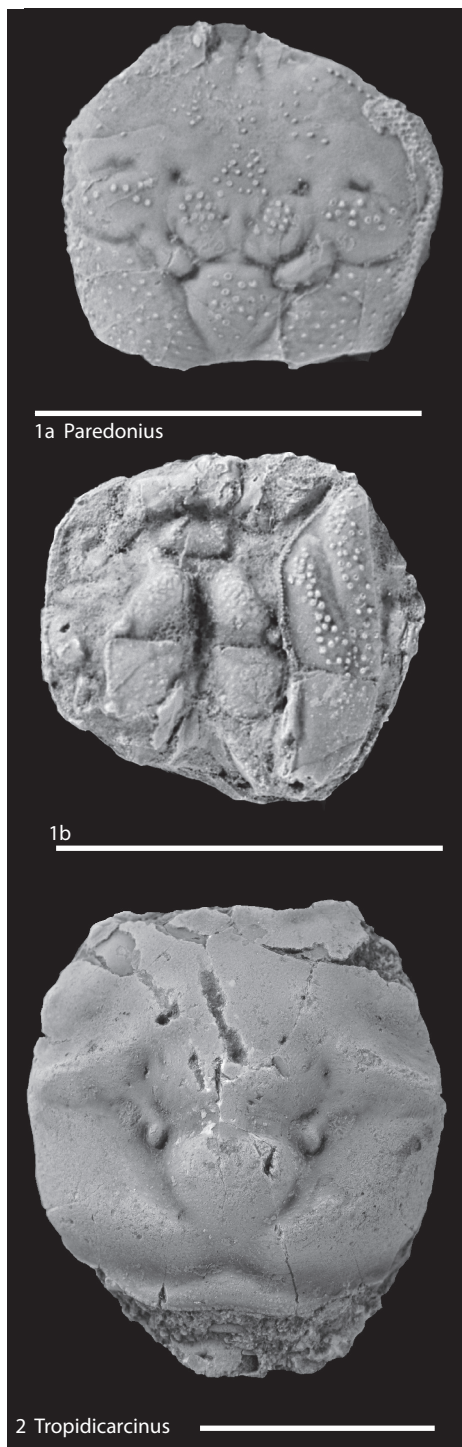


Fig. 3. Ibericanoridae (p. 3).

spines; protogastric region well defined; axial regions narrow. *Eocene*: USA (California).—FIG. 4, 2. \**E. californianus*, holotype, LACMIP 40548.35, LACMIP Type 14747, scale bar 1 cm (photo provided by A. Garassino, Loma Linda University, California, USA).

## Section RANINOIDA Ahyong & others, 2007

[Updates to Treatise Online 113]

### Addition to Family PARANECROCARCINIDAE Fraaije, van Bakel, Jagt, & Artal, 2008

*Thelecarcinus* BÖHM, 1891, p. 43 [\**T. guembeli*, p. 43, pl. 1,3; M]. Carapace wider than long, length approximately 80% maximum width; front with four spines; orbits projected forward; anterolateral margins with numerous small spines; posterolateral margin weakly concave; posterior margin narrow, concave; protogastric region with two tubercles; branchial regions with tubercles roughly arranged into rows. [Emended from SCHWEITZER, KARASAWA, & FELDMANN, 2021, p. 22.] *Upper Cretaceous (Maastrichtian)*: Germany.—FIG. 5. \**T. guembeli*, cast of holotype BSP 1873 III F503, scale bar 1 cm (new; photo by R. Feldmann).

### Additions to Family ORITHOPSIDAE Schweitzer & others, 2003

*Anoplocarcinus* SCHWEITZER, FELDMANN, KARASAWA, LUQUE, & VEGA, 2019, p. 17 [\**A. hudspeithi*, p. 7, fig. 1–2; OD]. Carapace wider than long, hexagonal; rostrum not well known, appearing to extend slightly beyond orbits; orbits with two closed fissures and long outer-orbital spine; anterolateral margins with four spines, excluding outer orbital spine, second and third moderately long; protogastric region with two large tubercles; branchial keels slightly oblique, narrow, with a few small scattered tubercles; branchiocardiac and cervical grooves subequal in development; sternal suture 5/6 possibly complete; sternites 7 not in contact along posterior margin; sternites 6 and 7 strongly deflexed. [SCHWEITZER & others, 2019, p. 17.] *Lower Cretaceous (Albian)*: USA (Oregon).—FIG. 6, 1. \**A. hudspeithi*, holotype, UWBM 98681, scale bar 1 cm (new; photo by R. Feldmann).

*Chronocancer* SANTANA, TAVARES, MARTINS, MELO, & PINHEIRO, 2023, p. 2 [\**C. camilosantanae*; OD] [non *Chronocancer* SANTANA, TAVARES, MARTINS, MELO, & PINHEIRO, 2022, p. 3; non *C. camilosantana* SANTANA, TAVARES, MARTINS, MELO, & PINHEIRO, 2022, p. 4; names unavailable under ICZN Article 8.5, 1999]. Carapace approximately as wide as long; rostrum apparently very long, extending well beyond orbits; orbits small, with broad fissure and tiny outer-orbital spine; cervical groove deep; branchiocardiac and postcervical

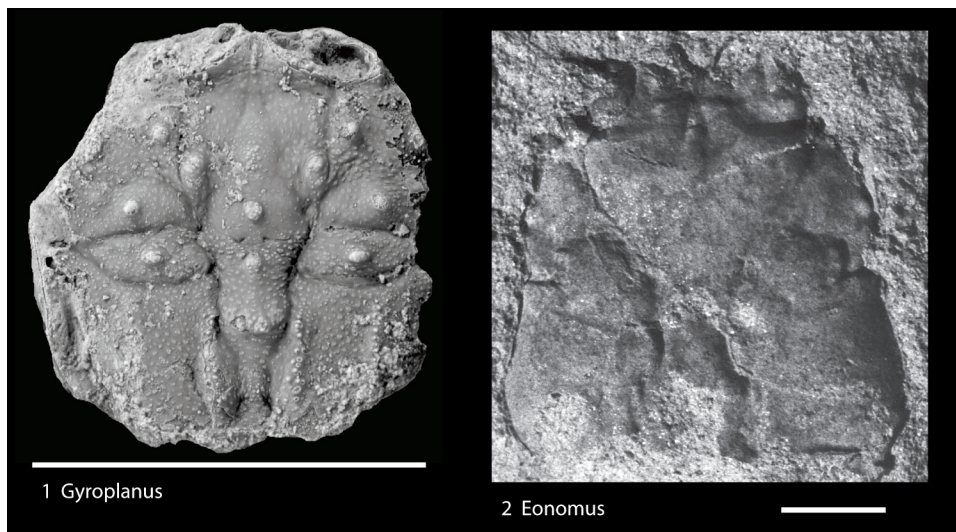


FIG. 4. Quadratoplanidae, Cymonomidae (p. 3–4).

grooves shallower. *Lower Cretaceous (Aptian–Albian)*: Brazil.—FIG. 6,2. \**C. camilosantanai*, holotype, MPPCN 4055, scale bar 1 cm (new; photo by W. Santana, Universidade Regional do Cariri, Ceará, Brazil).

**Exucarcinus** PRADO & LUQUE in PRADO, LUQUE, BARRETO, & PALMER, 2018, p. 740 [\**E. gonzagoi*, p. 740, fig. 3; OD]. Carapace wider than long, regions broadly inflated; front axially sulcate, termination not known; orbits wide, with two fissures, long outer-orbital spine; anterolateral margins with several spines of varying lengths and sizes; epibranchial region arcuate; cardiac region extending as weak ridge onto branchial regions. *Lower Cretaceous (Aptian–Albian)*: Brazil.—FIG. 6,3. \**E. gonzagoi*, holotype, DGEO-CTG-UFPE-8114, scale bar 1 cm (new; photo by J. Luque, University of Cambridge, UK).

#### Addition to

#### Family PALAEOCRYSTIDAE

Lörenthey in Lörenthey & Beurlen, 1929

**Ripleycorystes** SCHWEITZER, FELDMANN, PHILLIPS, & ARMSTRONG, 2019b, p. 162 [\**R. cardwelli*, p. 164, fig. 13.1; OD]. Carapace elongate-ovoid, with broad fronto-orbital margin occupying approximately 80% maximum carapace width; concave, short posterior margin; three small, sharp anterolateral spines, distinct longitudinal branchial keels, a more subtle axial keel that broadens posteriorly; finely granular exo- and endocuticular surfaces. [Emended from SCHWEITZER & others, 2019, p. 164.] *Upper Cretaceous (Maastrichtian)*: USA (Mississippi).—FIG. 7. \**R. cardwelli*, holotype, MMNS IP-9892, scale bar 1 cm (new, photo by R. Feldmann).

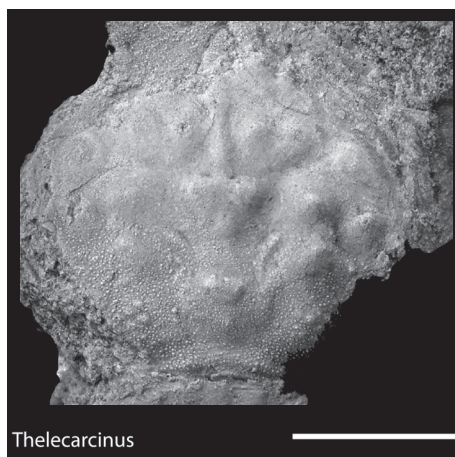


FIG. 5. Paraneocarcinidae (p. 4).

#### Addition to

#### Family LYREIDIDAE Guinot, 1993

##### Subfamily ROGUEINAE Karasawa, Schweitzer, Feldmann, & Luque, 2014

**Doraranina** GUSTAFSON, NYBORG, & VAN BAKEL, 2019, p. 124 [\**D. manleyi*, p.124, fig. 2; OD]. Carapace longer than wide but over all quite wide for family; anterior margin wide; rostrum trifid, approximately as long as or shorter than orbital spines; intra-orbital spine long, outer-orbital spine bifid, inner branch much shorter than outer branch; anterolateral spine long, with a triangular spine at approximately mid-length on upper margin; carapace surface punctate. *Eocene (Ypresian)*: USA (Oregon).—FIG. 8. \**D.*

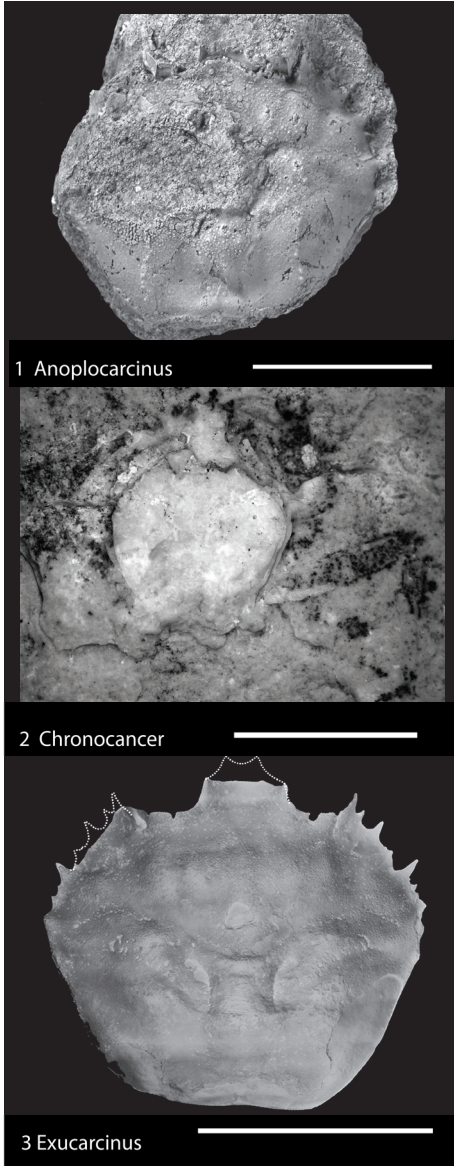


FIG. 6. Orithopsidae (p. 4–5).

*manleyi*, holotype, CMNH F-62673, scale bar 1 cm (new; photo by B. Hughes, Condon Fossil Collection, University of Oregon Museum of Natural and Cultural History, Eugene, Oregon, USA).

**Additions to  
Family RANINIDAE De Haan, 1839  
in 1833–1850**

**Subfamily RANININAE De Haan, 1839 in  
1833–1850**



FIG. 7. Palaeocorystidae (p. 5).



FIG. 8. Lyreididae (p. 5–6).

**Amphoranina** NYBORG, PASINI, GARASSINO, VAN BAKEL, VEGA, & NYBORG, 2020, p. 89 [*\*A. blandi*, p. 90, fig. 2–4; OD]. Carapace longer than wide, with convex lateral margins; rostrum trifid, central spine itself minutely trifid; orbits with two open fissures, intra-orbital spine long, outer-orbital spine singular, directed axially; anterolateral margins with two spines, first spine long, slender, needlelike; second spine bifid or trifid; anterior dorsal carapace with short, scabrous ridges. *Eocene* (*Lutetian*): USA (Washington). *Eocene–Oligocene*: Canada (British Columbia), USA (Washington).—FIG. 9, 1. *\*A. blandi*, holotype, UWBM IP 102324, scale bar 1 cm (new; photo from A. Garassino, Loma Linda University, California, USA).

**Pseudoranina** CHARBONNIER, AUDO, GARASSINO, & HYŽNÝ, 2017, p. 199 [*\*P. guinotae*, p. 202,



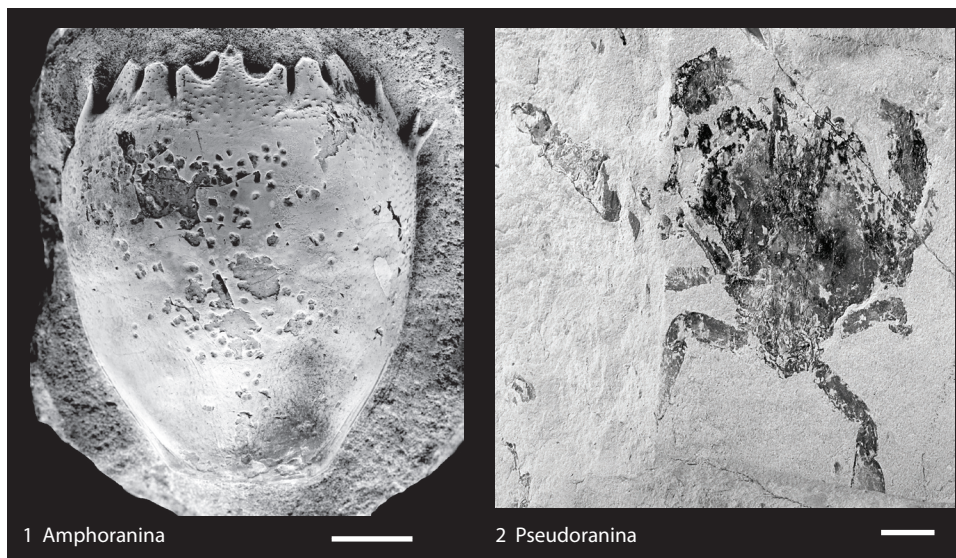


FIG. 9. Raninidae (p. 6–7).

fig. 445–448; OD]. Carapace longer than wide, widest at approximately mid-length, possibly with lateral spines; third maxillipeds long; pleon short, extending beyond posterior margin of carapace; fourth? pereiopod with paddle-like dactyls; possibly fifth pereiopod reduced. *Upper Cretaceous (Santonian)*: Lebanon.—FIG. 9.2. \**P. guinotae*, holotype, MNHN.F.R03873, scale bar 1 cm (photo by D. Audo, Reconnat, MNHN).

### ABBREVIATIONS FOR MUSEUM REPOSITORIES

- BSP:** Bayerische Staatssammlung für Paläontologie und historische Geologie München (Munich), Germany  
**DGEO-CTG-UFPE:** Palaeontology Collection of the Geology Department, Centre of Technology and Geosciences, Federal University of Pernambuco, Brazil.  
**CMNH F:** Condon Fossil Collection, University of Oregon Museum of Natural and Cultural History, Eugene, OR, US  
**IGM:** Museo de Paleontología, Instituto de Geología, Universidad Nacional Autónoma de México  
**LACMIP:** Los Angeles County Museum, Invertebrate Paleontology, California, USA  
**MNHN.F:** Muséum National d'histoire naturelle, Paris, Collection de Paléontologie, France  
**MPPCN:** Museu de Paleontologia Plácido Cidade Nuvens, Santana do Cariri, Ceará, Brazil  
**MCZ:** Museo Civico “G. Zannato” di Montecchio Maggiore, Vicenza, Italy  
**MMNS:** Mississippi Museum of Natural Science, Jackson, Mississippi, USA  
**MMNS IP:** Invertebrate Paleontology, Mississippi Museum of Natural Science, Jackson, MS, USA

**UF:** Florida Museum of Natural History, University of Florida, Gainesville, Florida, USA

**USNM:** United States National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA

**UWBM:** Burke Museum, University of Washington, Seattle, Washington, USA

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