Supplementary Materials for

Exceptional preservation of comma shrimp from a mid-Cretaceous Lagerstätte of Colombia, and the origins of crown Cumacea

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**Figure S1.** Mass accumulations of *Eobodotria muisca* gen. et sp. nov. from the mid-Cretaceous (Cenomanian–Turonian, 95–90 Mya) of Colombia, South America.

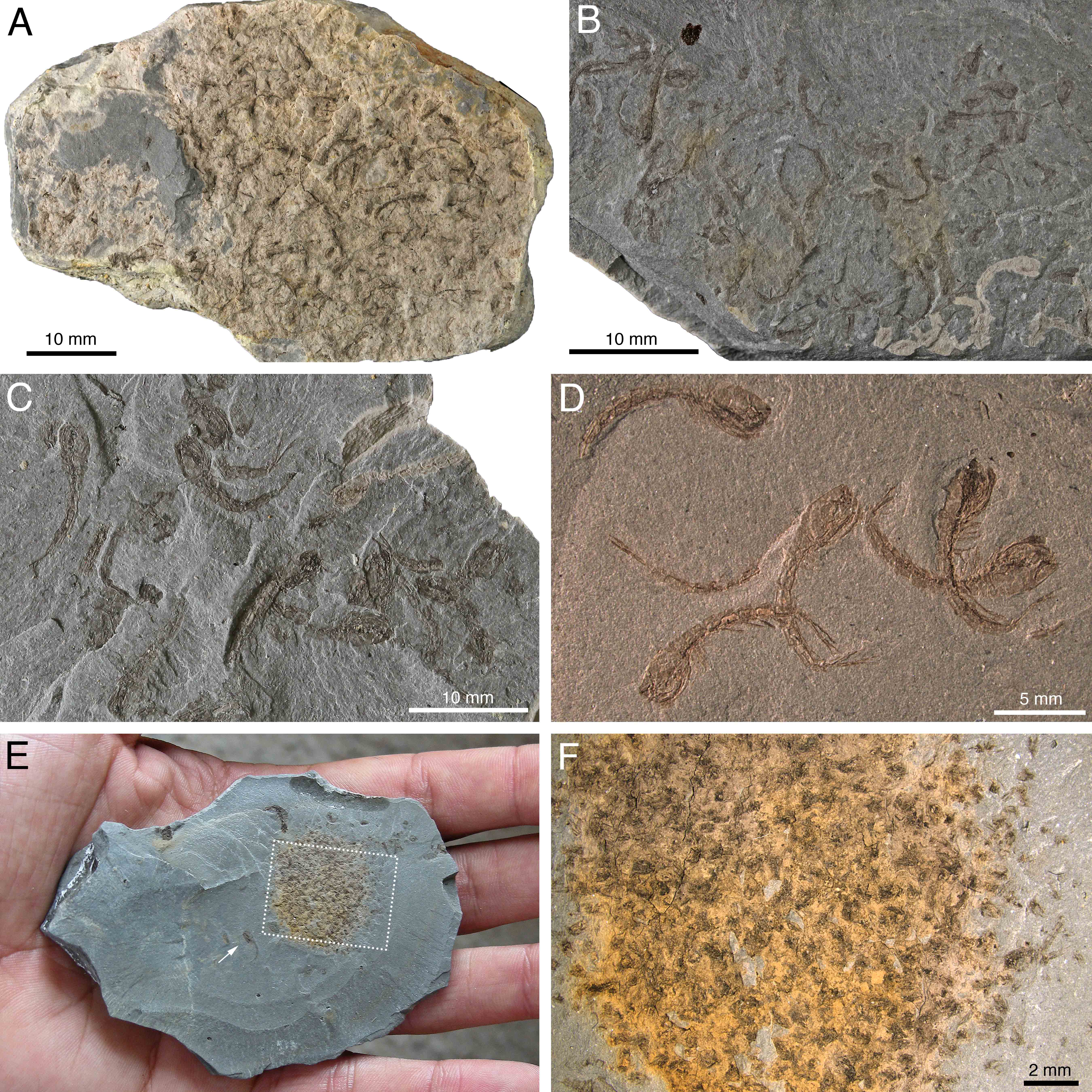
**Figure S2.** *Palaeocuma hessi* Bachmayer, 1960, from the Jurassic (Callovian, 165 Mya) of La Voulte-sur-Rhone, France.

**Figure S3** Results of equally-weighted and implied-weights maximum parsimony analyses.

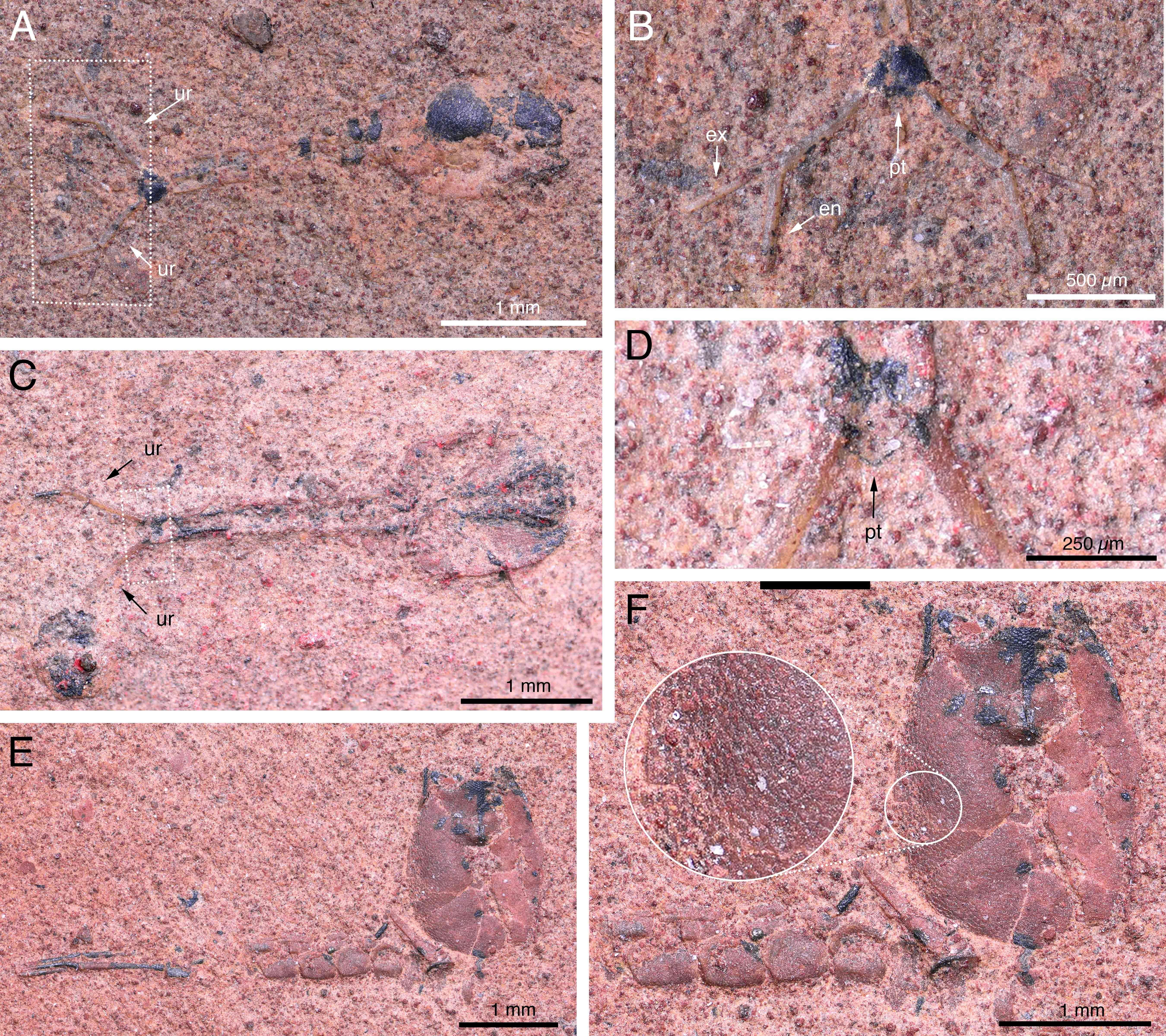
**Figure S4** Bayesian majority-rule consensus topology of the post-burnin sample of trees for crown-group cumacean family Bodotriidae, including the extinct *Eobodotria muisca* gen. et sp. nov.

**Table S1** List of known fossil stem- and crown-group cumaceans, arranged chronologically from oldest to youngest.

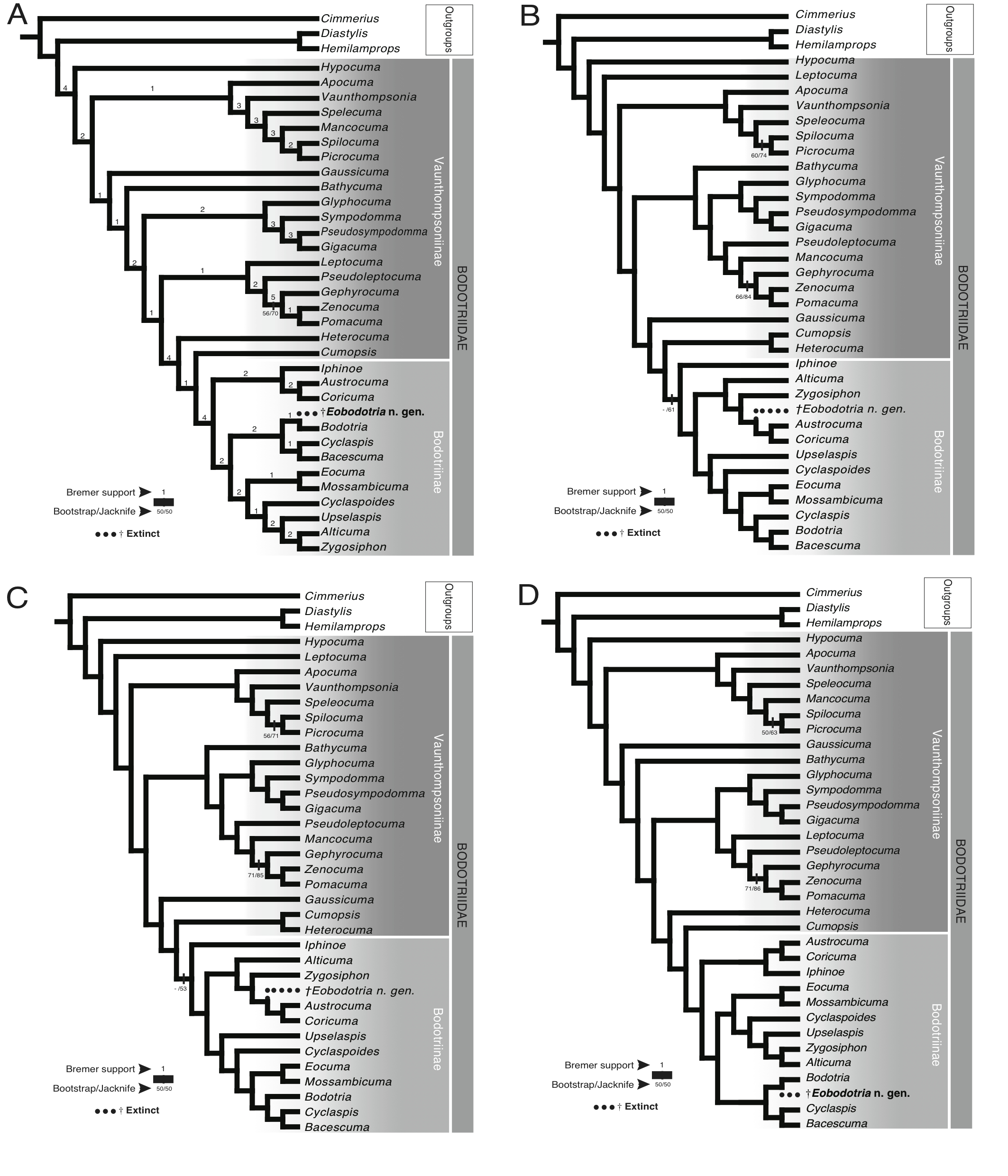
Supporting Figures



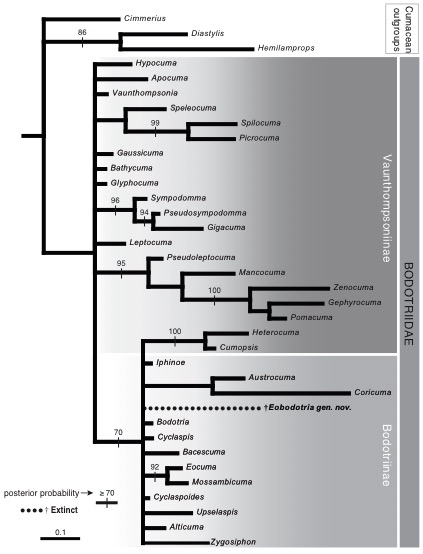
**Figure S1.** Mass accumulations of *Eobodotria muisca* gen. et sp. nov. from the mid-Cretaceous (Cenomanian–Turonian, 95–90 Mya) of Colombia, South America. (A) sample MGJRG.2019.I.13; brown, beige, and orange-yellow colours due to weathering. (B) sample IGM p881227, slightly weathered, showing a packing density of about 6 specimens per cm2. (C) Sample MGJRG.2019.I.9, showing a fresh, non-weathered hand sample with well-preserved cumaceans. (D) Sample IGM p880694 with holotype and at least 4 other complete specimens. (E) Sample IGM p880691, showing an unusual pile of poorly preserved cumacean remains; white arrow points a well-preserved adult female (see Figure 1D). (F) Close-up of the pile of cumacean remains in sample IGM p880691 (dotted box in E).

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**Figure S2.** *Palaeocuma hessi* Bachmayer, 1960, from the Jurassic (Callovian, 165 Mya) of La Voulte-sur-Rhone, France. (A) Holotype F1282; (B) Close-up of holotype biramous uropods with long and slender exopod and endopod. (C) Paratype F2441; (D) Close-up of paratype showing the fused pleotelson. (E) Hypotype F2442; (F) Close-up of hypotype showing details of the pleonites and the ovate carapace with scaly cuticle. Photos courtesy of Loïc Costeur and Walter Etter (Natural History Museum Basel, Switzerland).



**Figure S3.** Results of equally-weighted and implied-weights maximum parsimony analyses. A) equally-weighted parsimony: single most parsimonious tree. (B–D) Implied-weights maximum parsimony (IWMP) topologies: (B) concavity value K=3; (C) concavity value K=6; (D) concavity value K=12. Analyses performed in TNT v.1.5.

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**Figure S4.** Bayesian majority-rule consensus topology of the post-burnin sample of trees for crown-group cumacean family Bodotriidae, including the extinct *Eobodotria muisca* gen. et sp. nov. Posterior probability support values indicated above branches. Branches with posterior probability support < 75% are collapsed.

Supporting Tables

**Table S1.**  List of known fossil stem- and crown-group cumaceans, arranged chronologically from oldest to youngest (see also main text, figure 4*b–f*). Taxa marked with an asterisk (\*) are putative stem-group Cumacea.

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| --- | --- | --- | --- |
| **Taxon** | **Age** | **Unit** | **Locality** |
| *\*Carbocuma imoensis* Schram et al., 2003 | Upper Mississippian and Pennsylvanian | Imo Formation and Eudora Shale | Arkansas and Kansas, U.S.A. |
| *\*Ophthalmdiastylis parvulorostrum* Schram et al., 2003 | Upper Mississippian and Pennsylvanian | Imo Formation and Eudora Shale | Arkansas and Kansas, U.S.A. |
| *\*Securicaris spinosus* Schram et al., 2003 | Upper Mississippian | Imo Formation | Arkansas, U.S.A. |
| *\*Ophthalmdiastylis inflata* Malzahn, 1972 | Permian | Marl Beds of Zechstein 1 | Germany |
| *\*Ophthalmdiastylis costata* Malzahn, 1972 | Permian | Marl Beds of Zechstein 1 | Germany |
| *Palaeocuma hessi* Bachmayer, 1960 | Callovian | La Voulte-sur-Rhône Konservat-Lagerstätte | La Voulte-sur-Rhône, France |
| *Eobodotria muisca* Luque & Gerken gen. et sp. nov. | Upper Cenomanian–lower-mid Turonian | Churuvita Group | Boyacá, Colombia |