POLSKA AKADEMIA NAUK
ZAKŁAD ZOOLOGII SYSTEMATYCZNEJ

A C T A Z O O L O G I C A
C R A C O V I E N S I A

Tom VII Kraków, 15 IV 1962 Nr 9

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Bats of the early Pleistocene from Koneprusy (Czechoslovakia)

Nietoperze starszego plejstocenu Koneprus (Czechosłowacja)

Летучие мыши старого плейстоцена Конепрус (Чехословакия)

INTRODUCTION

In 1952 a cave, later denoted with the symbol C 718, was discovered at Cesarski Łom in Koneprusy in Czechoslovakia. Its sediments contained a rich fauna of the early Pleistocene, which was investigated by O. FEJFAR. The results of his investigations have been published in the form of preliminary reports and fragmentary elaborations (O. FEJFAR, 1956 a, 1956 b, 1956 c, 1956 d, 1959 and 1961). FEJFAR suggests that this fauna indicates the origin of the sediments during the Mindel glaciation. In the paper of 1959, he specifies the remains of the following bats from cave C 718: three specimens of *Myotis* sp., eight of *Plecotus* sp. and one of *Rhinolophus* sp. However, I have not found any members of the genus *Rhinolophus* LACÉPÈDE in the material sent to me.

I wish to express my heartiest thanks to Dr. Oldřich FEJFAR for providing me with this interesting material to work out.

The material that I received is pretty abundant but not very well preserved. It consists almost exclusively of mandibles, besides which there is only one fragment of a skull with teeth P^4—M^3. The collection is also rich in bony fragments of the limbs of bats, but so far it has been impossible to identify them precisely. Therefore, the mandibles constitute the most important part of the material, though they are not preserved whole, either. They are, as a rule, fragmentary and mostly lacking in teeth and processes; no incisors are present in any of them. Only for the most numerous species it was possible to collect the material permitting to examine all the remaining teeth and the shape of the processes of the mandibular branches. Owing to these difficulties, part of the

specimens of the genus *Myotis* KAUP, including many species only poorly differentiated as far as the build of mandibles is concerned, could not be strictly identified.

All the specimens preserved represent adult individuals. The composition and the state of preservation of the remains suggest that we have to do with a tanatocoenosis of bats, which died in the cave most likely during hibernation. However, a share of specimens derived from owls' pellets cannot be excluded.

The composition of the Chiropteran fauna of Koneprusy and its distribution among the particular layers of the sediments is as follows:

Species	Layer								
	D	E1	F	H2	H3	H4	H5	H6	H7
Barbastella barbastellus (SCHREBER)	—	—	—	9	10	13	9	78	20
Plecotus auritus (LINNAEUS)	—	—	1	—	3	1	3	2	9
Myotis nattereri (KUHL)	—	—	—	—	—	2	1	—	—
Myotis emarginatus (GEOFFROY)	—	—	—	—	—	—	—	—	1
M. nattereri + *emarginatus*	—	—	—	2	—	2	1	4	3
Myotis bechsteini (KUHL)	—	—	—	3	2	1	2	1	22
Eptesicus cf. *serotinus* (SCHREBER)	—	—	—	—	—	1	—	—	—
Cf. *Eptesicus* sp.	—	1	—	—	—	—	—	—	—

The figures denote the number of mandibular fragments.

Bats, being conspicuously conservative, change very slowly and are bad material for the considerations on the age of fossil faunae. Generally speaking, the bat fauna from Koneprusy resembles the contemporary fauna, but shows considerable differences in relation to the Central-European fauna of bats from the Pliocene and the early Pleistocene known from such localities as Gundersheim (F. HELLER, 1936), Węże (K. KOWALSKI, 1962). Podlesice (K. KOWALSKI, 1956) and Kadzielnia (K. KOWALSKI, 1958). No fossil fauna of bats has been hitherto known from the Mindel period in Europe. The fauna from Koneprusy seems to represent the oldest wave of bat species of a pretty cool climate so far known from Central Europe, the composition of which is similar to that of the present population of this region.

Interesting conclusions as to the climate at the time when the animal remains were accumulating can be made on the basis of the composition of the bat fauna from Koneprusy. It is striking that this fauna is deficient in any elements typical of the Mediterranean climate such as the members of the genus *Rhinolophus* LACÉPÈDE, the species *Miniopterus schreibersi* (KUHL) and the big species of the genus *Myotis* KAUP. All the species found in Koneprusy appear in Europe in the zone of deciduous forests at the present time, and some of them even reach pretty far on the north.

The absence of thermophil forms should be interpreted with caution. If the material from Koneprusy consists of the remains of the bats that hibernated

in the cave, it must be kept in mind that different species of bats hibernate in particular caves or in various parts of large caves (K. KOWALSKI, 1953). Nowadays in the area of Poland, for example, *Rhinolophus hipposideros* (BECHSTEIN) and *Myotis myotis* (BORKHAUSEN) winter only in deep caves where the temperature does not fall below 5°C, while in the same region such species as *Plecotus auritus* (LINNAEUS) and *Barbastella barbastellus* (SCHREBER) spend the winter by the openings of the same caves or in shallow caves at a temperature of about 0°C. Accordingly, the local conditions may have exerted an influence upon the composition of the fauna from Koneprusy. Nevertheless, the general picture of the bat fauna permits us to suppose that the climate was fairly cool, a bit cooler than it is now in Czechoslovakia and that the vegetation was of the Central-European type.

The differences in the composition of the bats in the particular layers of the profile (the symbles D—H7 in the table denote the layers with bat remains from the top to the bottom of the profile) are too great to be explained by mere accident. Thus, for instance, there is a huge preponderance of *Barbastella barbastellus* (SCHREBER) in layer H6, while *Myotis bechsteini* (KUHL) predominates in layer H7. The essential character of the bat fauna, however, did not undergo any change at the time when the sediments included in layers H2—H7 were being formed. In layers D, E1 and F the bat remains are so scarce that no far-reaching statements may be founded on them.

SYSTEMATIC PART

Family *Vespertilionidae* GRAY 1821

Genus *Barbastella* GRAY 1821

Barbastella barbastellus (SCHREBER 1774)

Material: jointly 139 mandibular fragments from layers H2—H7. None of the halves of the mandibles is complete, but altogether, they display all the teeth except incisors and all the processes.

Description. Coronoid process sharpened at top; angular process widened club-like terminad. Mental foramen small, round, situated between canine and first premolar. Symphysis broad and short. Mandibular dental formula: 3—1—2—3. Judging by the alveoli, the first two incisors stood close to each other; the third one was bigger and detached. The alveolus of the canine is round. The tooth itself is small with a very well-developed cingulum, on the medial frontal side of which there is an additional cusp. First premolar a little projecting frontad from tooth row. Its crown overlaps the cingulum of P_4, and its height equals a half of the height of P_4. The top view of its crown is an ellipse somewhat narrowed externally. P_4 strongly, sickle-like, bent backward, lower than M_1, with very robust cingulum. Seen from above, it is also somewhat

sickle-like, elongated. The crown of M_1 overlaps the cingulum of P_4 rather much. The talonid of M_3 slightly reduced, with two cusps.

The dimensions of the relatively well preserved halves of mandibles (in mm.) are as follows:

Layer	H2	H3	H4					H5			H6					H7				
Ser. No of specimen	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Condylar length of mandible	–	–	9.3	9.5	9.3	–	–	–	–	–	9.5	9.0	8.9	–	–	9.3	9.3	9.1	–	–
Alveolar length of tooth row	5.9	–	6.1	5.9	5.8	5.8	5.9	5.9	–	–	6.0	5.8	5.7	–	–	5.8	6.0	5.8	5.9	5.9
Alveolar length of tooth row without incisors	5.1	4.9	5.3	5.0	5.0	5.0	5.0	5.0	5.1	5.0	5.1	5.0	4.9	–	–	5.0	5.0	4.9	5.0	5.0
Crown length of P_4–M_3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4.2	–	–	–	–	–
Crown length of M_1–M_3	–	–	–	–	–	–	–	–	–	–	–	–	–	3.5	3.5	–	–	–	–	–
Inside height of mandibular branch under M_1	1.3	1.3	1.2	1.3	1.2	1.3	1.2	1.3	1.3	1.2	1.3	1.3	1.2	1.3	1.3	1.3	1.3	1.2	1.3	1.2

Systematic position. A number of characters given in the description, above all, the club-shaped angular process, acute coronoid process, number and shape of the premolars show evidently that we have to do with some members of the genus *Barbastella* GRAY. This genus includes two species: *B. barbastellus* (SCHREBER) and *B. leucomelas* CRETZSCHMAR. The latter species is distinguished by larger dimensions; it occurs from the Caucasus to Japan, China and Indochina. Our fossil material agrees with *B. barbastellus* (SCHREBER) as regards dimensions and must be ascribed to this species. O. WETTSTEIN-WESTERSHEIM (1921) described a new species, *B. schadleri* WETTST., from the late Pleistocene (Riss-Würm interglacial) from Drachenhöhle near Mixnitz in Austria. The only point in which this fossil form differs from *Barbastella barbastellus* (SCHREBER) is its somewhat greater dimensions, which, however, may be regarded as a subspecific character at the most. Concerning dimensions, the material from Koneprusy resembles the Recent species rather than a fossil form.

The remains of *Barbastella barbastellus* (SCHREBER) were found in three caves in Germany: at Fuchsloch in a fauna of the Riss-Würm interglacial (G. BRUNNER, 1954), at Gaisloch in the early Pleistocene (G. BRUNNER, 1950) and at Breitenberghöhle, in the strata of indefinite age (G. BRUNNER, 1957). T. KORMOS records it as „*Barbastella* aff. *barbastella* (SCHREBER)" from a locality of the early Pleistocene at Episkopia (Püspökfürdo) in Roumania.

Barbastella barbastellus (SCHREBER) occurs in Europe and in the Caucasus. It hibernates in caves, occasionally in numerous colonies. It chooses cool places for the purpose.

Genus *Plecotus* GEOFFROY 1813

Plecotus auritus (LINNAEUS 1758)

Material: 19 mandibular fragments. Teeth P_3—M_3 and all processes are jointly represented.

Description. Coronoid process sharpened at top; angular process long, somewhat widened terminally; mental foramen situated between alveoli of P_1 and P_3; symphysis broad, oval. Dental formula for mandible: 3—1—3—3. P_1 and P_3 stand in the tooth row, the alveolus of the latter being only somewhat smaller than that of the former. P_4 has two roots. The crown of this tooth, when seen from above, is in the shape of a triangle with rounded vertices; the tooth itself is short. In the side view, the tip of P_4 does not reach the height of the tip of M_1. The talonid of M_3 is reduced similarly to what we find in the contemporary specimens of *Plecotus auritus* (LINNAEUS) and it is distinctly smaller than the trigonid.

The dimensions of the relatively well preserved halves of mandibles are as follows (in mm.):

Layer	H3		H5			H6		H7		
Ser. No of specimen	1	2	3	4	5	6	7	8	9	10
Condylar length of mandible	—	—	—	—	—	10.2	—	10.4	—	—
Alveolar length of tooth row	—	—	—	—	6.3	6.5	6.3	6.5	—	6.3
Alveolar length of tooth row without incisors	—	—	—	5.5	5.5	5.5	5.5	5.7	5.7	5.7
Crown length of P_4—M_3	4.4	4.2	4.3	4.3	—	—	4.3	—	—	—
Crown length of M_1—M_3	3.8	3.9	3.7	—	—	—	—	—	—	—
Inside height of mandibular branch under M_1	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.3

Systematic position. The presence of three premolars, the site of the mental foramen between P_1 and P_3, the shape and height of P_4 and the shape of the coronoid process permit us to reckon the remains described above in the genus *Plecotus* GEOFFROY without any doubt.

The size and structure of the specimens from Koneprusy agree with those of the contemporary specimens of *Plecotus auritus* (LINNAEUS). The fossils of this genus were also reported from the Pliocene of Gundersheim in Germany (F. HELLER, 1936 as „*Plecotus* aff. *auritus* L."), from the early Pleistocene of Moggaster Höhle in Germany (F. HELLER, 1930 b), from Episkopia and Brasso in Roumania (T. KORMOS 1937 b), from the late Pleistocene of Fuchsloch (G. BRUNNER, 1954) and from the material of an age unidentified precisely of Breitenberghöhle in Germany (G. BRUNNER, 1957). The fossil species *Plecotus crassidens* KORMOS is known from the Pliocene and early Pleistocene of Europe and so far has been found at Episkopia in Roumania and at Podlesice and

Węże in Poland. It differs from *Plecotus auritus* (LINNAEUS) in the skull shape, which resembles that of the American subgenus *Corynorhinus* ALLEN. The differences in mandible are smaller, but it is characterized by a little larger dimensions, the larger width of teeth and the considerably weaker reduction of the talonid of M_3 than in the Recent form. These characters are not to be found in the material from Koneprusy, and consequently it must be included in the Recent species.

O. WETTSTEIN-WESTERSHEIM (1921) described a new species, *Plecotus abeli* WETT. from the Riss-Würm interglacial of Drachenhöhle near Mixnitz in Austria. As I have already written (K. KOWALSKI, 1956) the distinctive characters given by this author are of subspecific importance at most, and the material from Drachenhöhle may be reckoned in *Plecotus auritus* (LINNAEUS).

Now *Plecotus auritus* occurs in Europe, North Africa and in the Palaearctic region of Asia, reaching as far as Japan and China. Its occurrence is associated chiefly with woodland. *Plecotus auritus* (LINNAEUS) often winters in caves, choosing their cooler parts for this purpose. It generally winters singly.

Genus *Myotis* KAUP 1829

Myotis nattereri (KUHL 1818)

Material: 3 fragments of mandibles representing P_4—M_2 but no processes, from layers H4—H5.

Description. Mental foramen situated between alveoli of canine and first premolar; symphysis pretty broad. Dental formula for mandible: 3—1—3—3. The alveoli of incisors are almost the same size and lie in the tooth row. The first and the second premolar have round alveoli, showing no signs of reduction of these teeth. The alveolus of P_1 is 1.3 times as large as that of P_3. P_4 has a high crown, reaching above the apices of the molars. It is quadrangular, when seen from above, and only slightly elongated. On the cingula of the posterior margin of the molars there is an additional cusp.

The dimensions of the preserved fragments are identical with those of the contemporary *Myotis nattereri* (KUHL) from Poland which I used for comparison.

Systematic position. The presence of two premolars before P_4, the position of the mental foramen and the height of the crown of P_4 evidently show that the specimens belong to the genus *Myotis* KAUP. Within this genus, the lack of tendency toward the reduction of premolars, the shape of the crown of P_4 and the dimensions help us to identify the remains as *Myotis nattereri* (KAUP). The fossils of this species have been hitherto recorded from the early Pleistocene of Brasso in Roumania (J. EHIK, 1913) as „*Myotis (nattereri?)*" and from the layers of the Riss-Würm interglacial from Drachenhöhle near Mixnitz in Austria (O. WETTSTEIN-WESTERSHEIM, 1921).

The species of the genus *Myotis* KAUP described as related to the form *M. nattereri* (KAUP) are known from the Pliocene of Gundersheim and the early

Pleistocene of Roumania and Hungary. However, they show distinct differences as compared with the material from Koneprusy here described.

At present *Myotis nattereri* (KUHL) occours in Europe and Asia as far as Japan, Korea and Manchuria. Its ranges fairly far to the north but is lacking in South Italy and in the Balkan peninsula. It is associated with water and often hibernates in caves.

Myotis emarginatus (GEOFFROY 1806)

Material: a mandibular fragment with P_3—M_3 but without processes, from layer H7.

Description. Mental foramen situated between canine and first premolar; symphysis pretty broad; canine alveolus round; no reduction of premolars. P_3 is comparatively big and its crown is round, when seen from above. P_4 somewhat higher than the apices of molars. The crown of P_4 is rectangular and strongly elongated in its top view. On the cingulum on the posterior side of the molars there is a cusp. The talonid of M_3 is only slightly reduced.

Dimensions. The alveolar length of C—M_3 amounts to $\pm$6.0 mm., and the crown length of P_4—M_3 is up to 4.6 mm., while that of M_1—M_3 up to 3.7 mm. The inside height of the mandibular branch measured under M_1 equals 1.3 mm.

Systematic position. This mandibular fragment belongs undoubtedly to the genus *Myotis* KAUP and within this genus it conforms to the contemporary *Myotis emarginatus* (GEOFFROY) from Poland as regards its morphology and dimensions. The shape of P_4 distinguishes this specimen from the specimens of *Myotis nattereri* (KAUP) from Koneprusy.

Myotis emarginatus (GEOFFROY) was recorded from the early Pleistocene of Hundsheim in Austria (T. KORMOS, 1937 a), Episkopia in Roumania (T. KORMOS, 1937 b) and Nagyharsanyhegy in Hungary (T. KORMOS, 1937 b). It was also reported by G. BRUNNER (1957) from the material of undefinite age from Breitenberghöhle in Germany.

Other species related to *Myotis emarginatus* (GEOFFROY) are: *Myotis gundersheimensis* HELLER described from the Pliocene of Gundersheim in Germany and *Myotis steiningeri* KORMOS from the Pliocene and early Pleistocene of Hungary and Roumania. The first of these species differs from our specimen in broader molars, and the other in its square crown of P_4.

Now *Myotis emarginatus* (GEOFFROY) occurs in Europe and West Asia, reaching as far to the north as Holland, Central Germany and South Poland. It often winters in caves.

In the material from layers H2 and H4—H7 from Koneprusy 12 fragments of mandibles were found, in which P_4 was lacking, and so they could not be identified specifically. They all belong to the genus *Myotis* KAUP, or more strictly, to its forms of the size of *M. nattereri* (KUHL) and *M. emarginatus* (GEOFFROY). In all probability the remains represent both these species.

Myotis bechsteini (KUHL 1918)

Material: 31 fragments of mandibles from layers H2—H7 and one fragment of a maxilla with P^4—M^3 from layer H7. The mandibles show the build of the P_4—M_3 teeth and processes.

Description. Teeth of maxilla without protoconuli. M^3 is more reduced than it is in the other species of the genus *Myotis* KAUP of the same size. The coronoid process is high, narrowed at the top. Angular process big, situated between canine and first premolar; symphysis large, oval.

Alveolus of canine oval, slightly elongated; those of first two molars nearly same size. Their dimensions and position in the mandibular tooth row do not show any reduction of the premolars. The apex of P_4 is somewhat higher than those of the molars. The crown of this tooth is slightly elongated, when seen from above, its length being 0.9 mm. and width 0.7 mm. Molars with distinct cingulum.

Dimensions. The P^4—M^3 length in the only fragment of maxilla from layer H7 amounts to 4.9 mm.

The dimensions of the relatively well preserved mandibles are as follows (in mm.):

Layer	H4	H7	
Ser. No of specimen	1	2	3
Alveolar length of tooth row	—	7.5	—
Ditto, without incisors	7.0	6.5	—
Crown length of M_1—M_3	—	—	4.1
Inside height of mandibular branch under M_1	1.6	1.5	1.4

Systematic position. The high coronoid process, the reduction of M^3 and its lack in the first premolars, the shape of P_4 and, finally, the dimensions permit us to classify the specimens described above in the species *Myotis bechsteini* (KUHL). Two groups of specimens may be distinguished in the material from Koneprusy, one with a little more robust teeth and the other with smaller ones. The other characters seem to be identical in both groups. The few contemporary and subfossil specimens of *Myotis bechsteini* (KUHL) that were at my disposal are of intermediate sizes between these two groups. Owing to poor fossil material and to the lack of the data as to the variability of the Recent population of the species, it is difficult to determine whether we have to do here with individual variability, which seems more probable, or with two different systematic forms.

The remains of *Myotis bechsteini* (KUHL) have been recorded from many localities of the early Pleistocene, e. g. Episkopia in Roumania (T. KORMOS, 1914), Brasso in Roumania (J. EHIK, 1913), Sütto in Hungary (T. KORMOS, 1937 b), Hundsheim in Austria (T. KORMOS, 1937 a), Sackdillinger Höhle

(F. HELLER, 1930 a), Moggaster Höhle (F. HELLER, 1930 b) and Gaisloch (G. BRUNNER, 1950) in Germany. It is also known from the late Pleistocene, for instance, from Drachenhöhle near Mixnitz in Austria (O. WETTSTEIN-WESTERSHEIM, 1921).

At present *Myotis bechsteini* (KUHL) occurs in Europe from the Atlantic to European Russia and in the Caucasus. It is very rare and appears in small numbers all over its range. It occasionally winters in caves. It belongs to the commonest forms among the subfossil remains of bats in the Tatra caves, which proves that this species was more numerous some time in the past.

Genus *Eptesicus* RAFINESQUE 1820

Eptesicus cf. *serotinus* (SCHREBER 1774)

Material: a toothless mandibular fragment from layer H4.

Description. The fragment contains the alveoli of I_1—M_1. The mental foramen lies below the first premolar (P_1). Symphysis broad, oval. Dental formula for mandible: 3—1—2—3. Alveolus of canine egg-shaped, that of first premolar oval. Inside height of mandibular branch under M_1: 2.4 mm.

Systematic position. The mandibular fragment described above is distinguished by its large dimensions from all other Chiropteran remains from Koneprusy. These dimensions as well as the reduction of the premolars and some details in the build of the alveoli give evidence of its pertinence to *Eptesicus serotinus* (SCHREBER).

Eptesicus serotinus (SCHREBER) is very widely distributed throughout Europe and Asia now. It occasionally hibernates in caves.

Eptesicus praeglacialis KORMOS described by T. KORMOS (1930) from the early Pleistocene of Episkopia in Roumania resembles *E. serotinus* (SCHREBER) very much. This species is also mentioned by M. KRETZOI (1956) from the early Pleistocene of Villany 3 in Hungary.

Cf. *Eptesicus* sp.

Material: one toothless mandible without processes from layer E1.

Description. Mental foramen between incisor and first premolar; symphysis short, broad; dental formula for mandible: 3—1—2—3.

Alveoli of incisor and of P_1 round.

Alveolar length of tooth row: 6.3 mm. Alveolar length of C—M_3: 5.6 mm.

Systematic position. The dental formula and the build of the mandible show that this specimen is most likely a representative of the genus *Eptesicus* RAFINESQUE, of a size like that of *Eptesicus nilssoni* (KEYSERLING & BLASIUS). It is impossible to identify it precisely on the basis of such poor material.

STRESZCZENIE

W r. 1952 odkryto w Cesarskim Łomie w Koneprusach w Czechosłowacji jaskinię oznaczoną później jako C 718. Sedymenty jej zawierały bogatą faunę starszego plejstocenu, która została zbadana i częściowo opublikowana przez O. Fejfara (1956 a—d, 1959, 1961). Zbadana fauna wskazuje na pochodzenie osadów z czasu zlodowacenia Mindel.

Praca niniejsza zawiera opis szczątków nietoperzy z jaskini C 718, przekazanych autorowi do opracowania przez O. Fejfara. Materiał ten był dość liczny, ale niezbyt dobrze zachowany. Składał się z fragmentów żuchw, jednego fragmentu czaszki oraz kości kończyn — te ostatnie nie zostały opracowane.

Wszystkie okazy należą do osobników dorosłych. Można przypuszczać, że materiał z Koneprus przedstawia szczątki kolonii zimowej nietoperzy, która znajdowała się kiedyś w jaskini.

Tabela na stronie 146 podaje skład gatunkowy fauny nietoperzy z podziałem na poszczególne warstwy wyróżnione w namulisku. Cyfry w tabeli oznaczają ilość fragmentów żuchw.

Fauna nietoperzy z Koneprus nie zawiera zupełnie gatunków śródziemnomorskich nietoperzy, nawet tych, które żyją dziś także w Europie Środkowej, jak przedstawiciele rodzaju *Rhinolophus* Lacépède, jak *Miniopterus schreibersi* (Kuhl), jak duże gatunki rodzaju *Myotis* Kaup. Fauna ta różni się wskutek tego zasadniczo od znanych dotąd z pliocenu i starszego plejstocenu Europy Środkowej faun nietoperzy, w których te elementy śródziemnomorskie licznie występują. Fauna z Koneprus obejmuje jedynie gatunki żyjące dziś w Środkowej Europie i dochodzące dość daleko na północ. Wskazuje ona na klimat chłodny, chłodniejszy od panującego dziś w Czechach. Jest to pierwsza w Europie fauna nietoperzy z okresu zlodowacenia Mindel.

W poszczególnych warstwach obserwujemy różny skład ilościowy fauny, zasadniczy jej charakter utrzymuje się jednak w całym profilu.

W części systematycznej autor opisuje znalezione szczątki nietoperzy i podaje ich wymiary, a także omawia stanowisko systematyczne, dotychczas znane stanowiska kopalne i rozmieszczenie współczesne wszystkich gatunków nietoperzy znalezionych w Koneprusach.

РЕЗЮМЕ

В 1952 г. в Цесарском Ломе в Конепрусах в Чехословакии обнаружили пещеру, которую позже обозначили как С-718. Седименты пещеры содержали богатую фауну старшего плейстоцена, которая была исследована и частично опубликована О. Фейфаром (1956 a—d, 1959, 1961). Исследованная фауна указывает, что осаждения происходят из времен Миндельского оледенения.

Данная работа содержит описание остатков летучих мышей из пещер Сы-718,

полученных автором для обработки от О. Фейфара. Материал был значительный, но плохо сохранившийся. Слагался из осколков челюстей, одного осколка чашки и костей конечностей (конечности не были обработаны).

Все образцы принадлежат особям взрослым. Можно предполагать, что материал из Конепрус представляет собой остатки зимней колонии летучих мышей, которая находилась когда то в пещере.

В таблице, на странице 146, представлен видовой состав фауны летучих мышей с делением на отдельные слои, отмеченные в тине. Цифры в таблице обозначают количество осколков челюстей.

Фауна летучих мышей из Конепрус совершенно не содержит средиземноморских видов летучих мышей, даже тех, которые в настоящее время живут в Центральной Европе как представители рода *Rhinolophus* Lacépède, как *Miniopterus schreibersi* (Kuhl), как большие виды рода *Myotis* Kaup. В связи с вышесказанным, фауна эта коренным образом отличается от известной фауны летучих мышей плиоцена и старшего плейстоцена Центральной Европы, в которой эти средиземноморские элементы выступают в значительном количестве. Фауна Конепрус охватфвает единственно виды живующие в настоящее время в Центральной Европе и заходящие довольно далеко на север. Она указывает на климат холодный, более холодный чем современный климат Чехословакии. Это первая в Европе фауна летучих мышей периода Миндельского оледенения.

В отдельных слоях наблюдаем различный количественный состав фауны, однако основной её характер удерживается во всем профиле.

В систематической части работы автор описывает найденные остатки летучих мышей и приводит их измерения, анализирует также их систематическое положение, известные до сих пор местоположения раскопок и современное размещение летучих мышей найденных в Конепрусах.

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Redaktor pracy: dr M. Młynarski

Państwowe Wydawnictwo Naukowe — Oddział w Krakowie 1962

Nakład 800+100 egz. — Ark. wyd. 1, — Ark. druk. $^{12}/_{16}$ — Papier ilustr. kl. III 80 g 70×100
Zam. 682/61 Cena zł 6,—

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