

## A new fossil Musci (Bryidae) from the Cretaceous of Northeast China

Wang, Yongdong<sup>1,\*</sup> and Wu, Xiangwu<sup>2</sup>

1) State Key Laboratory of Palaeobiology and Stratigraphy, Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, Nanjing, China, \*E-mail: ydwan@nigpas.ac.cn

2) Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, Nanjing, China

Fossil mosses are very limited in deep time, less than 100 species have been documented so far globally for the Pre-Quaternary history (JASSENS et al., 1979). In China, the fossil record of mosses is rare. In the Cenozoic, only two species are recorded, including *Calymperopsis yunfuensis* Wu, Luo et Meng from the Quaternary of Guangdong, *Neckera shanwanica* Wu et Fen from the Miocene in Shandong. Prior to the Cenozoic, less than 10 species of fossil mosses have been described in China. The fossil sporophytes with undoubted affinity of Bryidae are in particular very rare. Among previous reports, only two species including *Muscites yallournensis* Clif. et Cookson from the Oligocene of Australia and *Stachybryolites zhoui* Wu, Wu et Wang from the Lower Jurassic in Kramay of Xinjiang have been recorded. These specimens are however represented by the dispersed preservation of capsules. Here we report a new fossil Bryidae (Musci) *Panchiehia jiyinensis* gen. et sp. nov. from the Lower Cretaceous Taoqihe Formation in Jiaying of Yichun City, Heilongjiang Province of northeastern China. Although the specimen is small and fragment, the essential structures of Bryidae are all well preserved, including vegetative organs (such as stem, leaves, false root, paraphyllia), reproductive organs (male shoot) and the stalked capsule of the sporophyte. The stem of this plant is creeping, branches are vertical to erect, and are many times dichotomous branching. The sporophytes are in the top of the lateral branches, with stalk and an oval capsule that is bilateral symmetrical, and with two layers of peristomal teeth. These features are quite similar to those from the relative genera of living Leskeaceae belonging to Hypnobryales of Bryidae, implying their potential affinity. The fossil specimen reported from the Lower Cretaceous of Heilongjiang is very remarkable and represents the first discovery of fossil gametophyte with the reproductive organs and sporophytes (capsules and stalks). Therefore, this new fossil Musci from the Cretaceous of China shows very important significance for understanding the evolution of fossil bryophytes.