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SYSTEMATIC DESCRIPTIONS:
SUPERFAMILY RETROPLUMOIDEA GILL, 1894

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Superfamily
RETROPLUMOIDEA Gill, 1894

[*nom. transl.* DE SAINT LAURENT, 1989, p. 110, *pro* Retroplumidae GILL, 1894, p. 1045]

As for family. *Upper Cretaceous (Turonian)–Holocene.*

Family RETROPLUMIDAE
Gill, 1894

[Retroplumidae GILL, 1894, p. 1045] [=Ptenoplacidae ALCOCK, 1899, p. 78; =Costacoplumidae DE SAINT LAURENT, 1989, p. 149; =Gonioplacoidinae QUAYLE & COLLINS, 2012, p. 39]

Carapace transversely rectangular; rostrum very narrow, spatulate, sometimes slightly widened distally; orbits wide, orbital margin sinuous, with outer-orbital spine; posterior margin rimmed; dorsal carapace with transverse ridges, usually some continuous and some discontinuous; sternum with somites 1 and 2 fused, triangular; somite 3 with lateral extensions; somites 4–7 may have transverse ridges; males and immature females with pleonal somites 3–5 fused; chelipeds very short; pereopods 2–4 longer. *Upper Cretaceous (Turonian)–Holocene.*

Retropluma GILL, 1894, p. 1044, *nom. nov. pro* *Archaeoplax* ALCOCK & ANDERSON, 1894, p. 180, *non* STIMPSON, 1863, p. 584 [**Archaeoplax notopus* ALCOCK & ANDERSON, 1894, p. 181, pl. 9,3; M] [=*Prenoplax* ALCOCK & ANDERSON, 1895, pl. 15,2 (type, *P. notopus*, OD), unnecessary replacement name for *Archaeoplax* ALCOCK & ANDERSON, 1894]. Carapace transversely rectangular, narrowing anteriorly; rostrum very narrow, spatulate, sometimes slightly widened distally; orbits wide; orbital margin sinuous, with outer-orbital spine; anterolateral margin with one spine that is extension of dorsal transverse ridge, often a second spine at anterolateral corner at end of discontinuous transverse ridge; posterolateral margin entire; posterior margin weakly convex, rimmed; dorsal carapace with two transverse, entire ridges and

usually with discontinuous transverse ridge between them; sternites 1 and 2 fused, triangular; sternite 3 with lateral extensions; sternites 4–7 may have transverse ridges; males and immature females with pleonal somites 3–5 fused. *Eocene–Holocene:* France, Italy, Spain, *Eocene (Ypresian–Lutetian)*; Spain, *Eocene*; Slovenia, *Miocene (Burdigalian)*; Denmark, Malaysia (Sabah), Slovakia, *Miocene*; Italy, *Pliocene (Zanclean)*; Italy, *Pleistocene*; Indo-Pacific, Australia, Indian Ocean *Holocene.*—FIG. 1, 1*a–b*. *R. denticulata* RATHBUN, 1932, KSU D 2526, *Holocene*, Tosa Bay, Japan; *a* dorsal view; *b*, ventral view, scale bars, 1 cm (new).

Archaeopus RATHBUN, 1908, p. 346, pl. 47, 4–7, 48, 49, 2–4 [**A. antennatus*; OD]. Carapace subquadrate, wider than long; front narrow, downturned, axially sulcate; orbits wide, orbital margin sinuous, with well-developed outer-orbital spine; proto-gastric regions with straight or arcuate transverse ridges; mesogastric and cardiac regions with short transverse ridges; epibranchial regions arcuate, composed of distinct swellings; remainder of branchial regions undifferentiated, with short transverse ridge; sternites 4–6 with transverse ridges; male pleonal somites all appearing to be free. *Upper Cretaceous–Eocene:* Japan, *Turonian–Maastrichtian*; Canada (British Columbia), *Santonian–Campanian*; Mexico (Baja California), USA (Alaska), *Campanian–Maastrichtian*; USA (California), *Upper Cretaceous*; USA (California), *Paleocene*; Canada (British Columbia), *Eocene (Priabonian)*.—FIG. 2, 1. *A. vancouverensis* (WOODWARD, 1896), KSU D 1157, cast of GSC 5816a, *Campanian*, British Columbia, Canada, scale bar, 1 cm (new).

Bathylpuma DE SAINT LAURENT, 1989, p. 133, pl. 4*A–B*, 5*B* [**B. spinifer*; OD]. Carapace transversely rectangular, widest at position of second anterolateral spine; rostrum very narrow, spatulate; orbits wide, orbital margin sinuous, with outer-orbital spine; anterolateral margin with three, long spines; weakly developed transverse ridges across proto-gastric-hepatic, cardiac, and branchial regions; posterolateral margin entire; posterior margin weakly convex, rimmed; sternites 1 and 2 fused, triangular, sternite 3 with lateral extensions; sternites 4–7 may have transverse ridges; males and immature females with pleonal somites 3–5 fused. *Pliocene–Holocene:* Italy, *Pliocene–Pleistocene*; Indo-Pacific, *Holocene.*—FIG. 1, 2*a–b*. *B. forficula* DE SAINT LAURENT, 1989, KSU D

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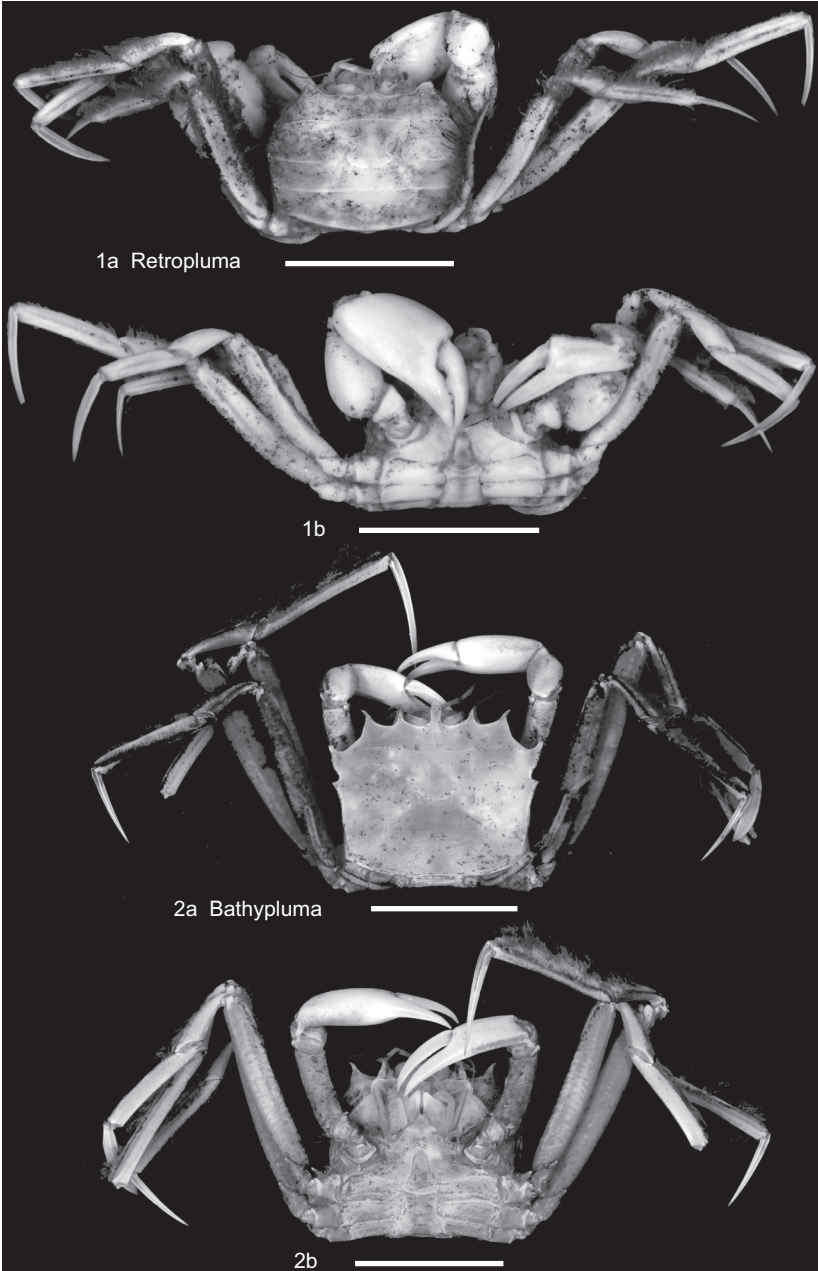


FIG. 1. Retroplumidae (p. 1–2).

2528, Holocene, Indonesia, *a*, dorsal view; *b*, ventral view, scale bars, 1 cm (new).
Costacopluma COLLINS & MORRIS, 1975, p. 823, pl. 97, 1–9 [*C. concava*; OD]. Carapace ovoid, surface flattened; rostrum narrow, triangular, downturned; carapace surface with distinct, granular ridges; one

transverse ridge crossing hepatic and protogastric regions and interrupted by mesogastric region; epibranchial ridge directed obliquely posteriorly from lateral margin to lateral edge of urogastric region; branchial ridge directed obliquely anteriorly from lateral margin to intersect with end

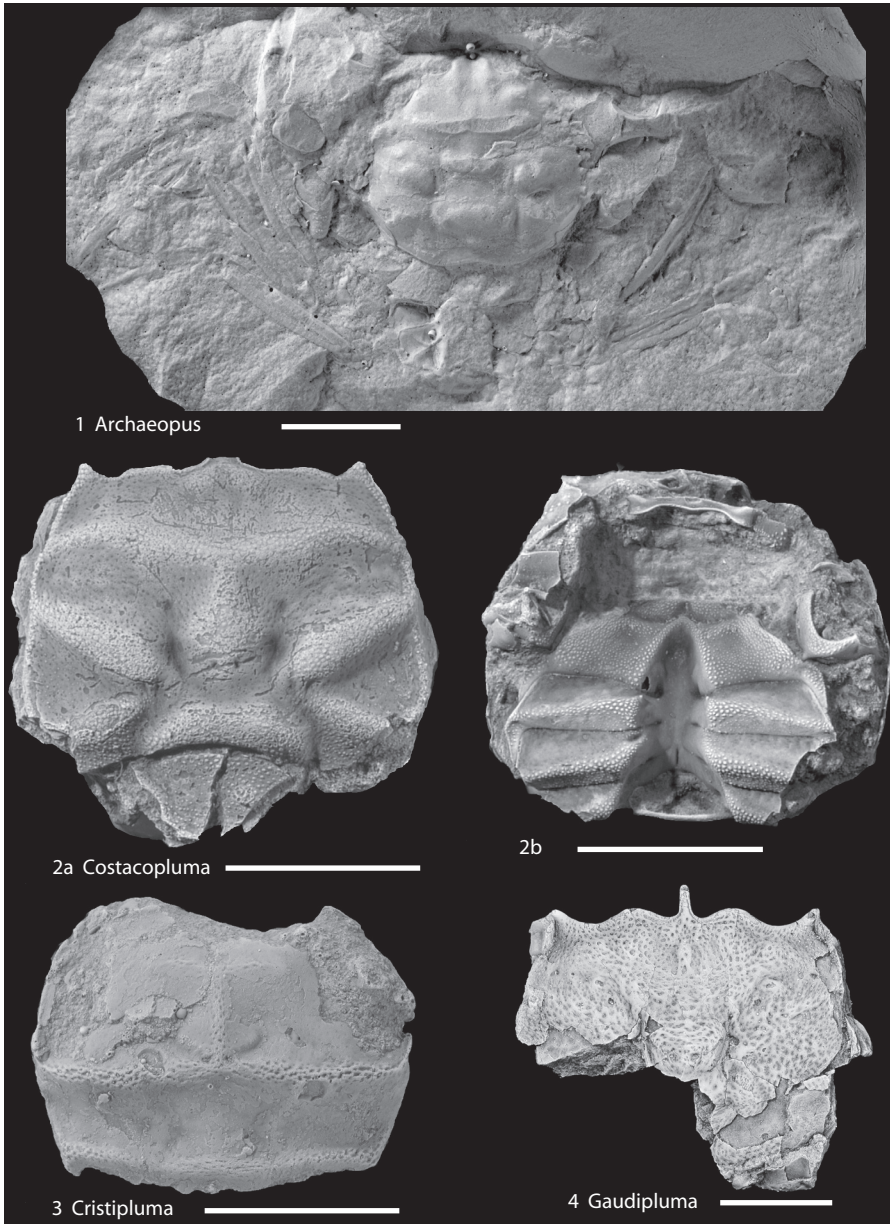


FIG. 2. Retroplumidae (p. 1–4).

epibranchial ridge; cardiac region wide anteriorly, narrowing abruptly posteriorly. *Upper Cretaceous (Coniacian–Maastrichtian)–Eocene*: Nigeria, *Coniacian–Maastrichtian*; western Greenland, Mexico (Guerrero), *Coniacian*; Morocco, *Campanian*; India, Mexico (Coahuila, Guerrero, Nuevo Leon), Senegal, *Maastrichtian*; Argentina, USA (Alabama, California), *Paleocene (Danian)*; Brazil, Venezuela,

Senegal, USA (Texas), *Paleocene*; USA (Alabama), *Eocene (Ypresian–Lutetian)*.—FIG. 2, 2a–b. *C. grayi* FELDMANN & PORTELL, 2007, Danian, Alabama; a, UF 228989, dorsal carapace; b, UF 228990, ventral view, scale bars, 0.5 cm (Feldmann, Schweitzer, & Portell, 2014, pl. 1, 1, 2, 2).

Cristipluma BISHOP, 1983, p. 427, fig. 3K, 8A–C [*C. mississippiensis*; OD]. Carapace rectangular;

- protogastric regions with transverse ridges; mesogastric region with longitudinal ridge; epibranchial and metagastric regions with continuous, granular transverse ridge; branchial and intestinal regions with continuous, granular transverse ridge. *Upper Cretaceous (Maastrichtian)*: Mississippi, Tennessee, USA.—FIG. 2,3. **C. mississippiensis*, Maastrichtian, Tennessee, KSU D 1176, cast of holotype GSCM 1685, scale bar, 1 cm (new).
- Gaudipluma** ARTAL & others, 2013, p. 348, fig. 3–4 [**G. bacamortensis*; OD]. Carapace about as wide as long, flattened, surface pitted; orbital margin sinuous, smooth, with small outer-orbital spine; lateral margins arcuate, entire; dorsal carapace with oblique weak ridge in epibranchial area and very weak transverse ridges in fused protogastric and hepatic region and metabranchial regions; pereopods with long, sharp spines, pereopod 5 much reduced; male and female pleon narrow, male somite 6 long, female telson long. [Diagnosis adapted from ARTAL & others, 2013, p. 348.] *Eocene (Ypresian)*: Spain.—FIG. 2,4. **G. bacamortensis*, holotype MAB k.3282, Ypresian, Spain, scale bar, 1 cm (new; photo by B. van Bakel).
- Gonioplacoides** QUAYLE & COLLINS, 2012, p. 39, pl. 3,6–7 [**G. minuta*; OD]. Carapace ovate, wider than long; orbits extremely wide, upper orbital margin sinuous, fronto-orbital width occupying entire frontal margin of carapace, outer orbital angle produced into triangular spine; carapace regions inflated, forming oblique ridges on epibranchial and branchial regions. *Eocene (Priabonian)*: UK (England).—FIG. 3,1. **G. minuta*, holotype, NHM IC 607, scale bar, 1 cm (new; photo by Philip [Phil] Hurst).
- Loerenthoplumosa** SCHWEITZER, DWORSCHAK, & MARTIN, 2011, p. 361, *nom. nov. pro Loerentheyia* BEURLIN in LÖRENTHEY & BEURLIN, 1929, p. 388, *non Loerentheyia* LÖRENTHEY, 1902 (mollusk) [**Loerentheyia carinata* BEURLIN in LÖRENTHEY & BEURLIN, 1929, p. 388, fig. 49; M]. Carapace rectangular, wider than long; rostrum narrow, orbits very wide; carapace surface with transverse ridge across protogastric, hepatic, and mesogastric regions; ridge extending obliquely from lateral margin to lateral edge of urogastric region; transverse ridge extending across branchial region and cardiac region. *Eocene (Lutetian–Bartonian)*: Hungary.—FIG. 3,2. **L. carinata* (BEURLIN), no scale (LÖRENTHEY & BEURLIN, 1929, fig. 49).
- Loerenthopluma** BESCHIN & others, 1996, p. 89, pl. 1,1 [**L. lata*; OD]. Carapace wide, subrectangular, depressed; fronto-orbital margin very wide, ending with an outer-orbital spine; front narrow; lateral margins converging slightly posteriorly; carapace with three transverse ridges; transverse ridge extending across hepatic, protogastric, and mesogastric regions; ridge extending obliquely from lateral margin to lateral edge of urogastric region; transverse ridge extending across branchial region and cardiac region. *Eocene–Oligocene*: Belgium, *Eocene (Ypresian)*; Italy: *Eocene (Lutetian)*; Hungary: *Oligocene*.—FIG. 3,3. **L. lata*, cast of holotype MCZ 1476, numbered KSU 3, Lutetian, Italy, scale bar, 1 cm (new).
- Retrocypoda** VIA BOADA, 1959, p. 63(393), fig. 20 [**R. almelai*; OD]. Carapace wider than long, length about three-quarters maximum carapace width, rectangular, widest at midlength, flattened transversely and longitudinally; carapace front narrow, about 8 percent maximum carapace width, strongly downturned, axially sulcate, broadening distally; orbits elongate, ovoid, with arcuate crest about one-third the distance from axis, directed forward, upper-orbital margin sinuous, terminating in forward-directed outer-orbital spine; lower orbital margin with prominent spine at midlength; fronto-orbital width about two-thirds maximum carapace width; anterolateral margins diverging posteriorly, granular, margin crispate; posterolateral margin convex; posterior margin nearly straight, rimmed; carapace with protogastric and hepatic, epibranchial, and two, branchial, sinuous ridges; mesogastric region well defined, triangular; metagastric region short; cardiac region hexagonal, wider than long, with transverse ridge at midlength; surface of anterior regions smooth; posterior regions nodose; buccal cavity quadrate, widest about one-third the distance posteriorly; mandibles strong; male sternum widest at sternite 6, sternites 5–7 with prominent sinuous, transverse ridge; male pleon with at least somites 3–5 fused, somites with transverse ridges; female pleon broadens to somite 4, then narrows to telson, ovoid, somites free. *Eocene (Lutetian)*: Italy, Spain.—FIG. 3,4. **R. almelai*, holotype, MGSB 20123, Lutetian, Spain, scale bar, 1 cm (new).
- Serrablopluma** ARTAL & others, 2013, p. 344, fig. 1–2 [**S. diminuta*; OD]. Carapace transversely ovate, wider than long; front extremely narrow; orbital margin sinuous, with prominent suborbital spine; anterolateral margin straight, terminating in strong spine; posterolateral margin with one spine marking termination of transverse ridge; carapace with three, sharp transverse ridges, one across mesogastric and protogastric regions, one forming epibranchial region, and third extending across cardiac and metabranchial regions; male pleon with transverse ridges on somites; female pleon much wider than male; fifth pereopod reduced. [Diagnosis adapted from ARTAL & others, 2013, p. 344.] *Eocene (Priabonian)*: Spain.—FIG. 3,5a–b. **S. diminuta*, Priabonian, Spain; a, holotype, MGSB 75287, dorsal carapace; b, paratype MGSB 75289, ventral view, scale bars, 1 cm (new; photos by B. van Bakel).

ABBREVIATIONS FOR MUSEUM REPOSITORIES

- GSC: Geological Survey of Canada, Eastern Paleontology Division, Ottawa, Ontario, Canada
GSCM: Georgia Southern Museum, Georgia Southern University, Statesboro, Georgia

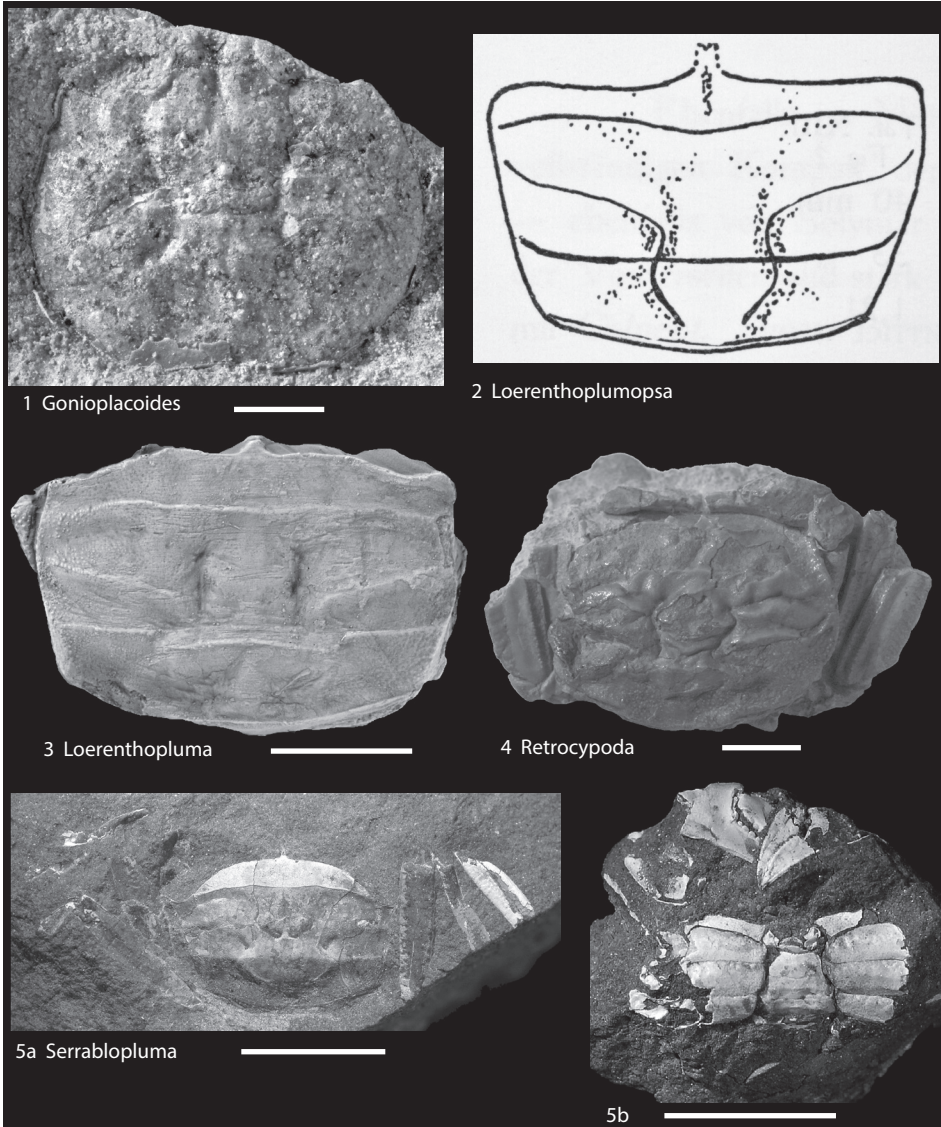


FIG. 3. Retroplumidae (p. 4).

KSU D: Decapod Comparative Collection, Department of Geology, Kent State University, Kent, Ohio, USA
MAB k: Oertijdmuseum De Groene Poort, Boxtel, The Netherlands
MCZ: Museo Civico “G. Zannato” di Montecchio Maggiore, Vicenza, Italy
MGSB: Museo Geológico del Seminario de Barcelona, Barcelona, Spain
NHM: The Natural History Museum, London, England, UK

UF: University of Florida, Florida Museum, Invertebrate Paleontology Collection, Gainesville, Florida

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