

Recognition of the holotype of *Glyphea dressieri* VON MEYER *in* BRONN, 1837 (Decapoda: Glypheidae)

By Rodney M. FELDMANN¹, Carrie E. SCHWEITZER² & Günter SCHWEIGERT³

(With one figure)

Manuscript submitted on August 22nd 2014,
the revised manuscript on October 16th 2014.

Type specimens are the primary documentation of the identity of fossil species as well as living organisms. Whether the fossils are pristine or poorly preserved, complete or incomplete, juvenile or adult, near the central morphological tendency or a morphological end member, they represent the material basis against which the identity of other, similar specimens must be compared. For this reason, the holotype and other type specimens are carefully stored in collections for reference by subsequent workers. When performing revisionary work on taxa, it is best practice to either examine the type material personally or refer to original descriptions and illustrations to assure that the material being studied conforms to the species concept of the original author, as documented by the types.

For a variety of reasons including time, lack of care in curation, wars, and loss of specimens, original type material may be irretrievable, in which case it may be necessary for subsequent workers to select a neotype that as closely as possible conforms to the concept of the original type or type series. However, designation of a neotype must not be done in the event that the original description and illustrations clearly capture the intent of the author of the species (ICZN, Art. 75.2). Thus, neotypes are normally identified only when there is difficulty in interpreting the original intention of the authors (ICZN, Art. 75.1). Under this circumstance, the reviser of the taxon has the opportunity to designate a neotype to clarify understanding. Occasionally, despite the best efforts of workers to locate original type material, and when a neotype has been proposed, the original material surfaces. When that occurs, it is necessary to announce the discovery of the original specimen(s) and to suppress the status of the neotype. That is the purpose of this note.

¹ Kent State University Kent, Department of Geology, 221 McGilvrey Hall, OH 44242 USA; e-mail: rfeldman@kent.edu

² Kent State University at Stark, Department of Geology, 6000 Frank Avenue NW, North Canton, OH, 44720 USA

³ Staatliches Museum für Naturkunde, Rosenstein 1, 70191 Stuttgart, Germany

In 1836, VON MEYER (p. 56) referred to *Glyphea Dressieri*, but he neither described nor illustrated the species. In 1837, BRONN described the species which he attributed to VON MEYER (p. 480). Subsequently, different spellings of the trivial name were published (*udressieri*, *dudressieri*), but the original spelling (*dressieri*) must be taken as the correct one. CHARBONNIER *et al.* (2013) provided a detailed synonymy of the species, and it will not be repeated here. The type, by monotypy, was indicated as having been collected in the “Terrain à Chailles” at Besançon, France (VON MEYER, 1836; BRONN, 1837). A depository was not indicated.

Subsequently, BEURLÉN (1930, p. 372) named a new subgenus of *Glyphea*, *Squamosoglyphea*, designating *Glyphea Udressieri* H. v. M. [*sic*], as the subgenotype. GLAESSNER (1969, p. R464) retained *Squamosoglyphea* as a subgenus of *Glyphea*; however, SCHWEIGERT & GARASSINO (2005) elevated *Squamosoglyphea* to generic rank and included *S. squamosa* (MÜNSTER, 1839) as a second valid species. They also provided a succinct discussion of related synonymies. In the same paper, SCHWEIGERT & GARASSINO (2005) assigned two new species to *Squamosoglyphea*, *S. redenbacheri* and *S. rogeri*. Thus, the unique nature of *Squamosoglyphea* was confirmed by the addition of these species, a position sustained by the phylogenetic analysis of KARASAWA *et al.* (2013). Incidental to the present recognition of the type specimen, CHARBONNIER *et al.* (2013) considered the two species, *S. redenbacheri* and *S. rogeri*, to be sexual dimorphs synonymous with *G. squamosa*. KARASAWA *et al.* considered the basis for distinguishing *Squamosoglyphea* from *Glyphea* to be based upon the unique scabrous ornamentation characteristic of the former. An alternative view was expressed by CHARBONNIER *et al.* (2013) who considered *Squamosoglyphea* a junior subjective synonym of *Glyphea*. Regardless of the systematic position of *Squamosoglyphea*, the controversy over its generic status emphasizes the importance of the holotype of *G. dressieri* VON MEYER in BRONN, 1837.

CHARBONNIER *et al.* (2013, p. 54) considered that the holotype of *Glyphea dressieri* was lost, attributing the loss to a fire at the University of Strasbourg, where much of the collection of D’UDRESSIER was housed (CHARBONNIER, personal commun. 2014). As a result, they designated a specimen from near the type locality, MNHN.FA29540, as the neotype. That specimen, from the Petitclerc collection, is deposited in the Muséum national d’Histoire naturelle, in Paris, France. The material basis for their examination of the species did not include the faithful cast of the holotype deposited in the Universitäts Museum Tübingen, Tübingen, Germany, examined by FELDMANN and SCHWEITZER. They, also, considered the type to be lost. However, their observation of the cast of the holotype specimen clearly documents the morphology of VON MEYER’s species, as recorded by BRONN (1837) obviating the need to designate a neotype.

As the KARASAWA *et al.* work was in preparation, a visit to the Naturhistorisches Museum Wien, Austria, by RMF and CES revealed the holotype, but their photograph was not suitable for publication. Subsequent personal communication with Andreas KROH, Department of Paleontology, NHMW, provided information that the specimen had been donated to the collection by COMTE D’UDRESSIER, in 1847. KROH also facilitated preparation of the illustrations of the specimen and the documenting labels (Figure 1) by Alice

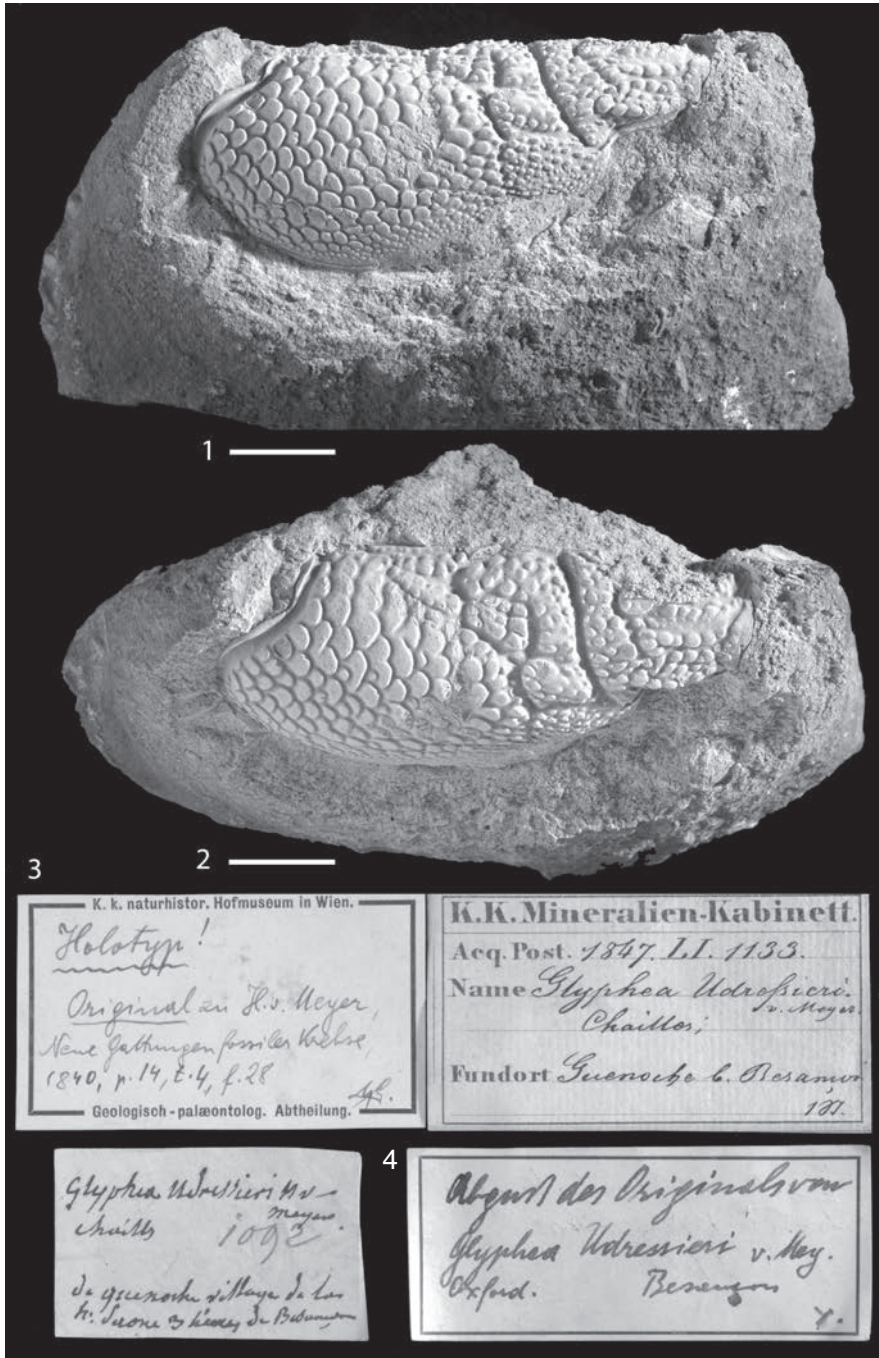


Fig. 1. 1, 2: Holotype of *Glyphea dressieri* VON MEYER in BRONN, 1937, NHMW 1847/0051/1133. 1, right lateral view. 2, right side of carapace rotated toward dorsum. Scale bars equal 1 cm. 3, labels documenting the specimen from the early Oxfordian in the Terrain à Chailles Formation (Argovian facies in the “old literature”). 4, label of a historical plaster cast kept in the same box.

SCHUMACHER. KROH also indicated that historical casts had been made of the specimen, one of which is likely that in the museum in Tübingen. Yet another cast may be in the collection of the Muséum National d'Histoire Naturelle in Paris (CHARBONNIER, personal commun. 2014).

As a result of this discovery, it is necessary to suppress the designation of the neotype, MNHN.F A29540, and to call attention to the holotype of *Glyphea dressieri* VON MEYER in BRONN, 1837, in the paleontology collections of the Naturhistorisches Museum Wien bearing the catalogue number NHMW 1847/0051/1133. As mentioned on the original label, the type locality is Quenoche (Haute-Saône department, Franche-Comté region, France; see CHARBONNIER *et al.* 2012: fig. 1). That locality is early Oxfordian and the unit is the Terrain à Chailles Formation (Argovian facies in the “old literature”).

Acknowledgements

Alice SCHUMACHER, Naturhistorisches Museum Wien, provided the photographs of the specimen and documenting information. Andreas KROH and Mathias HARZHAUSER, Naturhistorisches Museum Wien, provided access to the collections of the museum, and KROH provided information regarding the acquisition of the holotype. Reviews by Matúš HYŽNÝ, Naturhistorisches Museum Wien, and Sylvain CHARBONNIER, Muséum National d'Histoire Naturelle, Paris, provided useful information. Examination of type material was supported by NSF grants EF-0531670 and INT-0313606 to FELDMANN and SCHWEITZER. The current work is supported by NSF EAR-1223206 to SCHWEITZER and FELDMANN.

References

- BEURLIN, K. (1930): Vergleichende Stammesgeschichte, Grundlagen, Methoden, Probleme unter besonderer Berücksichtigung der höheren Krebse. – Fortschritte der Geologie und Palaeontologie, **8/26**: 317–586.
- BRONN, H.G. (1837): Lethaea Geognostica. Abbildungen und Beschreibungen der für die Gebirgs-Formationen bezeichnendsten Versteinerungen, **1**: 1–544.
- CHARBONNIER, S., PÉRÈS, D. & LETENNEUR, C. (2012): Exceptionally preserved crustaceans from the Oxfordian of eastern France (Terrain à Chailles Formation, Haute-Saône). – Geodiversitas, **34/3**: 531–568.
- CHARBONNIER, S., GARASSINO, A., SCHWEIGERT, G. & SIMPSON, M. (2013): A worldwide review of fossil and extant glypheid and litogastrid lobsters (Crustacea, Decapoda, Glypheoidea). – Mémoires du Muséum national d'Histoire naturelle, **205**: 1–284.
- GLAESSNER, M.F. (1969): Decapoda, pp. R400–R533, R626–R628. In: MOORE, R.C. (ed.) Treatise on Invertebrate Paleontology, R(4)(2). Lawrence, Kansas (Geological Society of America and University of Kansas Press).
- ICZN (1999): International Code of Zoological Nomenclature, Fourth Edition. The International Trust for Zoological Nomenclature, 306 pp.
- KARASAWA, H., SCHWEITZER, C.E. & FELDMANN, R.M. (2013): Phylogeny and systematics of extant and extinct lobsters. – Journal of Crustacean Biology, **33**: 78–123.

- MEYER, H. von (1836): Briefliche Mittheilungen. – Neues Jahrbuch für Mineralogie, Geognosie, Geologie und Peterfaktenkunde, **1836**: 55–61.
- MÜNSTER, G. Graf zu (1839): Decapoda Macruoura. Abbildung und Beschreibung der fossilen langschwänzigen Krebse in den Kalkschiefern von Bayern. – Beiträge zur Petrefactenkunde, **2**: 1–88.
- SCHWEIGERT, G. & GARASSINO, A. (2005): The lobster genus *Squamosoglyphea* BEURLEN, 1930 (Crustacea: Decapoda: Glypheidae) in the Upper Jurassic lithographic limestones of southern Germany. – Neues Jahrbuch für Geologie und Paläontologie, Monatshefte, **2005/5**: 269–288.

