



New data on Carboniferous crinoids from the Moscow Region*

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Abstract

Despite more than 150 years of study of crinoids from the Moscow Region there are numerous undescribed taxa from well-known localities as well as others from poorly known localities. In recent years, through the acquisition of new collections as well as new discoveries, the holdings of Carboniferous crinoids of the Paleontological Institute, Russian Academy of Science have been greatly increased. This has allowed a more detailed study of the faunas, which is in progress. Among the crinoids in the collection there are representatives of the family Pirasocrinidae Moore & Laudon, 1943, that are abundant in the Pennsylvanian of the USA, and previously unknown in the Carboniferous of the Moscow Region, as well as representatives of the genera *Allosocrinus* Strimple, 1949, *Cibolocrinus* Weller, 1909 and *Elibatocrinus* Moore, 1940, also previously unknown in the Moscow Region. There is also the first recognized Pennsylvanian member of the family Taxocrinidae Angelin, 1878. The stratigraphic distribution of the most common crinoids from the Carboniferous of the Moscow Region is compiled. The crinoid faunas that characterize the Upper Carboniferous Substages are described. They are represented by at least four crinoid faunas (Myachkovian, Khamovnikian, Dobryatinian and Noginskian) which are named respectively for the Substages name. The most typical crinoids of these faunas are mentioned, including undescribed forms. All previously described valid species of crinoids from the Carboniferous of the Moscow Region are listed.

Key words: Echinodermata, Crinoidea, Pirasocrinidae, Taxocrinidae, Russia, Palaeozoic

Introduction

Crinoids were typical members of the benthic communities in the Paleozoic. The isolated elements of their skeleton (stem fragments, thecal and arm ossicles) are rock-forming particles and can form so-called “crinoidal limestone”. The highest generic richness and overall abundance of crinoids were during the Lower Carboniferous (Mississippian), which is also known as the “Age of Crinoids” (Kammer & Ausich 2006).

Crinoids are known in almost all Substages of the Upper Carboniferous (Pennsylvanian) deposits in the Moscow Region. Within these deposits there are layers which contain crinoids commonly with excellent preservation, including complete crowns with nearly complete stems. There are also colonies of crinoid crowns and stems. In the Lower Carboniferous deposits of the Moscow Region crinoids are usually rare and fragmentary, represented by disarticulated elements. This is in contrast to North America, where Pennsylvanian deposits contain few crinoids preserved complete with arms, unlike Mississippian localities (Ausich 1999).

Crinoids were first described from the Carboniferous of the Moscow Region by Johann Got-