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CONVENIENT TAXONOMIC FEATURES OF SKULLS OF CERTAIN
MAMMALS FROM OWL PELLETS

DOGODNE CECHY TAKSONOMICZNE FRAGMENTÓW CZASZEK
NIEKTÓRYCH SSAKÓW Z WYPLUWEK

A wide utilisation of owl pellets for research on the fauna of *Micromammalia* is the cause that every research worker in that branch uses in his work, if only occasionally, osseous remains for determining species. Such material, provided in mass numbers and, ordinarily, considerably damaged, is often the source of certain difficulties. The degree of damaging of the skulls is, as a rule, rather great. A percentage of loose fragments always appears and their variable shape is difficult to identify.

In these conditions, the conduct of special morphological observations for selecting new taxonomic features that could be useful for the determination of skull fragments seems to be appropriate. In the case of a lack of distinct visual differences in the structure of skulls of related species, it is profitable to work out measurement features corresponding to the specificallness of the given material (Buchalczyk & Raczynski, 1961).

This article contains a series of new diagnostic features, which I employed in the course of my work, concerning the determination, from owl pellets, of some genera of *Insectivora* and *Rodentia*.

1. *Soricidae*. In conserved fragments of *Soricidae* skulls differences appearing in the vicinity of the mandibulary cavity were noticed. In the genus *Sorex* Linnaeus 1758, the *Proc. postglenoidalis*, seen from the side of the skull base, has the shape of a flat, uniform platelet, with a protruding frontal edge near the central part. In *Neomys* Kaup 1829, this platelet has a shallow furrow running from the front, terminated by an orifice which can be seen in the centre of the process. The structure of *Proc. postglenoidales* in the genus *Crocidura* Wagler 1832, resembles that of the *Sorex*, differing from it in that the delicate flat bone surfaces, laterally limited, are punctured by a pair of apertures of variable shape and size. They are situated near the middle of the line uniting the bases of the afore-mentioned processes. This feature, usually easily noticed, is sometimes less distinct, especially in old specimens. *Foramen lacrimale* in *Crocidura* is always situated on the level of the upper half of *For. infraorbitale*, and never in the lower one, as in *Sorex* and *Neomys* (Fig. 1).

The above observations suffice to facilitate a correct generic segregation when intermaxillary damages or a lack of dentition arise.

2. *Murinae*. In the material from owl pellets fragments containing maxillary bones are the best conserved in the skull of the *Murinae*. When alveoli are present, determination is rendered easy by apertures left by the roots of the teeth. Herold (1956/57) presents the typical disposition and scope of variability for the genera *Mus* Linnaeus 1758, and *Apodemus* Kaup 1829.

Separation of skulls of the house mouse, *Mus musculus* Linnaeus 1758 from the genus *Apodemus* is facilitated by the presence of characteristic paired small bone tubercles, situated on the lower surface of the maxillary bone, laterally in relation to the *Margo adentalis maxillae*, below the lower edge of *For. infraorbitale* (Fig. 2a).

This manner of differentiation is quite positive and easier, from the practical point of view, than determination by means of the shape of the parietofrontale suture (Richter, 1961).

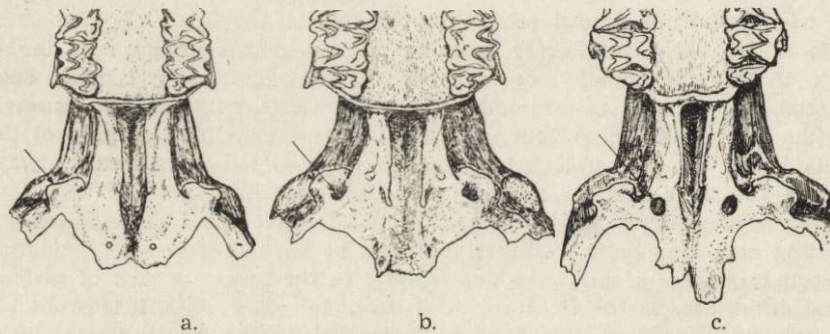


Fig. 1. a — *Sorex araneus*, b — *Neomys fodiens*, c — *Crocidura leucodon*.

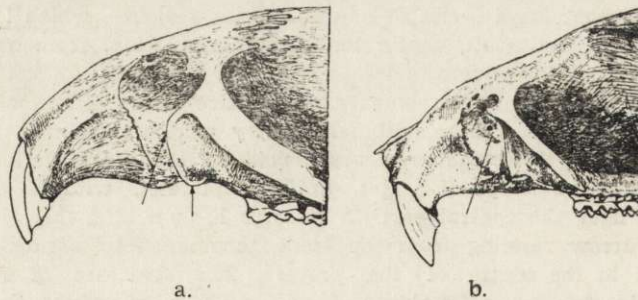


Fig. 2. a — *Mus musculus*, b — *Micromys minutus*.

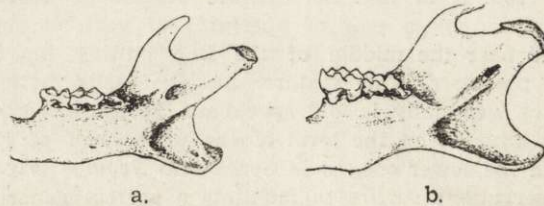


Fig. 3. a — *Sicista betulina*, b — *Mus musculus*.

The skull of *Micromys minutus* (Pallas 1771) also possesses good taxonomic features in the part which, as a rule, remains undamaged. This regards the formation of the bone arc delimitating the preorbital aperture, characteristic for the *Micromys*. Its front border is straight or concave, especially in the upper part, contiguous to the zygomatic arc (Fig. 2b). It must be mentioned here that the smaller dimensions of the *Micromys*, by which it differs from the remaining *Murinae*, do not appear so distinctly when comparing bone fragments damaged in a different degree.

3. The different structure of the skull of *Sicista betulina* (Pallas 1779) is such, that this genus is easy to distinguish on the basis of a description given, for ex., by Wałeckiecki (1884) or Gaffrey (1953). Experience shows, however, that because of its delicate structure even the rostral part is subject to disintegration and, in many cases only the mandibles remain (Raczyński 1959). The mandibles of *Sicista betulina* differ from the *Murinae* by a slender structure and a different shape of *Ramus mandibulae*. The lower incision is situated more towards the front in relation to *Incisura mandibulae*, while the *Proc. angularis* in its posterior part possesses a tubercle strongly bent externally. Moreover, *For. mandibulae*, differing from conditions seen in the *Mus musculus* is situated to the fore, always beyond the upper incision, *Incisura mandibulae* (Fig. 3). The features distinguishing *Sicista betulina* from *Micromys minutus* are also the different proportions in the structure of the mandible and a three-root structure of M_1 typical for *M. minutus*.

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