



Caddisflies from Chernovskie Kopi (Jurassic/Cretaceous of Transbaikalia)

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The Jurassic or Cretaceous insect fossil site Chernovskie Kopi (Siberia, Transbaikalia) has yielded a rich and diverse insect fossil assemblage dominated by caddisflies (Order Trichoptera). Imaginal caddisflies from this site belong to the families Phryganeidae, Dysoneuridae, Philorheithridae, and Calamoceratidae, and the larval cases represent mainly the formal genus *Folindusia*. The family Philorheithridae is recorded as fossil for the first time. A combination of unusual ecology related to volcanic environments with unexpected abundance of the so-called prophetic larval forms (those occurring for short time intervals well before the time of their normal appearance) resulted in high endemism of the adult assemblage as well as in occurrence of the cases characteristic of much younger caddis case assemblages.

Jurassic-Cretaceous continental deposits are widespread in Siberia, and specifically in the Transbaikal region, where many fossil insect sites are known and have been well studied. Most of them are of lacustrine origin and are dominated by freshwater insect remains. Their taxonomic analysis made it possible to identify 5 well characterized Jurassic assemblages of insects and the same number of the Late Cretaceous ones. The Transbaikal region is a unique, although rather small (at the global scale) area with a high diversity of complexes of insect fossils. A probable explanation of this phenomenon may be Mesozoic volcanism shaped the landscape, forming features such as volcanic depressions and mountainous relief (Sinitshenkova & Sukatsheva 2005).

A reliable geological age of the included deposits is hard to define for some assemblages. It is either Late Jurassic or Early Cretaceous according to different authors. The same problems pertain to the insect assemblage in the Chernovskie Kopi; it was termed Siphangarus—Trianguliperla (Plecoptera) complex by Sinitshenkova (1998), consistent with the paleontological practice of naming the complex by 1 or 2 of its predominant taxa (Zherikhin 1978).

The Chernovskie Kopi site is located 18 km southwest of Chita city (Fig. 1) within the territory of a coalfield. It has yielded diverse remains of plants, insects, numerous freshwater invertebrates, fishes and even crocodiles in lacustrine deposits of unclear geological age, although the deposits are dated unambiguously in the range of the Upper Jurassic to the Lower Cretaceous. Traces of plant-insect interactions as galls, oviposition scars and trace feedings were frequently found there as well. The whole material originates from siltstone and mudstone of the Doronino formation. The geological data permit us to identify the age of the formation as Late Malm to Early Neocomian. The insect-containing sediments in Chernovskie Kopi are brick-red in color owing to high temperatures accompanying the intrusion of igneous rock into the sedimentary suite of underlying layers (Fig. 2). The insects are represented by prints on fine-grained burnt argillites. Organic matter is not preserved under such conditions; therefore, the prints do not differ in color from the inclosing material. This may hinder the study of insect remains, although they are sometimes well preserved so that fine morphological details are distinctly recognized.