

*Citation:*

L. Rutten, *Elephas antiquus* Falc. From the river Waal near Nijmegen, in:  
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The differences are at most  $\frac{1}{4000}$  of the values themselves, mostly however much smaller, and for the large volumes they are even of the order of 1 to 100.000. The mean error may safely be put at no more than one to 10.000, an accuracy which is certainly not reached for other sources of error in these measurements. Of course the values directly give only the volumes at the temperature and the pressure of the gauging. For other temperatures and pressures corrections must be applied, which we shall discuss in one of the following papers.

Amsterdam.

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**Geology.** — "*Elephas antiquus Falc. from the river Waal near Nijmegen.*" By Dr. L. RUTTEN. (Communicated by Prof. Dr. A. WICHMANN).

The dredging-works in the river Waal in the neighbourhood of Nijmegen have brought to light already many a finding of diluvial mammals.

By much the greater part of the bones found belong — as indeed nearly all remains of mammals dredged from our rivers — either to animals of the mammoth fauna<sup>1)</sup> or to animals of the postglacial fauna.

An exception to this rule is the fragment of a molar of *Elephas meridionalis* from the river Waal near Nijmegen,<sup>2)</sup> and this finding proved that in the sub-soil of the neighbourhood of Nijmegen also pliocene deposits must be found.

Mr. G. M. KAM of Nijmegen, who collects with laudable ardour all remains of mammals that are found in the neighbourhood of this town, showed me a short time ago a number of newly found typical molars of *Elephas primigenius Blum.* and moreover a molar belonging doubtlessly to *El. antiquus Falc.*, and which had been dredged from the river Waal, as were likewise the mammoth teeth.

Though the great stratigraphical value formerly ascribed to *Elephas antiquus*, has somewhat depreciated, because it is supposed from later discoveries that the *antiquus*-fauna and the *primigenius*-fauna, differ more facially than stratigraphically from each other,<sup>3)</sup> it seems however that, for our country, the rare fossils that are known of the *antiquus*-fauna are older than the remains of the *primigenius*-fauna.

<sup>1)</sup> L. RUTTEN. Die diluvialen Säugetiere der Niederlande. Diss. Utrecht, 1909.

<sup>2)</sup> L. RUTTEN. Ibid., p. 15—16.

<sup>3)</sup> A.O. W. SOERGEL, *Elephas trogontherii* Pohl. und *Elephas antiquus* Falc. Palaeontographica. LX, 1912.

The newly found molar is most likely a third genuine molar of the left lower-jaw. It is much worn out by mastication, so that at

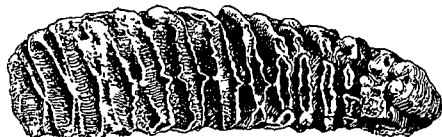


Fig. 1.

the frontal side a few lamillas have already disappeared. Extant are still  $\frac{1}{2}$  12x at  $221 \times 68 \times 117$  mm. During the wearing-out mastication there are formed on each lamina first a median, tape-shaped and two lateral, ring-shaped figures, which remain a long time separated, but finally fuse into a distinctly rhombic figure, so that the mastication-figures of two succeeding lamellae touch each other in the middle. (fig. 1). The enamel is  $2\frac{1}{2}$ —3 mm. thick and strongly plaited. The mentioned dimensions and characteristics are all extremely typical for *Elephas antiquus Falc.*

The molar was not much worn out and between the laminae it contained still a little ferruginous quartz-sand and some small pebbles of quartzite.

Much less typical is the remnant of mastication of another molar, belonging likewise most likely to *El. antiquus*. (fig. 2).



Fig. 2.

It contains still 4 laminae of  $55 \times 56$  mm. and is most likely a fragment of a first genuine molar of the upper-jaw. The very strongly plaited enamel is 2— $2\frac{1}{2}$  mm. thick. The figures of mastication can hardly be called rhombic; we must however take into consideration that these figures lose their typical character in the same measure as a molar is worn out by mastication. This fossil cannot possibly belong to *El. primigenius*; on account of its narrowness the molar shows the greatest affinity with *El. atiquus*.

**Chemistry.** — “On the nitration of methylurea.” By Dr. H. J. BACKER. (Communicated by Prof. FRANCHIMONT).

The behaviour of methylurea and of ethylurea on nitration is considered as a remarkable instance of the different influence which the methyl and ethyl group can exert on the properties of a compound.<sup>1)</sup>

DEGNER and VON PECHMANN<sup>2)</sup> have stated that with *methylurea* the nitration takes place at the *imino*-nitrogen atom, whereas according

<sup>1)</sup> DEGNER and VON PECHMANN, B. 30, 654 (1897). Also compare V. MEYER and JACOBSON's Lehrb. d. Org. Chemie I<sup>2</sup>, 1394 (1913).

<sup>2)</sup> B. 30, 652 (1897).