

## Systematic paleontology

Begin the systematic paleontology section with a paragraph identifying museum/collection names and acronyms. Include definitions for abbreviations or special nomenclature for morphological terms or concepts that pertain specifically to the subject matter.

Examples of both required and optional subheadings for the **Systematic paleontology** section are provided below. The order of subheadings should follow the examples given below. Please use the subheading in the order and by name as presented in this document. Additional subheadings can be used in **Systematic paleontology** section as needed, but they should not replace the categories supplied here and should be placed after the standard headings provided here and prior to the *Remarks* subheading.

The Journal of Paleontology employs Linnéan nomenclature with designated ranks. The International Code of Zoological Nomenclature and the International Code of Nomenclature for algae, fungi, and plants (ICN) must be adhered to. Follow standard practice in those fossils if it deviates from these rankings, such as with “tribe.” Phylogenetic groups determined via cladistic analysis can be used to inform supra-specific concepts but do not replace the Linnéan hierarchy.

For the various forms of open nomenclature follow Bengtson (1988), *Palaeontology* 31:223–227. It is usually better to use “sp. indet.” (species indeterminate) rather than overly derived identifications such as “n. sp. A” (new species A).

Provide a taxonomic list for each organism beginning with at least the Family level, although completeness of higher taxonomic levels is encouraged. Include the family name and date of publication (separated by a comma) for each. Include each bibliographic entry in the **References** section. Insert one blank line before the list.

Class Trilobita Walch, 1771  
Order Ptychopariida Swinnerton, 1915  
Suborder Ptychopariina Richter, 1932  
Superfamily Ptychoparioidea Matthew, 1887  
Family Ptychopariidae Matthew, 1887

*Remarks.*—A remarks section can be inserted at any level for higher taxonomic names as needed (e.g., for Family). Follow with one blank line and continue the systematic paleontology list.

Genus *Newgenusname* new genus  
<Example for a NEW genus>  
<one blank line above any genus name that does contain genus-level content>  
<Genus name preceded by "Genus" and followed by "new genus">  
<Abbreviate "new genus" to "n. gen." after first use>  
<Do not include a synonymy list for generic concepts.>  
<Sequence of headings: *Type species* – *Other species* – *Diagnosis* – *Etymology*  
– *Occurrence* – (any additional subheadings) – *Remarks*>

*Type species.*—[Required] Name with author and year of the type species, and whether it is “by original designation” or otherwise. Add “by monotypy” if the genus is monospecific. It is useful to include any other relevant information about the type of species, e.g. location, biostratigraphic and geographic occurrence. Including page, figure and plate numbers is optional.

*Other species.*—<Optional>A list of valid species for the genus can be provided, or include in *Remarks*.

*Diagnosis.*—<Required>In telegraphic style and in a standard sequence. Authors should ensure that diagnoses distinguish the taxon in question from all morphologically similar taxa. For this reason it is usually better if the diagnosis is differential in style. Remember that a genus is a concept, not a thing. With a monospecific genus, it is permissible to state “as for type species by monotypy”.

*Etymology.*—<Required>Explains the derivation or origin of the taxonomic name. Authors must check to see that the new genus name is not occupied within the Kingdom of their organism. A useful resource includes, but is not limited to: [ION](#) (Index to Organism Names).

*Occurrence.*—<Recommended>Describes the geologic and geographic position or range. Same as “distribution” in some journals.

*Any additional subheadings.*—<Optional>Minimize use of custom sections. Employ them when needed to organize and highlight complex issues.

*Remarks.*—<Required>Same as “Discussion” in some journals. An explanation of the generic concept and context should go into the *Remarks*.

#### Genus *Amecephalus* Walcott, 1924

<Example for a PREVIOUSLY DESCRIBED genus>  
<one blank line above any genus name that does contain genus-level content>  
<Genus name preceded by “Genus” followed by author and date>  
<Do not include a synonymy list for generic concepts.>  
<Sequence of headings: *Type species* – *Other species* –  
*Diagnosis* – *Occurrence* – (any additional subheadings) – *Remarks*>

The extent of the treatment may vary. Major revisions would likely include a *Diagnosis* section which indicates that the generic concept is modified. If it is emended from a preexisting one, explain that in the *Remarks*. It is not necessary to add qualifiers to the *Diagnosis* such as “Emended” in the subheading, rather, in *Remarks* include a literature citation, or “emended from [a reference].”

*Type species.*—<Required>*Ptychoparia piochensis* Walcott, 1866 from the Pioche Shale, southeastern Nevada, by original designation.

*Other species.*—<Optional>A list of valid species for the genus can be provided, or include in *Remarks*.

*Diagnosis.*—<Optional>See notes for new genus *Diagnosis*.

*Occurrence.*—<Optional>Describes the geologic and geographic position or range. Same as "Distribution" in some journals.

*Any additional subheadings.*—<Optional>Minimize use of custom subheadings. Employ them when needed to organize and highlight complex issues.

*Remarks.*—<Optional>Additional information relevant to the genus.

Suborder Asaphina Salter, 1864  
Superfamily Asaphacea Burmeister, 1843  
Family Ceratopygidae Linnarsson, 1869  
Genus Proceratopyge Wallerius, 1895  
<no blank line above genus name that does not carry genus-content below>

*Proceratopyge speciesname* new species  
Figures 1.1–1.4, 3  
<Example for a NEW species>  
<Species name followed by "new species">  
<Abbreviate to "n. sp." after first use>  
<Reference to Figures of the species in the paper>  
<A chronologic synonymy is required (if applicable), formatted as below>  
<Include each bibliographic entry in the **References** section.>  
<Sequence of headings: *Holotype* – *Diagnosis* – *Occurrence* – *Description*  
– *Etymology* – *Materials* – (any additional subheadings) – *Remarks*>

1952 *Strotocephalus arrojensis* Lochman in Cooper et al., p 157, pl. 21, figs. 29–34.  
2000 *Amecephalus arrojensis*; Sundberg and McCollum, p. 607, fig. 5.1–5.13.  
2003b *Amecephalus arrojensis*; Sundberg and McCollum, p. 966, pl. 3, fig. 12.

*Holotype.*—<Required>Holotype and other type designations, repository acronyms, and catalogue numbers, followed by brief information on the geologic age, stratigraphic unit, and geographic location of type locality.

*Diagnosis.*—<Required>In telegraphic style and in a standard sequence. A differential diagnosis is preferable to simply an abbreviated description. In the case of a monospecific genus do not put “as for genus” because the species is the tangible item: the characters of the species inform the generic concept. Do not cite figures.

*Occurrence.*—<Recommended>Describes briefly the geologic and geographic position or range. (Same as "Distribution" in some journals).

*Description.*—<Required>In telegraphic or prose style and in a standard sequence. This section may be split into separate headings for different anatomical parts if desired. Reference to figures is permitted to call out specific features, if useful.

*Etymology*.—<Required> Same as "Derivation of name" in some journals. Pay strict grammatical attention to the Latin (or Greek) endings. A useful guide is: Brown, R.W., 1954. [Composition of Scientific Words](#). Smithsonian Institution Press, 882 p.

*Materials*.—<Optional> List or description of all materials considered in the study.

*Any additional subheadings*.—<Optional> Minimize use of custom sections. Employ them only when needed to organize and highlight complex issues.

*Remarks*.—<Required> Same as "Discussion" in some journals. If necessary, additional categories and sections are best placed as third-level headings in the *Remarks* section.

*Kochiella maxeyi* Rasetti, 1951

Figure 7.1–7.23

<example for a PREVIOUSLY DESCRIBED species>

<Species name with author and year>

<Reference to Figures of the species in this paper>

<A chronologic synonymy is required (if applicable), formatted as below>

<Include each bibliographic entry in the **References** section.>

<Sequence of headings: *Holotype* – *Diagnosis* – *Occurrence* – *Description*  
– *Materials* – (any additional subheadings) – *Remarks*>

1951 *Kochiella? maxeyi* Rasetti, p. 228, pl. 13, figs. 5, 8.

?1951 *Kochiella?* cf. *K. maxeyi*; Rasetti, p. 229, pl. 13, fig. 9.

1957 *Kochiella? maxeyi*; Rasetti, p. 961, pl. 120, figs. 1–3.

1963 *Eiffelaspis maxeyi*; Chang, p. 479.

2002 *Kochiella maxeyi*; Sundberg and McCollum, p. 85, fig. 7.10.

*Holotype*.—<Required> Cranidium (USNM 116114) from the Mount Whyte Formation, southern Rocky Mountains, Canada (Rasetti, 1951, pl. 13, figs. 5–7).

*Diagnosis*.—<Optional> A differential diagnosis is preferable. Place rationale for an emended diagnosis in *Remarks*.

*Occurrence*.—<Optional> Describes the geologic and geographic position or range. Same as "Distribution" in some journals).

*Description*.—<Optional> See notes for new species description.

*Materials*.—<Optional> List or description of all specimens examined.

*Any additional subheadings*.—<Optional> Minimize use of custom sections. Employ them when needed to organize and highlight complex issues.

*Remarks*.—<Required> Additional information relevant to the species. Other subheadings can be used as needed. Avoid redundancy and unnecessary duplication of already

published information if no new data or interpretation is presented. If a diagnosis is emended, make that clear in the *Remarks*.