



## A review of the brachylepadomorph cirripede genus *Pycnolepas*, including the first record of an Early Cretaceous species from the Russian Far East\*

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\*Dedicated to the memory of Dr Annie Valérie Dhondt (1942–2006)

### Abstract

To date, twelve species have been assigned to the brachylepadomorph cirripede genus *Pycnolepas* Withers, 1914, some of them on the basis of very limited material. The current status of all these taxa is briefly reviewed. Added are notes on a small collection of isolated capitular valves from middle Albian (Lower Cretaceous) strata in the lower reaches of the Amur River (Vassinskaja protoka, Khabarovsk region); this constitutes the first record of *Pycnolepas* from the Russian Far East (North Pacific Province). It is noted that species of *Pycnolepas* are almost exclusively European in distribution; notable exceptions are *P. articulata* (?lower Aptian; Alexander Island, Antarctica), *P. orientalis* (unspecified Upper Cretaceous, Kuzna-chaj, Azerbaijan; here considered to be a *nomen dubium*), *P. nov. sp.* (upper Paleocene; Turgay Strait, northwestern Kazakhstan), and the present lot which appears to be closely related to *P. rigida* from the lower Albian-middle (?upper) Cenomanian of Europe (England, France). In the absence of other valves (terga, rostra and imbricating plates), for now we refer to this lot as *P. aff. rigida*, and consider it a vicariant species, awaiting the discovery of additional material. In the literature, it has been pointed out that amongst associated faunal elements (in particular, ammonoids and buchiid/inoceramid bivalves) at Vassinskaja protoka and nearby sections along the Amur River, there are species which are closely related to European taxa, and their occurrence appears best explained by vicariance biogeography. The absence of *Pycnolepas* in younger strata in the Russian Far East suggests that no subsequent radiation took place, but collection failure cannot be ruled out either in view of the vastness of the area and the generally small size of cirripede valves.

**Key words:** Cirripedia, Brachylepadomorpha, Brachylepadidae, *Pycnolepas*, revision, Russia, Lower Cretaceous

### Introduction

Currently, twelve species have been assigned to the extinct brachylepadid genus *Pycnolepas*. These range in age from Late Jurassic (Tithonian, 141–135 Ma) to Neogene (early Miocene, 23 Ma), yet some are based on very limited material and placement is more or less preliminary, awaiting the discovery of additional capitular valves and/or imbricating plates. With the exception of *P. articulata* from the ?lower Aptian of Alexander Island (Antarctica), *P. orientalis* from an unspecified Upper Cretaceous level along the Kuzna-chaj River (Azerbaijan; here considered a *nomen dubium*), and *P. nov. sp.* from the upper Paleocene of northwestern Kazakhstan, the genus is essentially European in distribution (Fig. 1). All species are briefly reviewed below, and added is the first record of *Pycnolepas* from the Russian Far East. This material, comprising a single carina and four scuta, is apparently closely related to the northwest European *P. rigida*; we consider it a vicariant