

ANDRZEJ SULIMSKI

TWO NEW RODENTS FROM WEŻE 1* (POLAND)

Study on the Tertiary bone breccia fauna
from Weże near Działoszyn in Poland
PART XVIII **

Abstract. — A preliminary description is given of two new species of rodents from the Pliocene steppe-fauna (Astian) of Weże 1 — *Plioselevinia gromovi* n. gen., n. sp. and *Sminthozapus janossyi* n. gen., n. sp.

INTRODUCTION

During the study of a rich fauna of small mammals from Weże 1 near Działoszyn the writer found several remains of the lower jaw and molars with a very characteristic structure. These remains belong to two representatives of small Rodentia (Simplicidentata). A close examination of these remains and their comparison with recent bone material permit to distinguish two different forms. One is assigned to the family Seleviniidae Argyropoulo & Vinogradov, the other to the family Zapodidae Coues (subfamily Zapodinae Trouessart). In the literature treating of Pliocene rodents the writer has not been able to find any form to which the remains mentioned above could be referred. Detailed descriptions of these remains and an analysis of *Sminthozapus janossyi* n. gen., n. sp., its variations and relationship, will be published in a future monograph of the rodents from Weże 1.

The specimens described in this paper are marked: M.Z. (= Museum of the Earth) VIII/Vm — 328 and 329.

Sincere thanks are due to Prof. M. Kretzoi (Budapest) for constructive criticism, and to Dr. D. Jánóssy (Budapest) for pointing out the specific structure of molars in *Sminthozapus* n. gen.

* See foot-note on p. 441.

** Parts I-V — see *Acta Geol. Pol.*, vol. II-V/1952-55; parts VI-XVII — *Acta Palaeont. Pol.*, vol. I-VII/1956-62.

Figures in text-plates I and II were prepared by the writer from photographs and cross sections of teeth.

DESCRIPTIONS

Order **Rodentia** Bowdich, 1821

(= **Simplicidentata** Lilljeborg, 1866)

Superfamily **Gliroidea** Simpson, 1945

Family **Seleviniidae** Argyropoulo & Vinogradov, 1939

Genus *Plioselevinia* n. gen.

Genotypus: *Plioselevinia gromovi* n. sp.

Derivatio nominis: *Plioselevinia* — Gr. *pleion* = more, *Selevinia* = generic name of the recent species *S. betpakdalensis* Argyropoulo & Vinogradov.

Diagnosis. — The genus being at present monotypic, its diagnosis is the same as that of the genotype.

Plioselevinia gromovi n. sp.

(text-pl. I, fig. 1, 2)

Holotypus: A complete lower jaw with articular process, without molars. Specimen No. M.Z.VIII/Vm-328/1 (text-pl. I, fig. 2 a-c).

Derivatio nominis: *gromovi* — in honour of Professor I. M. Gromov from Leningrad.

Material. — Besides the holotype, another fragment of the left lower jaw, without teeth and articular processes, has been found (specimen No. M.Z.VIII/Vm-328/2). Both specimens occur in the lower beds of the bone breccia at Weže 1, which probably belong to the Astian.

Diagnosis. — Dental formula is:

$$\frac{(1\ 0\ 0\ 3)}{1\ 0\ 0\ 3} = 16$$

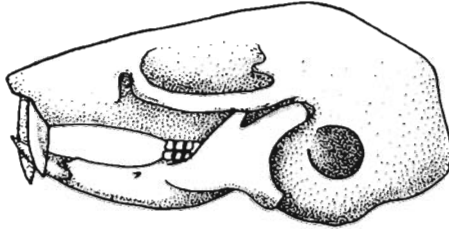
Lower incisor very large, laterally strongly flattened. The sagittal diameter of the incisors nearly twice as large as the transversal. The cutting surface rhomboidal, long. Diastema strongly elongated. The tooth-row (alveoles) very short. Three alveoles present, one for each molar. The angular process short, downturned, without perforation, basally broad, lingually deepened. The coronoid process short and pointed. The ascending ramus strongly bent backwards. The anterior

Plioselevinia gromovi n. gen., n. sp.

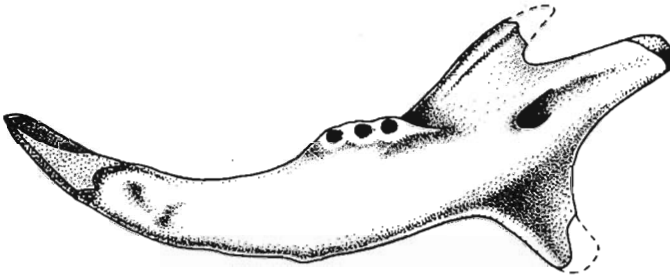
Fig. 1. Reconstruction of the skull and lower jaw (on the base of the skull structure of *Selevinia betpakdalensis* Argyropoulo & Vinogradov); side view.

Fig. 2. Right lower jaw — holotype (spec. No. M.Z. VIII/Vm — 328/1); a inner view, b outer view, c top view.

TEXT-PL. I

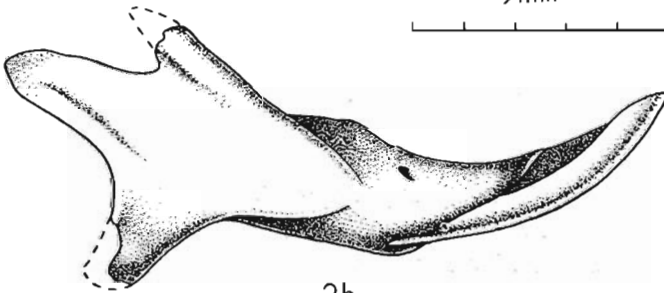


1

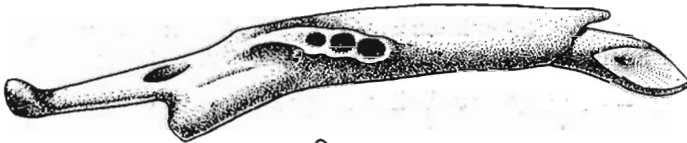


2a

5 mm



2b



2c

edge of the ascending ramus situated close to the posterior edge of the M_3 alveole. The roots of molars pin-like, single. The mental foramen small, somewhat nearer to the sagittal edge of the diastema — along about 1/3 of its length. The mandibular foramen large, on the level of the row of molar alveoles. The buccal masseter crests (lower and upper) distinct. The root of the incisor reaches slightly below the mandibular foramen. On the buccal side the enamel bands of the incisors embrace nearly half of the sagittal width. On the lingual side only a fine band of the enamel is visible.

Dimensions (in mm):

Complete length of the lower jaw	13.2
Length of the row of molar alveoles	1.5
Length of diastema	4.0
Sagittal diameter of incisor	1.3
Transversal diameter of incisor	0.7
Height of the jaw below M_1	2.5
Length of alveole of M_1	0.45
Length of alveole of M_3	0.3

Discussion. — Thus far *Selevinia betpakdalensis* Argyropoulo & Vinogradov, 1939, from the steppe region of Klazakhstan, USSR (Grassé, 1955, Vinogradov & Argyropoulo, 1939, 1941), is the only known representative of Seleviniidae with which the mandibular remains from Weže 1 are comparable. *Plioselvinia* n. gen. differs from *Selevinia* Belosludov & Bashanov, 1938, in somewhat larger dimensions, greater prognatism, stronger lower incisors, lack of perforation on the angular process, and longer diastema. However, the characteristic structure of the whole jaw, proportions of the particular elements of the jaw, proportions in the diameters of incisors, and the presence of three alveoles (one for each molar) indicate the near relationship of the two genera compared.

Superfamily **Dipodoidea** Weber, 1904

Family **Zapodidae** Coues, 1875

Subfamily **Zapodinae** Trouessart, 1880

Genus *Sminthozapus* n. gen.

Genotypus: *Sminthozapus janossyi* n. sp.

Derivatio nominis: *Sminthozapus* — a combination of two generic names: *Sminthus* Nordmann (younger name *Sicista* Gray) and *Zapus* Coues.

Diagnosis. — This genus being at present monotypic, its diagnosis is the same as that of the genotype.

Sminthozapus janossyi n. sp.

(text-pl. II, fig. 1-5)

Holotypus: Fragment of right lower jaw bearing M_{1-3} . Specimen No. M.Z. VIII/Vm-329/1 (text-pl. II, fig. 1).

Paratypus: Fragment of right lower jaw bearing I-M₁. Specimen No. M.Z. VIII/Vm-329/2 (text-pl. II, fig. 5 a-b).

Derivatio nominis: *janossyi* — in honour of Dr. D. Jánossy from Budapest.

Material. — In addition to the holotype and paratype, the material consists of one left lower jaw with M₁₋₃, two left fragments of lower jaw with M₁₋₂, 38 isolated upper incisors, 45 lower incisors. Moreover: 14 M₁, 19 M₂, 4 M₃, 15 M¹, 10 M², 1 M³, one fragment of the upper jaw with M²⁻³ in situ, and several other fragments of upper jaws with anterior roots of jugal arches. All these specimens are labelled: M.Z. VIII/Vm-329, and successively marked from number 1 onwards. The specimens occur in the lower beds of the bone breccia at Weże 1, which probably belong to the Astian.

Diagnosis. — Dental formula is:

$$\frac{1\ 0\ 1\ 3}{1\ 0\ 0\ 3} = 18.$$

Upper incisors grooved. The dental channel Y-shaped. The diastema long. Situation of the jugal arch in relation to P⁴ as in forms of *Plesiosminthus* Viret. An aperture present between the inner surface of the ascending ramus and the posterior edge of M₃. The coronoid and articular processes bent backwards. The anterior edge of the ascending ramus on the border of M₃. The horizontal ramus of the lower jaw high. The angular process broad at the base, lacking perforation. M₁ with paraconid. The protoconid and metaconid are symmetrically situated and always connected. The buccal spur — "G" (*Gegensporn* after Schaub, 1925, 1930, 1951, 1958) — weakly marked. The longitudinal ridge (*Längsgrat*) runs to the protoconid, never to the metaconid. There is one connection between the hypoconid and the entoconid — the hypolophulid I + II. The mesolophid low, as long as the entoconid. The second lingual sinus (re-entering fold) on M₂ deep and broad. Between the protoconid and the mesolophid occurs the protostylide spur. The mesostylide spur as long as the entoconid. The ectoloph oblique. The trigonid sinus present. The connection of the protoconid with the metaconid, and that of the hypoconid with the entoconid single — metalophulid I + II = *Vorjochkante*, and hypolophulid I + II = *Nachjochkante*, respectively. M₃ of the *Eozapus* type, with four folds and three lingual sinuses. The mesostylid spur variable in course. The paraconid occasionally present. Lower incisors without longitudinal grooves. P⁴ (alveole) small, one-rooted. The mesostyle spur of M¹ well developed. Connection of the protocone with the paracone, and of the metacone with the hypocone (pseudohypocone) single — protoloph I + II, and metaloph I + II respectively. The anterior part of M² — as in *Eozapus*

setchuanus (Pousargues). The protocone and hypocone weak, low. The protocone joins to the paracone either by a single protoloph or by a mesoloph through a pseudoprotoloph. Sometimes the pseudomesoloph is united with the paracone. The ectoloph slightly oblique. M^3 has three sinuses and four buccal folds. The metacone is lacking.

Dimensions (in mm):

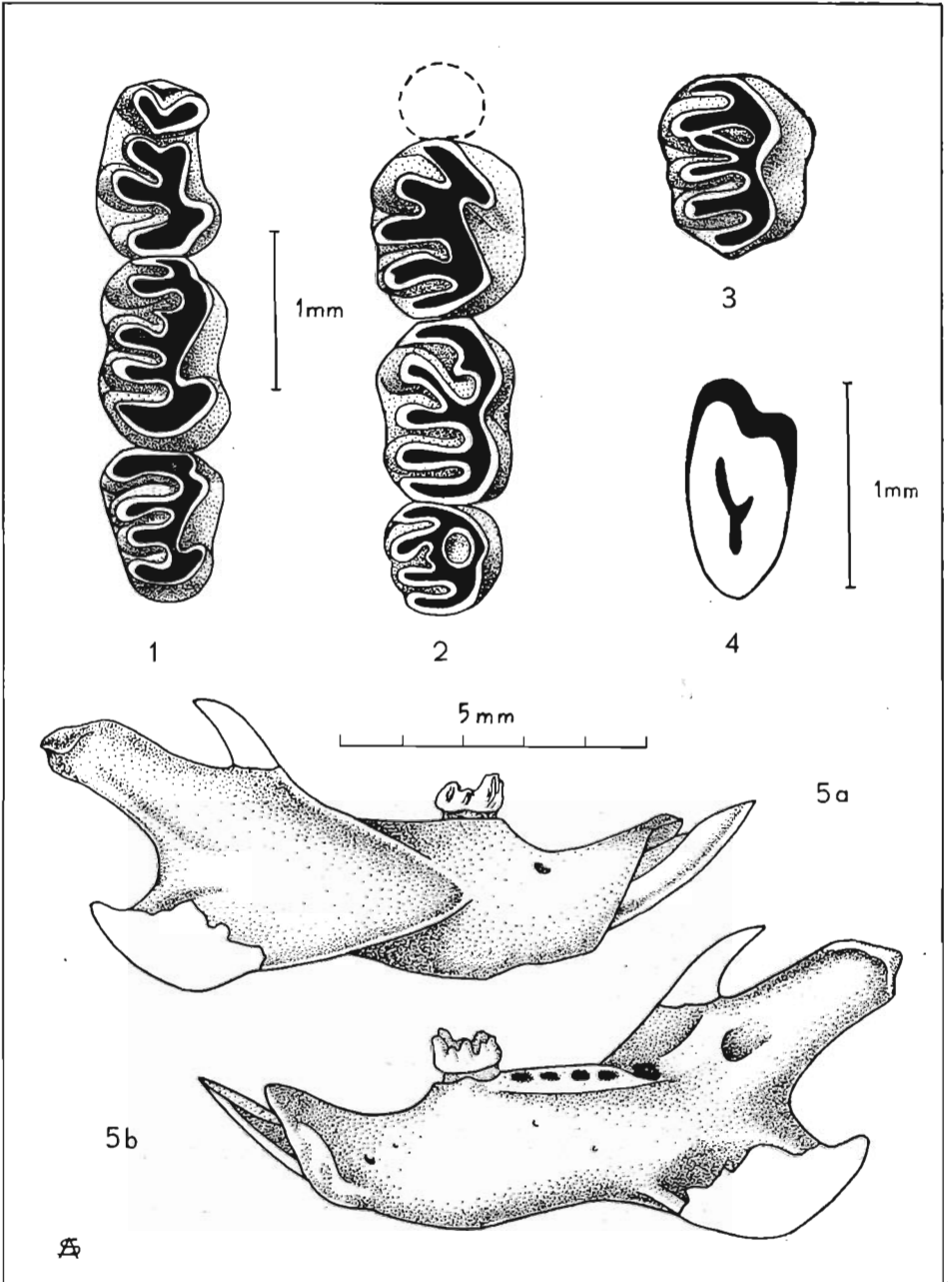
Complete length of the lower jaw	11.7
Average height of the lower jaw below M_1	2.6
Average thickness of the lower jaw below M_1	1.0
Length of diastema	2.7 and 2.8
Length of M_{1-3}	3.1—3.5
Length and width of:	
M_1	1.0—1.2/0.7—0.9
M_2	1.1—1.3/0.7—0.9
M_3	0.9/0.7 and 0.9/0.8
Sagittal and transversal diameter of:	
lower incisor	0.8—0.9/0.5
upper incisor	1.0—1.1/0.4—0.5
Length of M^{2-3}	1.7
Length and width of:	
P^4 (alveole)	0.7/0.7
M^1	1.0—1.2/0.8—0.9
M^2	0.9—1.2/0.8—0.9
M^3	0.6—0.7/0.6

Discussion. — Grooved upper incisors, structure of lower and upper molars, small general dimensions, morphology of the lower jaw, position of the jugal arches, broad angular process, presence of aperture between the posterior edge of M_3 and the ascending ramus — all suggest the assignment of the remains from Weze 1 to the family Zapodidae Coues and subfamily Zapodinae Trouessart. Forms comparable with *S. janossyi* n. gen. n. sp. are on the one hand the Euroasiatic Oligo-Miocene species of the genus *Plesiosminthus* Viret (*P. schaubi* Viret, *P. myrion* Schaub, *P. parvulus* (Bohlin) (Bohlin, 1946; Schaub, 1930, 1951, 1958)), on the other hand species of the genus *Sicista* Gray (*S. betulina* (Pall.), *S. subtilis* (Pall.)) (Miller, 1912), and the Asiatic *Eozapus setchuanus* (Pousargues) (Schaub, 1951, 1958). As regards size, *Sminthozapus janossyi* n.sp. approximately agrees with the first named species, morphologically however (lower and upper molars, and lower jaws) it

Sminthozapus janossyi n. gen., n. sp.

- Fig. 1. Right lower tooth-row, holotype (spec. No. M.Z. VIII/Vm — 329/1).
 Fig. 2. Right upper tooth-row (spec. No. M.Z. VIII/Vm — 329/6).
 Fig. 3. Right M^2 (spec. No. M.Z. VIII/Vm — 329/145).
 Fig. 4. Transverse section of the upper incisor (spec. No. M.Z. VIII/Vm — 329/40).
 a outer view, b inner view.
 Fig. 5. Right lower jaw with M_1 , paratype (spec. No. M.Z. VIII/Vm — 329/2);

TEXT-PL. II



resembles various species of *Plesiosminthus* Viret (especially structure of M_1), *Eozapus setchuanus* (Pousargues), and some species of genus *Zapus* Coues (structure of lower jaws). The same applies to the structure of the upper incisors, and to the aperture between the posterior edge of M_3 and the inner side of the ascending ramus. These last named features link *Sminthozapus janossyi* n. gen., n. sp., and species of *Plesiosminthus* Viret and *Eozapus* Preble with a number of forms from the subfamily Zapodinae Trouessart.

CONCLUSIONS

The rodents described above are found in the lower beds of the Weże 1 bone breccia. The age of these beds may be regarded as Astian or somewhat older. The remains of these rodents belong to the rather rare forms of very rich and varied assemblages of small mammals in this locality. *Plioselinia gromovi* n. gen., n. sp., closely related to the recent *Selevinia betpakdalensis* Argyropoulo & Vinogradov from Kazakhstan (USSR), constitutes a very interesting element in this assemblage, for it indicates the close connections of the Weże 1 fauna with the Middle-Asiatic fauna. Like *Sminthozapus janossyi* n. gen., n. sp., this is a distinctly steppe form. The other rodent here is very closely related to the recent *Eozapus setchuanus* (Pousargues) from China, and to the Euroasiatic Oligo-Miocene species of genus *Plesiosminthus* Viret. Hence it indicates the continuity of evolution in the primitive tribe of „Plesiosminthinae” from the Miocene, through the Pliocene, to recent times. *Sminthozapus janossyi* n. gen., n. sp. likewise confirms the close contact of the Pliocene fauna from Weże 1 with the Asiatic fauna of the Far East. Judging from the ecological conditions in which the recent species mentioned above are now living, it may well be supposed that species described from Weże 1 existed in similar environment.

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ANDRZEJ SULIMSKI

O DWÓCH NOWYCH GRYZONIACH (RODENTIA) Z WĘŻÓW 1*
KOŁO DZIAŁOSZYNA

Streszczenie

Podczas badań nad bogatą i różnorodną fauną drobnych ssaków z Wężów 1 (północna część Jury Polskiej) znaleziono dwa nowe gryzonie z rodzin Seleviniidae Argyropoulo & Vinogradov, 1939 i Zapodidae Coues, 1875 (Zapodinae Trouessart, 1880), a mianowicie: *Plioselevinia gromovi* n. gen., n. sp. i *Sminthozapus janossyi* n. gen., n. sp. Obie te formy należą, wraz z wielu innymi, do stepowych przedstawicieli zespołu ssaków w Wężach 1. Szczątki ich znaleziono w dolnych warstwach brekcji kostnej, które zaliczono do piętra Astium (mogą one być także nieco wcześniejsze). Dokładny opis tych form podany będzie w większej monografii, poświęconej gryzoniom tego samego znaleziska.

OBJAŚNIENIA DO ILUSTRACJI

Text-Pl. I (p. 505)

Plioselevinia gromovi n. gen., n. sp.

- Fig. 1. Rekonstrukcja czaszki i dolnej szczęki (na podstawie budowy czaszki *Selevinia betpakdalensis* Argyropoulo & Vinogradov); z boku.
- Fig. 2. Prawa dolna szczęka, holotyp (okaz No. M.Z. VIII/Vm — 328/1); a strona wewnętrzna, b strona zewnętrzna, c z góry.

Text-Pl. II (p. 509)

Sminthozapus janossyi n. gen., n. sp.

- Fig. 1. Prawy dolny szereg zębów, holotyp (okaz No. M.Z. VIII/Vm — 329/1).
- Fig. 2. Prawy górny szereg zębów (okaz No. M.Z. VIII/Vm — 329/6).

* Vide odsyłacz do s. 489.

Fig. 3. Prawy M² (okaz No. M.Z. VIII/Vm — 329/145).

Fig. 4. Przekrój poprzeczny górnego siekacza (okaz No. M.Z. VIII/Vm — 329/40).

Fig. 5. Prawa dolna szczęka z M₁, paratyp (okaz No. M.Z. VIII/Vm — 329/2);
a strona zewnętrzna, b strona wewnętrzna.

АНДРЖЕЙ СУЛИМСКИ

ДВА НОВЫЕ ГРЫЗУНЫ (RODENTIA) ИЗ МЕСТНОСТИ ВЕНЖЕ 1*
БЛИЗ ДЗЯЛОШИНА (ПОЛЬША)

Резюме

Среди многочисленных костей мелких млекопитающих из костной брекчии Венже 1 около Дзялошина, автор нашел остатки двух новых грызунов, принадлежащих к семействам *Seleviniidae* Argyropoulo & Vinogradov, 1939, и *Zapodidae* Coues, 1875 (подсемейство *Zapodinae* Trouessart, 1880), а названных здесь *Plioselevinia gromovi* n. gen., n. sp. и *Sminthozapus janossyi* n. gen., n. sp. Обе эти формы принадлежат, вместе с многими другими, к представителям степных млекопитающих. Остатки их были найдены в нижних слоях костной брекчии, причисляемых условно к астскому ярусу (*Astium*). Обстоятельное описание этих видов будет опубликовано в приготавливаемой автором монографии грызунов из Венже. На этом месте автор ограничился представлением их диагнозов.

* См. сноску на стр. 495.