

‘Mid’-Cretaceous fish faunas from northeast China

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Abstract

The ‘mid’-Cretaceous fish faunas from northeast China are distributed mainly in Songliao Basin, Heilongjiang and Jilin Provinces and in a series of small basins that extend east to Songliao Basin. In contrast to the early Early Cretaceous endemic †*Lycoptera*-fauna from North China the members of the ‘mid’-Cretaceous (approximately Aptian-Cenomanian) fish faunas from northeast China find their contemporary relatives either in neighboring areas or even in regions long distance away. Included in these faunas are species belonging to Osteoglossomorpha and Euteleostei. Those from the late Early Cretaceous are osteoglossomorphs (†*Plesiolycoptera daqingensis* ZHANG & ZHOU 1976, †*Jiaohichthys pulchellus* MA 1983, †*Pulinia baojiatunensis* MA 1983 and †*Yanbiania wangqingica* LI 1987) and primitive euteleosts (†*Manchurichthys uwatokoii* SAITO 1936, preliminarily referred to Salmoniformes incertae sedis). Those from the Late Cretaceous fish fauna are primitive euteleosts (†*Sungarichthys longicephalus* TAKAI 1943 and †*Jilingichthys rapax* ZHOU 1976, both preliminarily referred to Salmoniformes incertae sedis), a neoteleost (†*Hama macrostoma* ZHOU 1976), and a single tooth of Selachii. The osteoglossomorphs of approximately the same age are also found in the adjacent areas of North America. The primitive euteleosts and neoteleosts seem to have wider distribution, possibly related to the Late Cretaceous general transgression in the northern hemisphere. Comparison of †*Jiaohichthys* and †*Yanbiania* shows surprising morphological similarity between the two genera and the necessity of inclusion of †*Jiaohichthys* in further phylogenetic analyses of osteoglossomorphs. The stratigraphical distribution of the fishes shows different combinations in different formations. The lower (older) formations contain osteoglossomorphs and basal euteleosts, while the higher one contains only osteoglossomorphs and the highest one – basal euteleosts, a neoteleost, and a selachian tooth. The successive change of some groups of fishes in the section is obviously age-related while the presence or absence of certain groups of fishes in certain formations is suggested to be related to different environments in which the fishes occur.

Introduction

This paper is an English summary of four papers written by CHOW, LIU and myself in the late seventies (1976-1977) on ‘mid’-Cretaceous fish faunas from northeast China with references to MA (1983) and LI (1987). Due to the special circumstances in the 70ies no English summaries were attached to the former four papers. So it is worthwhile to introduce the faunas described in those four papers in English for the access of those workers who do not read Chinese, though for the full descriptions the readers should still refer to the Chinese texts. Additional observations of some of the specimens are also given in order to clarify the states of certain characters.

The well-known early Early Cretaceous Jehol Fauna contains a series of forms that only occur in the areas of North China (including the western part of northeast China), Mongolia, and Zabaikalia (southern part of Siberia), an area approximately between the Turgai Strait on its western, Bering Strait on its eastern and Qingling Mountains on its southern side. The members of this fauna are not known from anywhere else in the world during the early Early Cretaceous though relatives of the main groups of this fauna are present in the Late Cretaceous, Tertiary fish faunas from western, and Recent fish faunas from eastern and southeastern North America (PATTERSON 1981, CAVENDER 1986, LU 1994, CHANG & JIN 1996) (Table 1). In contrast to the early Early Cretaceous endemic fish fauna from northern China some groups of fishes (e.g., osteoglossomorphs) from ‘mid’-Cretaceous of northeast China find close relatives in more or less contemporary sediments of the adjacent regions of North America while some other groups (e.g., euteleosts) even bear certain cosmopolitan character.

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