A humerus of the saber-toothed cat, *Homotherium crenatidens* (Weithofer, 1889) dredged from the seabed between the British Islands and The Netherlands

Dick Mol & Wilrie van Logchem

In the last issue of 2008 (Volume 25, 2) of Cranium, the journal of the Dutch Working-Group on Pleistocene Mammals (Werkgroep Pleistocene Zoogdieren, WPZ, http://www.pleistocenemammals.com/new/) Wilrie van Logchem and Dick Mol announce the discovery of a distal end of the saber-toothed cat, *Homotherium crenatidens,* which fishermen trawled from the bottom of the North Sea between the British Islands and the European continent. The richly-illustrated paper "De vroeg-pleistocene sabeltandkat, *Homotherium crenatidens* (Weithofer, 1889), voor het eerst opgevist van de bodem van de Noordzee" has been published in December 2008.

The distal end of a left humerus was uncovered by the crew of the fishing vessel Klasina-J., a beam trawler registered as TX1 at the island of Texel, The Netherlands. The authors assigned the fossil to the Early Pleistocene (2 600 000 – 850 000 years ago) because of its degree of mineralization, in addition to the geological and palaeontological data of the site where it was found (52º50' N. - 02º18' E.).

An extensive comparative study at the Forschungsinstitut und Naturmuseum Senckenberg, Forschungsstation für Quartärpaleontologie in Weimar, Germany led to the attribution of the humerus fragment to the Pliocene and Early Pleistocene saber-toothed cat, *Homotherium crenatidens.* Almost as heavy as a small horse, the large and powerful felid could reach a weight up to 400 kg.

In Weimar, the specimen was compared with six large felid species of the renowned site Untermassfeld, Germany (Late Early Pleistocene, around 1.2 million years old). This unique felid community of the locality Untermassfeld consists of cheetah (*Acinonyx pardinensis pleistoceanicus*), puma (*Puma pardoides*), lynx (*Lynx issiodorensis*) and European jaguar (P*anthera onca gombaszoegensis*) as well as saber-toothed cats (*Megantereon cultridens* and *Homotherium crenatidens*). The North Sea humerus fragment shows characteristics that perfectly resemble those of the distal ends of a humerus from *Homotherium crenatidens* (IQW 1982/18 434 (Mei. 17954)) in the Untermassfeld-collection. The morphology of the humeri of the cheetah, puma, lynx, European jaguar and saber-toothed cat *Megantereon cultridens* differs enough to conclude that it did not belong to one of these species.

The study of literature, focusing on the detailed description of a complete skeleton of *Homotherium crenatidens* that was excavated from the classical site Senèze, Central Massive, Auvergne, France by Raymond Ballesio in 1963, suggests that the North Sea specimen belongs to an extremely large and probably male individual.

This discovery marks the first time that the heavily built scimitar-toothed cat *Homotherium crenatidens* is recorded from the southern bight of the North Sea. The other species of saber-toothed cat that is known from the North Sea, is the powerful and comparatively slender *Homotherium latidens,* which lived in the area up to the end of the Late Pleistocene (28 000 BP).

Van Logchem & Mol consider the North Sea *Homotherium crenatidens* as a species which inhabited the southern bight of the North Sea between East Anglia and The Netherlands in the Early Pleistocene, 2 600 000 – 850 000 years ago. Within this time frame, the saber-toothed cat was a species belonging to a fauna along with southern mammoths (*Mammuthus meridionalis*), hippos (*Hippopotamus antiquus*), rhinos, (*Stephanorhinus etruscus*), large horses (*Equus major*), short-faced hyenas (*Pachycrocuta brevirostris*) and several species of deer.

The spectacular discovery of the species *Homotherium crenatidens* in northwestern Europe has been presented in the exhibition "Opgeraapt, Opgevist, Uitgehakt – fossielen uit Nederlandse bodem" in the Natural History Museum in Rotterdam until the end of January 2009. In this exhibition the famous Late Pleistocene mandible of *Homotherium latidens* is also displayed.

Further reading:

Ballesio, R. 1963. Monographie d'un Machairodus du gisement Villafranchien de Senèze: *Homotherium crenatidens* Fabrini. – Travaux du Laboratoire de Géollogie de la Faculté des Sciences de Lyon, N.S., no. 9: 1-129.

Hemmer, H. 2001. Die Feliden aus dem Epivillafranchium von Untermassfeld. – In: **Kahlke, R.-D. (Hrsg.). 2001.** Das Pleistozän von Untermassfeld bei Meiningen (Thüringen). Teil 3 – Monographien des Römisch-Germanischen Zentralmuseums Mainz, Band 40, 3: 699 –782.

Logchem, W. van, & D. Mol, 2008. De vroeg-pleistocene sabeltandkat, *Homotherium crenatidens* (Weithofer, 1889), voor het eerst opgevist van de bodem van de Noordzee. – Cranium, 25, 2: 3-16.

Mol, D., W. van Logchem, K. van Hooijdonk & R. Bakker. 2007. De Sabeltandtijger uit de Noordzee. – Norg, Drukware: 1-160 (see PalArch's Journal of Vertebrate Palaeontology 5, 2 (2008) at www.PalArch.nl for a book review).

Mol, D., J. de Vos, R. Bakker, B. van Geel, J. Glimmerveen, H. van der Plicht & K. Post. 2008. Kleine encyclopedie van het leven in het Pleistoceen. Mammoeten, neushoorns en andere dieren van de Noordzeebodem. – Diemen, Veen Magazines: 1-233.

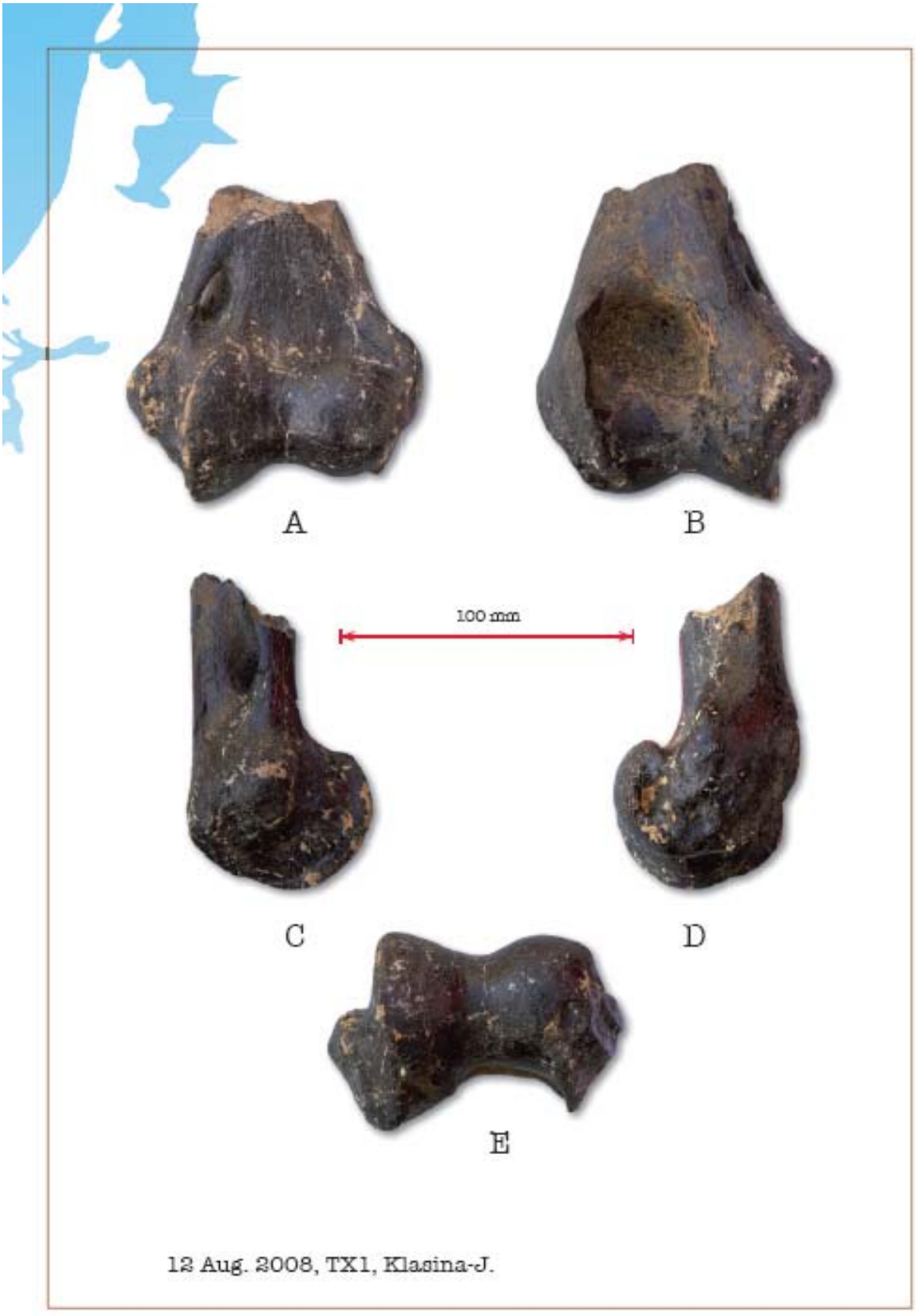

Figure 1 (previous page). The distal end of the humerus of Homotherium crenatidens *from the North Sea. A) Anterior view, B) posterior view, C) medial view, D) lateral view and E) distal view of the trochlea. Collection Bert Schagen, Texel, The Netherlands. Photography Hans Wildschut.*

Figure 2. Comparison of the humerus fragment in the extensive collections of the Forschungsinstitut und Naturmuseum Senckenberg, Forschungsstation für Quartärpaleontologie in Weimar, Germany. Photography Dick Mol.

Colophon

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Contributions can take the form of, for instance, excavation reports, material studies, databases etc. PalArch is especially, but not exclusively, suitable for submission that involves large amounts of data.

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