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Authors: Garassino, Alessandro, and Pasini, Giovanni

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A new furry lobster (Crustacea, Decapoda, Synaxidae) from the Upper Cretaceous (Cenomanian) of Lebanon

ALESSANDRO GARASSINO & GIOVANNI PASINI

Abstract

A new lobster, *Palaeopalinurellus jbeilensis* n. sp. from the Upper Cretaceous (Cenomanian) of Hakel (Lebanon) is herein described. It represents the first report of a member of the Synaxidae BATE, 1881 from the lithographic limestones of Lebanon and the third report for this genus in the worldwide fossil record, enlarging its palaeogeographic distribution and stratigraphic range.

Key words: Reptantia, Achelata, taxonomy, Hakel.

1. Introduction

Recently, CHARBONNIER et al. (2017) provided an overall updated review of the rich decapod crustacean fauna from the Cenomanian (Hakel, Hadjoula, En Nammoura) and Santonian (Sahel Alma) *Konservat-Lagerstätten* outcrops of Lebanon.

Based upon this review, the Achelata SCHOLTZ & RICHTER, 1995 includes representatives of Scyllarida *sensu stricto*, Verscyllarida *sensu stricto*, Neoscyllarida, and some lobster larval stages (for a complete list see CHARBONNIER et al. 2017: 133–158). Among the Neoscyllarida, only representatives of the Palinuridae LATREILLE, 1802 have been reported to date. Therefore, the description of *Palaeopalinurellus jbeilensis* n. sp. represents the first record of a synaxid lobster from the Cretaceous of Lebanon, enlarging the scarce knowledge of achelatan lobsters from the Hakel outcrop.

2. Systematic palaeontology

Infraorder Achelata SCHOLTZ & RICHTER, 1995

Family Synaxidae BATE, 1881

Genus *Palaeopalinurellus* FRAAIJE, VAN BAKEL, JAGT & BROCHET, 2020

Type species: *Palaeopalinurellus culocervus* FRAAIJE, VAN BAKEL, JAGT & BROCHET, 2020, by monotypy.

Other species included: *Palaeopalinurellus strambergensis* (BACHMAYER, 1959); *Palaeopalinurellus jbeilensis* n. sp. (herein).

Palaeopalinurellus jbeilensis n. sp.
Fig. 1A, B

Etymology: From the Jbeil district in northwestern Lebanon, where the Hakel outcrop is located.

Type material: The holotype, housed in the palaeontological collection of the Museo di Storia Naturale di Milano, Italy (MSNM i16305), and sole specimen known to date, is an incomplete carapace in dorsal view, partially compressed dorso-ventrally, with a maximum preserved length of 10 mm and maximum preserved width of c. 7 mm.

Type locality: Hakel (Lebanon).

Diagnosis: Carapace small, tubular, having the same width anteriorly and posteriorly; anterior part of carapace with five to six longitudinal rows of spines, the two largest ones forming post-rostral ridges, two to three smaller ones forming post-orbital ridges; V-shaped rimmed posterior margin.

Description: Carapace small, tubular, having the same width anteriorly and posteriorly; frontal region poorly preserved; cervical groove shallow and weakly pronounced, running horizontally in 3/4 of carapace, getting strongly inclined and sinuous towards the anterolateral margin, stopping just below orbits; anterior part of carapace with five to six longitudinal rows of forwardly directed spines, the largest one forming two post-rostral ridges, the two to three smaller ones forming post-orbital ridges; granulate hepatic regions slightly inflated; posterior part of carapace densely covered with large scale-like smooth tubercles inclined forward; convex ventrally V-shaped rimmed posterior margin.

Discussion: Recently, FRAAIJE et al. (2020) reported *Palaeopalinurellus* FRAAIJE, VAN BAKEL, JAGT & BROCHET, 2020, from the Upper Jurassic (Oxfordian) of northeastern France. This genus was erected based upon the combination of a lack of strong armature, such as frontal horns and anterolateral teeth, small orbits, type of ornament of the posterior part of the carapace, and anterior taper of the carapace. The carapace being small and tubular, the anterior part of the carapace with spiny

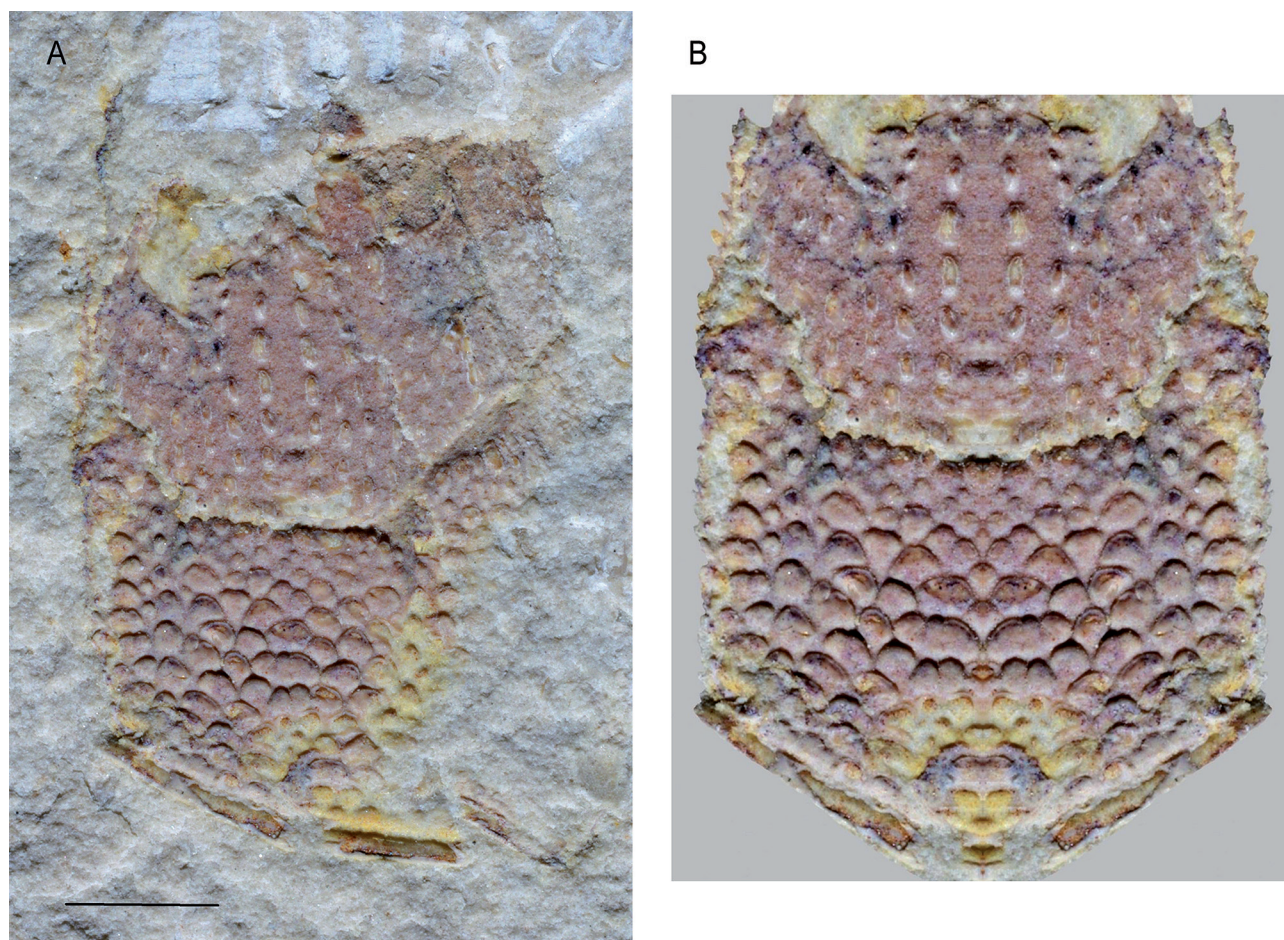


Fig. 1. *Palaeopalinurellus jbeilensis* n. sp., holotype, MSNM i16305. **A** – Original specimen. **B** – Mirrored photographic reconstruction of the carapace; frontal part missing. Scale bar equals 2 mm (Photograph: GIORGIO TERUZZI).

longitudinal rows without strong armature, and the posterior part of the carapace densely covered with scale-like tubercles fit the main generic characters of *Palaeopalinurellus*, to which the studied specimen is assigned.

FRAAIJE et al. (2020) assigned to *Palaeopalinurellus* two species, *P. strambergensis* (BACHMAYER, 1959) from the Upper Jurassic (Tithonian) of Štramberk (Czech Republic) and *P. culocervus* FRAAIJE, VAN BAKEL, JAGT & BROCHET, 2020, from the Upper Jurassic (Oxfordian) of Orquevaux (Haute-Marne, France).

Palaeopalinurellus jbeilensis n. sp. differs from *P. strambergensis* in having the anterior part of the carapace with five to six longitudinal rows of spines, the two bigger ones forming post-rostral ridges, and the two to three smaller ones forming post-orbital ridges (vs. anterior part of carapace covered by circular tuberculation in *P. strambergensis*); posterior part of carapace densely covered with large scale-like smooth tubercles inclined forward (vs. posterior part of carapace densely covered with circular tuberculation uniformly arranged in *P. strambergensis*).

Palaeopalinurellus jbeilensis n. sp. differs from *P. culocervus* in having a small, tubular carapace, having the same width anteriorly and posteriorly (vs. tapering anteriorly in *P. culocer-*

vus); anterior part of carapace with five to six longitudinal rows of spines, the two bigger ones forming post-rostral ridges, the two to three smaller ones forming post-orbital ridges (vs. three rows forming post-rostral ridges and two rows forming post-orbital ridges in *P. culocervus*), and a V-shaped rimmed posterior margin (vs. concave posterior margin in *P. culocervus*). Finally, the different stratigraphic age justifies the description of this new species within the genus.

In conclusion, *P. jbeilensis* n. sp. expands the palaeogeographic distribution of this poorly known fossil genus and its stratigraphic range from the Upper Jurassic (Oxfordian) to the Upper Cretaceous (Cenomanian).

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3. References

- BACHMAYER, F. (1959): Neue Crustaceen aus dem Jura von Stramberg (ČSR). – Sitzungsberichte der Österreichischen Akademie der Wissenschaften, mathematisch-naturwissenschaftliche Klasse, (I), **168** (10): 937–944.
- BATE, C.S. (1881): On *Synaxes*, a new genus of Crustacea. – The Annals and Magazine of Natural History, (5), **7** (39): 220–228.
- CHARBONNIER, S., AUDO, D., GARASSINO A. & HYŽNÝ, M. (2017): Fossil Crustacea of Lebanon. – Mémoires du Muséum national d'Histoire naturelle, **210**: 252 pp.
- FRAAIJE, R.H.B., VAN BAKEL, B.W.M., JAGT, J.W.M. & BROCHET, R. (2020): A new furry lobster (Crustacea, Decapoda, Synaxidae) from the Oxfordian (Upper Jurassic) of northeastern France. – Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen, **296** (3): 327–330.
- LATREILLE, P. A. (1802–1803): Histoire naturelle, générale et particulière, des Crustacés et des Insectes, vol. 3. 468 pp.; Paris (F. Dufart).
- SCHOLTZ, G. & RICHTER, S. (1995): Phylogenetic systematics of the reptantian Decapoda (Crustacea, Malacostraca). – Zoological Journal of the Linnean Society, **113**: 289–328.

Addresses of the authors:

ALESSANDRO GARASSINO (corresponding author), Research Adjunct, Department of Earth and Biological Sciences, Loma Linda University, Loma Linda, CA 92354, USA; e-mail: alegarassino@gmail.com

GIOVANNI PASINI, Via Alessandro Volta 16, 22070 Appiano Gentile (Como), Italia; e-mail: giovannialdopasini@gmail.com

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