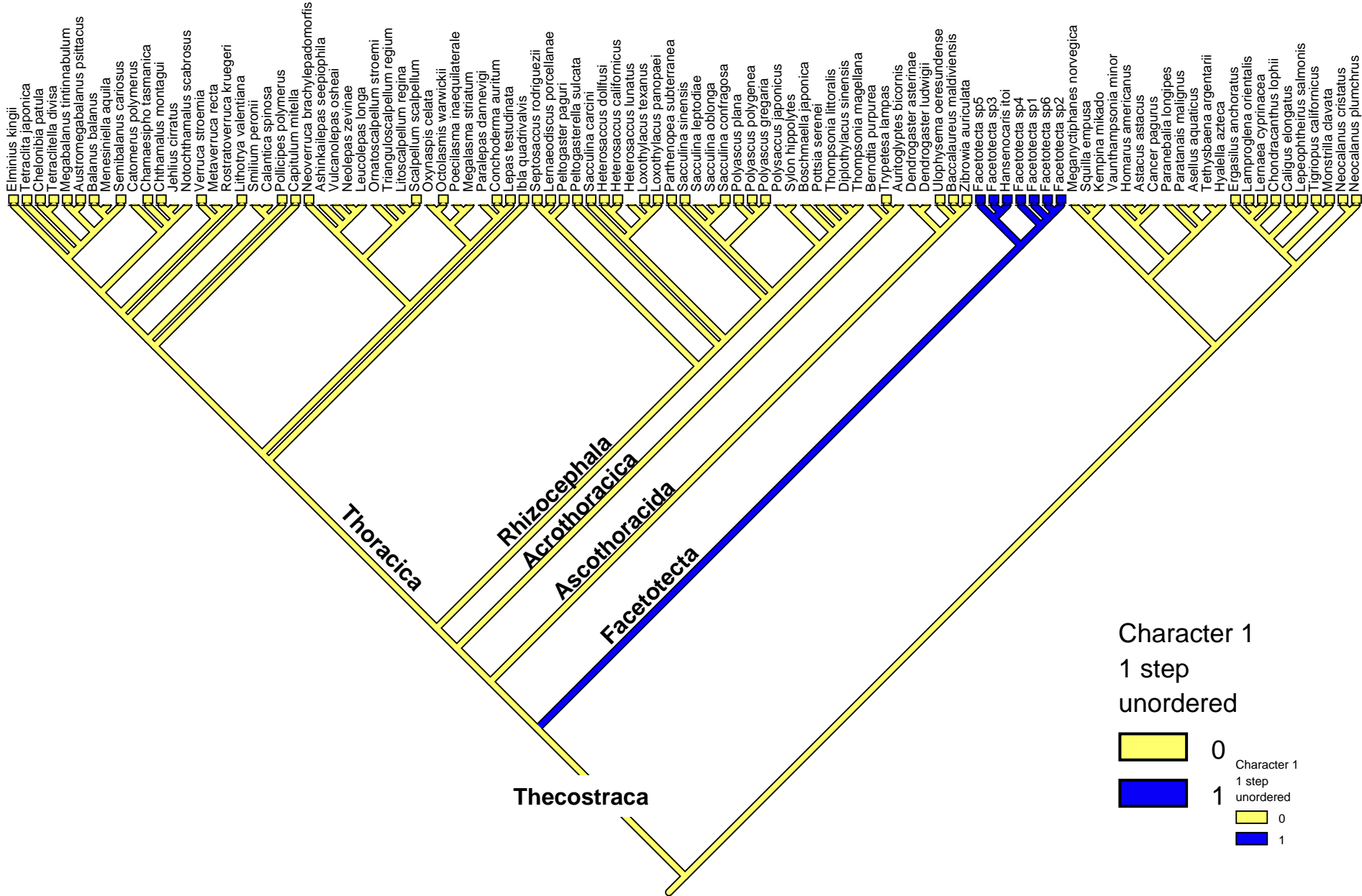
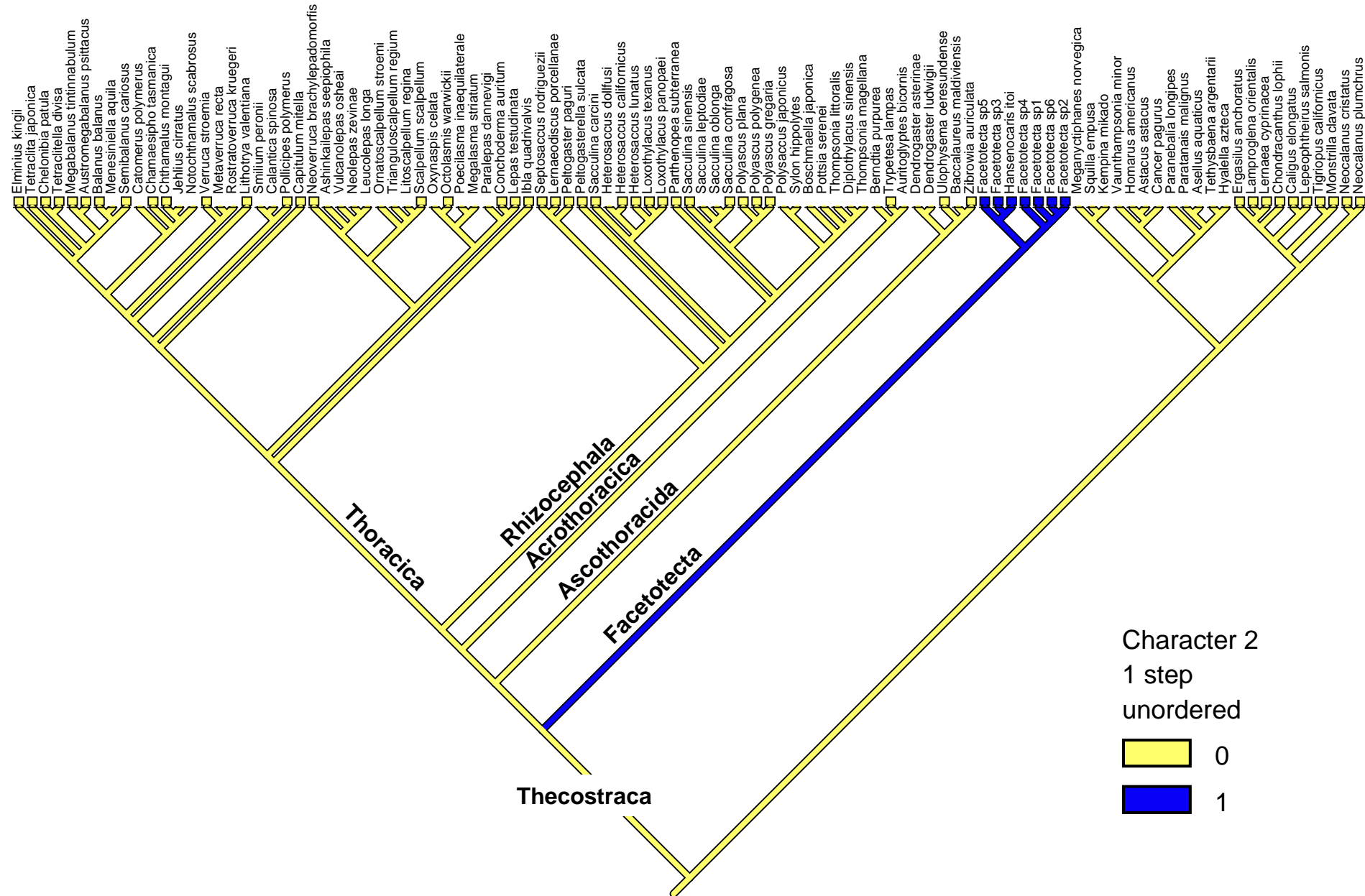


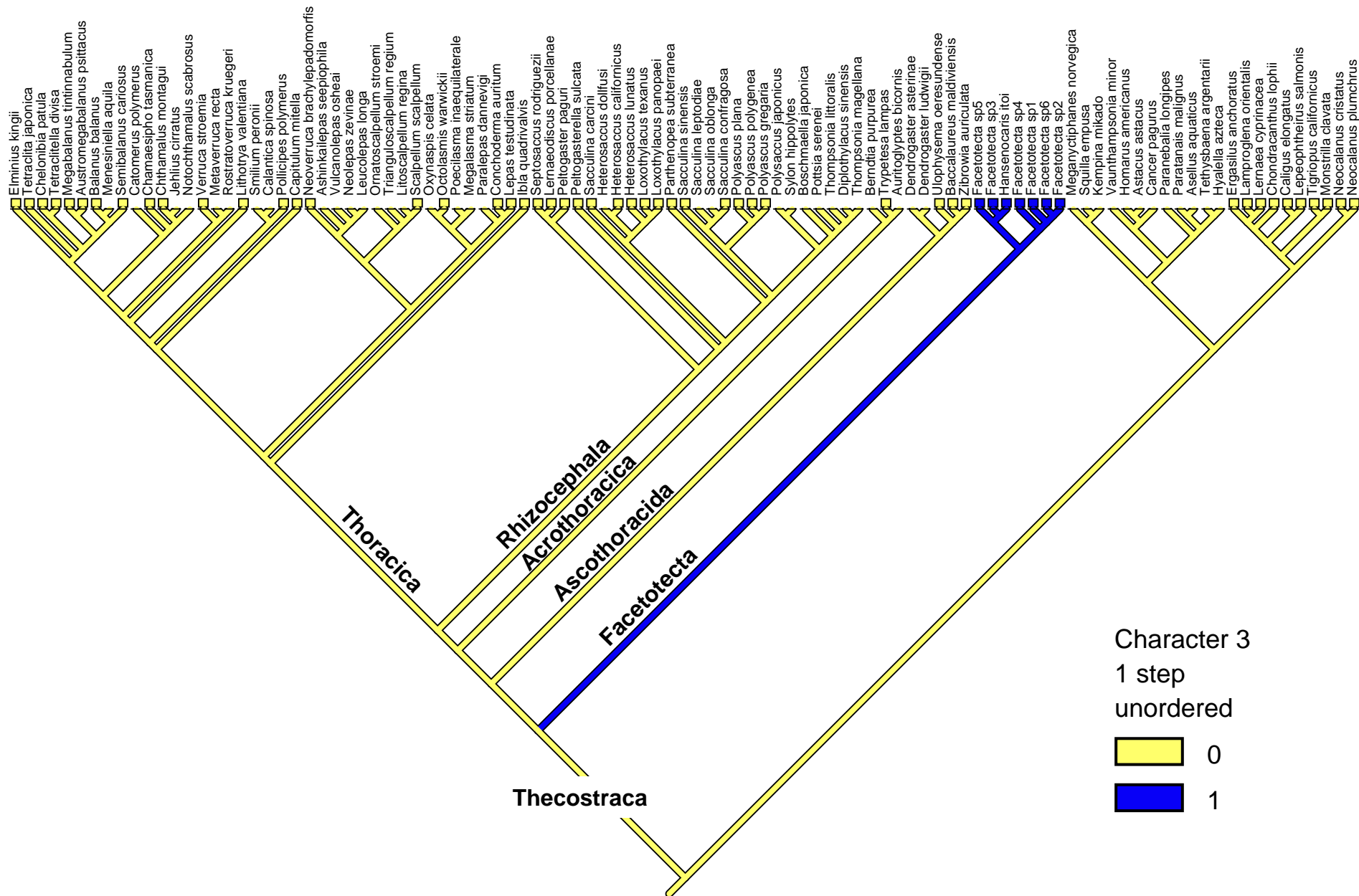
Character 1. *Naupliar cephalic shield continuous with free trunk dorsum:* (0) no; (1) yes.



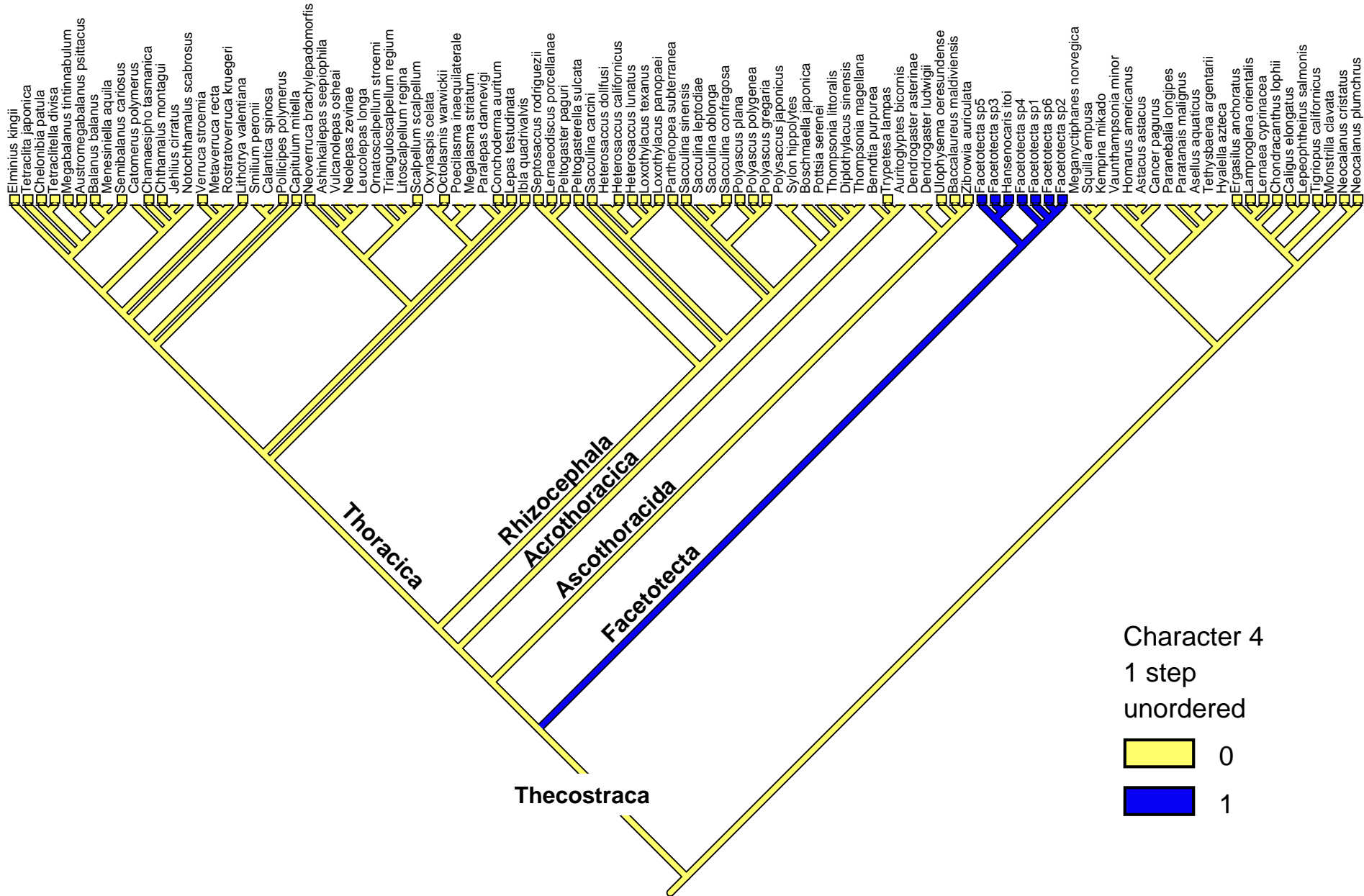
Character 2. Naupliar cephalic shield ridges of common (facetotectan) plan: (0) no; (1) yes.



Character 3. Nauplius with dorsal window plate in common position: (0) no; (1) yes.

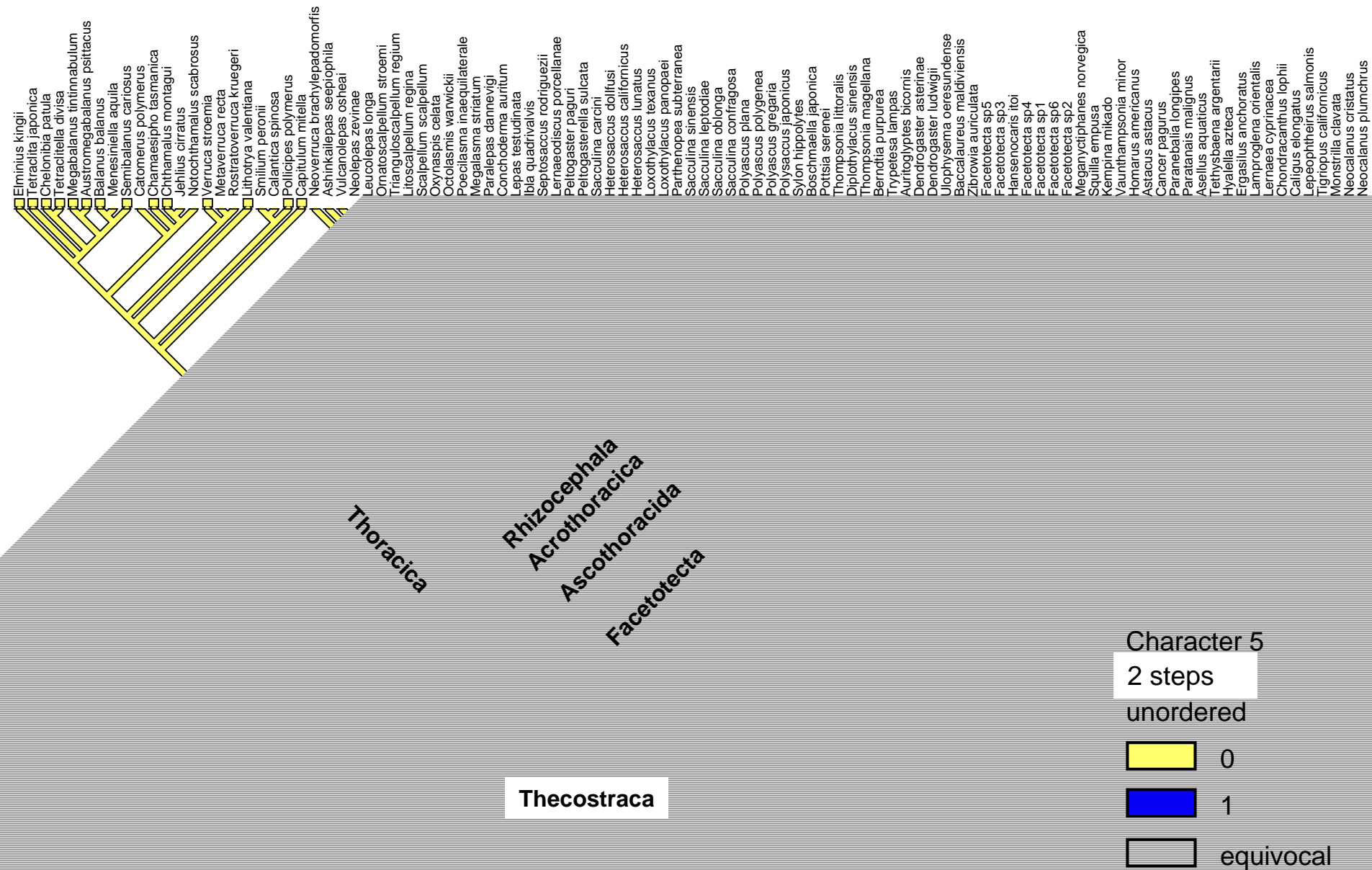


Character 4. *Nauplius with ventral side of cephalic region flat, round and with wide rim: (0) no; (1) yes.*

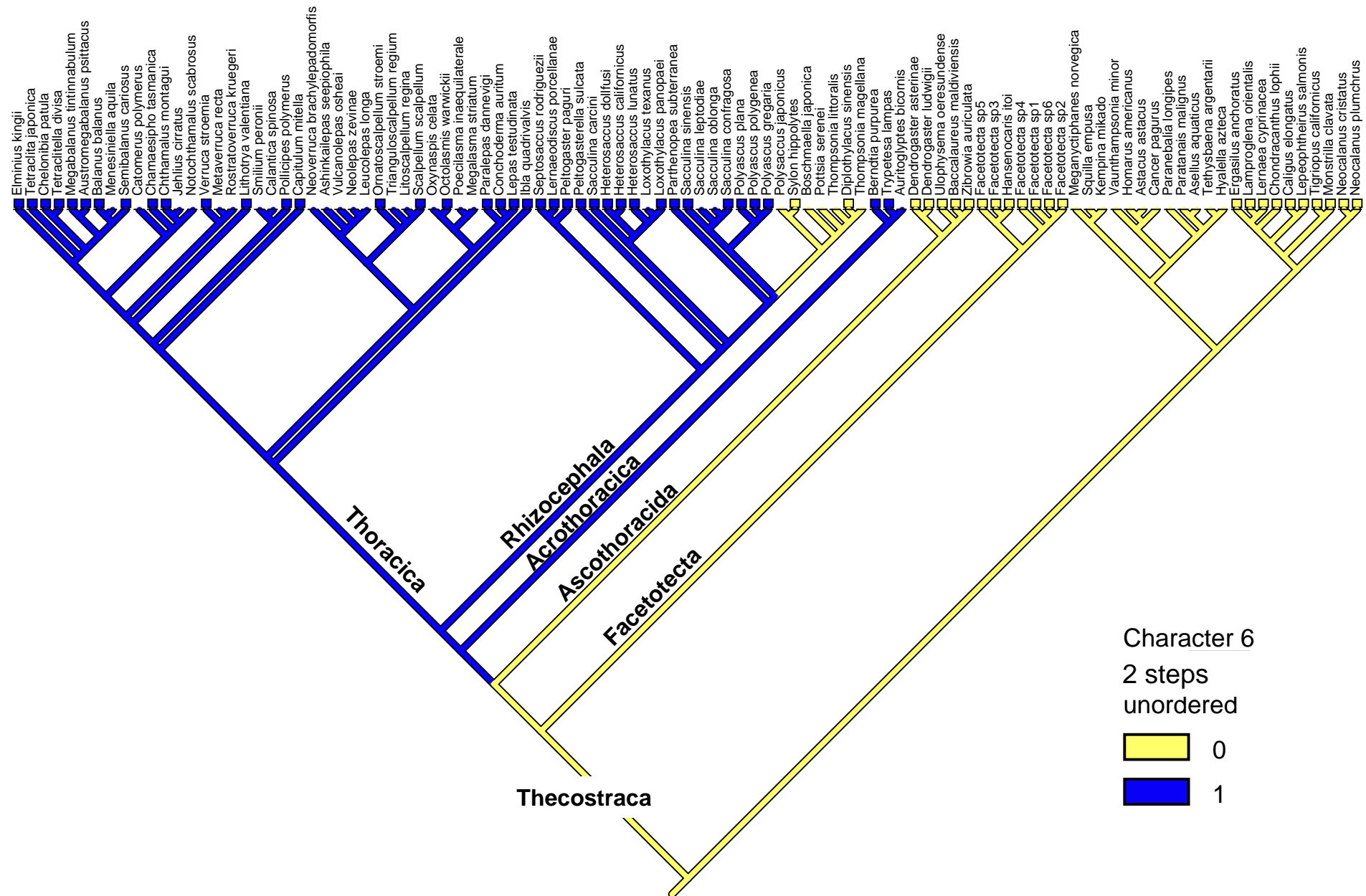


Character 5. Nauplius with furcal setae; excluding furcal spines, which apparently all taxa can have:

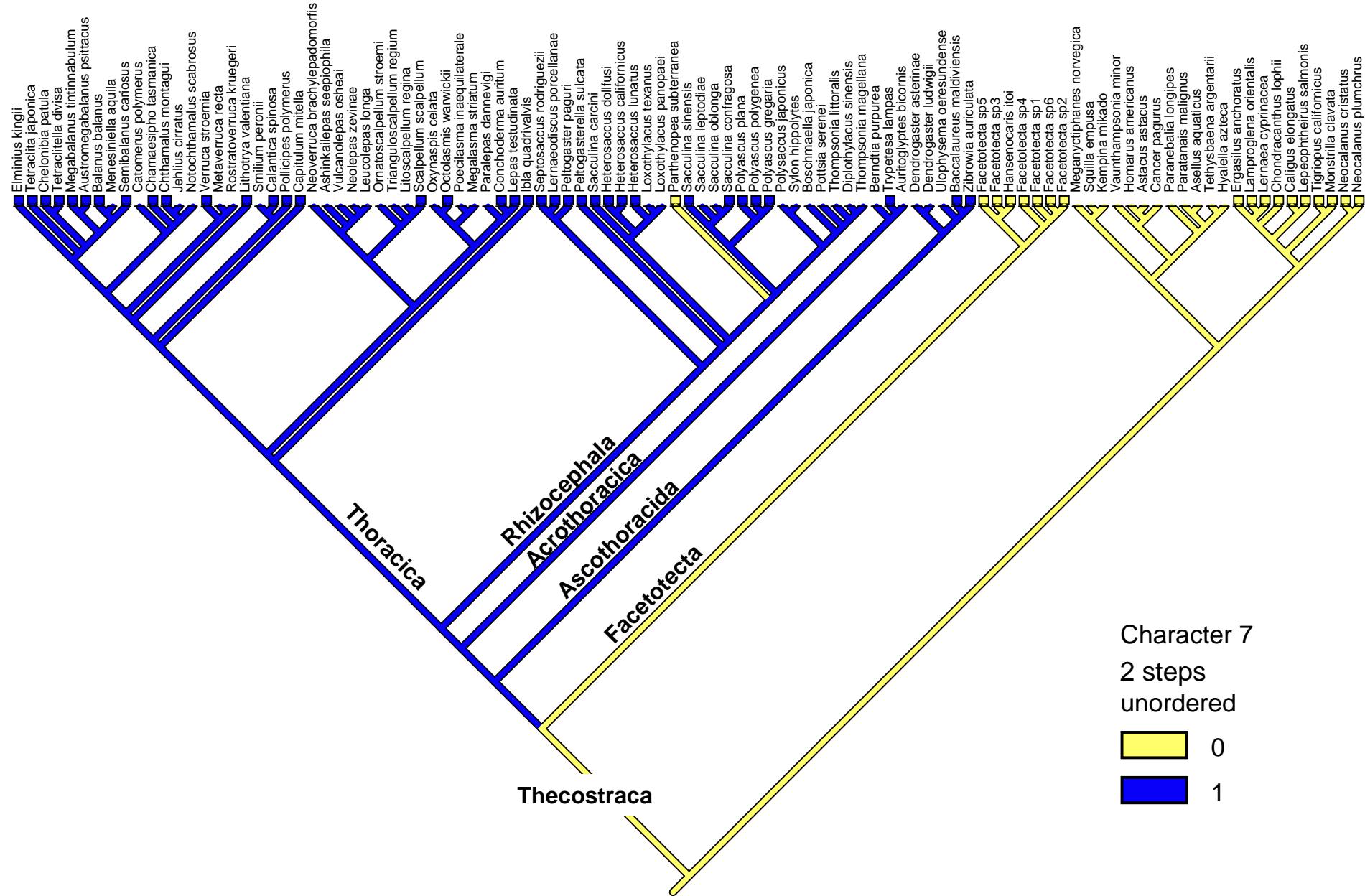
(0) absent; (1) present.



Character 6. Frontolateral pores and glands: (0) absent; (1) present.

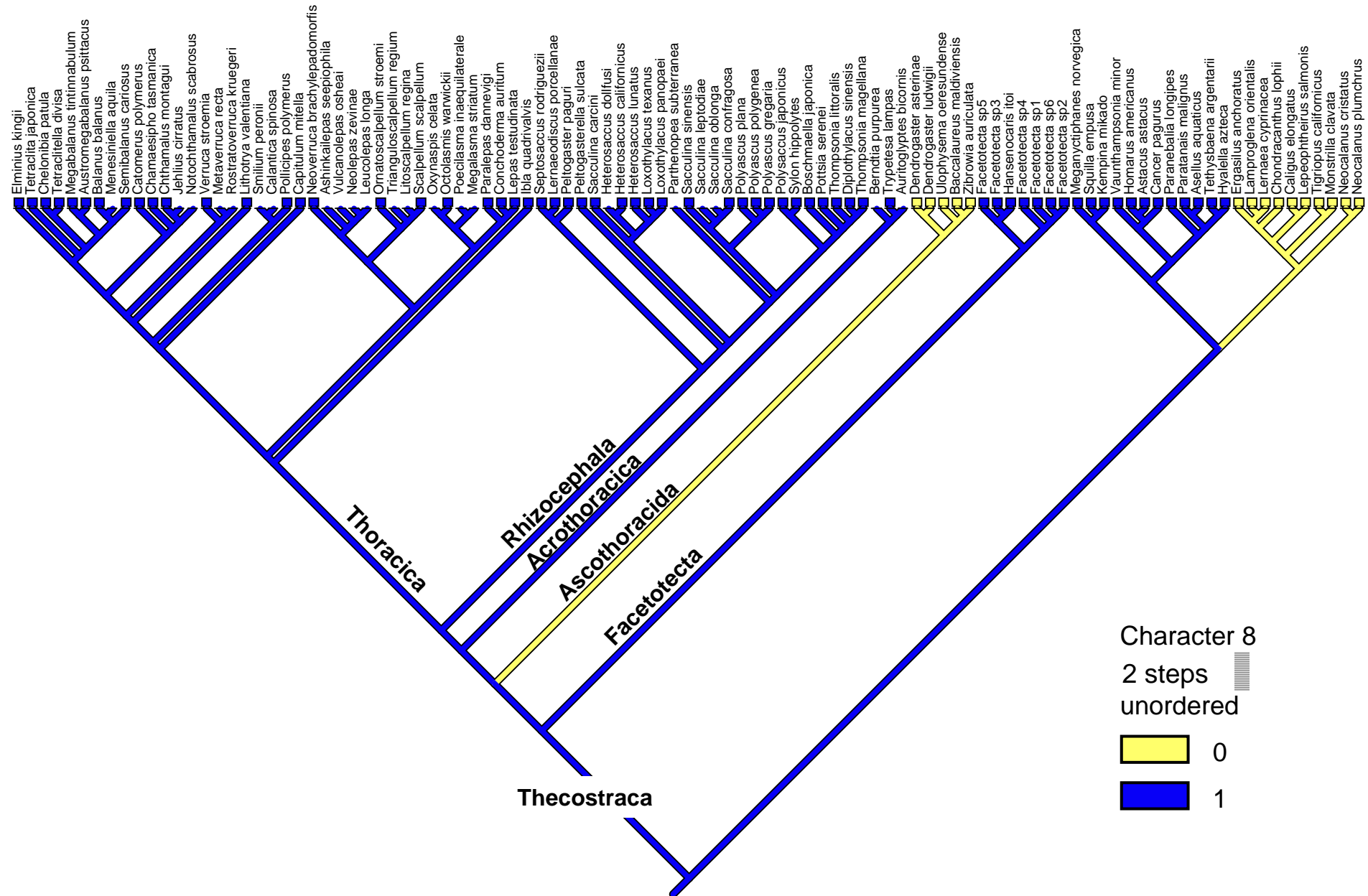


Character 7. Frontal filaments in nauplius: (0) absent; (1) present.

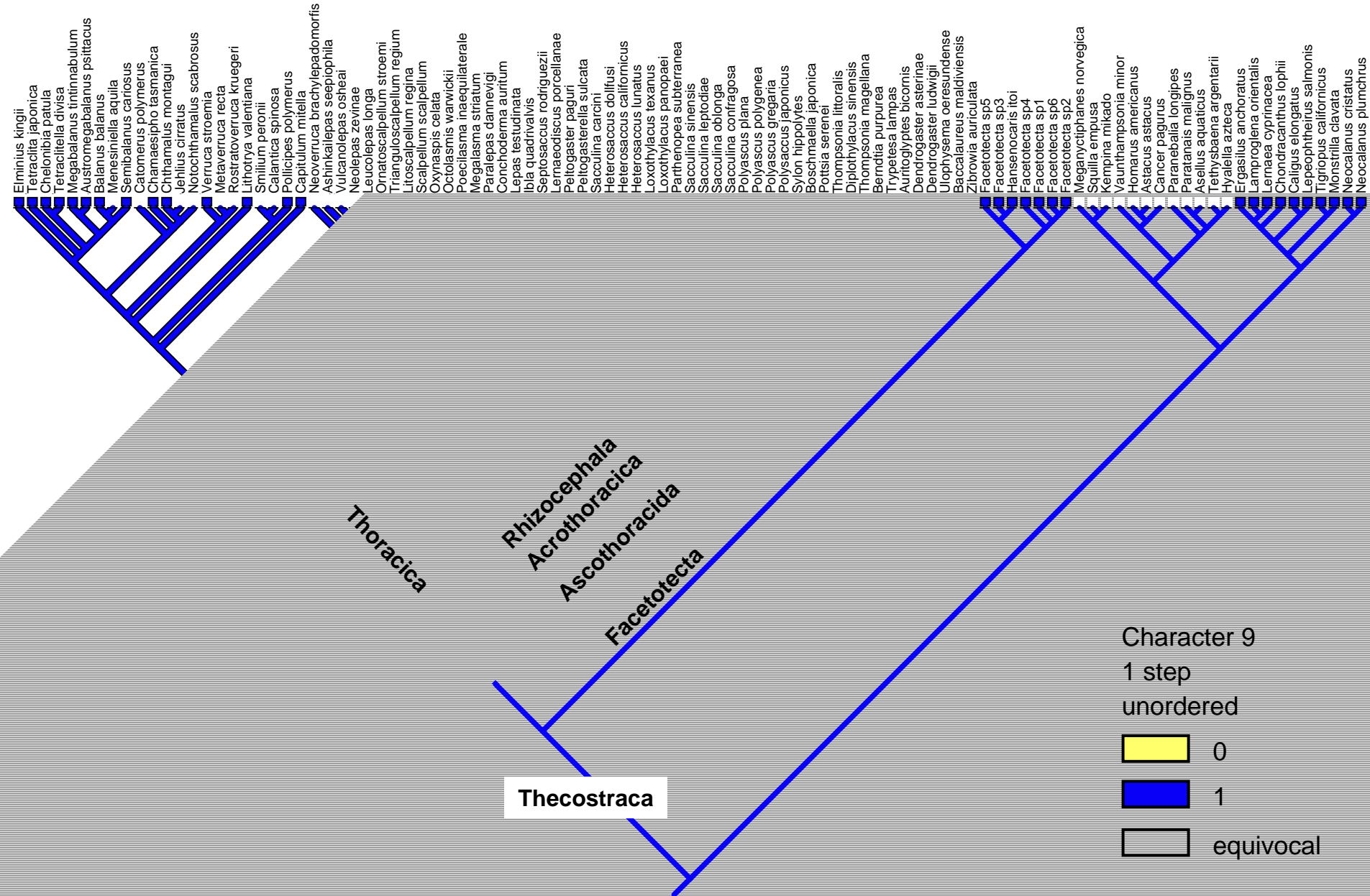


Character 8. Antennular segment number expressed in entire life cycle:

(0) 8 or more; (1) less than 8.

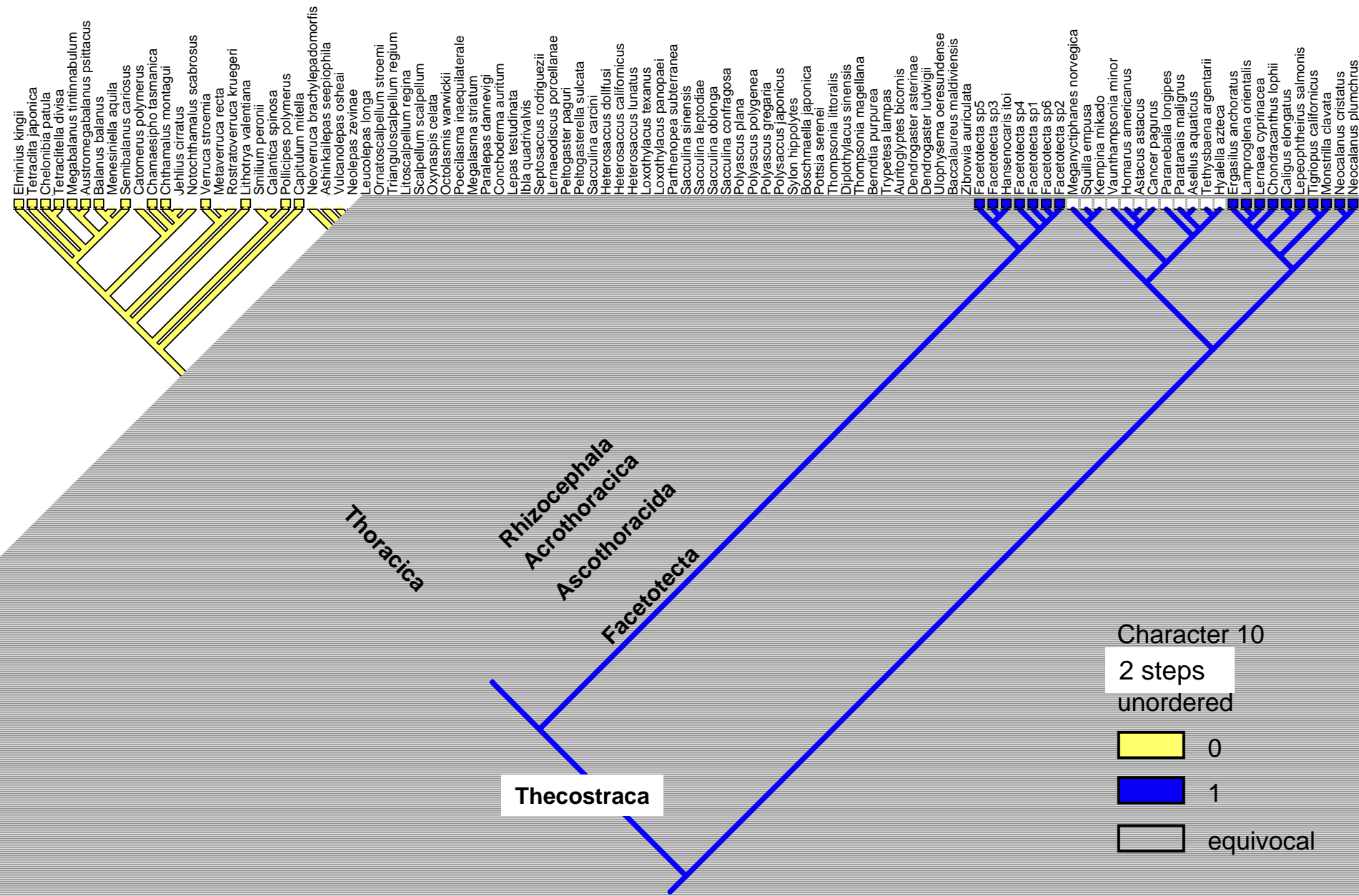


Character 9. Antennular segments in stage 1 nauplii: (0) more than 3; (1) 3 or fewer.

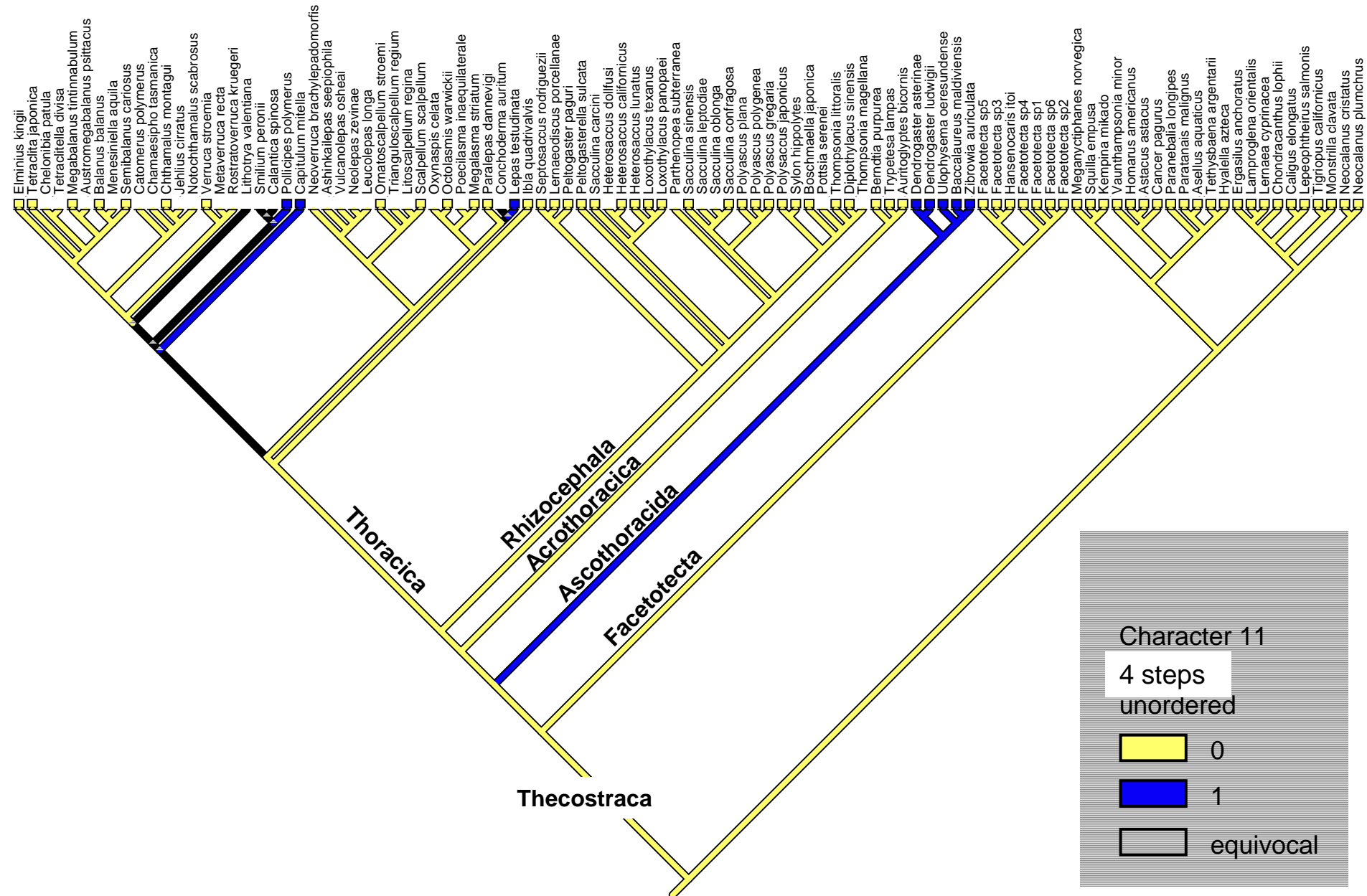


Character 10. Nauplii with at most two segments in naupliar endopods of antennae and mandibles:

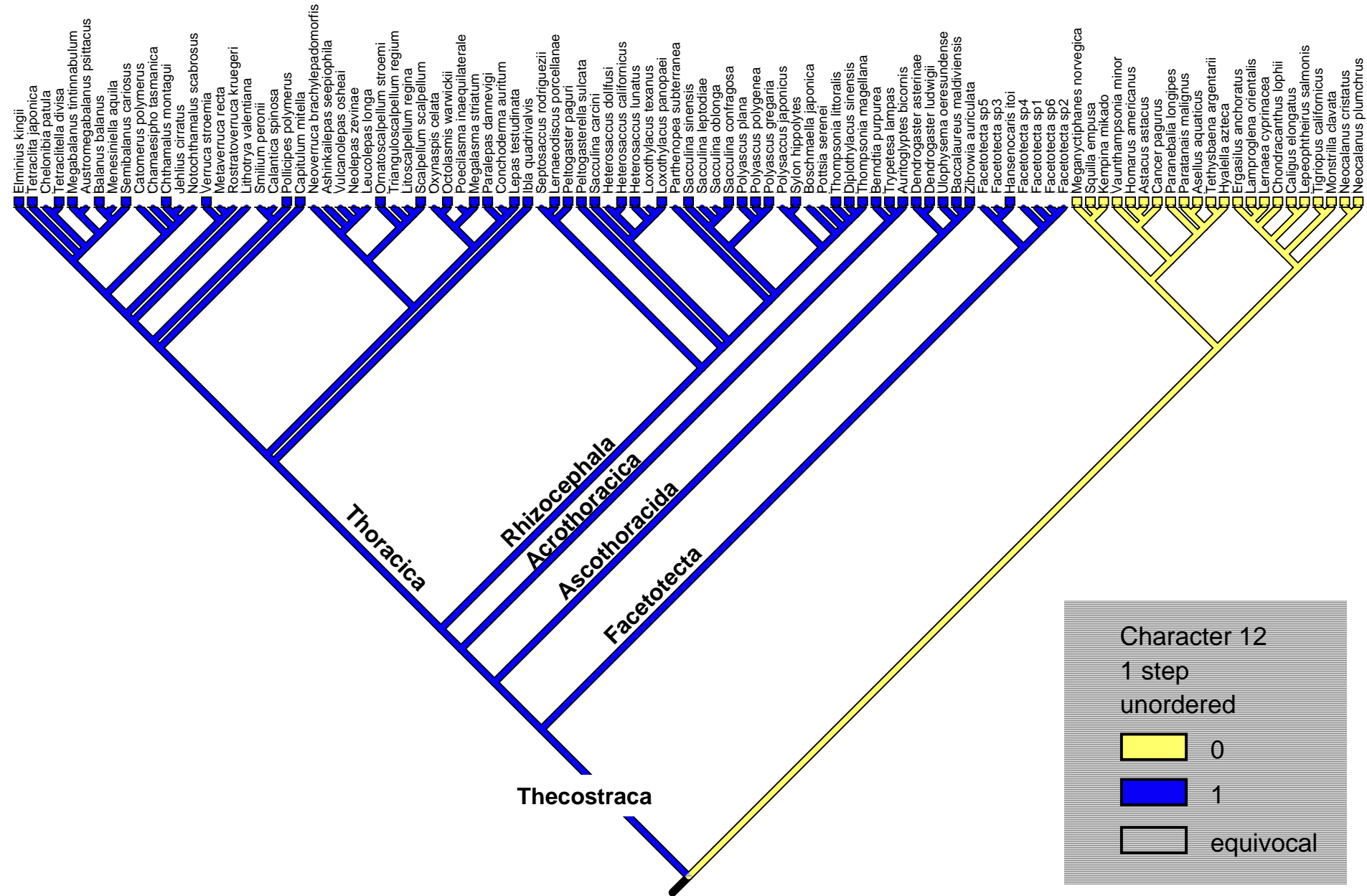
(0) no; (1) yes.



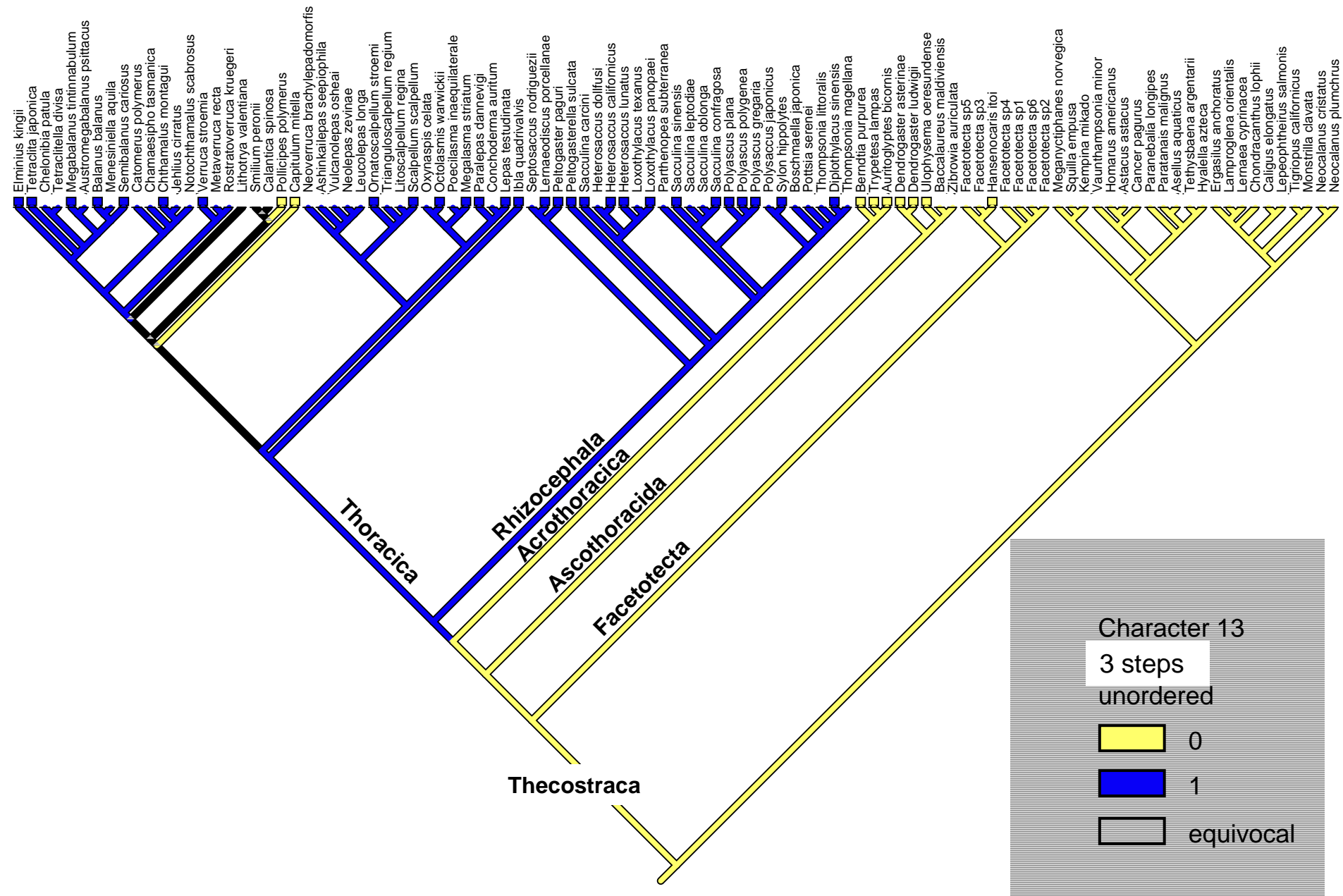
Character 11. *Head shield with distinct hinge line:* (0) absent; (1) present.



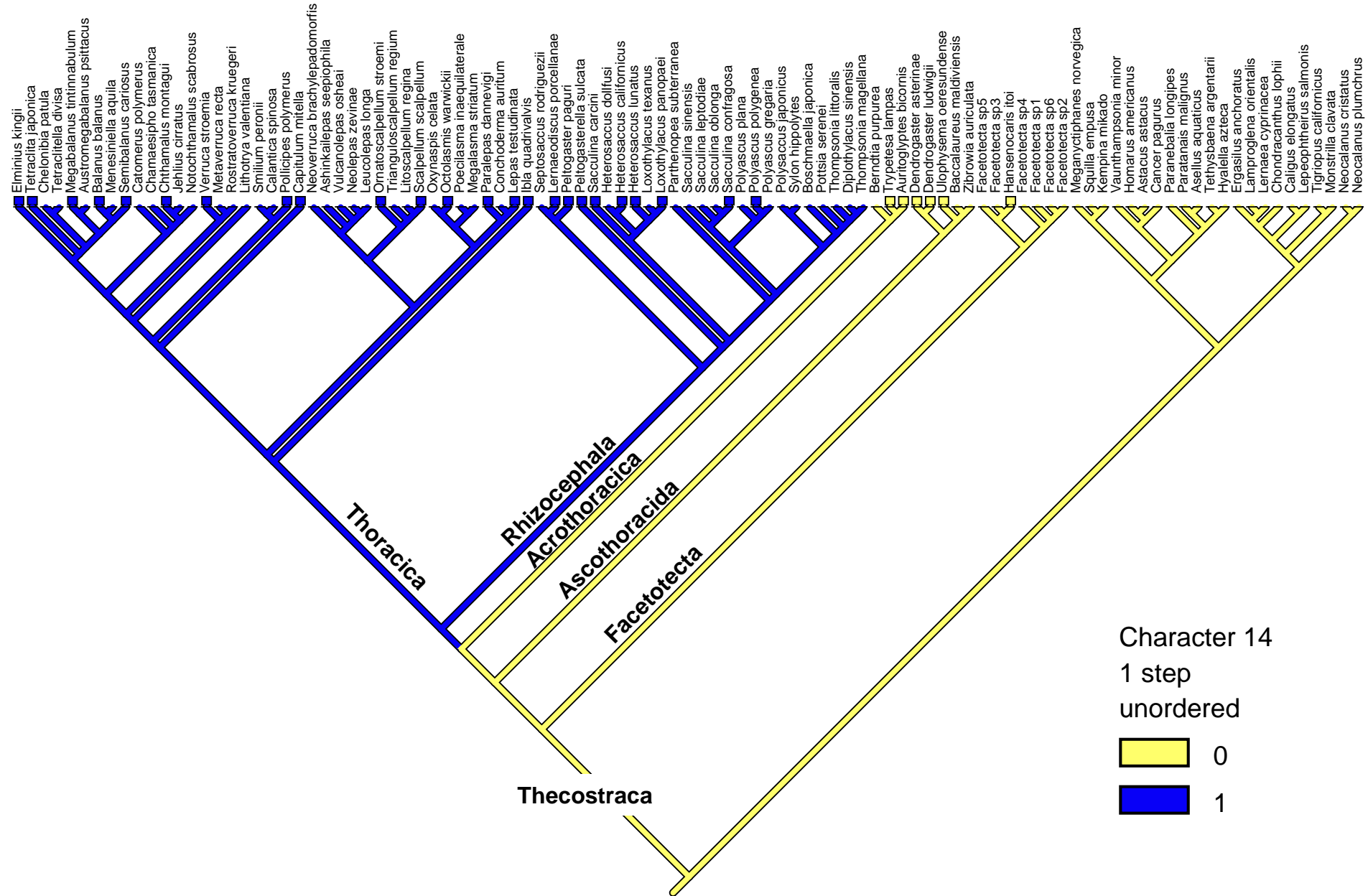
Character 12. Lattice organs: (0) absent; (1) present.



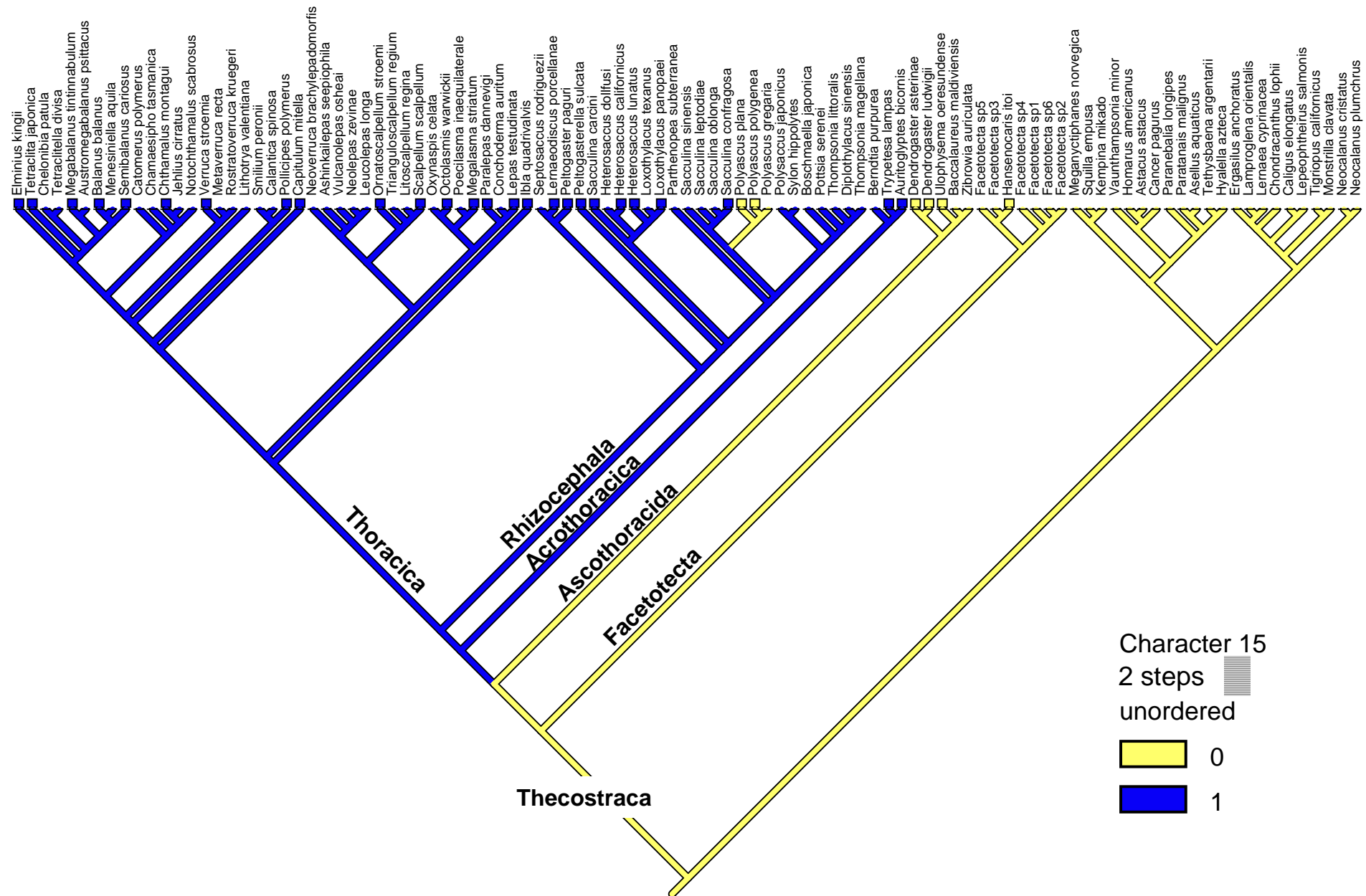
Character 13. Lattice organs (Lo) shape: (0) with more or less distinct crest in trough; (1) no distinct crest.



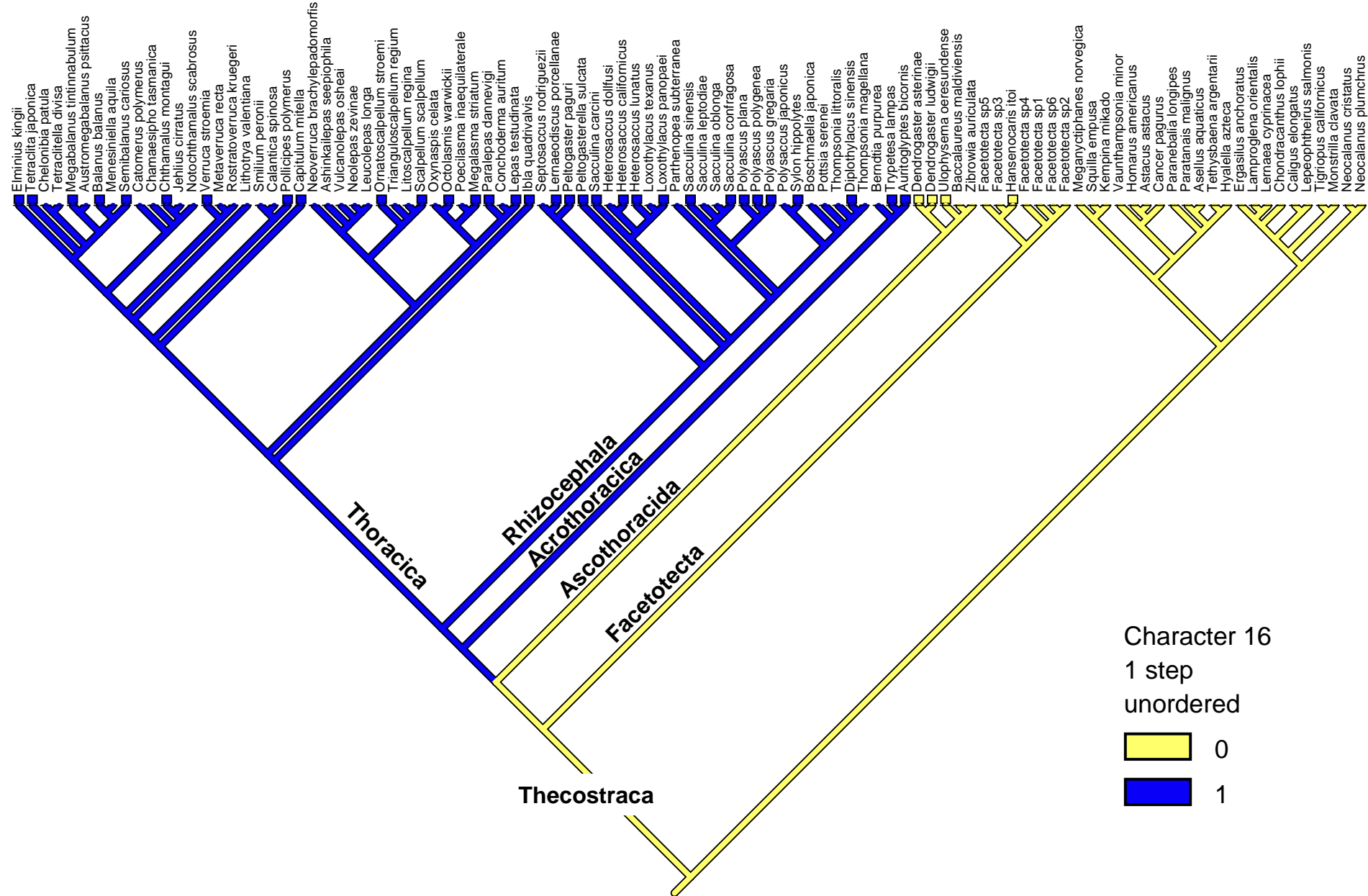
Character 14. *Lattice organ pair 1 (Lo1) large terminal pore position:* (0) posterior; (1) anterior.



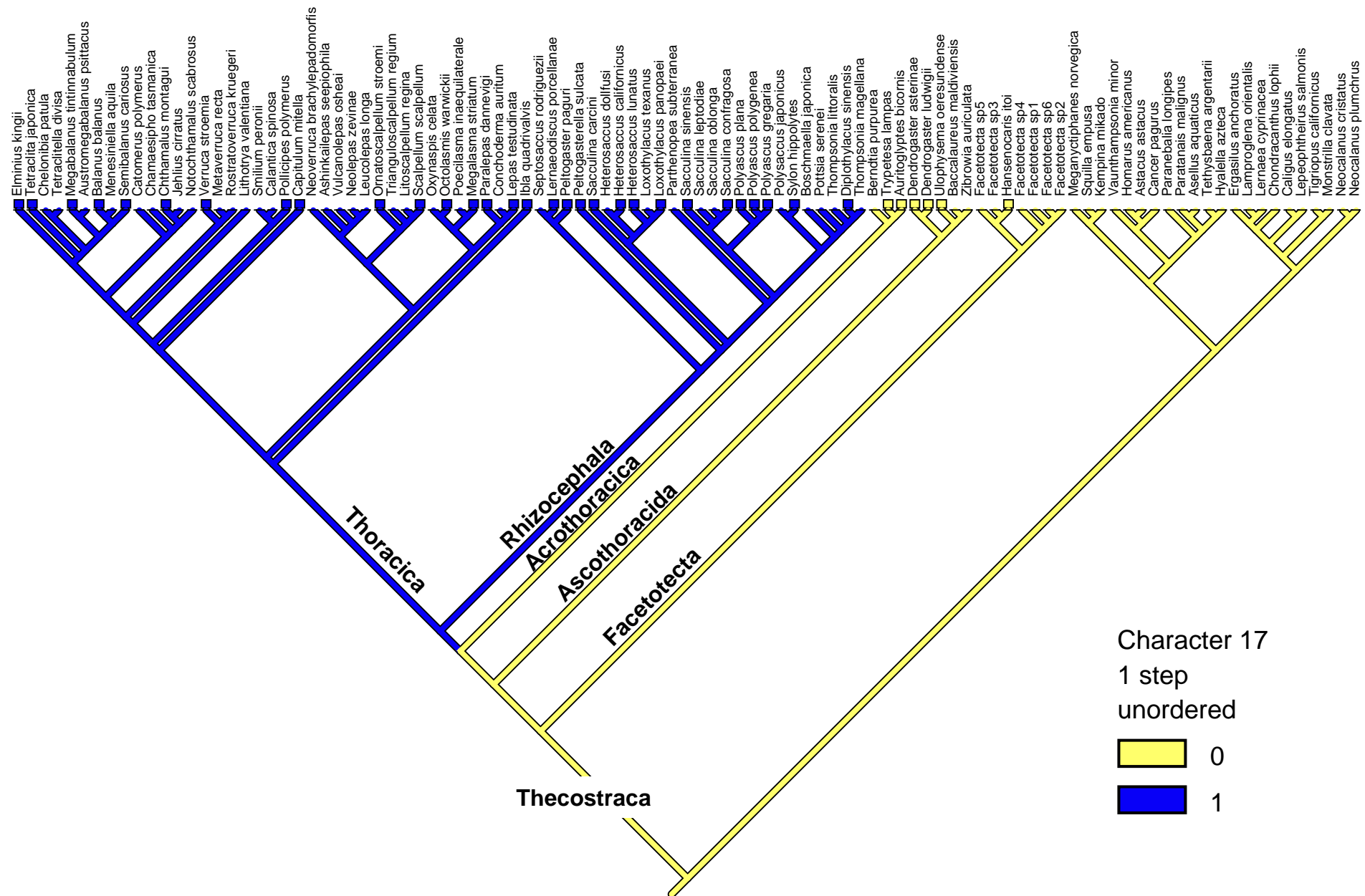
Character 15. Lattice organ pair 2 (Lo2) large terminal pore position: (0) posterior; (1) anterior.



Character 16. *Lattice organs with pores (large or small):* (0) absent; (1) present.



Character 17. Lattice organs with large deep pores (pits): (0) absent; (1) present.



Character 18. Frontal filaments in cypridoid larva: (0) absent; (1) present.

Elminius kingii
 Terracita japonica
 Chelonibia patula
 Terracitella divisa
 Megabalanus tintinnabulum
 Austromegabalanus psittacus
 Balanus balanus
 Menesimella aquila
 Semibalanus cariosus
 Chamerus polymerus
 Chamaespho tasmanica
 Chthamalus montagu
 Jehlius cirratus
 Notochthamalus scabrosus
 Verruca stroemia
 Metaverruca recta
 Rostatroverruca kruegeri
 Lithotrya valentiana
 Smilium peronii
 Calamita spinosa
 Pollicipes polymerus
 Capitulum miteila
 Neoverruca brachylepadomorhis
 Ashinkailepas seephiophila
 Vulcanolepas osheai
 Neolepas zeviniae
 Leucolepas longa
 Ornatoscalpellum stroemi
 Trianguloscalpellum regium
 Litoscalpellum regina
 Scalpellum scalpellum
 Orynaspis celata
 Octolasmis warwickii
 Poecilasma inaequilaterale
 Megalasma striatum
 Paralepas dannevirgi
 Conchoderma auritum
 Lepas testudinata
 Ibia quadrivalvis
 Septosaccus rodriguezii
 Lernaediscus porcellanae
 Peltogaster paguri
 Peltogasterella sulcata
 Sacculina carcini
 Heterosaccus dolifusi
 Heterosaccus californicus
 Heterosaccus lunatus
 Loxothylacus texanus
 Loxothylacus panopaei
 Parthenopea subterranea
 Sacculina sinensis
 Sacculina leptodidae
 Sacculina oblonga
 Sacculina confragosa
 Polyascus plana
 Polyascus polygenea
 Polyascus gregaria
 Polyascus japonicus
 Sydon hippolytes
 Boschmaella japonica
 Pottisia serenei
 Thompsonia littoralis
 Diplothylacus sinensis
 Thompsonia magellana
 Thompsonia purpurea
 Berndia purpurea
 Trypetesa lampas
 Auritogyptes bicornis
 Dendrogaster asterinae
 Dendrogaster ludwigii
 Ulophysema oeresundense
 Baccalareus maldiviensis
 Zibrowia auriculata
 Facetotecta sp5
 Facetotecta sp3
 Facetotecta sp4
 Facetotecta sp1
 Facetotecta sp6
 Facetotecta sp2
 Meganyctiphanes norvegica
 Squilla empusa
 Kempina mikado
 Vaunthamponia minor
 Homarus americanus
 Astacus astacus
 Cancer pagurus
 Paranebata longipes
 Paratanais malignus
 Aseilus aquaticus
 Tethysbaena argentarii
 Hyaella azteca
 Ergasilus anchoratus
 Lamproglana orientalis
 Lernaea cyprinacea
 Chondracanthus lophii
 Caligus elongatus
 Lepeophtheirus salmonis
 Tigrionus californicus
 Monstrilla clavata
 Neocalanus cristatus
 Neocalanus plumchrus

Thoracica

Rhizocephala
Acrothoracica

Ascothoracida

Facetotecta

Thecostraca

Character 18

2 steps

unordered



0

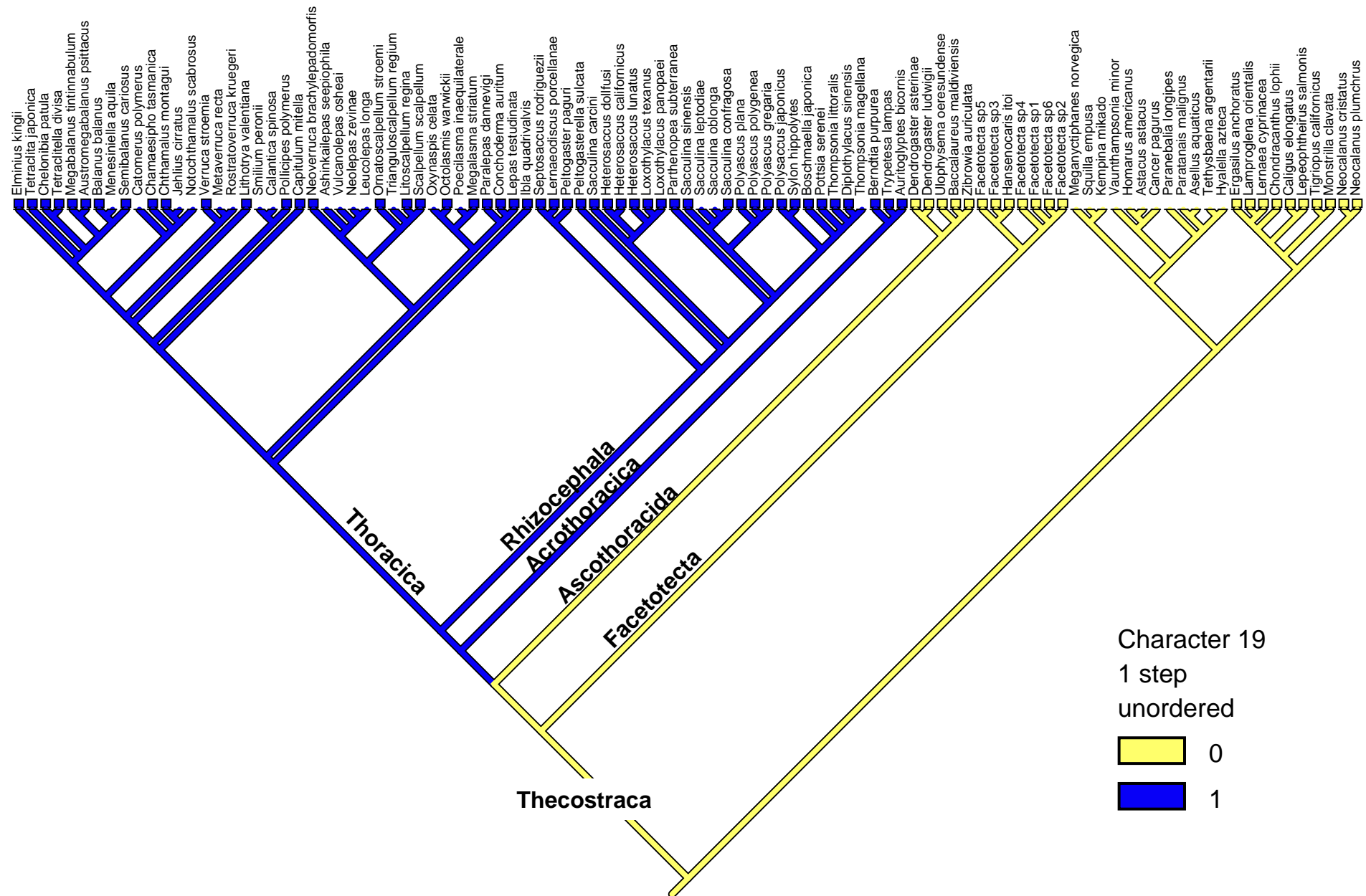


1



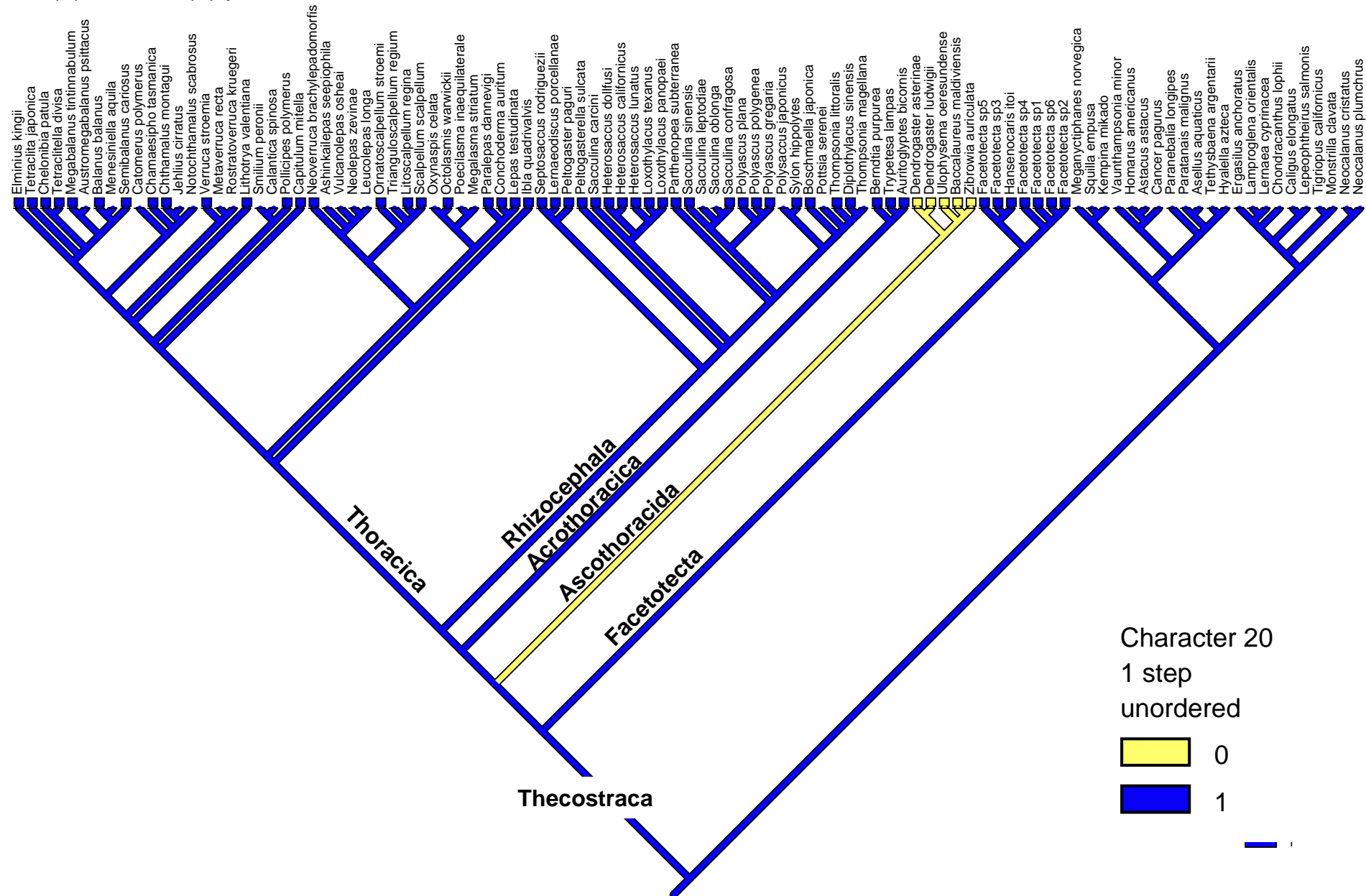
equivocal

Character 19. Basal part of antennule consisting of a Y-rod U-plate system: (0) absent; (1) present.

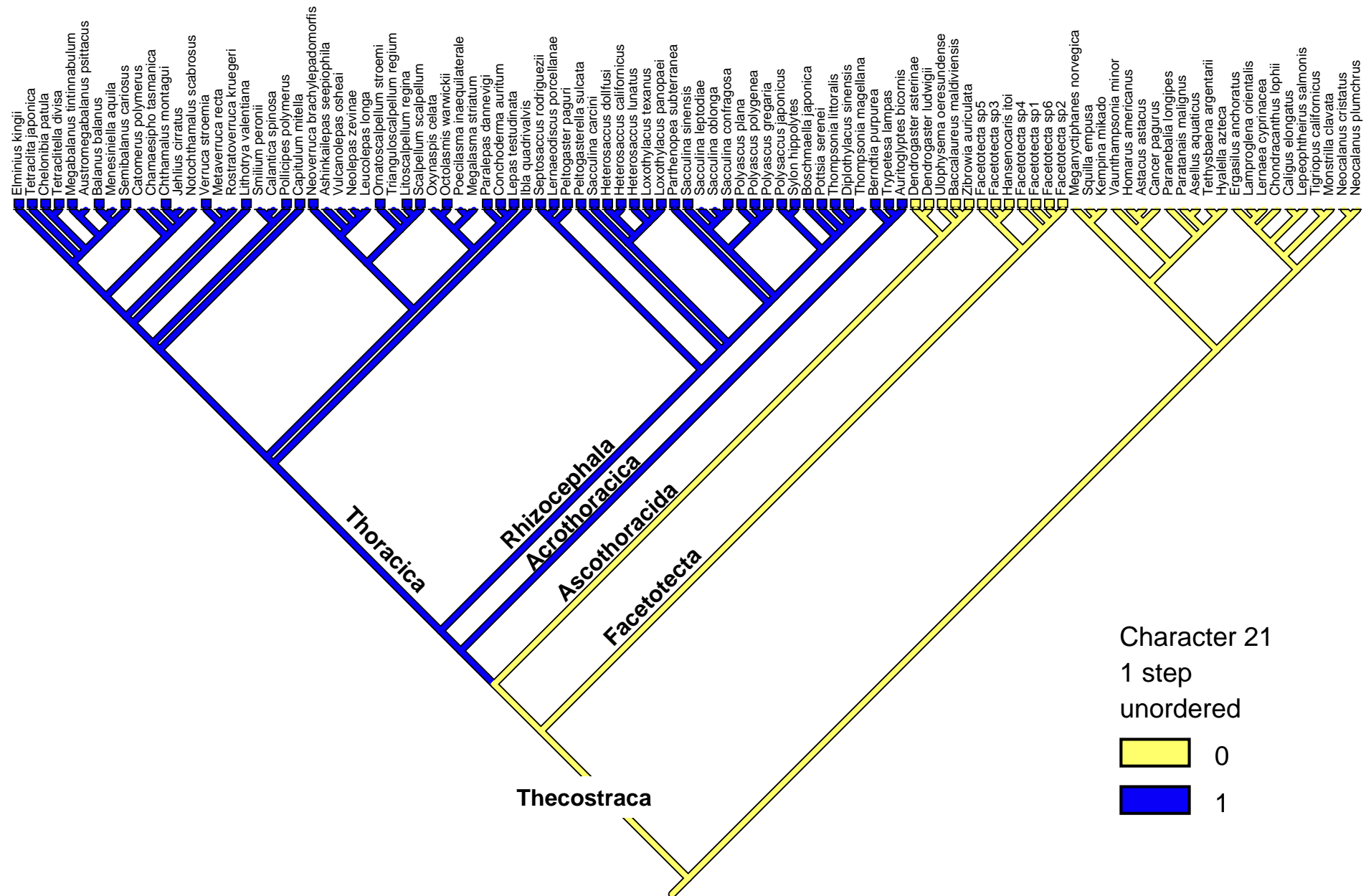


Character 20. A hand, hoof or bell shaped antennular segment (with disc or claw for attachment):

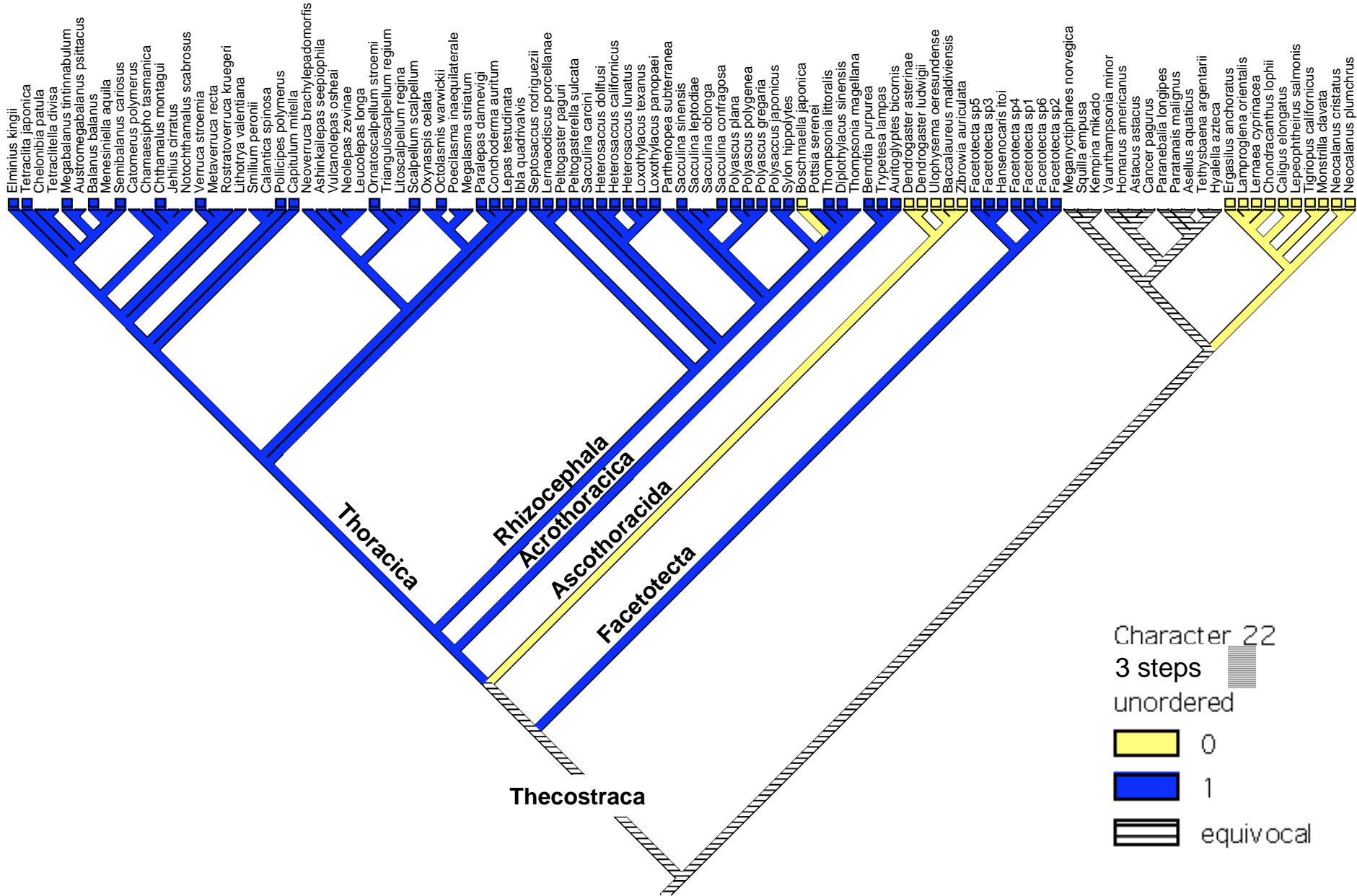
(0) absent; (1) present.



Character 21. Antennule with an attachment disc covered with cuticular villi: (0) absent; (1) present.



Character 22. *Distal element of antennule as a cylindrical, movable sensory “palp”*
 (from two segments or two fused segments): (0) absent; (1) present.



Character 23. Antennular sensory palp undivided (segments fused): (0) no; (1) yes.

Elminius kingii
 Tetractia japonica
 Chelonia patula
 Tetractella divisa
 Megabalanus tintinnabulum
 Austromegabalanus psittacus
 Balanus balanus
 Menesiniella aquila
 Semibalanus carosus
 Catomerus polymerus
 Chamaesipho tasmanica
 Chthamalus montagu
 Jehlius cirratus
 Notochthamalus scabrosus
 Verruca stroemia
 Metaverruca recta
 Rostrotoverruca kruegeri
 Lithotrya valentiana
 Smilium peronii
 Calantica spinosa
 Pollicipes polymerus
 Capitulum mitella
 Neoverrucia brachylepdomorphis
 Ashinkallepas seeiophila
 Vulcanolepas osheai
 Neolepas zeynae
 Leoclepas longa
 Ornatoscalpeillum stroemi
 Trianguloscalpeillum regium
 Litoscalpeillum regina
 Scalpeillum scalpeillum
 Oxynaspis celata
 Oculaspis warwickii
 Poeclasma inaequilaterale
 Megalasma striatum
 Paralepas dannevigii
 Conchoderma auritum
 Lepas testudinata
 Ibia quadrivalvis
 Seposaccus rodriguezii
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 Peitogaster paguri
 Peitogasterella sulcata
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 Sacculina leptodidae
 Sacculina oblonga
 Sacculina contragosa
 Polyascus plana
 Polyascus polygenea
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 Polyascus japonicus
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 Boschmaella japonica
 Pottsia serenei
 Thompsonia littoralis
 Diplothyacus sinensis
 Thompsonia magellana
 Bermdia purpurea
 Trypetesa lampas
 Auritoglyptes bicornis
 Dendrogaster asterinae
 Dendrogaster ludwigii
 Ulophysema oeresundense
 Baccalareus maldiviensis
 Zibrowia auriculata
 Facetotecta sp5
 Facetotecta sp3
 Hansenocaris itoi
 Facetotecta sp4
 Facetotecta sp1
 Facetotecta sp6
 Facetotecta sp2
 Meganyctiphanes norvegica
 Squilla empusa
 Kempina mikado
 Vauithamptonia minor
 Homarus americanus
 Astacus astacus
 Cancer pagurus
 Paranebaila longipes
 Paratanais malignus
 Asellus aquaticus
 Tethysbaena argentarii
 Hyalella azteca
 Ergasilus anchoratus
 Lamproglana orientalis
 Lernaean cyprinacea
 Chondracanthus lophii
 Caligus elongatus
 Lepeophtheirus salmonis
 Tigriopus californicus
 Monstrilla clavata
 Neocalanus cristatus
 Neocalanus plumchtrus

Thoracica

Rhizocephala
 Acrothoracica

Ascothoracida
 Facetotecta

Thecostraca

Character 23

1 step

unordered



0

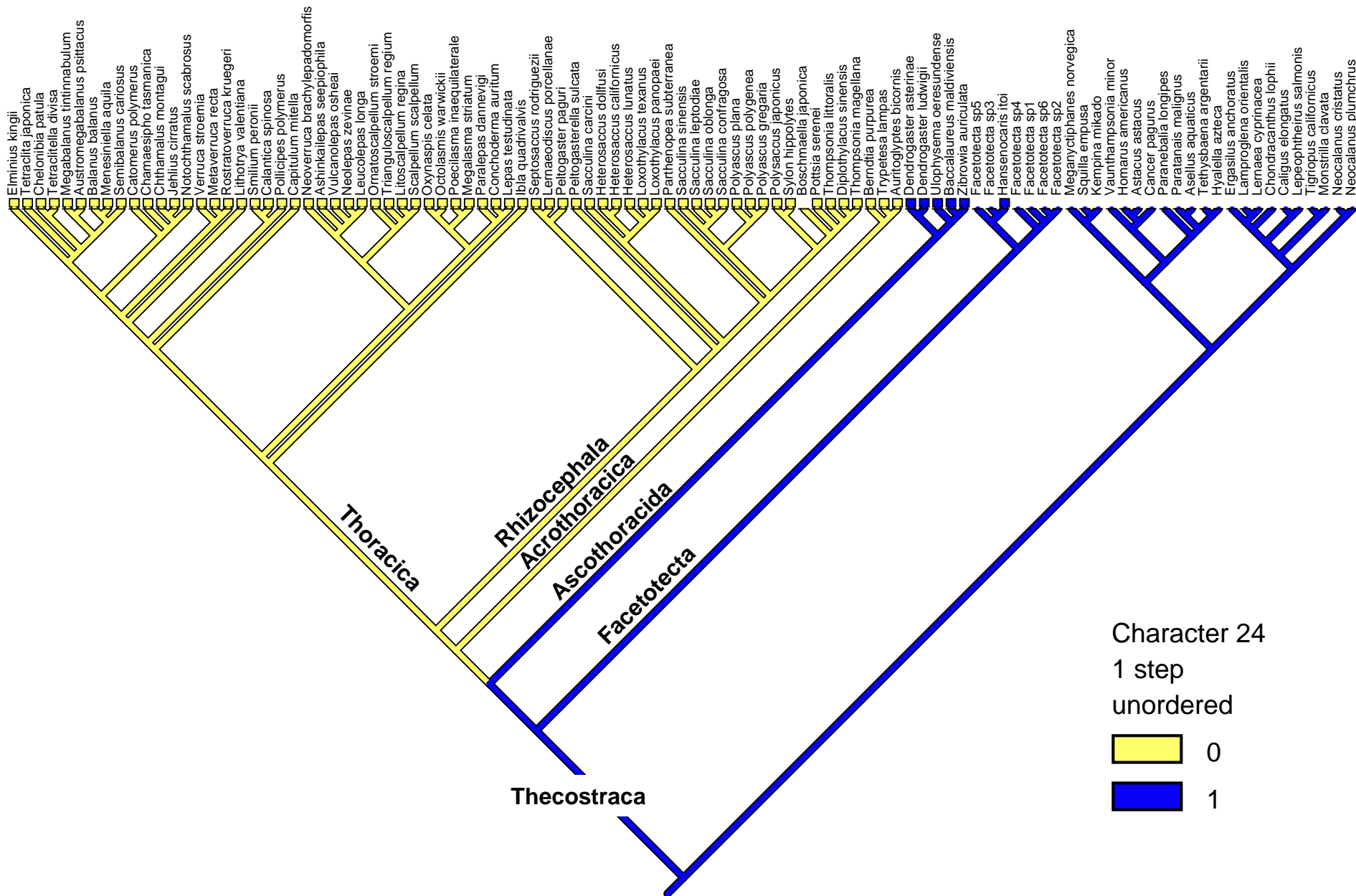


1

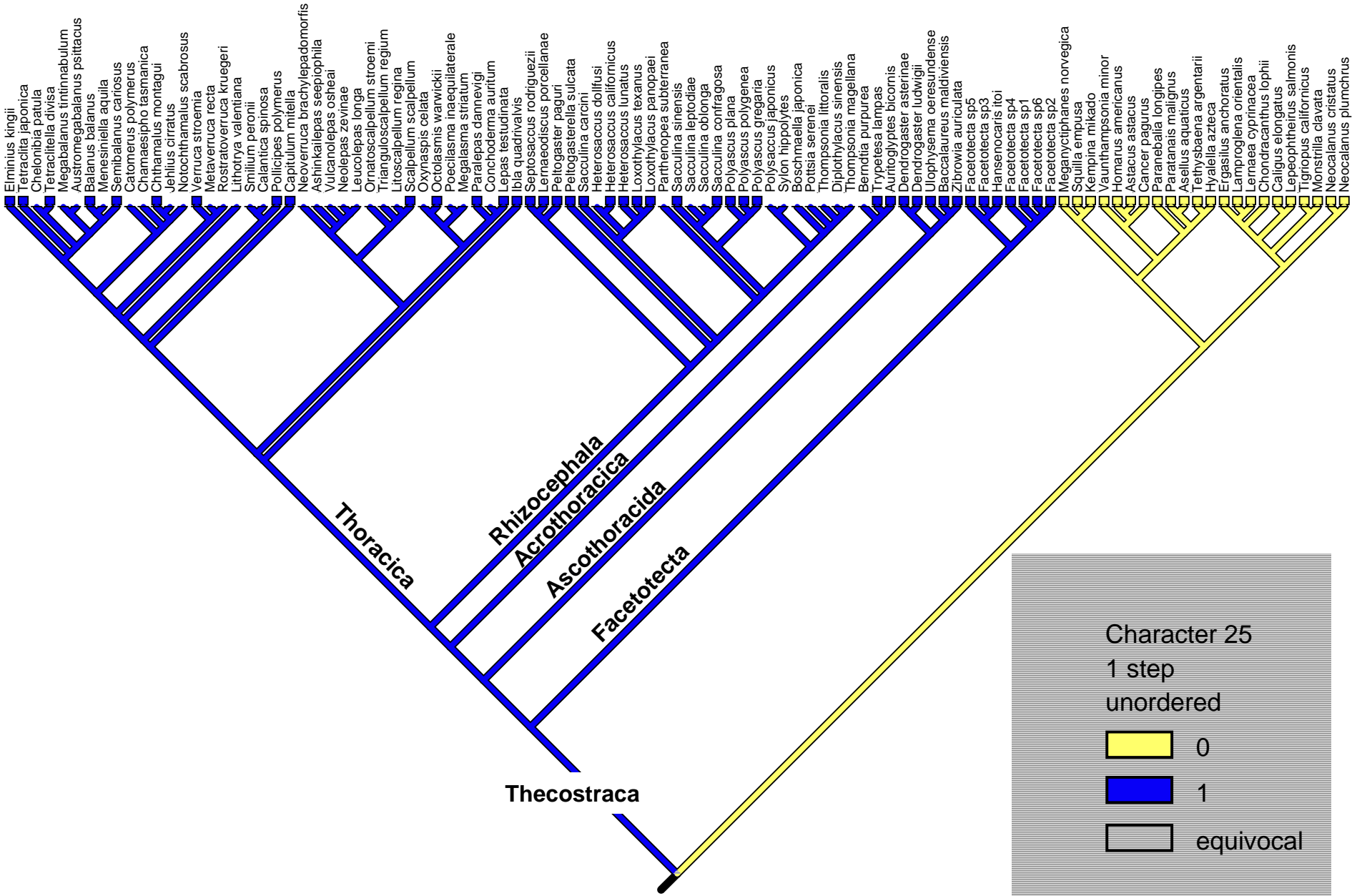


equivocal

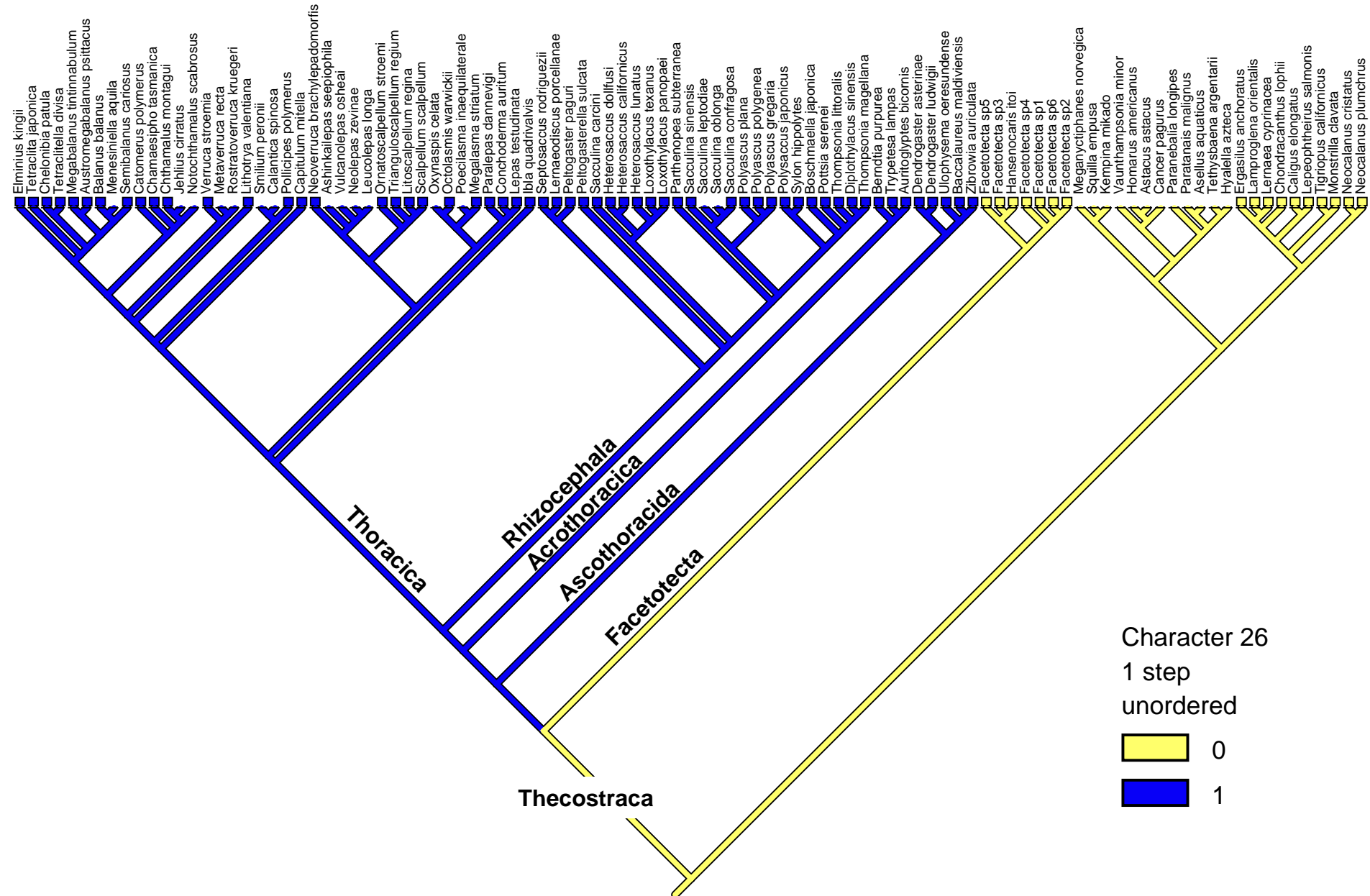
Character 24. Antennule with (motile) distal claw: (0) absent; (1) present.



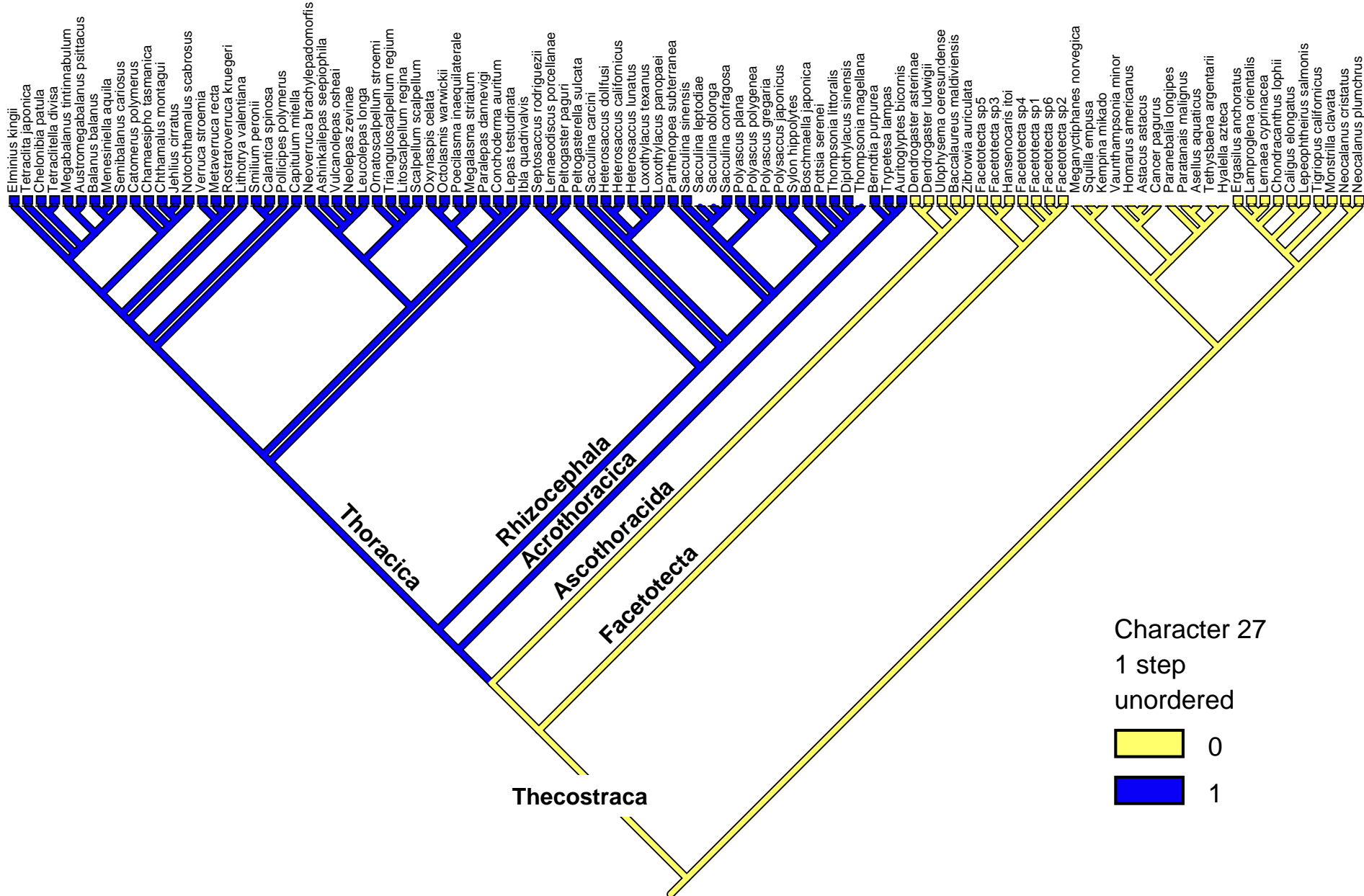
Character 25. Aesthetascs: (0) on almost every antennular segment; (1) only one or two aesthetascs.



Character 26. *Distal antennular musculature:* (0) complex; (1) simple.

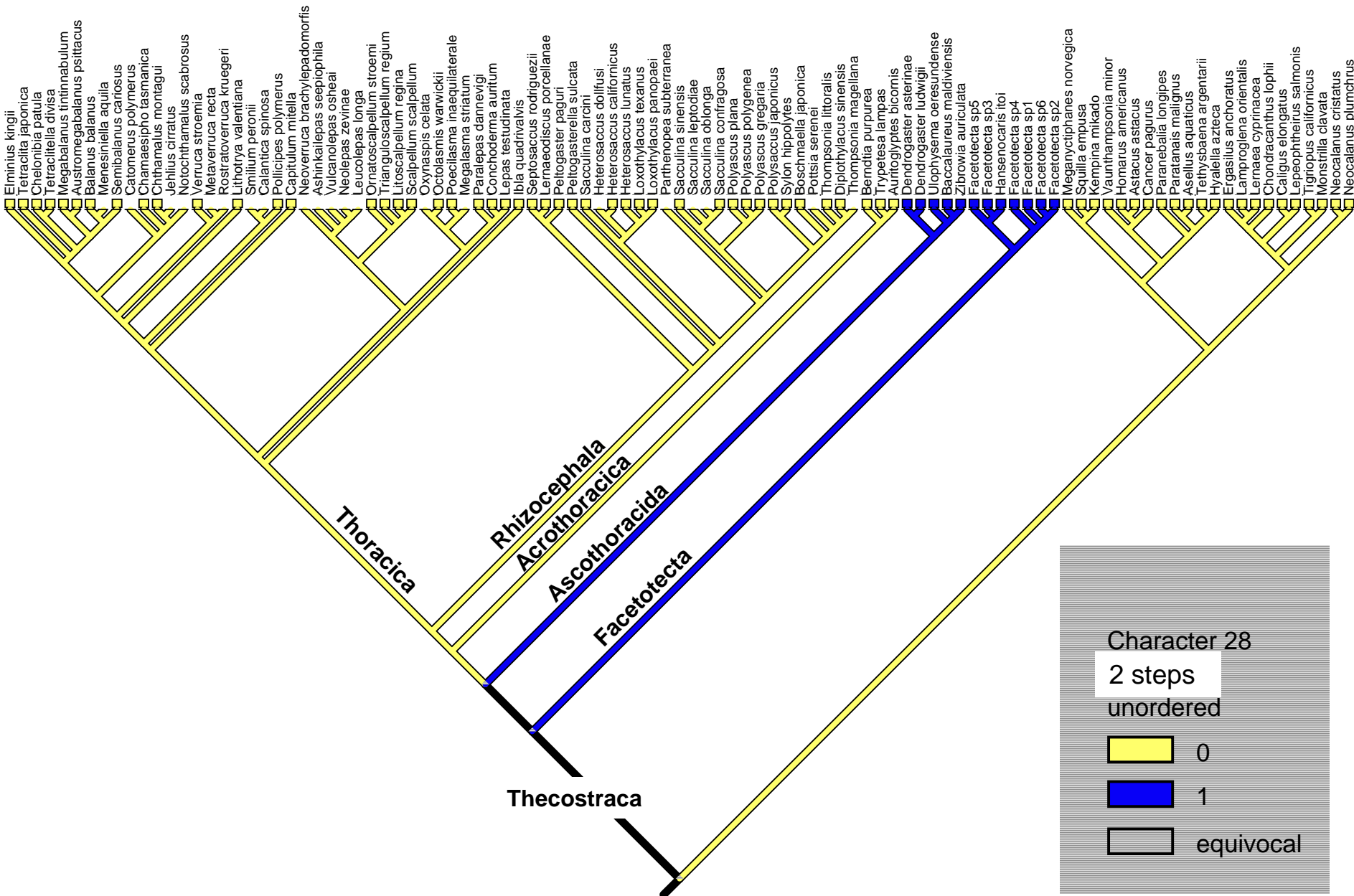


Character 27. Multicellular cement gland exiting on antennule: (0) absent; (1) present.

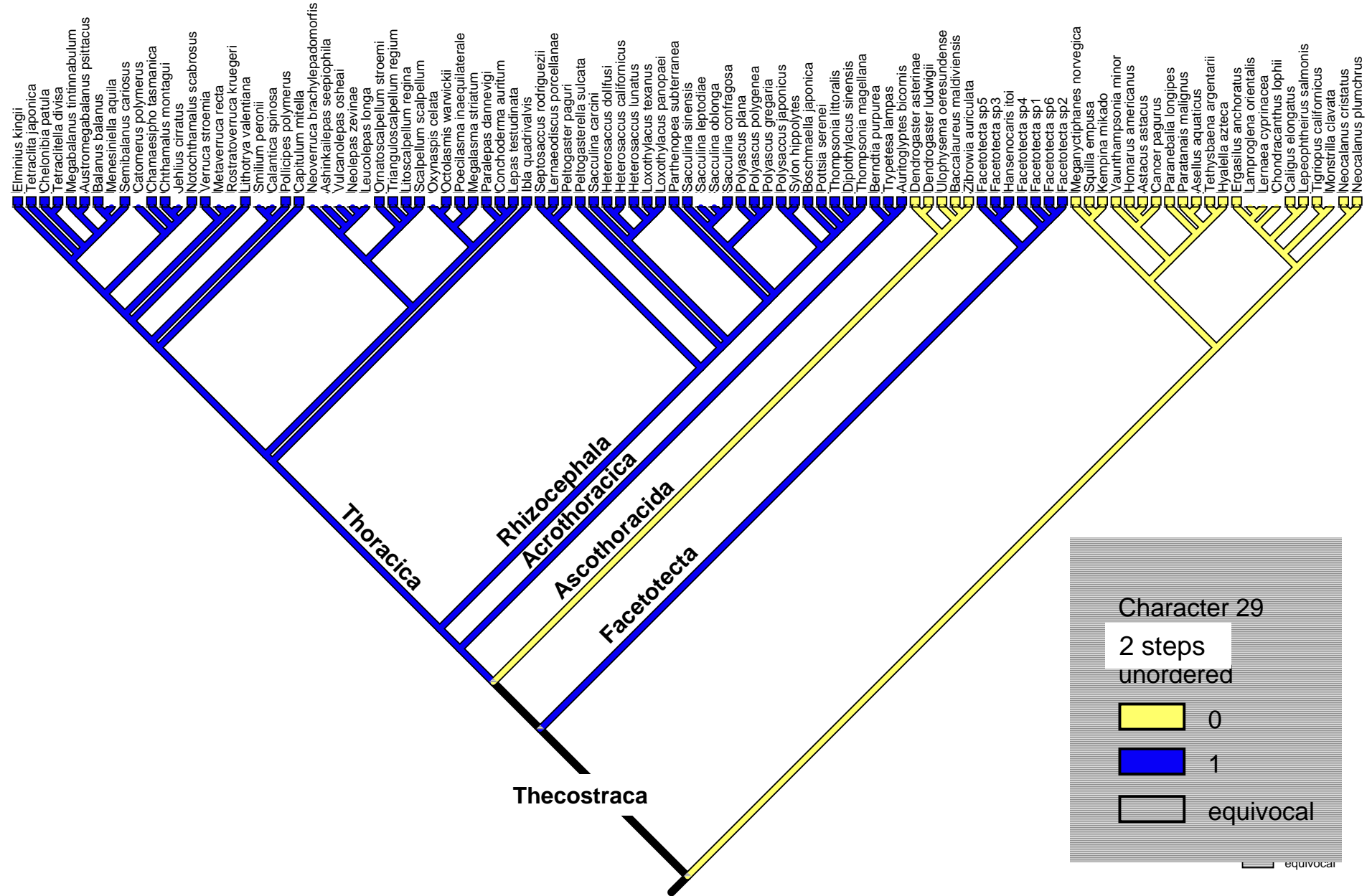


Character 28. Filamentary tuft-like cephalic sensory appendage in post-naupliar stage:

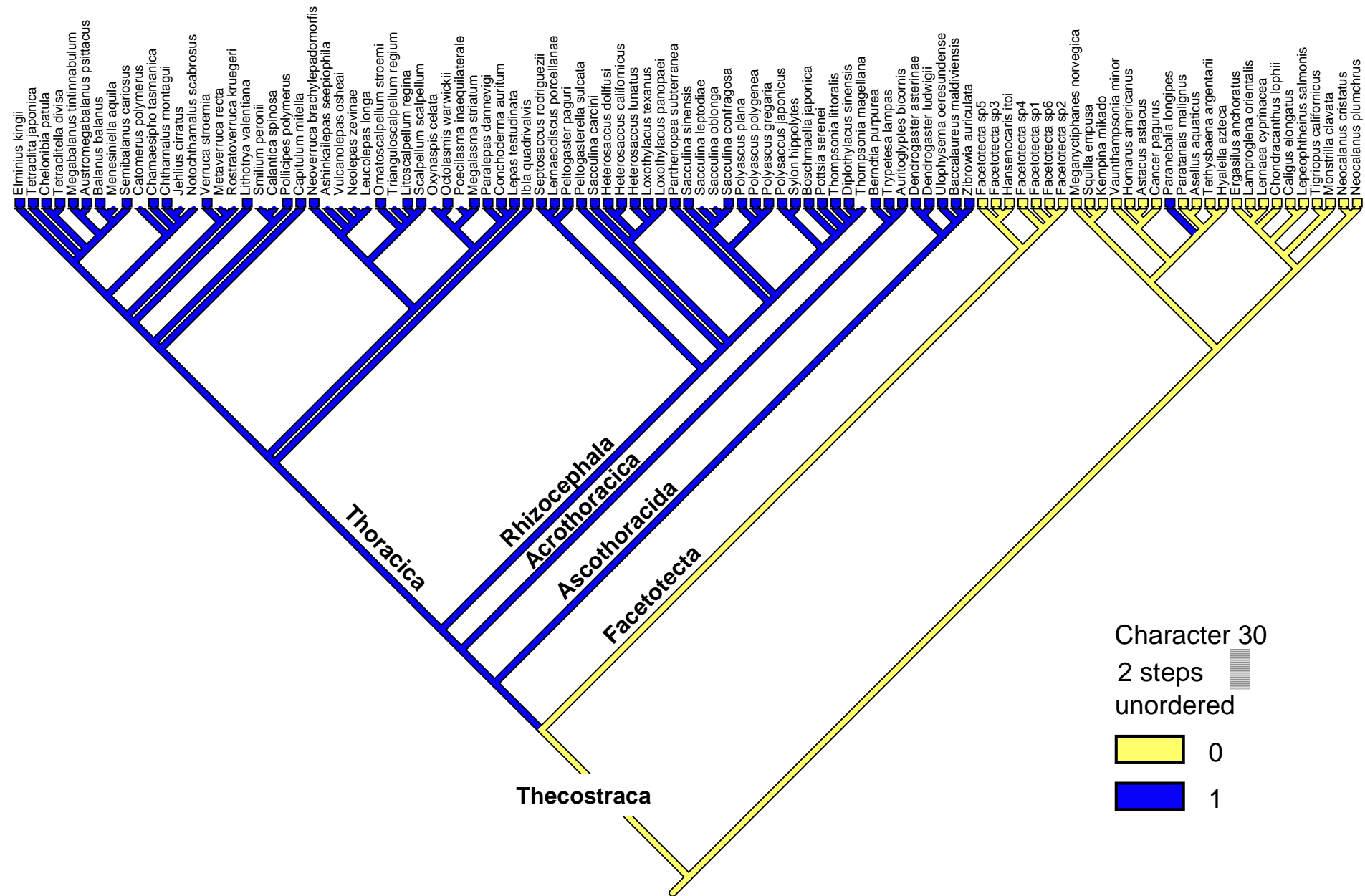
(0) absent; (1) present.



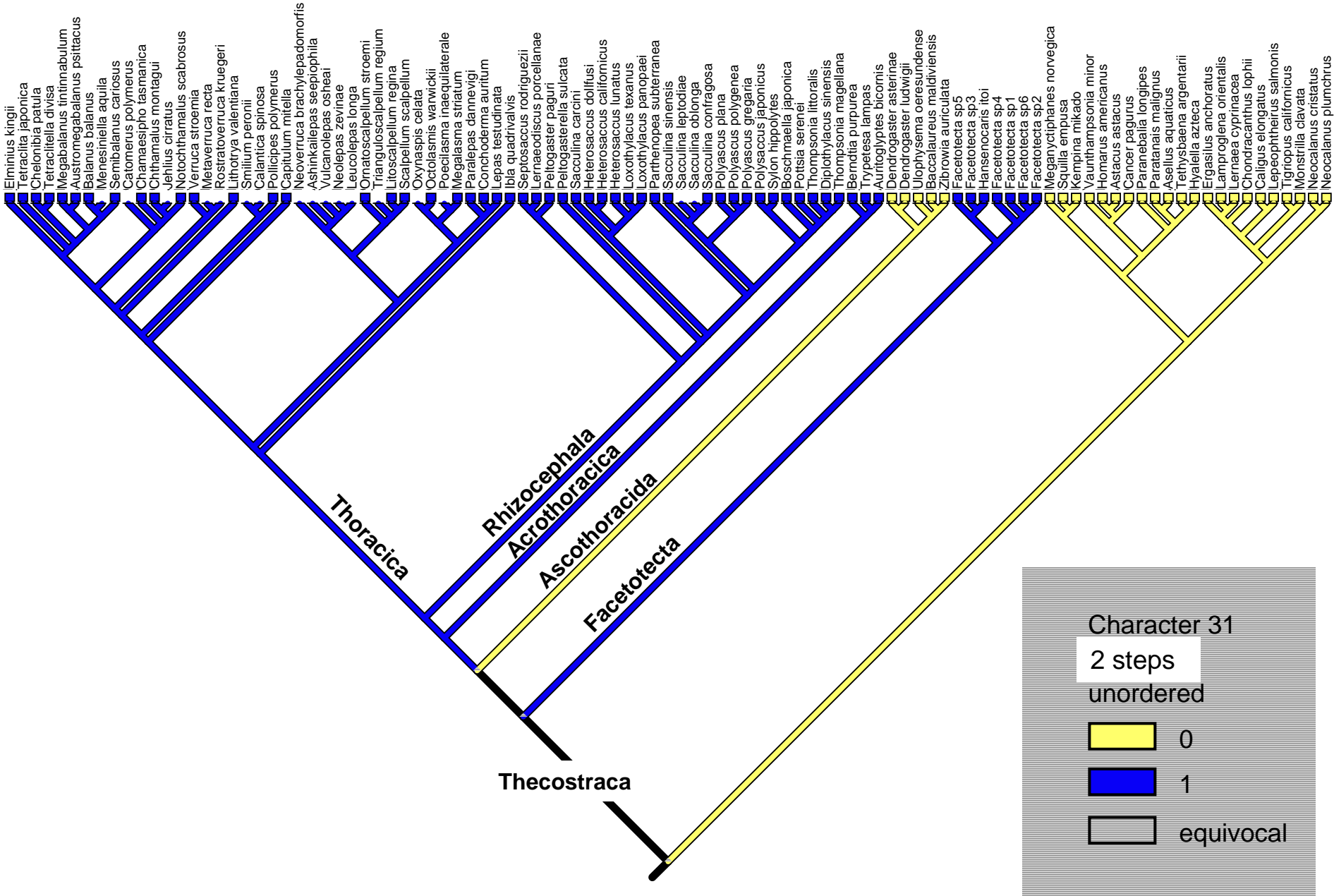
Character 29. Mouthparts and gut. (0) retained after metanauplius;
 (1) lost or reduced in cypridoid stage, but can reappear.



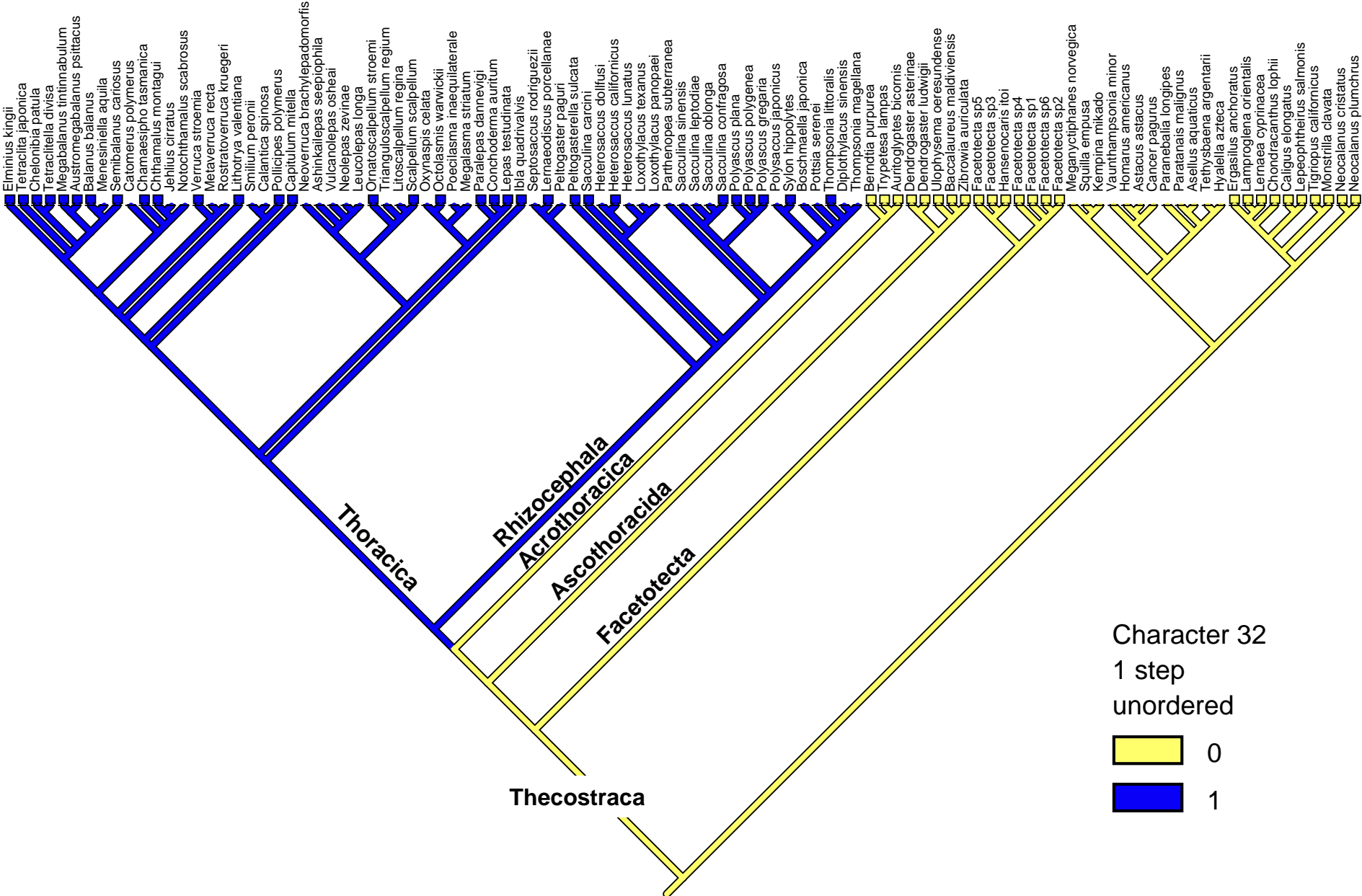
Character 30. *Postoral adductor muscle (for any post-naupliar stage):* (0) absent; (1) present.



Character 31. General condition of thoracopodal musculature: (0) well developed; (1) poorly developed.

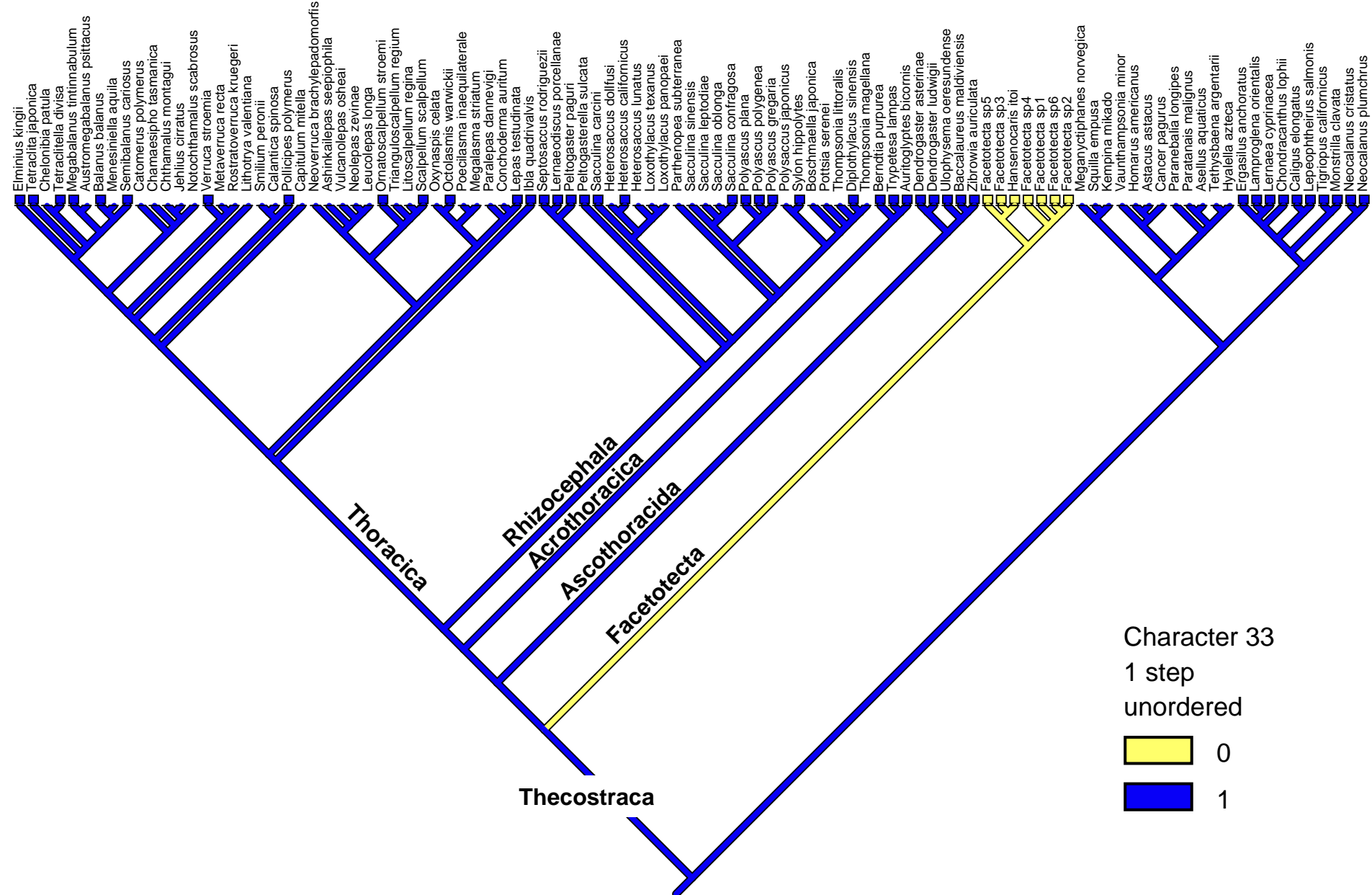


Character 32. *Fusion of the two basal segments of endopods in post-naupliar thoracopods 2 and following:* (0) absent; (1) present.

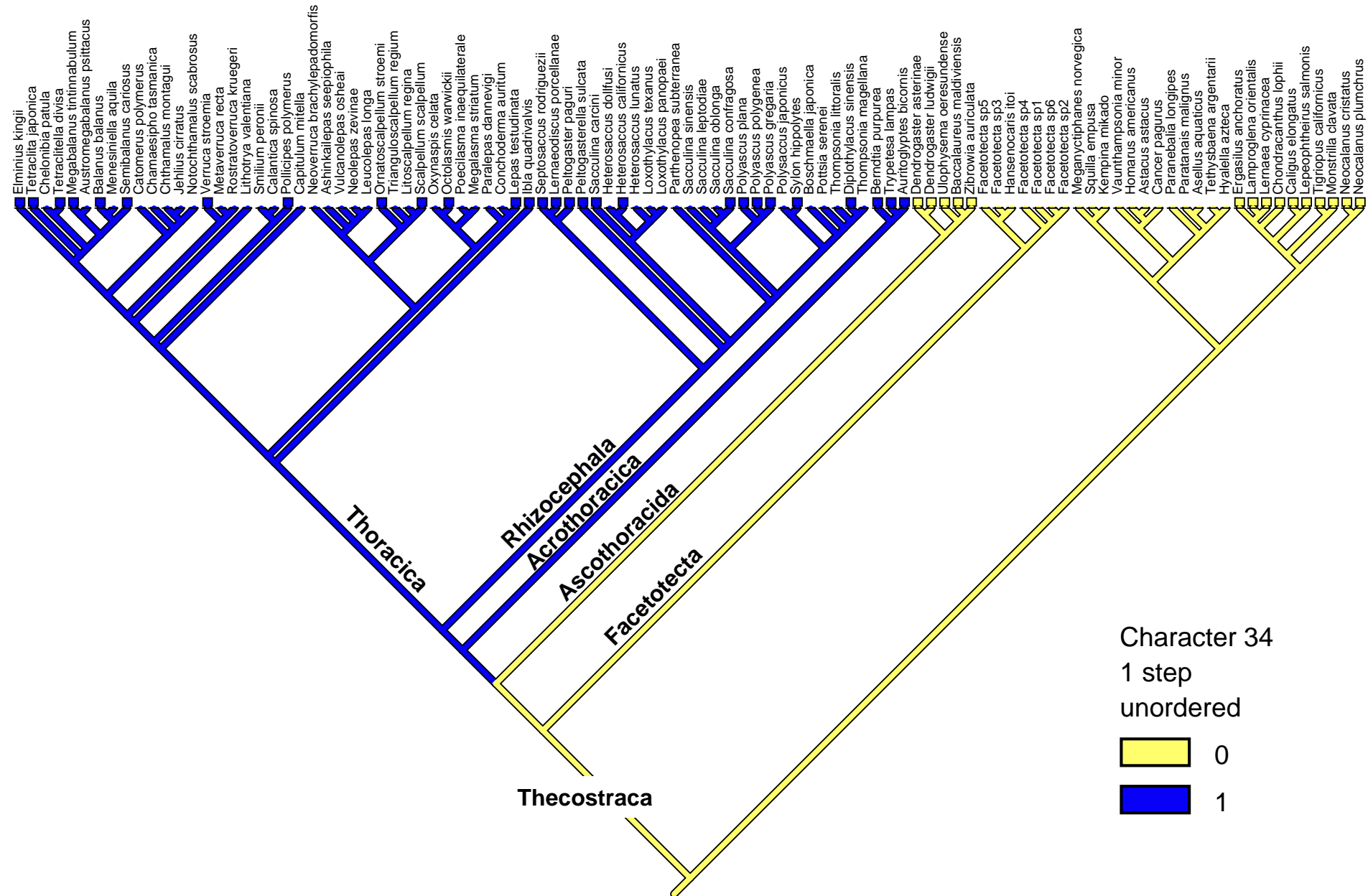


Character 33. Seta on first exopodal segment of thoracopods in post-naupliar instars:

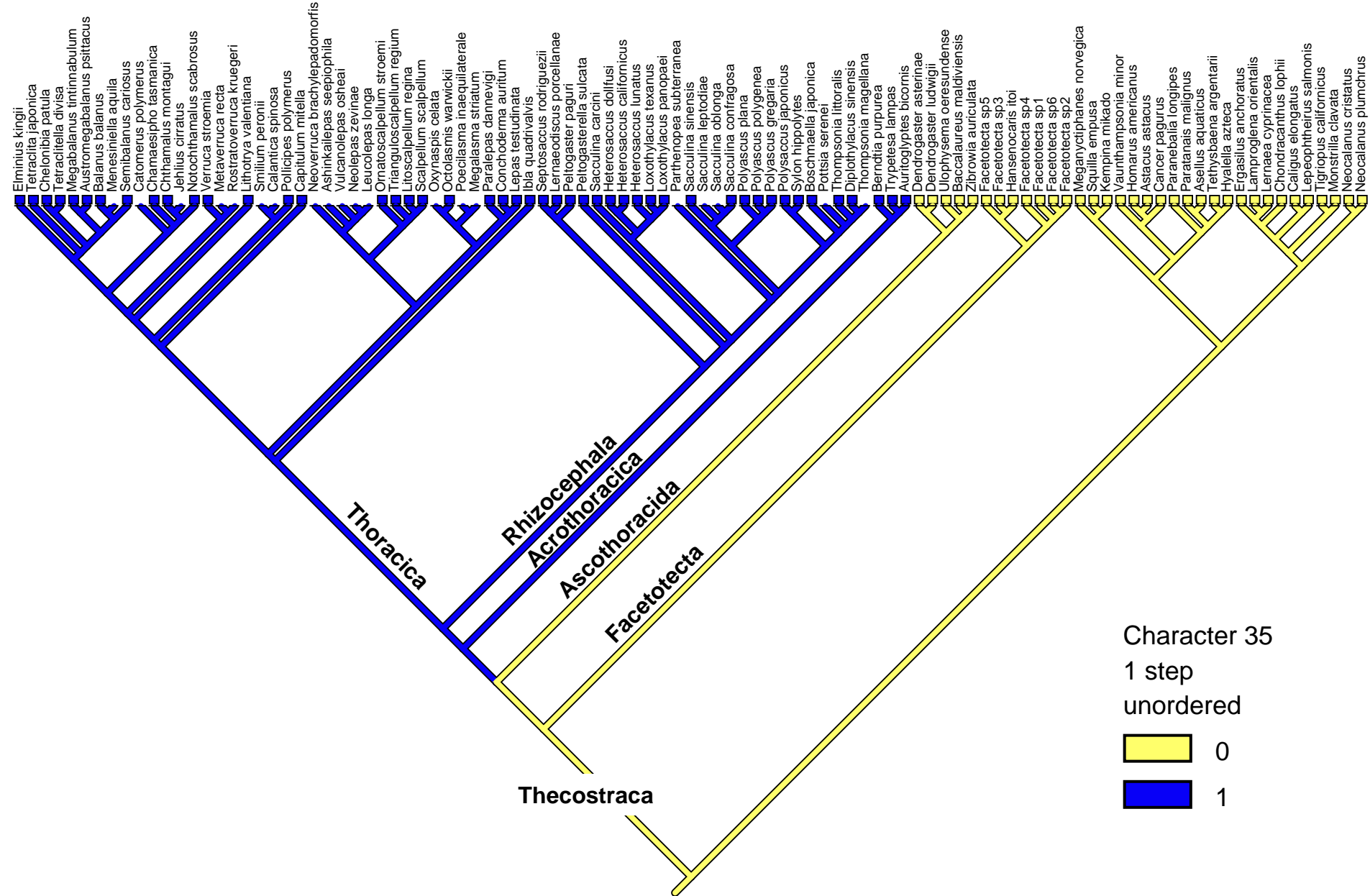
(0) absent; (1) present.



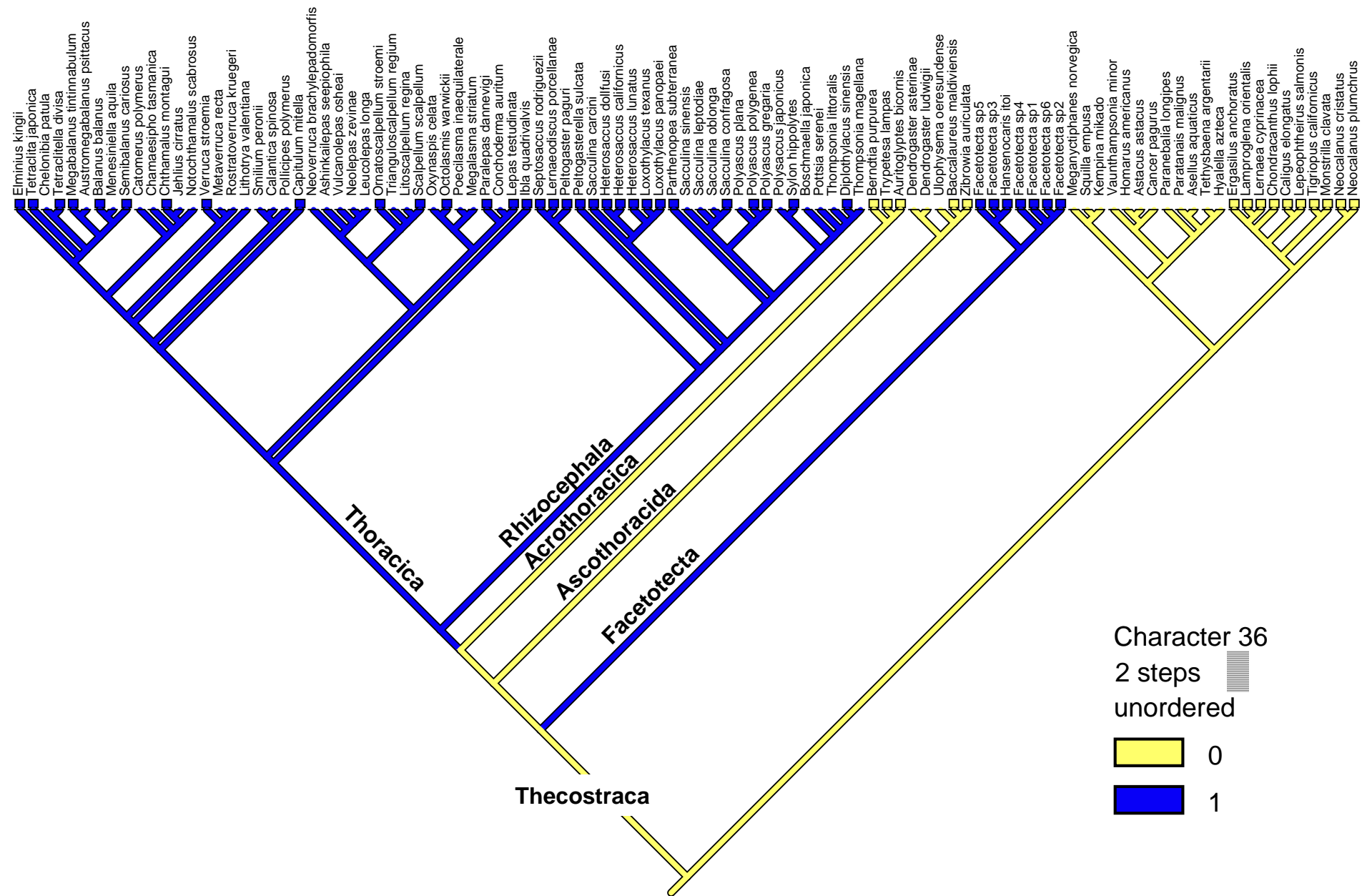
Character 34. *Single seta on first exopodal segment of thoracopods in post-naupliar instars is a serrated grooming seta: (0) no; (1) yes.*



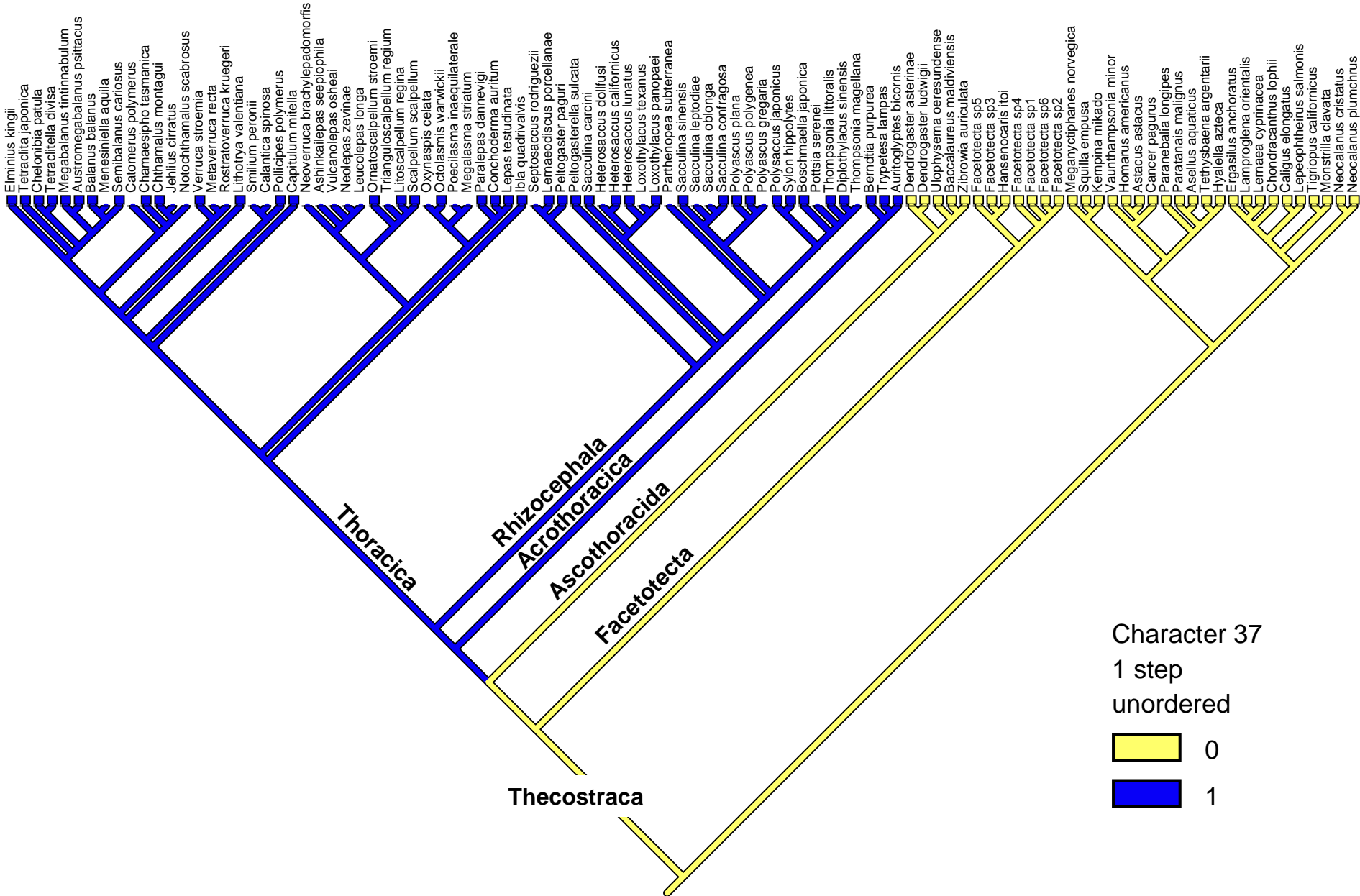
Character 35. Abdominal development; excluding telson: (0) well developed; (1) rudimentary or absent.



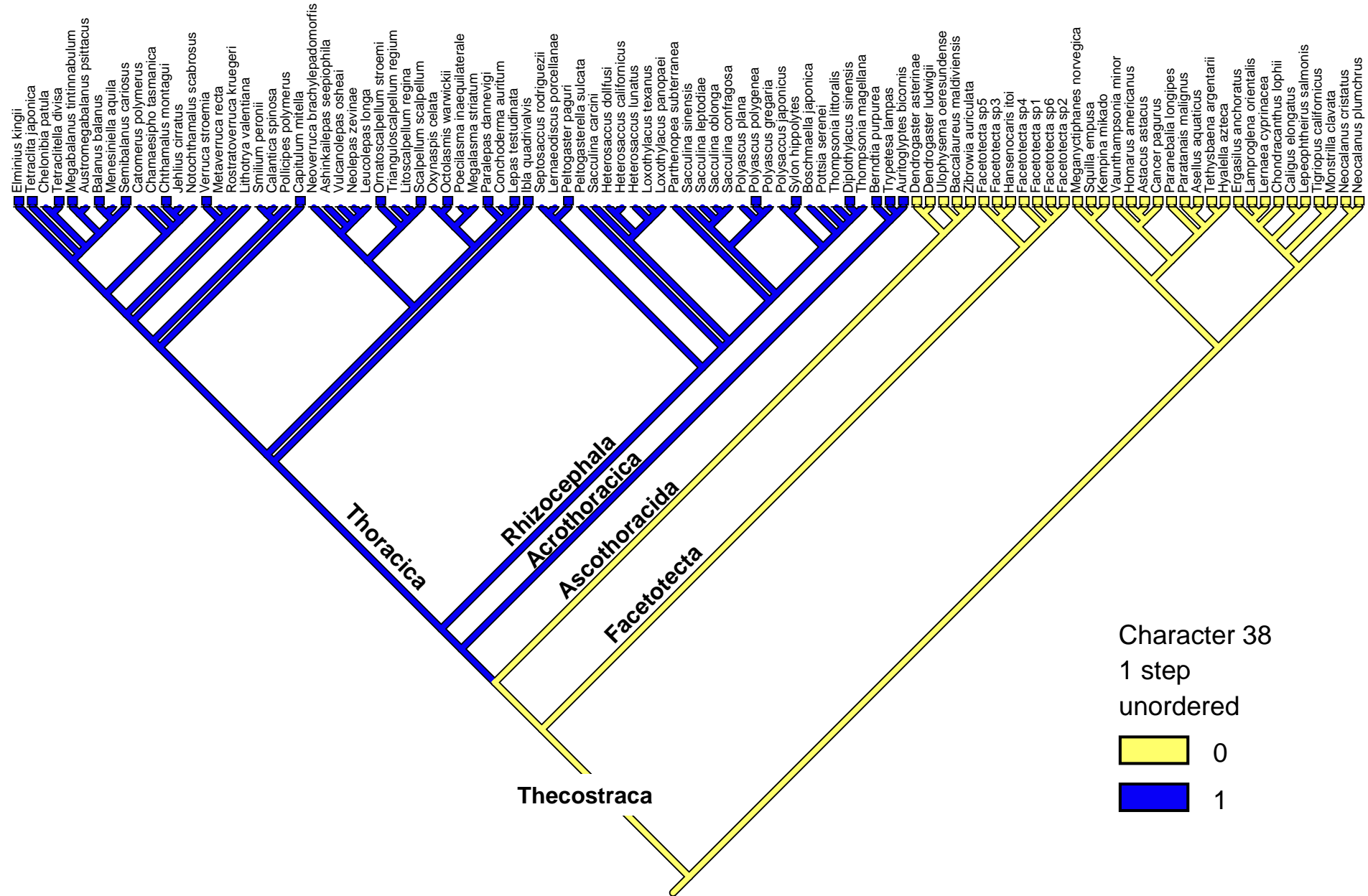
Character 36. Abdominal segment number, excluding telson: (0) four; (1) less than four.



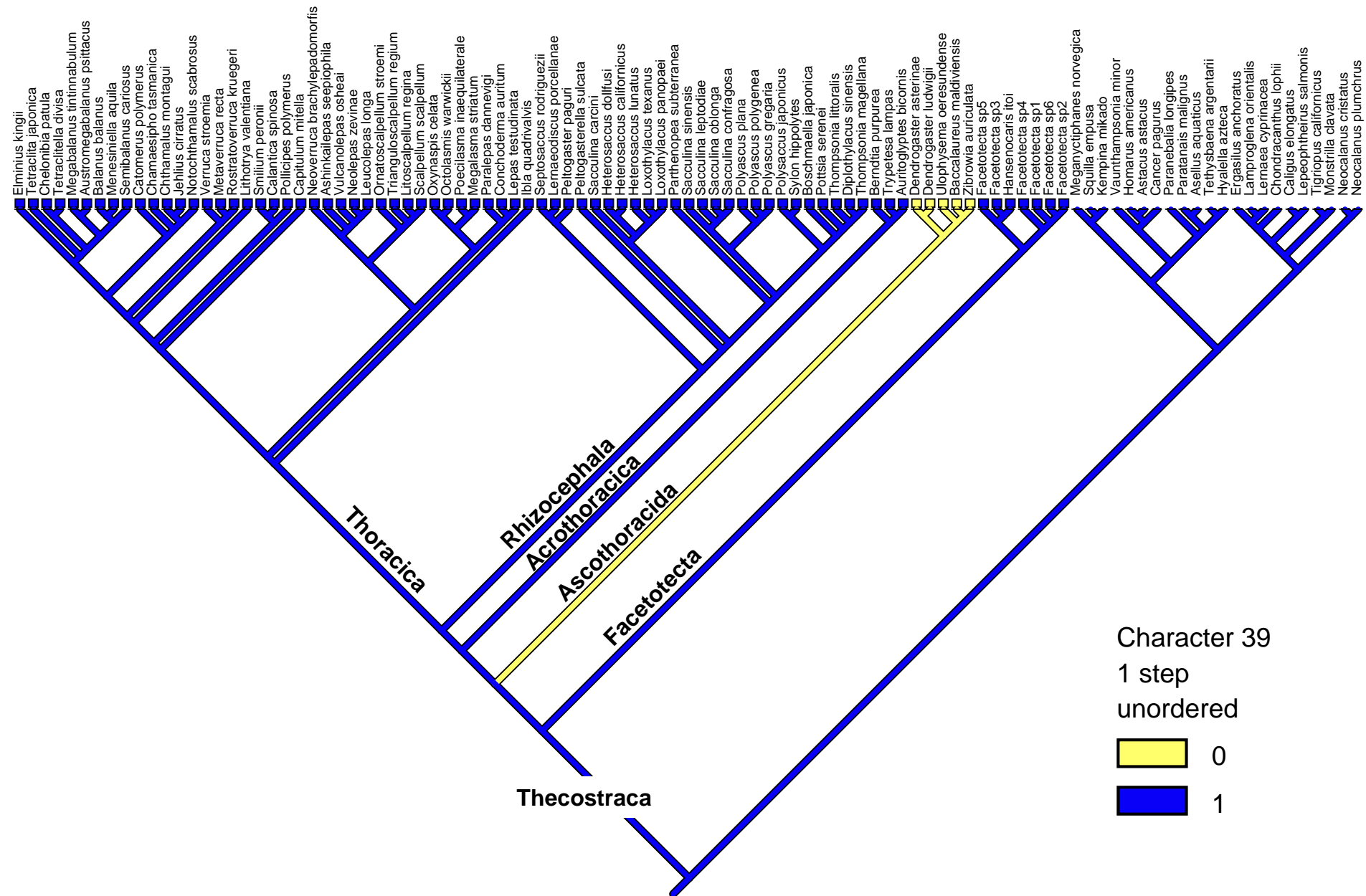
Character 37. *Telson-abdomen development relative to thorax:* (1) not pronouncedly narrower and not set off from thorax; (2) always distinct but narrower and set off from thorax.



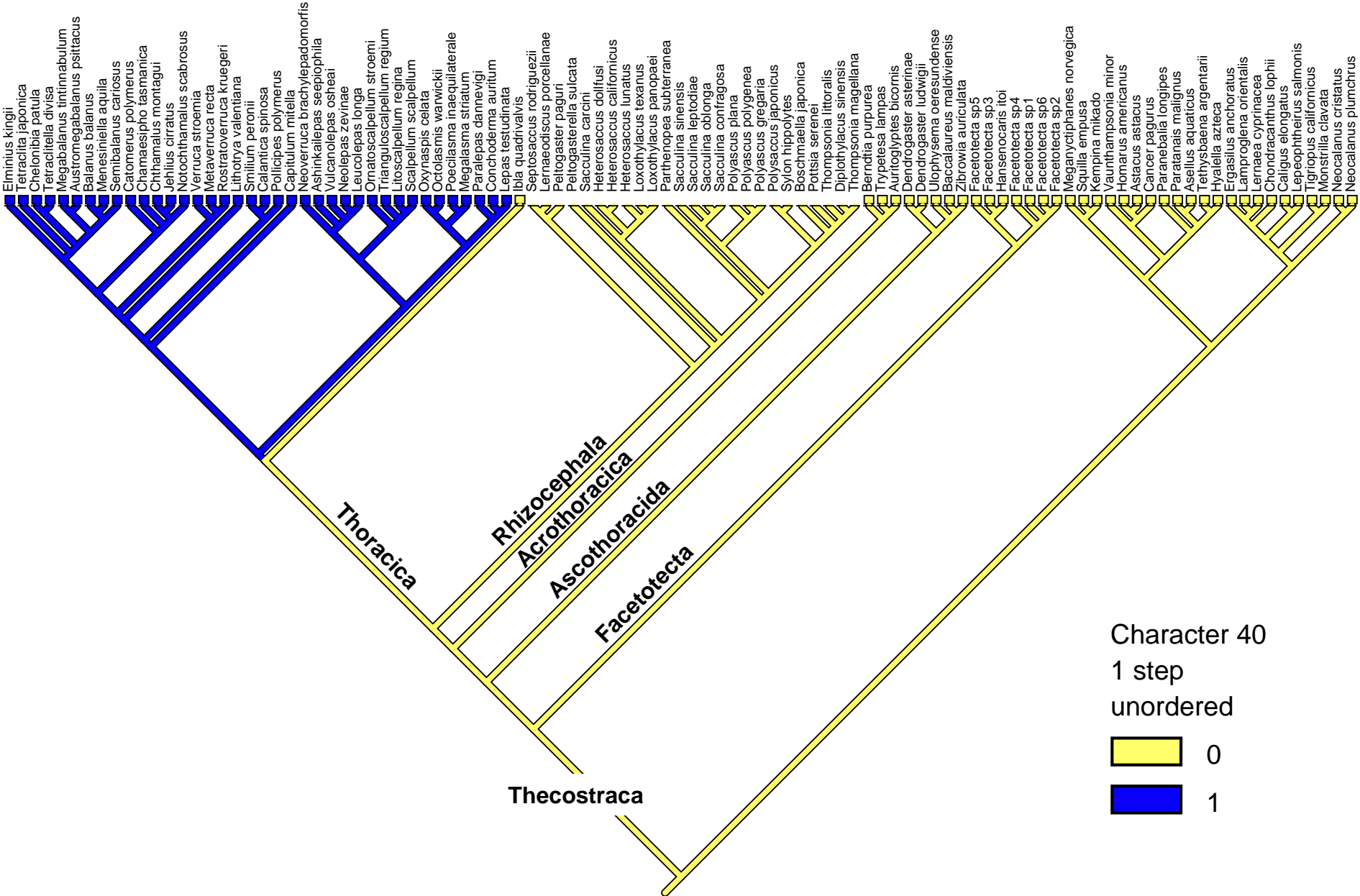
Character 38. *Telson cleft:* (0) absent; (1) distinct, shallow to almost reaching the base.



Character 39. *Profound metamorphosis after cypridoid stage:* (0) absent; (1) present.



Character 40. *Preoral adductor muscle in post-cypridoid stage:* (0) absent; (1) present.



Character 41. *Primordial shell plate in first attached instar.* (0) no; (1) yes.

