

**PREFACE TO 'FAUNAL AND STRATIGRAPHICAL ASPECTS OF THE EARLY  
PALAEOCENE (DANIAN) IN THE SE NETHERLANDS AND NE BELGIUM'**

by

J.W.M. Jagt  
Venlo, The Netherlands

and

A.W. Janssen  
Rijksmuseum van Geologie en Mineralogie, Leiden, The Netherlands

Jagt, J.W.M., & A.W. Janssen. Preface to 'Faunal and stratigraphical aspects of the Early Palaeocene (Danian) in the SE Netherlands and NE Belgium'.—Meded. Werkgr. Tert. Kwart. Geol., 25(2-3): 111-114, 3 figs. Leiden, October 1988.

Six papers on various aspects of the Palaeocene (Danian) deposits in the Maastricht area (SE Netherlands and NE Belgium) are presented. The main purpose of this issue is to revive the discussion on the exact age and to stimulate a further detailed study of these deposits and their correlation with contemporaneous deposits elsewhere in NW Europe.

J.W.M. Jagt, 2de Maasveldstraat 47, 5921 JN Venlo, The Netherlands; A.W. Janssen, Rijksmuseum van Geologie en Mineralogie, Hooglandse Kerkgracht 17, 2312 HS Leiden, The Netherlands.

When compared to the underlying Late Maastrichtian deposits, strata of Early Palaeocene (Danian) age in the type area of the Maastrichtian (southern Limburg, The Netherlands, and adjacent Belgian territory) have received only little attention. Since new quarrying activities have recently started in the former Curfs quarry at Geulhem (Fig. 1), stratotype of the Geulhem Member of the Houthem Formation, and the temporary sections along the Albert Canal (Figs 2 and 3) between Vroenhoven bridge and Veldwezelt bridge (province of Limburg, Belgium) have yielded enormous amounts of macrofossil material, the time seems right to devote this thematic issue to faunal and stratigraphical aspects of the Danian in the area. Publications that have appeared over the past decade treat isolated aspects of the Geulhem Member and its fauna only. A detailed picture of the biostratigraphy, sedimentology, nanno-, micro- and macrofossil assemblages and correlation with the type Danian is not yet available. One of the reasons for this may be that the results obtained from analyses of the various fossil groups of biostratigraphic value turn out to be conflicting. Still, there is a general consensus in the recent literature as to the Danian age of the Geulhem Member. It is mainly through lack of sufficient data that a precise correlation (when at all possible) with the type Danian has not yet been established.



Fig. 1. Section of the former Curfs quarry at Geulhem, municipality of Valkenburg aan de Geul, province of Limburg, The Netherlands.

From bottom to top the following deposits are visible: Meerssen Member of the Maastricht Formation (Maastrichtian); Vroenhoven Horizon (= base of the Geulhem Member, indicated with an arrow); Geulhem Member of the Houthem Formation (Palaeocene, Danian); Klimmen Member of the Tongeren Formation (Oligocene, Latdorfian). This section is overlain by some 12-15 m of various Pleistocene deposits.

Photograph A.W. Janssen, May 1988 (copyright Rijksmuseum van Geologie en Mineralogie, Leiden)

The aim of the present issue is to revive the discussion on the exact age of the Geulhem Member and on the Cretaceous-Tertiary (K-T) boundary in the Maastrichtian type area. In this respect, it is very unfortunate that the temporary sections along the Albert Canal are now practically all overgrown and inaccessible for detailed studies. This is especially unfortunate since preliminary data have shown that the Geulhem Member here is more completely developed than at its stratotype at Geulhem. These temporary sections have been accessible over a period of several years; yet, no detailed analyses have been carried out of stratigraphically important groups such as calcareous nanoplankton, planktonic foraminifers and dinoflagellates. The studies that have been carried out were invariably on a small scale, so that we are still left with a rather patchy picture of the Danian in the area.



Fig. 2. The Albert Canal at Riemst, province of Limburg, Belgium, looking North, with the Veldwezelt bridge in the background.

Some exposures slightly above waterlevel in the Danian Geulhem Member (compare Fig. 3) are still present after large-scale excavations for broadening the canal.

Photograph R.W.J.M. van der Ham, March 1987 (with kind permission copied from van der Ham *et al.*, 1987, in: *Publ. Natuurhist. Genootsch. Limburg*, 36).

In the light of a renewed world-wide interest in the phenomena at the K-T boundary, such as extinction events, whether induced by extraterrestrial impacts or not, it would seem rewarding to restudy the faunal assemblages on both sides of the boundary in the SE Netherlands and NE Belgium, especially so as a proper understanding of the Maastrichtian Stage involves a good knowledge of its upper limit.

It should be noted that the data presented in the contributions in the present issue are partly of a preliminary nature. It is to be hoped that in the near future well-coordinated, multidisciplinary studies will be carried out, which should focus especially on the section as exposed in the former Curfs quarry and provide a detailed picture of the stratigraphic ranges of such fossils as calcareous nanoplankton, dinoflagellates, planktonic foraminifers and echinoderms. Analyses of the yield of boreholes in southern Limburg and contiguous areas in Belgium will undoubtedly complement and refine the picture.

In this issue papers dealing with ostracod assemblages across the K-T boundary, lithology, bioclast assemblages and gamma radiation, with selected molluscs, cirripedes and echinoids are presented, some of which offer data on the underlying Maastrichtian as well.



Fig. 3. Temporary exposure along the Albert Canal at Riemst, province of Limburg, Belgium, at the locality illustrated in Fig. 2.

Upper part of Geulhem Member (Danian), overlain by silty Klimmen Member deposits (Oligocene, Lattendorfian), separated by an irregular boundary.

Photograph R.W.J.M. van der Ham, March 1987 (with kind permission copied from van der Ham *et al.*, 1987, *in*: Publ. Natuurhist. Genootsch. Limburg, 36).

In view of the fact that locally highly fossiliferous Danian strata cover the Maastrichtian in its type area, it is advised to select a key section exposing the K-T boundary (preferably at the former Curfs quarry).

It is our hope that this issue will trigger off a renewed interest in the Danian of the Maastricht area, especially from members of the Werkgroep voor Tertiaire en Kwartaire Geologie, who might act as promoters of several future projects.