

«BEIRA»: FOURTH MOLAR IN LOWER JAW OF AN AFRICAN ELEPHANT (*LOXODONTA AFRICANA*)

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It is considered established that African elephants develop six cheek teeth during their life span, i.e., three deciduous molars (D2, D3, and D4) and three molars (M1, M2, and M3). To our knowledge, formation of a 4th molar has not previously been described.

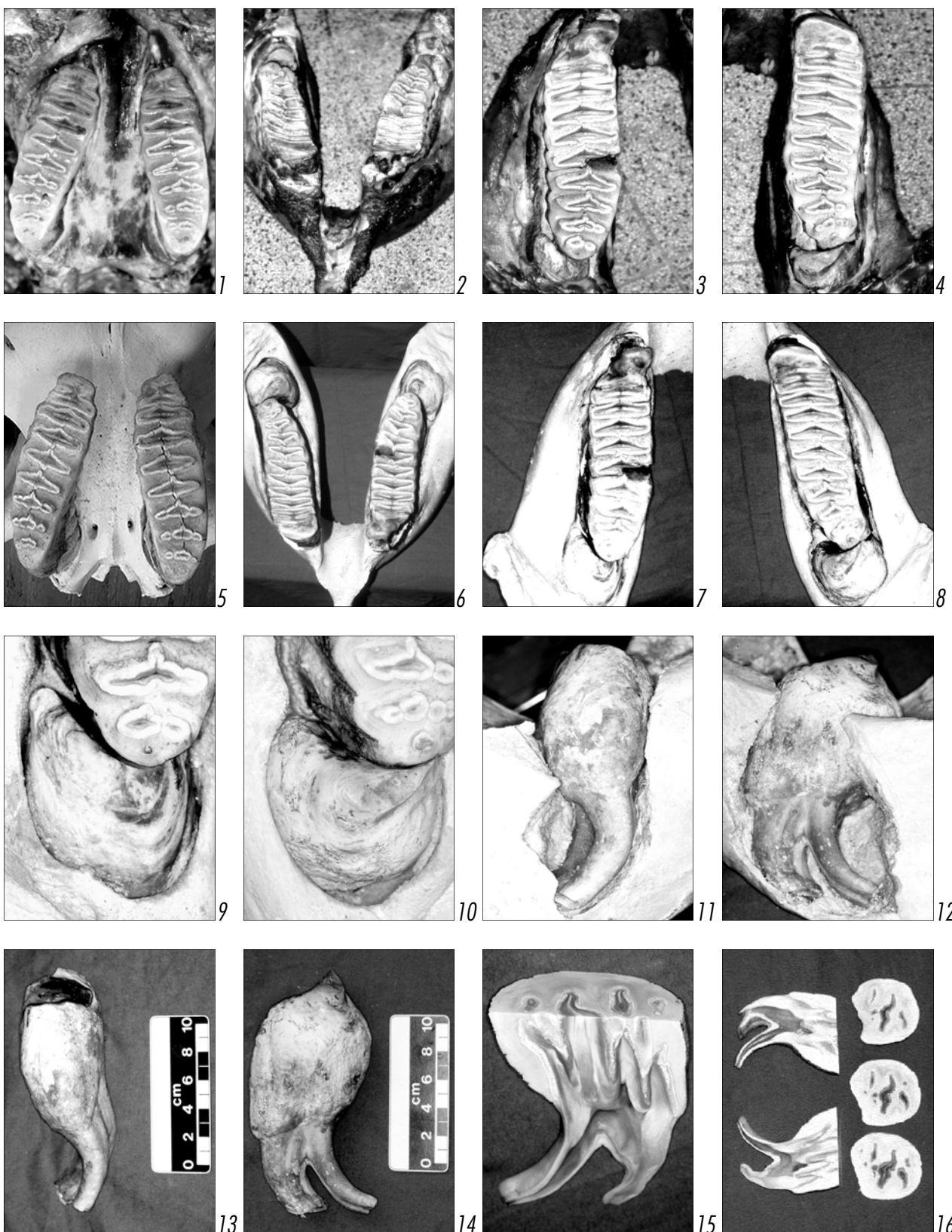
In the summer of 1953, the Basel Zoo purchased the female elephant «Beira» from the firm Carl Hagenbeck, Stellingen, Germany. The elephant was shipped from Maputo in Mozambique and arrived in Basel on October 9, 1953. Based on an assessment of the molars, Beira was estimated to be approximately 1 year older than the Zoo's African elephants imported from Tanzania in 1952. Beira adapted to the existing group without any problems.

In the morning of May 28, 1998, Beira was found lying on the ground of the open-air enclosure. The animal was unable to rise to her feet, and every effort to lift her up failed. Thus, the veterinary surgeon had no other option than to induce euthanasia. At her age of 48 years, Beira was probably the oldest elephant living in captivity at the time.

Examination of the crudely prepared mandibles revealed that the 3rd molars (M3) were considerably longer than expected for the animal's age (*Illustrations 1 and 2*). Surprisingly, 4th molars, located distally to the M3, were found bilaterally in the mandible (*Illustrations 3 and 4*). Accurate determination of the shape and size of these additional teeth was not possible in the intact preparation and required further dissection to provide detailed information (*Illustrations 5 and 6*).

The dimensions of the two M3 in the maxilla were as follows: right M3 = 25 x 7.8 cm with 10 lamellae; left M3 = 24.5 x 7.9 cm with 9 lamellae. The dimensions of the two M3 in the mandible were as follows: right M3 = 25 x 7.4 cm with 12 lamellae; left M3 = 25.5 x 7.2 cm with 10 lamellae. The left M3 exhibited a horizontal fracture extending into the roots. Moreover, a piece of tooth was missing occlusolingually (*Illustrations 7 and 8*).

Because both 4th molars were not in contact during occlusion, they were not worn down by friction. *Illustrations 9 and 10* show the two additional teeth still embedded in the mandible. The mystery of these additional teeth with regard to their size and shape was resolved only after removal of the 3rd molars and dissection of the additional teeth. The root apices of both teeth extended as far as the angle of the mandible (*Illustrations 11 and 12*). The 4th molar on the right side had a size of 7.2 x 6.0 cm and a weight of 0.78 kg, and was supported by four roots. The total length of the tooth from the crown to the root tips measured 16.4 cm (*Illustration 14*). While occlusion indicated the presence of one lamella, cross-sectional examination revealed four lamellae and an extended pulp cavity (*Illustrations 15 and 16*). In contrast, the 4th molar on the left side exhibited only two roots and had an overall dimension of 5.2 x 6.2 cm, at a total weight of 0.62 kg. Here, the length of the tooth measured 15.6 cm (*Illustration 13*). One occlusal lamella was also present, but the actual number of lamellae was not determined because the tooth was left intact.



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