A C T A P A L A E O N T O L O G I C A P O L O N I C A
Vol. 23 1 9 7 8 No 2

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NEW LATE CRETACEOUS MAMMAL LOCALITY IN MONGOLIA AND A DESCRIPTION OF A NEW MULTITUBERCULATE

Abstract. — A multituberculate *Tugrigbaatar saichanensis* gen. n., sp. n., assigned to the Eucosmodontidae is described on the basis of a skull and fragments of postcranial skeleton. It resembles a eucosmodontid from the Djadokhta Formation, *Kryptobaatar dashzevegi*, with which it is compared in detail. A multituberculate humerus is reconstructed. The Toogreeg beds cropping out at the locality of Toogreeg in the Gobi Desert (ca. 30 km WNW of Bayn Dzak) yield late Cretaceous mammals. The age of the beds is tentatively estimated as approximately equivalent to that of the Djadokhta Formation (?late Santonian and/or ?early Campanian).

INTRODUCTION

The fossil locality of Toogreeg (Toogreegeen Shireh), situated some 30 km WNW of Bayn Dzak in the Gobi Desert, was discovered in 1961 by Dr. R. Barsbold and the second author (see Dashzeveg 1963). In 1969, 1970, 1975 and 1976 this locality was explored by the Soviet-Mongolian Expeditions (Kurzanov 1972, Kramarenko 1974, Tverdochlebov and Tsybin 1974). The Polish-Mongolian Palaeontological Expedition worked there for one week in 1970 (Kielan-Jaworowska and Barsbold 1972, Gradziński and Jerzykiewicz 1972, Maryańska and Osmólska 1975, Gradziński *et al.* 1977). The sandstone cropping out at Toogreeg is different lithologically from that of the Djadokhta Formation at Bayn Dzak, but yields the same dinosaurian species: *Protoceratops andrewsi* and *Velociraptor mongoliensis* and similar dinosaur eggs.

In 1974 the second author found the skull of a multituberculate associated with fragments of its postcranial skeleton, in the eastern part of the outcrops at Toogreeg, in concretions of light-grey sandstone. The specimen is described in the present paper as *Tugrigbaatar saichanensis* gen. n., sp. n., assigned to the Eucosmodontidae.

Further mammalian specimens (including those of a eutherian mammal) were found in Toogreeg by Dr. Barsbold and his co-workers in 1976,

during the field work of the Soviet-Mongolian Palaeontological Expedition (personal information from Dr. R. Barsbold). These now are housed in the Palaeontological Institute of the USSR Academy of Sciences in Moscow.

It has been claimed by various authors (see Maryańska and Osmólska 1975, and Gradziński *et al.* 1977, for reviews) that the Toogreeg beds (informally called by Maryańska and Osmólska 1975, the Toogreeg formation) are stratigraphic equivalents of the Djadokhta Formation. The age of the latter has been tentatively determined by Gradziński *et al.*, (1977) as ?late Santonian and/or ?early Campanian. It is possible that the occurrence in Toogreeg beds of a multituberculate, unknown in the Djadokhta Formation, is the result of different ecological conditions prevailing during deposition of the two formations. However, the possibility that the rocks of the Toogreeg beds are somewhat younger or older than those of the Djadokhta Formation cannot be excluded. Because of the lack of more detailed data, and because the age of the Djadokhta Formation has been determined within wide time limits, we tentatively accept the interpretation that the Toogreeg beds are a stratigraphic equivalent of the Djadokhta Formation.

We express our gratitude to Prof. W. A. Clemens (University of California, Berkeley) and Dr. D. J. Archibald (Yale University, New Haven) for reading the manuscript and comments. The following persons from the technical staff of the Institute of Paleobiology (Zakład Paleobiologii) of the Polish Academy of Sciences in Warsaw helped us in preparation of this paper: Mrs Joanna Skarżyńska preparing the specimen and Mrs. K. Budzyńska making the drawings after our pencil sketches.

Abbreviations used for Institutions:

ZPAL Institute of Paleobiology (Zakład Paleobiologii) of the Polish Academy of Sciences, Warsaw.

GISPS Geological Institute, Section of Palaeontology and Stratigraphy the Academy of Sciences of the Mongolian People's Republic, Ulan Bator.

SYSTEMATICS AND ANATOMY

Family **Eucosmodontidae** (Jepsen, 1940)

Discussion. — Kielan-Jaworowska (1974: 30) stated that there is: "One pair of palatal vacuities" in eucosmodontids. She also mentioned (Kielan-Jaworowska 1970: 45): "... palatal vacuity slender, situated opposite P^4", in the diagnosis of *Kryptobaatar dashzevegi*, assigned to the Eucosmodontidae. When the paper by Kielan-Jaworowska (1970) was submitted for publication, the collection of *K. dashzevegi* from Bayn Dzak included

several specimens, all lacking braincases. The palate is cracked in the best preserved specimen, chosen as the holotype of *K. dashzevegi* (ZPAL MgM-I/21), suggesting the presence of palatal vacuities (see Kielan-Jaworowska 1970, pl. 14:1b). New better preserved material of this species, collected by members of subsequent Polish-Mongolian Expeditions, shows that the palatal vacuities are lacking in *Kryptobaatar*. They are also lacking in *Tugrigbaatar* gen. n., assigned to the Eucosmodontidae. It follows that the diagnosis of the Eucosmodontidae should be emended: palatal vacuities are either present or absent in members of this family. If the skull structure of eucosmodontid genera was better known (see list in Kielan-Jaworowska 1970: 30, and in addition *Buginbaatar* Kielan-Jaworowska and Sochava, and *Tugrigbaatar* gen. n.) it might prove that this family is not a natural unit. Some genera, now assigned to the Eucosmodontidae might in future be separated to constitute a new family.

Genus *Tugrigbaatar* nov.

Type species: *Tugrigbaatar saichanensis sp. n.* — the only species known.

Tugrigbaatar saichanensis sp. n.
(pls 1—4; figs 1—5)

Derivation of the name: generic — from the locality of Toogreeg in the Gobi Desert and from Ulan Bator (Ulan Baatar); specific — from Gurvan Saykhan mountain range.

Holotype (the only known specimen): GISPS 8-2 PST, almost complete, damaged skull, associated with mandibles and fragments of the postcranial skeleton.

Type horizon and locality: Toogreeg beds, ?late Santonian and/or ?early Campanian; locality of Toogreeg, Gobi Desert, Mongolia.

Generic and specific diagnosis. — Dental formula $\frac{2042}{1022}$ Relatively small eucosmodontid, length of the skull about 30 mm. Snout roughly rectangular in front of zygomatic arches, which are confluent with lateral margins of the snout. Frontals taper anteriorly toward a common point. Lacrimal, as seen in dorsal view, probably roughly rectangular. Premaxilla short, relatively shorter than in *Kryptobaatar*. Small round foramen of unknown function (?incisive foramen) in the palatal part of premaxilla. Palatal vacuities lacking. Glenoid fossa probably small, situated far laterally on the stout root of the zygomatic arch. Intersection

of occipital plane and occlusal plane of the teeth at approximately a right angle. Basicranial region poorly known. Lower jaw massive, posterior part strongly bent laterally. Condyle small. Upper tooth row straight in horizontal and vertical planes, with P^4 protruding ventrally. P^1 and P^2

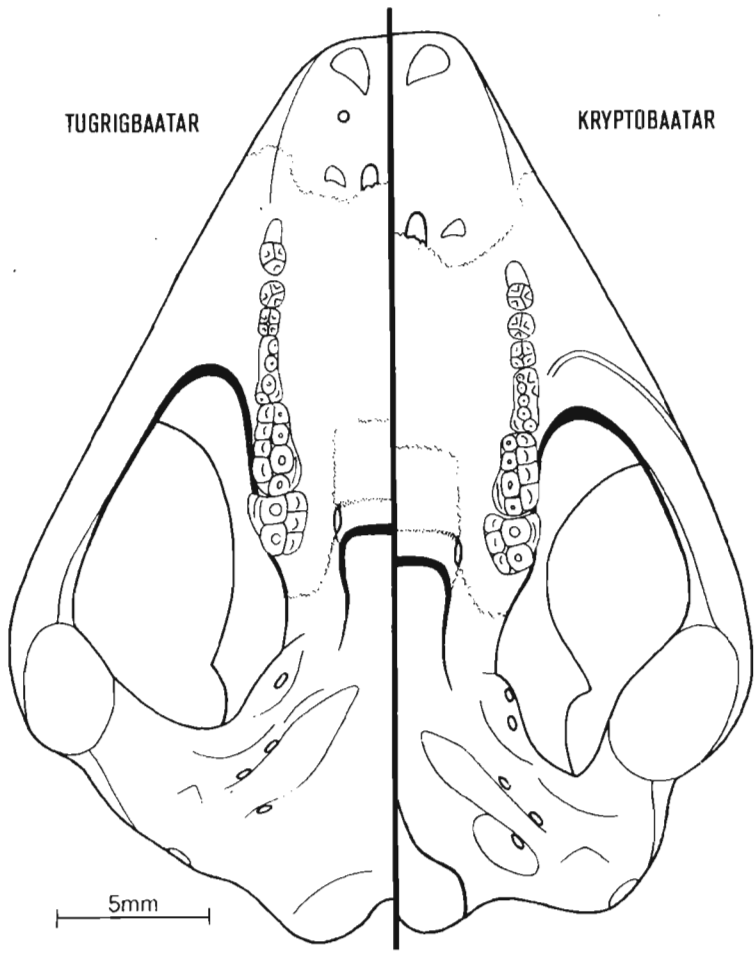

Fig. 1. Diagrammatic drawing of the skulls of *Tugrigbaatar saichanensis* sp. n. (left) and *Kryptobaatar dashzevegi* Kielan-Jaworowska (right), in palatal view, showing the differences between the two genera.

have 3 cusps; P^3 — number of cusps unknown; P^4 with ?4 cusps in the middle row, number of other cusps unknown; cusps ?4:4:ridge on M^1; 1:2:3 on M^2. Inner ridge on M^1 probably denticulated. P^4/M^1 length ratio 0.76. P_3 small, peg-like; P_4 arcuate with unidentified number of serrations possibly ?7 or 8 provided with ridges. Cusps 4:3 on M_1 and 4:2 on M_2. P_4/M_1 length ratio about 1.3.

Comparisons of the measurements of the dentition of *T. saichanensis* and *K. dashzevegi*

Species	*Tugrigbaatar saichanensis*	*Kryptobaatar dashzevegi*		
Mus. cat. no.	GISPS 8-2PST	ZPAL MgM-I/21 holotype	ZPAL MgM-I/6	GISPS 8--3PST
P^4 length	2.3	2.1	2.2	2.2
M^1 length	3.0	2.5	2.6	2.6
width	1.6	1.5	1.5	1.6
M^2 length	2.6	2.1	1.9	2.0
width		1.9	1.7	1.7
P_4 length	3.0	2.7		2.6
M_1 length	2.3	2.1		2.3
width		1.2		1.2
M_2 length	1.8	1.6		1.6
width	1.5	1.4		1.5

DESCRIPTION

SKULL

Snout and zygoma. — The nasals are extensive and strongly expanded posteriorly. The median processes of the frontals are deeply inserted between the nasals, probably forming a pointed end. The posterior pair of deep "vascular" foramina is preserved on the nasals, the anterior ones are not preserved. The premaxilla is short, directed vertically, except for the most dorsal segment. The premaxilla-maxillary suture extends almost vertically along the lateral wall of the snout. The infraorbital foramina, parts of lateral walls of the maxillae, and the anterior parts of zygomatic arches are not preserved. Only the posterior part of zygomatic arch is preserved on the right side of the skull. The glenoid fossa is incompletely preserved. Judging from the preserved fragment it was comparatively small, roughly oval and almost flat. It is situated far laterally, separated from the basicranial region by a stout root of the posterior part of the zygomatic arch, which is directed more transversely than longitudinally.

Palate. — The palatal processes of the premaxillae form concave surfaces, anteroposteriorly shorter than in other eucosmodontids, occupying about one third of the palatal length. A small round foramen of unknown function is present on the premaxilla at mid-length between I^1 and I^2.

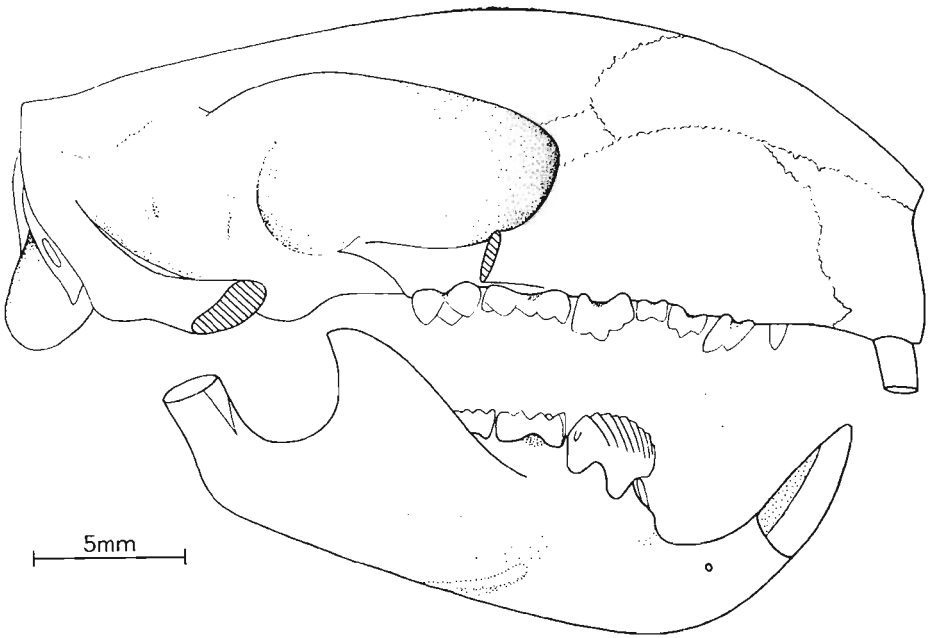

Fig. 2. *Tugrigbaatar saichanensis* sp. n.: reconstruction of the skull and lower jaw in lateral view.

It might be an incisive foramen. It is too small to be interpreted as an alveolus of an additional incisor. Also, as demonstrated by Hahn (1971), of the three pairs of the upper incisors present in the Jurassic Paulchoffatidae, the first was lost, and the two pairs occuring in the late Cretaceous multituberculates are I^1 and I^3. The upper incisors in Cretaceous and Tertiary multituberculates are commonly referred to as I^1 and I^2, but recognizing that this does not express homologies we follow Hahn's designations I^2 and I^3. The palatine fissure of roughly triangular shape is present on the lingual side of I^3; its posterior margin reaches the premaxilla-maxillary suture. The palatal processes of the maxillae are slightly concave, and palatal vacuities are absent. Because of damage the major and minor palatine foramina are not recognizable. The course of the palatine suture is only tentatively recognized. A postpalatine torus and palatonasal foramen are present. Details of the choanal structure cannot be discerned because of damage. The vomer and pterygoids are not preserved. A part of the basisphenoid is present.

Cranial roof. — The bones of the cranial roof are almost entirely destroyed but part of the endocranial cast has been preserved. It is of the same general pattern as that of *Ptilodus montanus* (see Simpson 1937), differing, however, in having a distinctly longer cerebellum. A study of the endocranial casts of Cretaceous multituberculates from Mongolia will be the subject of a separate publication. The fronto-parietal suture

cannot be traced and the postorbital processes are not preserved. The lambdoidal crests are present, more prominent laterally than medially.

Occiput. — The occiput is roughly semicircular in shape. Its upper part is oriented at about a right angle with regard to the plane of the palate. In the lower part the prominent occipital condyles protrude posteriorly beyond the surface of the upper part of the occipital plane. The occipital surface of the condyles forms an angle of less than 90° with the plane of the palate. The region of the foramen magnum is damaged and its size and shape are only tentatively reconstructed. The

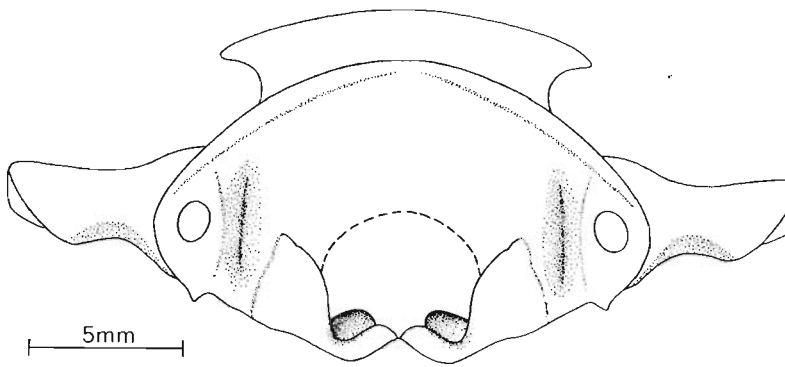

Fig. 3. *Tugrigbaatar saichanensis* sp. n.: reconstruction of the skull in occipital view.

condyles are unusual, consisting of an extensive posterodorsal part, that is very wide and not distinctly separated from the lateral part of the occipital plate, and a smaller ventral part. The upper surface of the ventral part is visible through the foramen magnum, in the bottom of the braincase. The lower surface of the ventral parts of the condyles is badly damaged. Judging from the preserved fragments they were prominent, strongly protruding ventrally. Lateral to the foramen magnum is a deep, fusiform depression bordered laterally by a crescent-shaped ridge. Sutures are not recognizable on the occipital plate. Lateral to the fusiform depression is a large post-temporal fossa. The paroccipital process is small, situated below and somewhat medial to the post-temporal fossa.

Orbit and temporal fossa. — This region is badly damaged on both sides of the skull. The anterior margin of the orbit is placed about opposite the anterior end of M^1. The only details that can be seen are the suture between the ascending lamina of the petrosal and the parietal (similar to that of *Nemegtbaatar*) and two oblique ridges on the anterior lamina of the petrosal.

Basicranium and ear. — The basicranial region is badly damaged. The suture between the maxilla and ectopterygoid (similar to that of *Kampto-*

baatar) is preserved on the left side of the skull. The ectopterygoid — alisphenoid suture is not discernible. A crescent-like wing of the alisphenoid protrudes ventrally in the anterolateral part of the basicranial region. This feature is characteristic of all Mongolian Cretaceous multituberculates. Possibly the basisphenoid-basioccipital suture is recognizable at the level opposite the mid-length of the promontorium, however, this line might be a crack.

It appears from the preserved parts that probably there was a deep fossa, which separated the condyle from the posteromedial margin of the promontorium (as in *Kamptobaatar*). On both sides of the skull the promontoria are damaged. The preserved parts suggest that promontorium was probably similar in shape to that of *Kamptobaatar*. The promontorium has a narrow basal part, inserted between two fossae: the fossa which houses the jugular foramen and the epitympanic recess. Fenestra vestibuli and fenestra cochleae are preserved on the left side of the skull. The facial foramen (VII) is tentatively recognized on the left side of the skull, along the lateral margin of the promontorium and in front of the fenestra vestibuli. The lateral flange of the petrosal, (as preserved on the right side of the skull) is very prominent. In front of it is a deep recess, more sharply limited from the recess of the tympanic cavity and from the region for foramina for V, than in *Kamptobaatar*. It is impossible to determine with any certainty into how many foramina the foramen for V was divided. Other foramina in the basicranial region are not recognizable. In general, the basicranial region of *Tugrigbaatar* resembles that of *Kamptobaatar* more closely than those of any other known multituberculate.

Mandible. — Right and left mandibles are preserved, but the posterior parts of both are damaged. The lower margin of the mandible forms an angle of about 15° with the plane of the teeth. The coronoid crest starts lateral to the middle of M_1. The masseteric crest is prominent anteriorly,

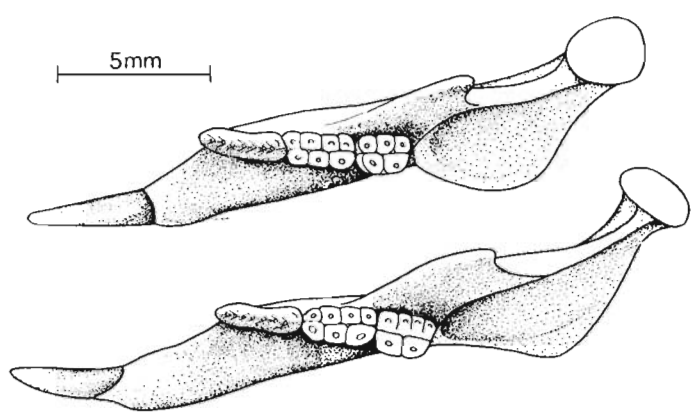

Fig. 4. Comparison of the right lower jaws in occlusal view of *Kryptobaatar dashzevegi* Kielan-Jaworowska (upper) and *Tugrigbaatar saichanensis* sp. n. (lower).

but diminishes in width posteriorly. It starts ventrolateral to the posterior root of M_1 and extends posteriorly as a ridge, concave upwards. It reaches the posterior margin of the mandible behind the level of the last molar. The masseteric fossa is moderately deep. The pterygoid fossa is large and deep, and begins behind the posterior margin of M_2. Entrance to the dental canal is afforded by a single, large foramen, in the middle of the anterior wall of the fossa. One mental foramen is discernible in the left mandible, below the middle of the diastema. The surface of the symphysis is shaped like a comma. The ascending ramus of the mandible is strongly bent outwards. The condyle is small, situated on a narrow stem.

Dentition. — Only the root of I^2 has been preserved; its structure suggests that this tooth was strong, with a thick layer of enamel. I^3 is small, peg-like, directed somewhat obliquely medially. P^1, P^2, and P^3 are double-rooted, P^1 and P^2 have 3 cusps, the number of cusps on P^3 is unknown (possibly 4). P^1 is the largest of the first three premolars, P^3 the smallest. P^4 is incompletely preserved; the number of cusps in outer row is unknown; there are ?4 cusps in the middle row and one cuspule in the inner row. In the middle row the penultimate cusp is the largest. The cusp formula for M^1 is 4:4:ridge. The ridge is finely crenulated. It the middle row the penultimate cusp is the largest. The inner ridge extends for half the length of the tooth. The cusp formula for M^2 is 1:2:3, the first cusp of the medial row is the largest cusp on the molar. I_1 is a strong tooth, with a very thick, sharply limited enamel band along its ventrolateral surface. P_3 is peg-like, entirely hidden under P_4. P_4 is arcuate, with the highest point reaching the level of the lower molars. The number of serrations on P_4 cannot be established with any certainty (possibly 7 or 8); all appear to be provided with ridges. A basal cuspule is present on the posterior part of the labial side of the crown. Cusp formula for M_1 is 4:3, for M_2 4:2. The first cusp in the outer row in M_2 is larger than the three posterior cusps.

POSTCRANIAL SKELETON

Representation of the postcranial skeleton consists of a damaged proximal part of the left humerus, and a distal part of the right humerus associated with a badly damaged fragment of the left ulna. Fragments of broken ribs are preserved on both sides of the specimen.

Humerus. — A complete multituberculate humerus has yet to be described, and it is difficult to estimate the degree of twisting of the anterior and distal ends. Gidley (1909) reconstructed the humerus of *Ptilodus* with almost no twisting. A comparison of the proximal part of the left humerus and the distal part of the right humerus of *Tugrigbaatar* indicates that the degree of twisting was greater than reconstructed by Gidley (1909), but probably smaller than reconstructed by Jenkins and

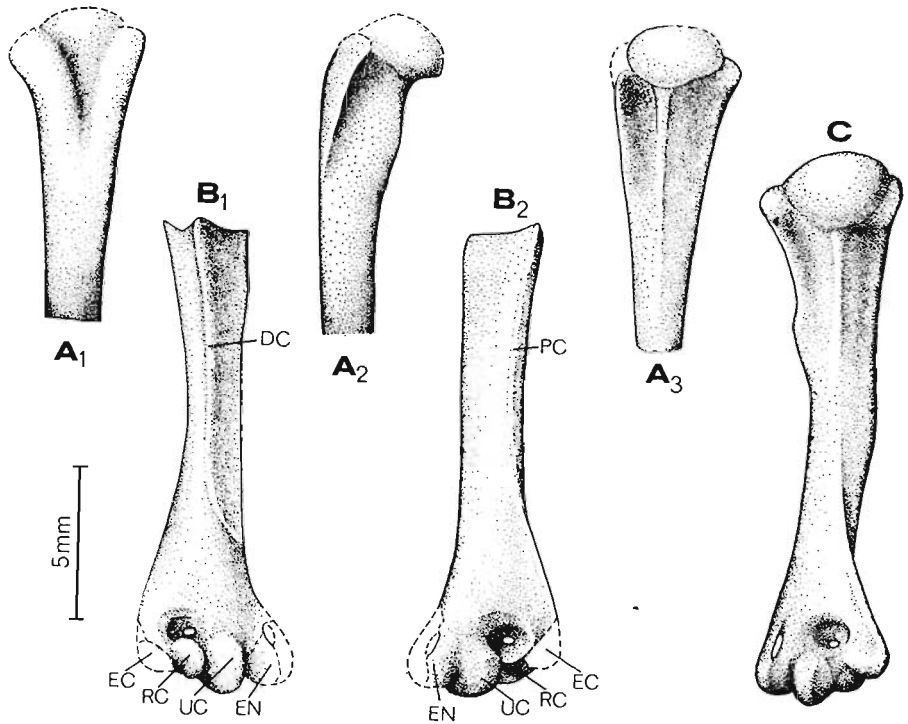

Fig. 5. *Tugrigbaatar saichanensis* sp. n.: the humerus; A, reconstructed proximal part of the left humerus, A_1 anterior, A_2 lateral, A_3 posterior views; B reconstructed distal part of the right humerus, B_1 anterior, B_2 posterior views; C reconstruction of the entire right humerus in posterior view. All the reconstructions based on holotypic specimen. DC deltopectoral crest, EC ectepicondyle, EN entepicondyle, PC posterior crest, RC radial condyle, UC ulnar condyle.

The figures A_3, B_2 and C, referred to as "posterior views" are not in exactly the same positions, due to the difficulty in estimating what was the exact posterior, posteromedial or posterolateral position of multituberculate humerus.

Parrington (1976) for *Eozostrodon*. A tentative reconstruction of the *Tugrigbaatar* humerus is given on fig. 5C.

Examination of the damaged head indicates that it differs from that of *Ptilodus gracilis*, described by Gidley (1909), and *Djadochtatherium matthewi* described by Simpson (1928), in being more prominent and overhanging the shaft to a greater extent. Other, undescribed multituberculate humeri from Mongolia in the ZPAL collection, belonging to the genera *?Kryptobaatar* and *Chulsanbaatar*, show similar prominence of the head. The reconstruction of the proximal part of the humerus (fig. 5A) is based partly on better preserved humeri of *?Kryptobaatar* and *Chulsanbaatar*. As in other multituberculates the surface of the head encorporates a greater portion of a sphere than in other known mammals. The greater and lesser tuberosities are of subequal size. They are separated by a long bicipital groove, wider and more sharply delimited than in most therian mammals.

In its proximal part the shaft is triangular in cross-section, because of

the presence of three prominent ridges: crest of the greater tuberosity (deltopectoral crest), crest of the lesser tuberosity, and a third ridge, designated by Poplewski (1947) as the posterior crest. The posterior crest is characteristic of all multituberculate humeri from Mongolia known to us and also occurs in a triconodont *Eozostrodon* (see Jenkins and Parrington 1976). In most therian mammals the posterior crest is lacking; it occurs in cats, but is much less prominent than in multituberculates and *Eozostrodon*. Simpson (1928:11) mentioned the presence of this crest in *Djadochtatherium*.

Distally the posterior crest extends to the ectepicondyle. In cats, the posterior crest divides distally into two branches, which extend to the entepicondyle and ectepicondyle. Proximally the surface between the posterior crest and the deltopectoral crest is strongly concave forming a deep sulcus. The deltopectoral crest is very prominent. Proximally it bears a roughly triangular convex surface, confluent with the greater tuberosity; distally it narrows and continues as a single ridge, which turns medially and disappears before reaching the entepicondyle. In all other multituberculate humeri from Mongolia, the anterior part of the ridge of the lesser tuberosity carries a small crescent-shaped prominence. This is not preserved in the *Tugrigbaatar* humerus, possibly due to damage. Such a prominence also occurs in *Eozostrodon*; as stated by Jenkins and Parrington (1976:100): "... this feature occurs in cynodonts and in primitive mammals and may represent the attachment of the teres major muscle".

The distal extremity is incompletely preserved. The entepicondyle has been broken, possibly across the entepicondylar foramen, and the ectepicondyle is also broken. The shape of both condyles, reconstructed in fig. 5B, must be regarded as entirely tentative. The ulnar condyle is larger and more elongated distally than the comparatively small, rounded radial condyle (capitulum). The edge of the ulnar condyle is formed by a sharp, spiral ridge. There is a wide intercondylar groove. The olecranon fossa is deep and perforated. The olecranon foramen, preserved in the specimen figured in pl. 4:2 has been slightly enlarged during the preparation. Its original size is shown in fig. 5B.

Ulna. — The proximal fragment of a right ulna, preserved with the humerus is badly damaged and does not merit description. It is of the same general pattern as the multituberculate ulna from the Hell Creek Formation, figured by Jenkins (1973, pl. 1:22).

COMPARISONS

Tugrigbaatar gen. n. is similar in size to *Kryptobaatar* Kielan-Jaworowska, and resembles *Kryptobaatar* in the general shape of its skull and mandibles. Differences appear in the proportions of particular cranial

elements and the size of the teeth (see figs. 1 and 3 and Table 1). *Tugrigbaatar* differs from *Kryptobaatar* in having a much shorter premaxilla, in the almost vertical course of premaxilla-maxillary suture on the lateral wall of the skull, in the presence of a small opening of unknown function in the palatal part of premaxilla, in having a differently shaped posterior part of the zygomatic arch, and in having a differently shaped glenoid fossa. In *Tugrigbaatar* the glenoid fossa is smaller than in *Kryptobaatar* and is situated more laterally, on a long, stout stem, directed roughly transversely. In *Kryptobaatar* this stem is shorter and directed more longitudinally than transversely. The differences in the position of the glenoid fossae are also expressed in the shape of the ascending ramus and condyle of the mandible. In *Tugrigbaatar* the ascending ramus is somewhat longer and directed more laterally than in *Kryptobaatar* (fig. 3); the condyle is smaller than in *Kryptobaatar*, situated on a very narrow stem. The greatest difference between the two genera concerns the structure of the basioccipital. The basioccipital region in *Kryptobaatar* protrudes strongly ventrally, forming a structure informally designated herein as the basioccipital box. The basioccipital box forms a ventral prolongation of the braincase. Such a structure does not occur in any other multituberculate genus, in which this region has been preserved, nor in any other mammal known to us. It will be described in detail in a forthcomming paper. In *Tugrigbaatar* the basioccipital is developed as in other multituberculates, with the occipital condyles protruding ventrally.

Further differences between the two genera are present in their dentitions. Fourth premolars and molars are longer in *Tugrigbaatar* than in *Kryptobaatar*. In *Tugrigbaatar* P^4 has ?4 cusps in the main row (5 in *Kryptobaatar*), and M_2 has four cusps in the outer row (3 in *Kryptobaatar*).

It may appear from the reconstructions of *Tugrigbaatar* and *Kryptobaatar* skulls in fig. 1, that the differences between the two genera are greater than it is the case. This is caused by the poor state of preservation of the *Tugrigbaatar* skull, in which the maxillary portion of the zygomatic ridge is not preserved. This ridge is not reconstructed in fig. 1, although it is possible that it occured in *Tugrigbaatar*.

The other eucosmodontid genera from Mongolia: *Bulganbaatar*, *Nemegtbaatar*, and *Buginabaatar* (see Kielan-Jaworowska 1974, and Kielan-Jaworowska and Sochava 1969); differ from *Tugrigbaatar* in being larger, in having greater numbers of cusps on the molars, and in the presence of palatal vacuities (present in *Nemegtbaatar* and *Bulganbaatar* but unknown in *Buginbaatar*). The glenoid fossa is unknown in *Bulganbaatar* and *Buginbaatar*. In *Nemegtbaatar* it is of the *Kryptobaatar* pattern, very different from that in *Tugrigbaatar*.

Tugrigbaatar differs from the North American Late Cretaceous genus

Stygimys (see Sloan and Van Valen 1965) in its smaller dimensions, in the lack of palatal vacuities, in having a smaller number of cusps on the fourth premolars and molars and in having arcuate P_4. *Eucosmodon* and other North American Paleocene eucosmodontid genera (see Jepsen 1930, 1940) do not invite close comparison with *Tugrigbaatar*.

The basicranial region is only known in the eucosmodontids *Tugrigbaatar*, *Nemegtbaatar* and *Kryptobaatar*. Thus, it cannot be stated whether the basioccipital box, characteristic of *Kryptobaatar* and absent from *Tugrigbaatar* and *Nemegtbaatar*, occurred in other eucosmodontid genera. The presence of this structure might warrant separation of these taxa at suprageneric level. More information is needed before a decision can be made.

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ZOFIA KIELAN-JAWOROWSKA I DEMBERLYIN DASHZEVEG

NOWE STANOWISKO SSAKÓW GÓRNO-KREDOWYCH W MONGOLII ORAZ OPIS NOWEGO MULTITUBERKULATA

Streszczenie

W warstwach z Tugrig, które odsłaniają się w stanowisku Tugrig na pustyni Gobi, (położonym około 30 km na WNW od Bajn Dzak) znaleziono ssaki górno-kredowe. Wiek warstw z Tugrig został w przybliżeniu określony jako odpowiadający Formacji Dżadochta, a więc jako ?późny santon i/lub wczesny kampan. Opisano nowy gatunek i rodzaj multituberkulata nazwanego *Tugrigbaatar saichanensis* i zaliczono go do rodziny Eucosmodontidae. Materiał, na podstawie którego ustalono nowy

gatunek obejmuje czaszkę i fragmenty szkieletu pozaczaszkowego. *T. saichanensis* najbardziej zbliża się do eukosmodontida *Kryptobaatar dashzevegi*, występującego w formacji Dżadochta. Przeprowadzono szczegółowe porównanie obu rodzajów. Zrekonstruowano też po raz pierwszy humerus multituberkulatów.

ЗОФИЯ КЕЛЯН-ЯВОРОВСКА и ДАМБЕРЛЫИН ДАШЗЕВЕГ

НОВЫЕ МЕСТОНАХОЖДЕНИЯ ВЕРХНЕМЕЛОВЫХ МЛЕКОПИТАЮЩИХ В МОНГОЛИИ И ОПИСАНИЕ НОВОГО МУЛЬТИТУБЕРКУЛЯТА

Резюме

В слоях которые обнаружаются в местности Тугруг пустини Гоби (около 30 км на WNW от Байн Дзак), обнаружены верхнемеловые млекопитающие. Слои Тугруг приблизительно корелируются с формацей Джадохта, возраст которой соответствует позднему сантону и/или раннему кампану. В статье описан новый вид и род мультитуберкулятия, названный *Turgigbaatar saichanensis* и отнесенный к семейству Eucosmodontidae. Материял, на основе которого был определён новый вид, состоит из черепа и некоторых фрагментов скелета. *T. saichanensis* наиболее близок эукосмодонтиду *Kryptobaatar dashzevegi*, описанного из формации Джадохта. Были проведены тщательные сравнения указанных двух родов. Также впервые была воспроизведена реконструкция плечевой кости (humerus) мультитуберкулята.

EXPLANATION OF THE PLATES

All the specimens figured in pls 1—4 are parts of the holotype, (GISPS 8—2 PST) of *Tugrigbaatar saichanensis* gen. n., sp. n., from the Upper Cretaceous, Toogreeg beds, Toogreeg, Gobi Desert, Mongolia; all × 3.

Plate 1

1*a*. Stereo-photograph of the skull before separation of the lower jaws, in left lateral view.

1*b*. Stereo-photograph of the same in right lateral view.

Plate 2

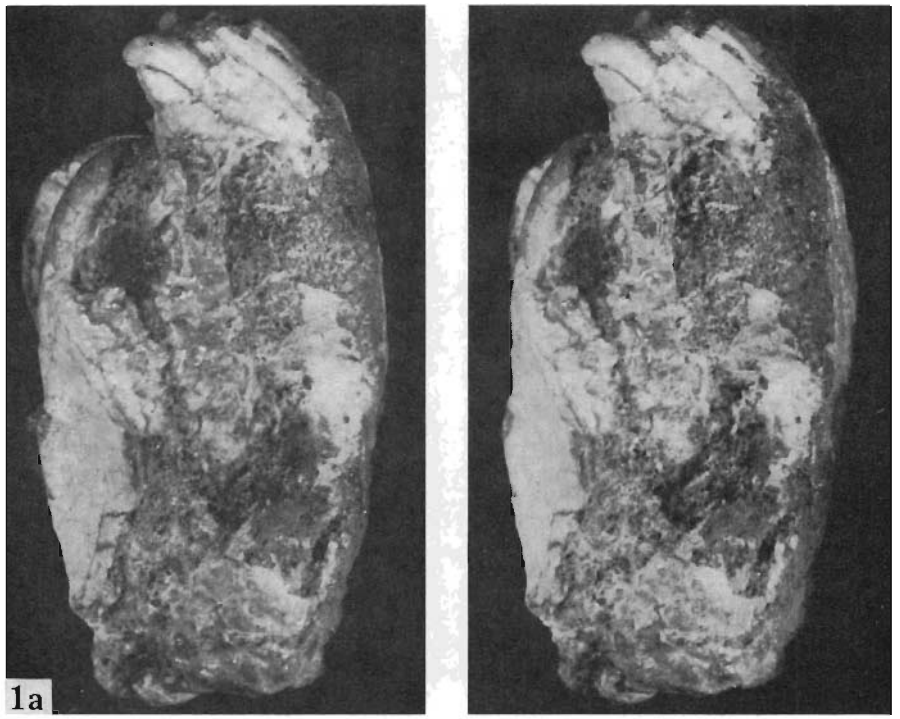
1*a*. Stereo-photograph of the skull in palatal view.
1*b*. Stereo-photograph of the same in dorsal view.

Plate 3

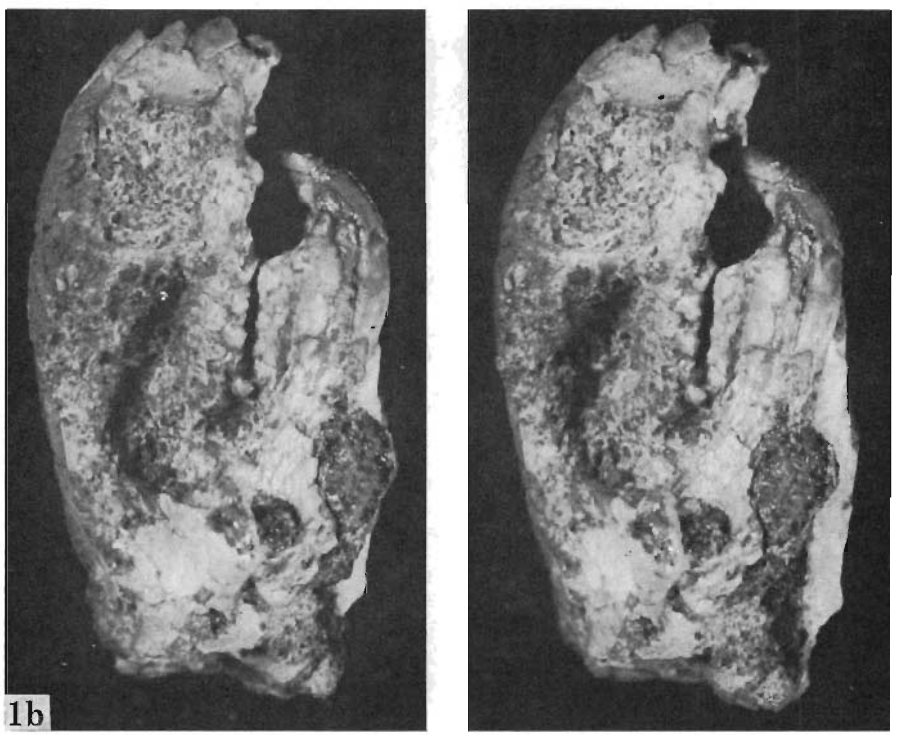
1*a*. Stereo-photograph of the skull, before separation of the lower jaws, in ventral view.
1*b*. Stereo-photograph of the skull of the same specimen in occipital view; on the right side a small fragment of the atlas is preserved.
1*c*. Incomplete left lower jaw in inner view.
1*d*. The same in outer view.
1*e*. Incomplete right lower jaw in outer view.
1*f*. The same in ventral view.

Plate 4

1*a*. Stereo-photograph of the proximal part of the left humerus with damaged head in lateral view.
1*b*. Stereo-photograph of the same in anterior view.
1*c*. Stereo-photograph of the same in posterior view.
2*a*. Stereo-photograph of the distal part of the right humerus in posterior view.
2*b*. Stereo-photograph of the same in lateral view.
2*c*. Stereo-photograph of the same in anterior view.
3*a*. Stereo-photograph of the incomplete left lower jaw in occlusal view.
3*b*. Stereo-photograph of the incomplete right lower jaw in occlusal view.



1a



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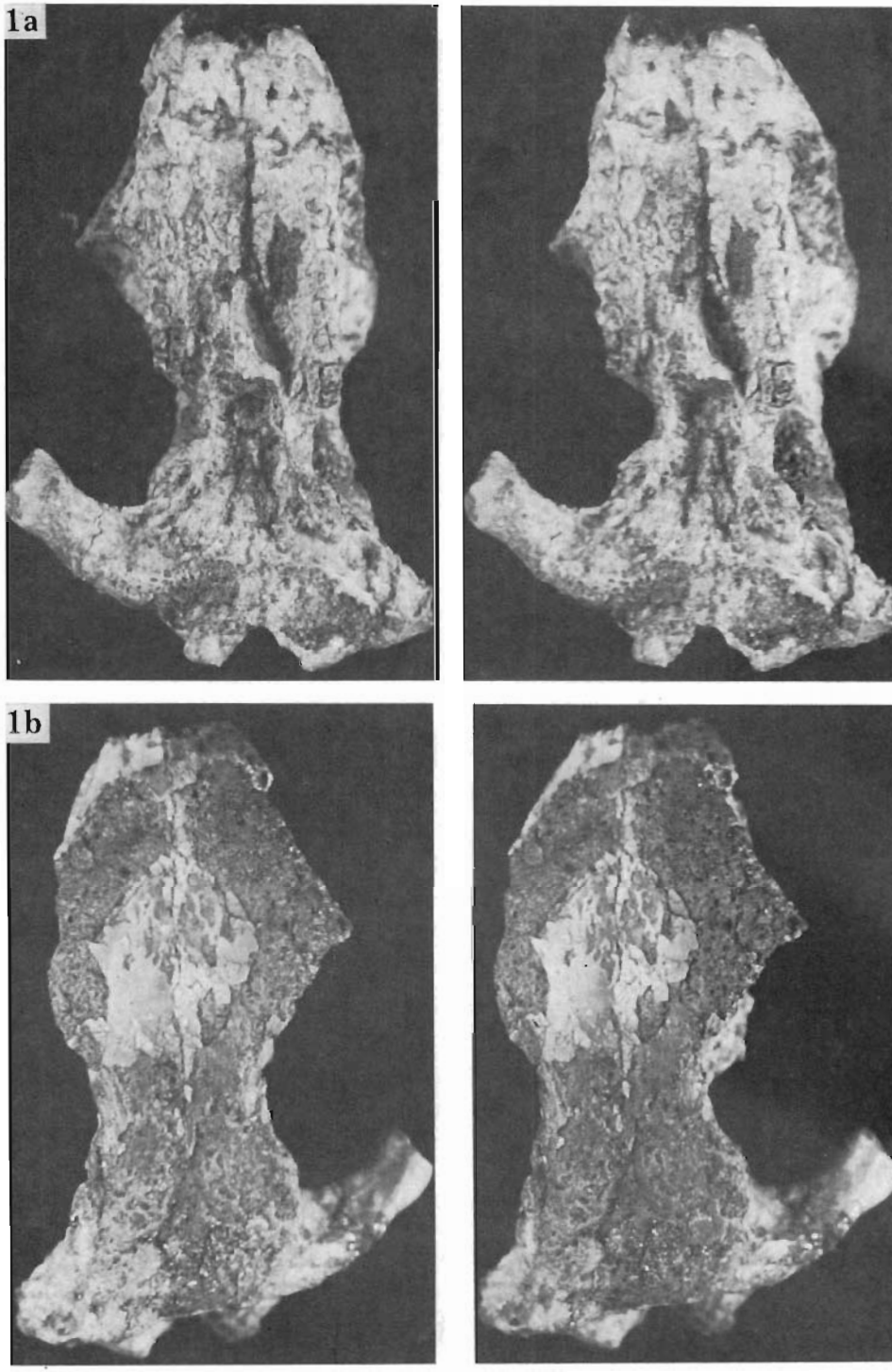
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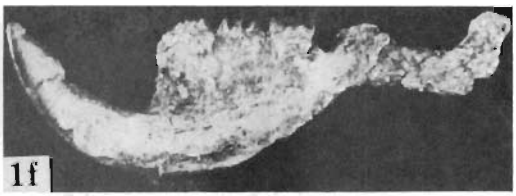
1b


1d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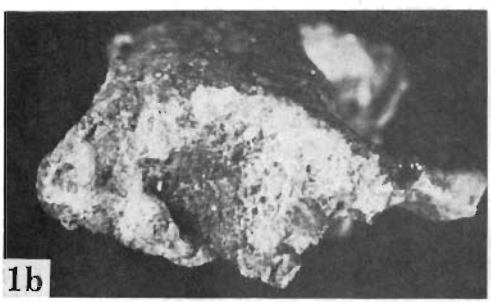
1c


1e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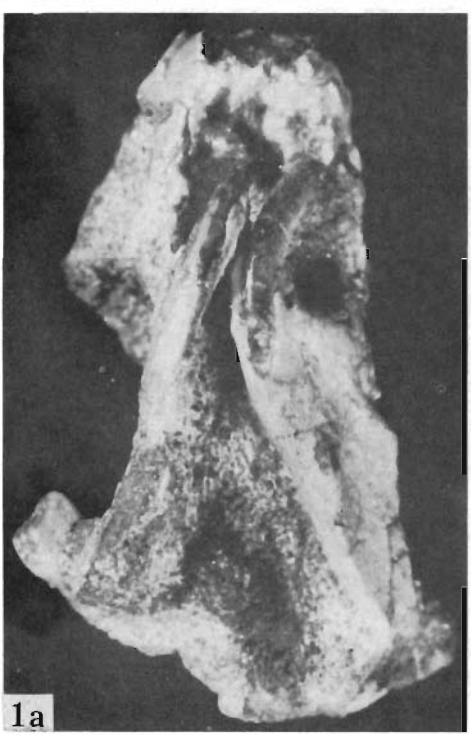
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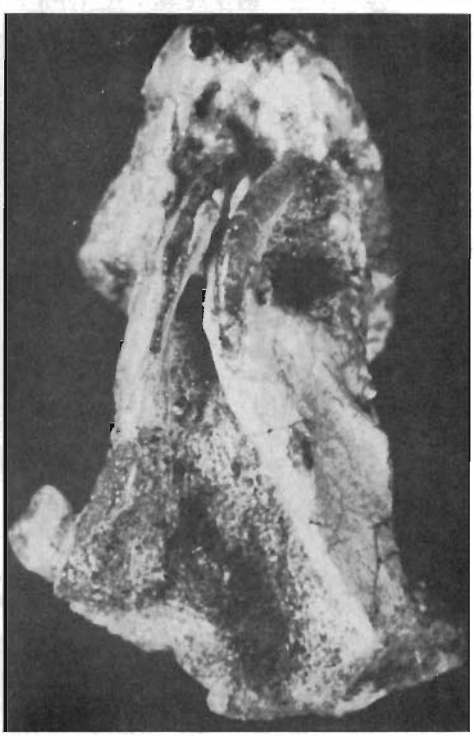
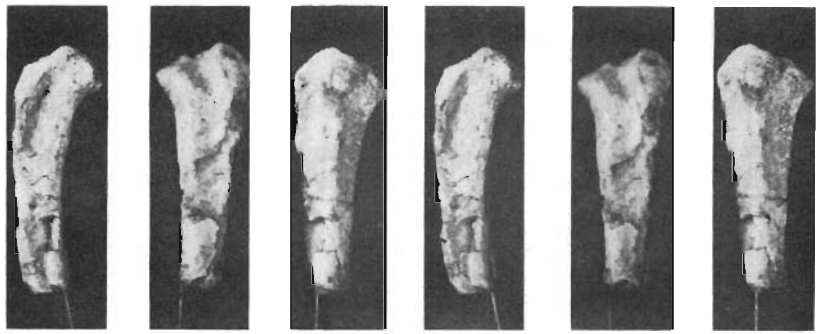
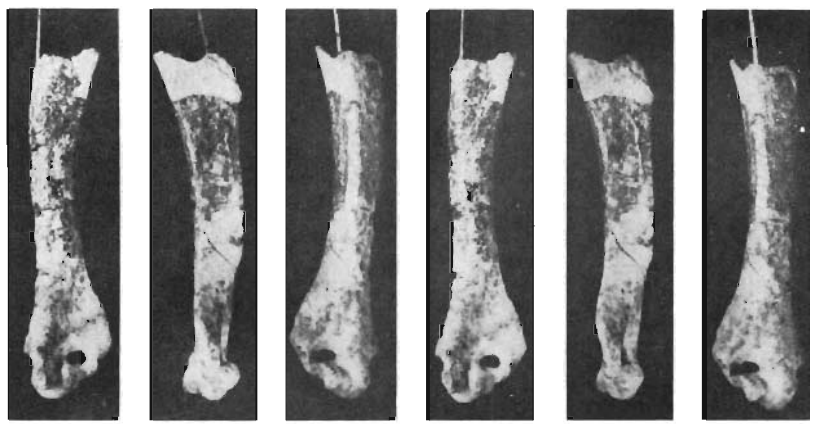




1a 1b 1c



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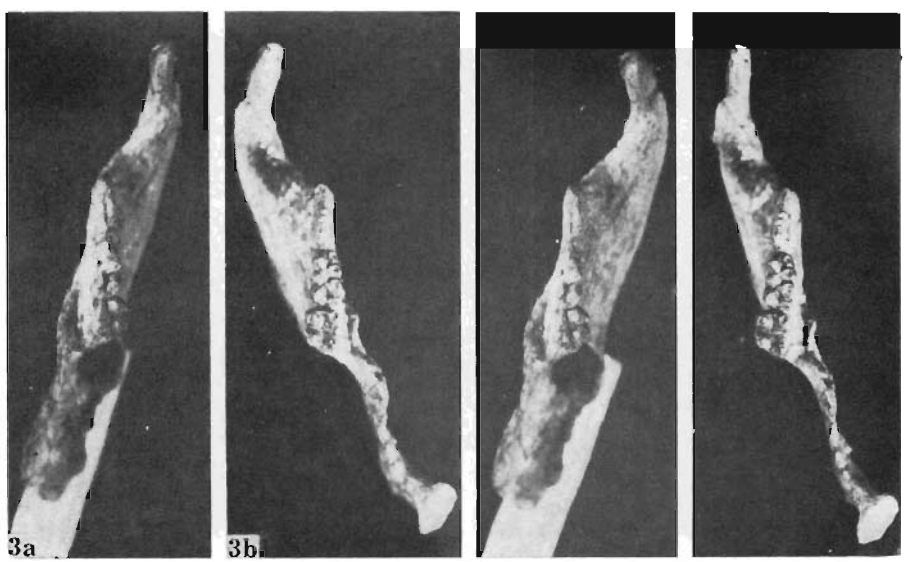

3a 3b