

Re-assessment of *Arthropleura* from the Moscovian of Northern France: new anatomical information and adaptations to terrestrial environments

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Appendix 2: general information on *Arthropleura* species and diet

Comparison with other *Arthropleura* species and extension

34 specimens are indexed in the database of the Lille Muséum (Oudoire, pers. obs.). Among them, 12 seem to be specimens of *A. armata*. Eight specimens have been described as *A. mammata*. 3 others have been described as *A. pruvosti* (synonymous with *A. armata*, Wilson 1999). One specimen has been described as *A. robusta* (also synonymous with *A. armata*, Wilson 1999). 10 specimens could not be identified at the species rank. Most of these specimens come from localities in the Moselle department and the coal basin of Saar-Lorraine, this material has been studied by Waterlot in 1914. Among the eight specimens of *A. mammata*, only six surely came from localities in Northern France, attesting the presence of *Arthropleura* in the Nord-Pas-de-Calais coal basin. Most of them are figured in Pruvost monographies (Pruvost 1911, 1912, 1919). The last time these specimens were studied was in 1999 by Wilson. There were no significant discoveries *in situ* during coal exploitation after the historical studies mentioned previously. *A. mammata* differs from *A. armata* by bearing less tubercles on its paratergites. These two species have surely cohabited in swampy environments near the Hercynian mountain range, as *A.*

mammata has been found from the Bashkirian to the Moscovian while *A. armata* has been recovered in the Moscovian (Westphalian D) and Kasimovian (Stephanian A) of Saar-Lorraine.

Diet

Arthropleura is likely to have had a detritivorous or herbivorous diet, feeding on fallen bark, tree stumps, and other litter components (Kraus & Brauckmann 2003; Kraus 2005; Lh  ritier *et al.* 2024). As suggested by Kraus & Brauckmann (2003) and Kraus (2005), the main food source of *Arthropleura* seems to have been the huge plant biomass that characterise many Northern France localities. These plants remains include reproductive structures from Pteridospermatophyta (e.g., large seed fern ovules of the genus *Pachytesta* Brongniart 1828) and various pollen organs and leaves from Pteridospermatophyta (e.g., *Neuropteris* Brongniart 1828, *Linopteris* Presl 1838) and ferns (*Pecopteris* Brongniart 1828) (Corsin & Corsin 1970; DiMichele & Phillips 1994, 1996; DiMichele *et al.* 2020). The specimens of the Bruay Formation have been associated with autochthonous or parautochthonous plant deposits (e.g., *Alethopteris serlii* [Brongniart] Goeppert 1836 Figs. 5A, C, *Linopteris subbrongniartii* pinnae Figs. 6C, F) which may have formed the basis of its diet. These plants may have provided *Arthropleura* and other animals with a the highly-nutritious food that possibly allowed them to maintain a large body size.