



Berichten van de Rijksdienst
voor het Oudheidkundig Bodemonderzoek

jaargang 24, 1974

ROIB

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A Medieval Jaw-Sledge from Dordrecht

figs. 1-6; pls. xxv-xxvi

The excavation in the medieval town centre of Dordrecht, province of South Holland, were carried out by the Rijksdienst voor het Oudheidkundig Bodemonderzoek (ROB) between 1968 and 1971; the work was directed by H. Sarfatij. In the course of these excavations, 1013 identifiable animal bone remains dating from the fourteenth and fifteenth centuries were recovered.

A preliminary study of the bones was carried out in 1973 at the Instituut voor Prae- en Protohistorie (IPP) (since 15 November 1974, the Albert Egges van Giffen Instituut voor Prae- en Protohistorie), University of Amsterdam. A detailed analysis of the faunal remains will be published as a part of the report by Mr Sarfatij of the archaeological investigations in Dordrecht. One of the worked bones, however, is discussed here in advance. The author would like to thank Mrs van Wijngaarden-Bakker and Mr P.J.A. van Mensch for bringing to his attention most of the parallels found in paintings and drawings. The piece under discussion is the left half of a lower jaw (number given by author D 428/2) of a horse: total length 33.5 cm, with a polished bottom surface 22 cm long (fig. 2 and pl. xxv: 1).

The right part of the jaw has been broken at the front side next to the alveolus of the medial incisor; at the rear end the vertical ramus has been removed behind the alveolus of M₃. On the left side the medial incisor is in a primary state of development, while the lateral one is undeveloped. The three milk-premolars are well worn. The first molar is present; the alveoli indicate that the second molar has also erupted but not the third molar. According to Habermehl,¹ the age of the horse can be estimated at approximately two and a half years.

Because a piece of the bottom was removed and polished, the jaw can easily stand upright without support. At first

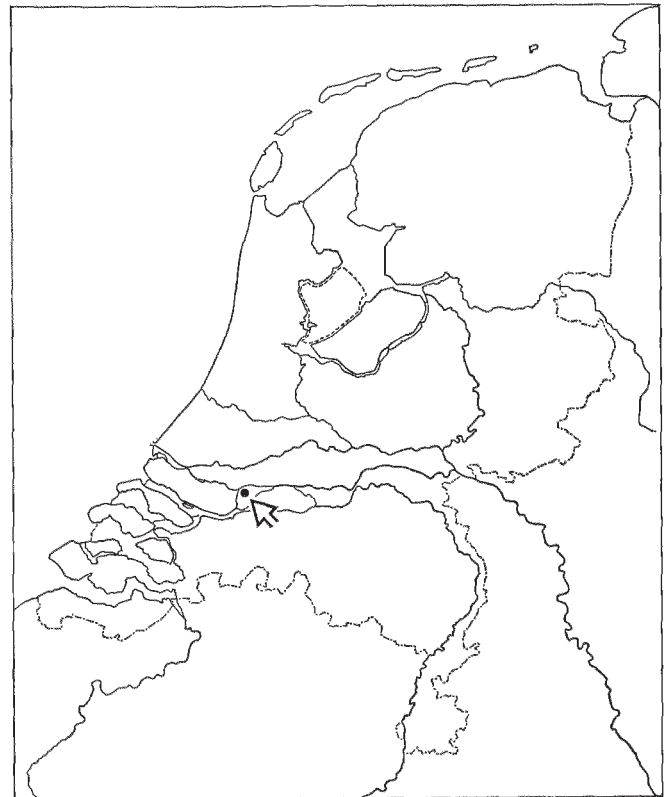


Fig. 1 Situation of Dordrecht

it was thought that the jaw has been polished for a certain purpose, for example for smoothing hides, but after a study of various parallels it became quite clear that the jaw was used as a sledge runner. The polishing must have been caused by the use of the jaw on a perfect plane surface, in other words on ice.

A find that is directly comparable with the Dordrecht find is the *Arnsvalder Kieferschlitten* (a jaw-sledge from

¹ Habermehl 1961, 32-4.

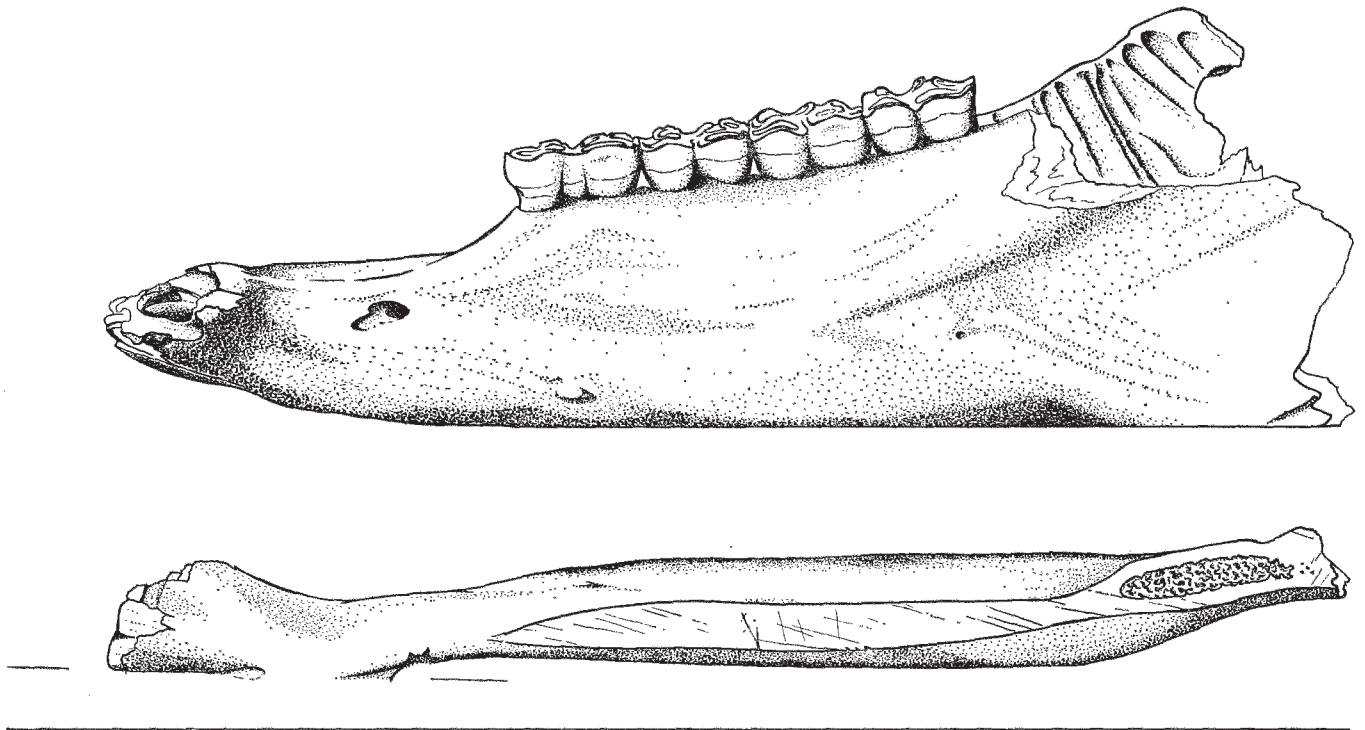
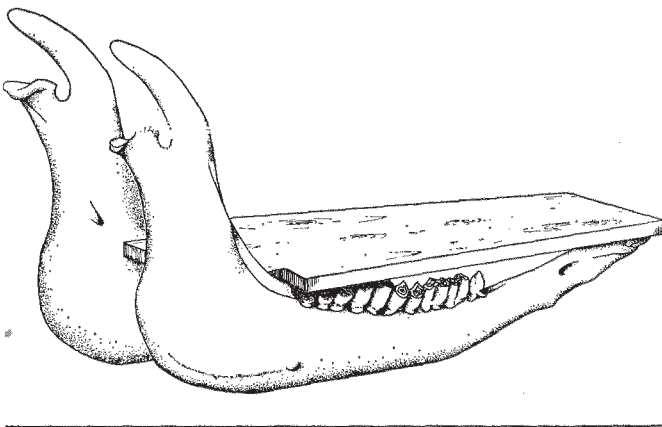


Fig. 2 Drawing of the mandible, lateral and ventral view (scale 1 : 2). Drawing, A.M. Numan, IPP

Fig. 3 The jaw-sledge from Arnswalde, Kreis Neumark, after Herman 1902. Drawing, A.M. Numan, IPP



Arnswald, Kreis Neumark in the former province of Brandenburg, Germany) in the collection of the former Museum für deutsche Volkstrachten und Erzeugnisse des Hausgewerbes, Berlin.² The *Arnswalder Kieferschlitzen* (fig. 3) has a simple construction: a triangular piece of wood has been placed on the dentition of a complete cow mandible. According to Herman, both cattle and horse mandibles were used as jaw-sledges.

One of the earliest examples of a drawing of a jaw-sledge can be found in the margin of a Gothic manuscript: a calendar of Saint Peter of Blandigny, a Flemish manuscript dated to the first quarter of the fourteenth century.³ It shows a child on a sledge holding two wooden prickers, presumably pointed with a metal end. From the small drawing it is difficult to say anything about the construction of the sledge, but it seems as if the wooden bench is supported by an additional piece of wood (pl. xxv:2). Three examples are to be found on sixteenth and seventeenth-century paintings and drawings by Pieter Bruegel

2 Herman 1901-2.

3 Randall 1966, pl. xcvi: 471.

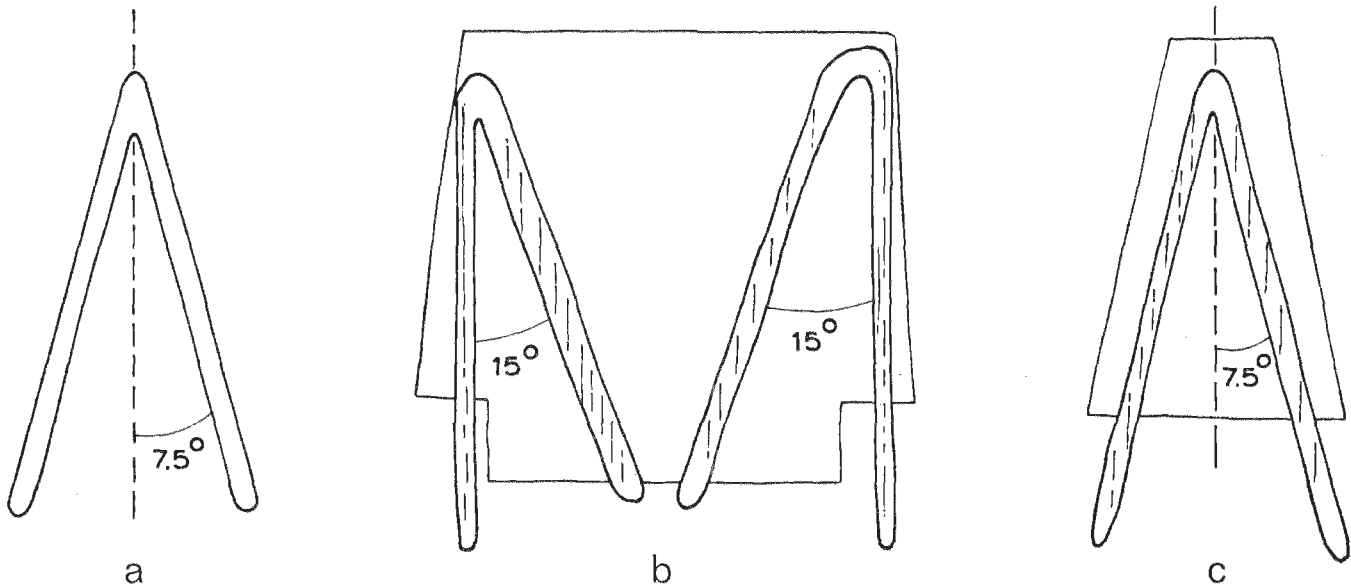


Fig. 4 a. Shows the angle between one half of a jaw of a horse and the centre-line (7.5°). b. When two jaws are placed under a piece of wood, the possibility exists that scratches on the jaws are up to 15° . c. If the Dordrecht sledge was of this single type, the scratches should have been at an angle of 7.5° . Drawing, J.P. de Wit, IFF

the Elder and Hendrik Avercamp. The boy on an engraving after Pieter Bruegel the Elder, *The St George Gate at Antwerp*, painted about 1555, must have been very small because his legs are resting on the front teeth of the jaw while his entire body is between the vertical parts of the jaw (pl. xxvi:2). In 1557 Pieter Bruegel the Elder painted *The Adoration of the Magi*. In the lower right corner of the painting we find the best parallel for the Dordrecht sledge form (pl. xxvi:1). Two complete jaws are used in this catamaran-type of sledge (fig. 6). It follows that the vertical parts of the two inner halves of the jaws must have been removed in order to make the insertion of a broader bench possible. There are two main arguments for supposing that the Dordrecht sledge was of this type. First, the vertical ramus of the jaw has been removed; and second, the scratches on the polished surface form an angle of 15° with the centre line between the jaw's two halves, which is double the natural angle between the two parts of a



Fig. 5 The sledge drawn after Avercamp (by permission of the Rijksprentenkabinet, Amsterdam). Drawing, A.M. Numan, IFF

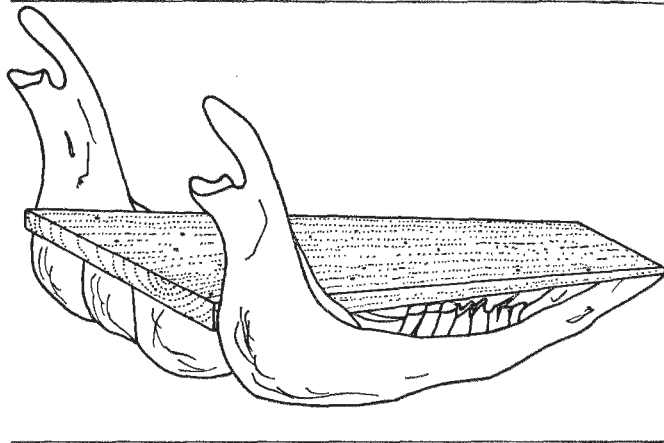


Fig. 6 The catamaran-type of sledge. Drawing, J.P. de Wit, I.P.P

complete horse mandible (as calculated by the author from three recent mandibles). Thus, the jaw in the sledge must have been placed with one runner parallel to the direction of movement and the other at 15° to this direction (see fig. 4). If the sledge was a catamaran-type, then the Dordrecht piece formed the inner part of the sledge's right runner.

The sledge drawn by Avercamp (c. 1620) differs from the other types because the boy in the drawing sits facing backwards (fig. 5). The construction of this type is hard to figure out. There seems to be a vertical piece of wood between the two parts of the jaw, but the way in which this is connected to the bone is not clear. The pictures show that all three jaw-sledge types were used on ice and not on snow. Finally, it is obvious that old-fashioned wooden sledges were imitations of the examples made of bone.

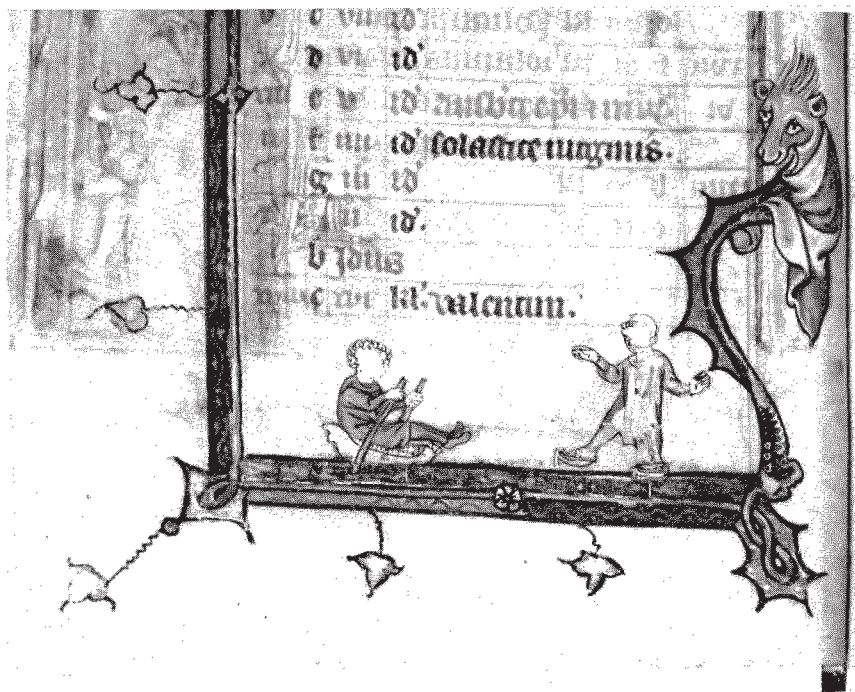
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1 The mandible from Dordrecht (photo F. Gijbels, 1999, Amsterdam)



2 Man on a sledge, after Randall 1966, pl. xcvi: 471 (by permission of the Bodleian Library, Oxford)



1 *The Adoration of the Magi*, by Pieter Bruegel, the Elder (by permission of the Rijksmuseum, Amsterdam)



2 *The St George Gate at Antwerp*, engraving by Fr. Huys and H. Cock, after Pieter Bruegel, the Elder; about 1555 (by permission of the Hamburg Kunsthalle)