



# Late Givetian ammonoids from Oberberge (Middle Devonian; Rhenish Mountains)

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With 16 figures and 6 tables

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**Abstract:** A small late Givetian (Middle Devonian) ammonoid assemblage from Oberberge near Schwelm is described. The co-occurrence of the genera *Mzerrebites*, *Pharciceras*, *Epitornoceras* and *Tornoceras* indicates reference to the base of the *Pharciceras* genus zone. *Mzerrebites bifurcatus* and *Mzerrebites schwelmensis* are revised with the proposal of neotypes; the new species *Pharciceras oberbergense* n. sp. and *Tornoceras wunderlichi* n. sp. are described.

**Key words:** Ammonoidea, Devonian, Givetian, Rhenish Mountains, Germany.

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## 1. Introduction

The small *Pharciceras*-bearing ammonoid assemblage from Oberberge (2.5 km NNW of Schwelm, Germany) has been known for nearly a century (PÄECKELMANN 1922). It is one of the few Late Givetian ammonoid occurrences in Germany with original pyritic preservation of the specimens in dark shales ('Prolecanitenschiefer' in the older literature). Similar occurrences are known from the northern margin of the Rhenish Mountains, e.g., from Hagen-Herbeck (BOCKWINKEL et al. 2013a), Letmathe and Iserlohn (FUCHS 1911; BECKER 1985), Balve (CLAUSEN 1989) and Sundern-Endorf (HENKE 1924).

At the time of its discovery and description by PÄECKELMANN (1922), this and similar faunas were attributed to the Ia zone of the "Manticoceras Stufe", which at the time was regarded as the basal Late Devonian ammonoid zone. After the Middle-Late Devonian boundary was redefined on the basis of conodont biostratigraphy (e.g., KLAPPER et al. 1987) these assemblages were re-assigned to the latest Middle Devonian. They are time equivalents of the more diverse assemblages from the Roteisenstein (red ironstone) of the Dillenburg area on the eastern margin of the Rhenish Mountains (e.g., WEDEKIND 1918; MATERN 1931).

In an earlier revision of the assemblage from Oberberge, KORN & WUNDERLICH (1982) re-described the species "*Koenenites bifurcatus* PÄECKELMANN, 1922" and "*Gephuroceras schwelmense* PÄECKELMANN, 1922" and concluded that the latter represents the juvenile stage of the first. Consequently they referred both to one species "*Hoeninghausia (Koenenites) bifurcata*". In the current study we reject this assessment. KORN & WUNDERLICH also re-described the pharciceratid, which by PÄECKELMANN (1922) was determined as "*Pharciceras lateseptatum* (FRECH, 1902)" under this same species. Tornoceratid ammonoids were not described by PÄECKELMANN (1922) or KORN & WUNDERLICH (1982).

During the last ten years, knowledge of late Givetian ammonoids has increased significantly, particularly for the Moroccan occurrences (BOCKWINKEL et al. 2009, 2013b), where the most diverse assemblages are known. These monographic descriptions make it possible to view the classical occurrences in the Rhenish Mountains in a new light. In the following study, we re-describe the assemblage from Oberberge on the basis of material collected in 1978 by the late KLAUS WUNDERLICH (Leverkusen).