

Pridolian–Lochkovian macrofaunas from southern Belgium and northern France: de Koninck (1876) revisited

Bernard Mottequin¹ & Julien Denayer²

¹Royal Belgian Institute of Natural Sciences, OD. Earth and History of Life, rue Vautier 29, B 1000 Brussels, Belgium. E-mail: bmottequin@naturalsciences.be

²Evolution & Diversity Dynamics Lab, Université de Liège, Bat. B18, Allée du Six-Août, Sart Tilman, B-4000 Liège, Belgium. E-mail: julien.denayer@ulg.ac.be

In southern Belgium and northern France, the essentially siliciclastic rocks unconformably lying on the Caledonian basement were formerly included in the Gedinnian (from Gedinne, a small village of the Namur Province, Belgium). As rightly stressed by Steemans (in Dejonghe *et al.*, 2006), the Gedinnian, in its historical type area, mainly corresponds to a lithostratigraphical unit delimited at its base by a major discordance and its boundaries are strongly diachronous as demonstrated by the miospores (Steemans, 1989). Thus, its use as a regional stage has to be avoided, but it is briefly used here for convenience as a local expression of the Lochkovian *pro parte*. The lower part of the Gedinnian is known for a long time for its diverse invertebrate faunas (*e.g.*, Hébert, 1855; de Koninck, 1876).

Based on Dewalque and Malaise's collections, de Koninck (1876) was the first to illustrate and describe the macrofaunas occurring within the basal "Gedinnian" at Gdumont on the south-east flank of the Stavelot Massif (Belgium) and at Mondrepuis (northern France) on the southern border of the Dinant Synclinorium. Although these macrofaunas have been revised notably by Leriche (1912), Asselberghs (1930), Boucot (1960), Godefroid (1995) and Godefroid & Cravatte (1999), de Koninck's (1876) material has never been re-illustrated so far. As it has recently been retraced in the historical collections of the Liège University (Dewalque's collection), it is now possible to provide the first photographic illustrations of some type specimens of the species erected by de Koninck (1876), who strongly idealised and embellished the line drawings of his specimens. This discovery is therefore of some interest as is also the case of the recent recovery of almost all the invertebrates (*e.g.*, brachiopods, pelecypods) described by Kayser (1895) from the Pépinster Formation (Eifelian–Givetian). However, the specimens that were part of Malaise's collections have not been found yet in spite of our efforts, but may be housed at the Royal Belgian Institute of Natural Sciences.

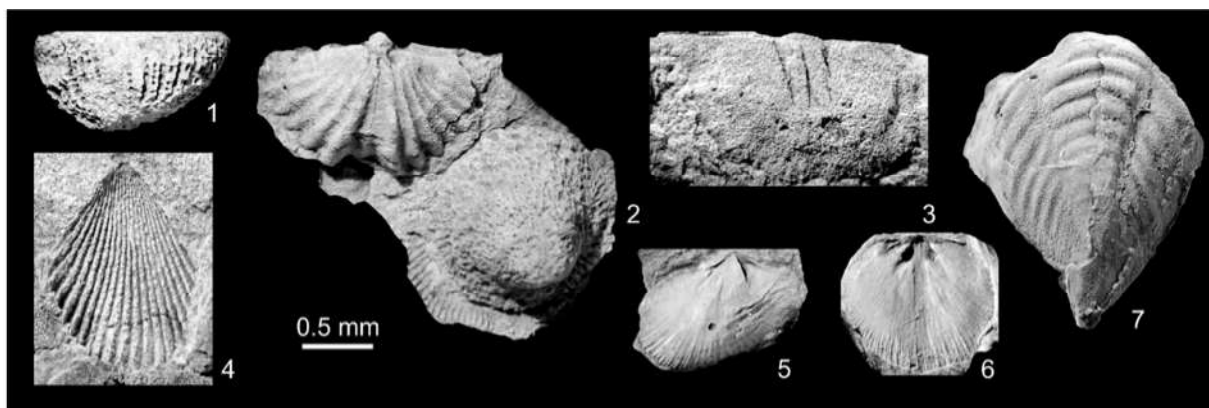


Fig. 1: Some specimens of the Dewalque collection housed at the University of Liège and identified by de Koninck (1876). The specimens no. 1–4 and 5–7 are from the Waismes (Gdumont) and the Mondrepuis (Mondrepuis) formations, respectively. (1) "*Cyathophyllum binum* Lonsdale" (= de Koninck, 1876: pl. 1, fig. 2). (2) *Quadrifarius dumontianus* (= de Koninck, 1876: pl. 1, fig. 9a-9b) and *Cystiphyllum profundum* (= de Koninck, 1876: pl. 1, fig. 1-1a). (3) *Shaleria rigida* (= de Koninck, 1876: pl. 1, fig. 5?). (4) "*Camarotoechia*" *aequicostata* (= de Koninck, 1876: pl. 1, fig. 7?). (5-6) *Platyorthis verneuili* (de Koninck, 1876). (7) *Digonus roemeri* (= de Koninck, 1876, pl. 1, fig. 15b-15c?).

The material from Gdumont, which mainly consists of brachiopods, solitary rugose and colonial tabulate corals, has been recovered from the lowermost part of the Waismes (Weismes in German) Formation defined by Vandeven (1991), the age of which is considered as Pridolian at least for the fossiliferous levels (see discussion in Godefroid & Cravatte, 1999). The material only consists of poorly preserved internal moulds

and this feature may explain the embellishment of de Koninck's line drawings (e.g., compare the idealized representation of "*Cyatophyllum binum*" with the original specimen (Fig. 1.1)). It includes the following species erected by de Koninck (1876) (their original generic assignment has been modified wherever possible): "*Cystiphyllum profundum*", "*Chonetes omaliana*", "*Shaleria rigida*", "*Camarotoechia aequicostata*", "*Quadrifarius dumontianus*".

Most of the species described and/or reported by de Koninck are from the Mondrepuis Formation, in the eponym locality. In this area, the base of the formation is early Lochkovian in age (Stemans, 1989). The Mondrepuis Formation yields a diverse fauna including notably brachiopods, ostracods, pelecypods, tentaculites and trilobites. The species erected by de Koninck (1876) are the following (see remarks above): *Primitia jonesii*, *Beyrichia richteri*, *Digonus roemeri*, *Platyorthis verneuili*, *Grammysia deornata*, *Avicula subcrenata*, *Pterinea ovalis*, *Tentaculites irregularis*. The specimen illustrated by de Koninck (1876: pl. 1, fig. 1) was selected (but not figured) as the lectotype of *Digonus roemeri* (de Koninck, 1876) by Richter & Richter (1932) (see also Richter & Richter, 1954). Only one specimen identified as such has been traced in the Dewalque collection. Its general outline is in accordance with de Koninck's illustrations but, as it is smaller, it cannot be definitely considered as the specimen figured by de Koninck.

References

- Asselberghs E. (1930). Description des faunes marines du Gedinnien de l'Ardenne. *Mémoires du Musée royal d'Histoire naturelle de Belgique*, 41: 1-73.
- Boucot A.J. (1960). Lower Gedinnian brachiopods of Belgium. *Mémoires de l'Institut géologique de l'Université de Louvain*, 21: 11-20.
- Dejonghe L., Herbosch A., Stemans P. & Verniers J. (2006). Disused Palaeozoic regional stages from Belgium: Devillian, Revinian, Salmian, Gedinnian and Burnotian. *Geologica Belgica*, 9: 191-197.
- Godefroid J. & Cravatte T. (1999). Les brachiopodes de la limite Silurien/Dévonien (sud de la Belgique). *Bulletin de l'Institut royal des Sciences naturelles de Belgique, Sciences de la Terre*, 69: 5-26.
- Godefroid J. (1995). *Dayia shirleyi* Alvarez & Rachebœuf, 1986, un brachiopode silurien dans les « Schistes de Mondrepuits » à Muno (sud de la Belgique). *Bulletin de l'Institut royal des Sciences naturelles de Belgique, Sciences de la Terre*, 65: 269-272.
- Hébert M. (1855). Quelques renseignements nouveaux sur la constitution géologique de l'Ardenne française. *Bulletin de la Société géologique de France (2^{ème} série)*, 12, 1165-1186.
- Kayser E. (1895). Sur une faune du sommet de la série rhénane à Pépinster, Goé et Tilff. *Annales de la Société géologique de Belgique*, 22: 177-216.
- Koninck L.-G. de (1876). Notice sur quelques fossiles recueillis par Dewalque dans le système Gedinnien de A. Dumont. *Annales de la Société géologique de Belgique*, 3: 25-52.
- Leriche M. (1912). La faune du Gedinnien inférieur de l'Ardenne. *Mémoires du Musée royal d'Histoire naturelle de Belgique*, 6:1-58.
- Richter R. & Richter E. (1932). Unterlagen zum Fossilium Catalogus, Trilobitae. VI. *Senckenbergiana*, 14: 359-371.
- Richter R. & Richter E. (1954). Die Trilobiten des Ebbe-Sattels und zu vergleichende Arten (Ordovizium, Gotlandium/Devon). *Abhandlungen der Senckenbergischen Naturforschenden Gesellschaft*, 488: 1-76.
- Stemans P. (1989). Palynostratigraphie de l'Eodévonien dans l'Ouest de l'Europe. *Mémoires pour servir à l'Explication des Cartes géologiques et minières de la Belgique*, 27: 1-453.
- Vandenvén G. (1991). Explications de la carte géologique du Synclinorium de l'Eifel (région de Gouvy-Sankt-Vith-Elsenborn). *Annales de la Société géologique de Belgique*, 113: 103-113.