New rare Arthropods (Trilobites and Cyclids) from Carboniferous and Permian of Russia

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Large-scale studies of Carboniferous–Permian trilobites by Russian paleontologists were completed about 80 years ago. As a result, the systematic and stratigraphic distributions of the previously described taxa require revision in accordance with modern data. In addition, in recent decades, a fairly large number of new, not yet described fossil materials have accumulated.

The author conducted a revision of all localities of the trilobites of the Carboniferous and Permian of the former USSR. Most of localities received accurate geographic location and age in accordance with modern data, which allowed us to review the stratigraphic distribution of many species and some genera. So, e.g., the endemic genus *Anujaspis* (North-East of Russia), widely known in the literature, which was long considered as Artinskian, is actually not younger than the Bashkirian.


The other interesting group is Cyclida – enigmatic the Late Paleozoic–Mesozoic arthropods. Their taxonomic position is still open. Now 55 species and 17 genera have been described. Cyclids on the territory of Russia are extremely rare: until now only 6–7 forms from Carboniferous and Permian were known. Since 2016, the author has been searching for new material and revising all previously known cyclids of this territory.

In the process of research, the author established 2 new genera (*Skuinocyclus* and *Prolatcyclus*) and 2 new species: *Skuinocyclus juliae* Mychko & Alekseev, 2018 and *Prolatcyclus kindzadza* Mychko et. al., 2019. According to the results of the revision of previously known forms, it was found that *Cyclus spinosus* and *C. tuberosus* are synonyms and represent a new undescribed genus; *C. miloradovitchi* is a typical species for the new genus

Some researchers include cyclids in the subclass Branchiura along with modern parasitic carp lice. However, in the structure of cyclids there are features that contradict this: *Skuinocyclus juliae* has small lugs on the ventral side of the carapaces, which significantly complicated the ectoparasitic lifestyle. New taxa expand our knowledge of the biodiversity of this extinct animal group.

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