

Brachypotherium aurelianense Nouel, var. nov.
Gailiti, from the Miocene deposits of the Turgai
region.

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The continental Tertiary deposits of the Turgai region, as has been repeatedly mentioned, contain at least three successive Mammalian faunas. The most ancient one, that of the Upper Oligocene *Indricotherium* beds, has been fully studied by the author (as regards all the hitherto collected material); the most recent Pliocene *Hipparion* fauna is so far but scantily represented; as to the intermediate Miocene fauna from the gypsiferous clays of the river Jilančik, a description of one of its representatives is given for the first time in the present paper.

The Jilančik fauna is not very diversified consisting all but exclusively of Rhinoceroses (at least three species) and Mastodons. The description of this fauna begins with a form, which, besides affording morphological and partly paleozoogeographical interest, is important from a stratigraphical point of view: similarly to what had formerly occurred in referring the fauna of the *Indricotherium* beds to the Oligocene by means of the study of the remains of *Epiaceratherium turgaicum*, the Burdigalian (Lower Miocene) age of the Jilančik fauna is now with still greater precision established in view of the occurrence of *Brachypotherium aurelianense*.

The following parts of the skeleton have been preserved from the form which is now being described:¹ one distorted skull (№ $\frac{1401}{D\ 399}$), and an incom-

¹ The Jilančik fauna has been revealed as a result of excavations undertaken under the auspices of the Academy of Sciences, in 1914; since that year the Geological Museum has repeatedly received specimens from the Jilančik beds: excavations have been since resorted to in 1916, 1924, and 1926; all the material collected prior to 1926 (collection 1401 D and 1748) forms the subject of the present paper.

plete dental apparatus from another (№ $\frac{1401}{D 2}$); of the skeleton nearly all the bones of the limbs (partly from one individual) could be pieced together; the lower jaw and the vertebrate column are lacking.

An exact determination of these remains (as of the Jilančik fauna in general) could only be reached after a careful comparative study of the fossils of the Museums in France (Marseilles, Lyon, Paris, Strassburg), England (London), and Germany (Stuttgart and Munich). I feel much obliged to the authorities of these Museums on account of the opportunities granted for my studies.

Skull. The specimen under review is depressed, its upper part being at the same time deflected to the right; the nasal bones are curved upwards, and the frontal-nasal suture is crushed; the temporal arches are fractured and adpressed to the skull. The skull, reconstructed (so far as it could be) in its original form (pl. I, fig. 1), is brachycephalic, with a short muzzle and widely expanded powerful jugal arches. The frontal surface, slightly concave, represents a flat rhombus with a slight longitudinal ridge; cristae parietales, as also crista sagittalis are but feebly expressed (owing to deformation?). The occipital region is much crushed, it should have been originally fairly broad, and in no case was it constricted upwards; crista occipitalis, somewhat broken, exhibits a slight concavity.

Both zygomatic arches, as mentioned above, are fractured: the width of the preserved anterior parts (very massive) reaches 85 mm. The anterior border of the orbit lies between P⁴ and M¹ (in the distorted skull), the posterior margin of the nasal-maxillary notch being disposed opposite the centre of P³ or even between P³ and P².

The frontal-nasal suture is fractured; the length of the nasal bones being about 170—180 mm, the distance from the nasal-maxillary notch not exceeding 120—130 mm; the nasal part of the skull apparently becomes narrower forwards; the precise form of the nasal bones, from their being much compressed, is, however, impossible to reconstruct: in any case these bones are fairly thin with an inconsiderable swelling in the region of the longitudinal suture, and constitute a sloping vault; they are, possibly, not joined all along the suture; at least, the separately preserved anterior part of the nasal bones exhibits traces of being united throughout a length of but a few centimeters anteriorly. The anterior extremity of the nasal bones is constricted and forms a swelling some five centimeters from its distal

end; at this point the nasals are orbicularly trapezoid in section, with a deep groove along the middle line (in place of the suture; this groove extends across the swelling indicated); the outer borders of the bones, on approaching their anterior extremity, are slightly raised, thereby constituting slight indentations. The swelling exhibits a rough surface pointing to the presence of a small horn.

The auditory regions are much crushed on both sides of the skull, in their present condition they exhibit the following structure: proc. paroccipitalis is short, its length (from proc. post-tympanicus to the end) measuring but 35 mm, although it may have admissibly become shorter as a result of the depression sustained by the skull; below it becomes narrower and slightly curved; along its posterior side runs a perceptible ridge, while the anterior one is correspondingly concave. The proc. post-tympanicus fuses with the proc. paroccipitalis; it is abbreviated, swollen at its lower end, and curved, so that the auditory sinus becomes orbicular in outline; at the same time it slightly overlaps the proc. postglenoideus, whence no fissure is observable between the two. Proc. postglenoideus is short, massive, triangular in section (being thicker in front than behind).

Dentition. The premolars differ considerably from the molars both in being smaller, and in exhibiting a peculiar structure (pl. I, fig. 2); molarisation of the teeth commences with P⁴, which as well as P³ is provided with an antecrochet and a feebly developed crotchet sometimes replaced by small plications; the cingulum is well developed. The molars are characterised by possessing well modelled protocone and a highly developed rounded antecrochet: the inner end of the protoloph assumes therefore the form of an assymetrical trifolium; the protocone widens considerably at its base, especially in M³, its lateral sides being concave, not flat. The inner end of the metaloph is patterned similarly to that of the protoloph, but in a less pronounced degree; the crotchet is well developed, the crista being wanting.

P¹ — first premolar — is wanting.

P² — second premolar — possesses a crown transversely elongated, becoming narrower inwards, with the flat outer side much inclined inwards, and the inner rounded. The transverse crests are unequal: the protoloph being less developed and shorter than the metaloph with which it unites at its inner end as a result of trituration; the metaloph is much widened at its inner end which has an angular outline (having as it were a modelled tubercle at that end). The median valley is of an irregular triangular (trapezoidal) shape, the posterior valley being of a similar shape and of nearly the same size, but somewhat differently disposed. The ectoloph has a feebly developed parastyle; the usual external ridge is wanting (a very slight plication only may be observed), but a fore and a hind ridges occur along the borders of the outer face of the tooth.

The cingulum is well developed on the whole inner side of the tooth.