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NOTE ON *CROCIDURA SUAVEOLENS* (PALLAS, 1811) FROM POLAND

PRZYCZYNEK DO ZNAJOMOŚCI ZĘBIELKA KARLICZKA,
CROCIDURA SUAVEOLENS (PALLAS, 1811) Z TERENÓW POLSKI

There are no significant differences in the dimensions of body and skull between *C. suaveolens* from Poland and the nominal form — *Crocidura suaveolens suaveolens* (Pallas, 1811). Individuals from Poland therefore belong to the nominal subspecies. The ratio of height of p^1 to paraconus p^2 is of no taxonomic significance as distinguishing *C. s. suaveolens* from *C. s. mimula*, and is frequently different on the two sides of the jaw in the same individual. Length of life of *C. suaveolens* may be as long as 18 months under natural conditions.

It is only of recent years that more attention has been paid in Poland to *C. suaveolens* and a greater amount of material collected, coming chiefly from the pellets of predatory birds (Simm, 1952; Skuratowicz & Warchalewski, 1954; Cais, 1963; Kulczycki, 1964). A large number of specimens of *C. suaveolens* were caught by Chudoba, *et al.* (1961) in the Wrocław area, and by Chudoba & Humiński (1963) at Krynica. The present report is based on the above authors' material ($n = 75$), collected mainly at the end of summer in autumn 1958—1959.

Morphological variation. The colour of the coats of different individuals of *C. suaveolens* from Wrocław was distinguished by relatively considerable differences due to both individual and seasonal variation.

The summer coat of these animals from the Wrocław area approximately corresponded to the class of colour from Saccardos Umber to Sudan Brown. The underside of the body was similar to the Olive Buff colour. The dorsal side of the winter coat was dark, with a sharper line of demarcation from the colour of the sides than in summer coats. This is in complete agreement with Ognev's description (1928). In the majority of cases the colour of the dorsal part of the animals' fur in winter, according to Ridgway's scale (Zimmermann, 1952) varied from Bister to Chestnut Brown. The colour of the ventral side was similar to Cinnamon — Olive Buff. The back of the most darkly coloured

individuals was similar to Clove Brown — Bister and Sudan Brown — Brussels Brown.

Individuals of *C. suaveolens* from Krynica had winter coats only during the capture period. The majority of them were darkly coloured, being most similar to Sudan Brown — Brussels Brown on the dorsal side, and Olive Buff on the ventral side. The coloration of some individuals was between Bister and Saccardos Umber. The ventral side of these animals was similar in shade to Marguerite Yellow. These data show that there are no great differences between the colour of the winter coat of animals from these two localities.

The autumn moult period occurred in September and the first half of October in individuals of *C. suaveolens* from Wrocław. It began on the dorsal side of the hind part of the body, then moved forwards and on to the sides. The head was the last part to change coat. The general direction taken by the autumn moult in this species is similar to that in some other representatives of *Soricidae* (Dehnel, 1949; Borowski, 1952).

Table 1.

Range and mean values of some dimensions of *Crocidura suaveolens* (Pallas, 1811) from different places in Poland.

Locality	Wrocław n = 31	Krynica n = 16	Przemyśl (after Cais, 1963)
Head & Body	51—67 58.7	49—67 57.8	—
Tail	30—37 32.9	27—35 31.4	—
Hind foot	10—12 10.9	10—12 10.9	—
Weight	2.9—5.7 4.3	3.1—5.8 4.5	—
Cb.-length	15.4—17.3 16.4	15.2—16.9 16.1	15.4—17.1 16.66
Brain-case breadth	7.6—8.6 8.1	6.9—9.2 8.0	—
Brain-case depth	3.7—5.4 4.8	3.9—5.5 4.8	—
Interorbital constriction	3.8—4.3 4.0	3.7—4.8 3.9	3.6—4.1 3.85
<i>Foramina anteorbitalia</i>	3.1—3.5 3.3	3.0—3.3 3.15	2.9—3.35 3.12
Maxillary tooth-row	6.9—7.3 7.4	7.0—7.5 7.3	7.0—7.8 7.38
Mandibulary tooth-row	6.8 6.3—7.2	6.4—7.0 6.7	—

Dimensions of body and skull in individuals of *C. suaveolens* from Wrocław and Krynica are given in table 1, and are very similar in specimens coming from the two localities.

Systematic position. Ognev's view (1928) that Poland is included in the range of the nominal subspecies has not so far been either confirmed or refuted authoritatively. Cais (1963) states that the craniometric features of *Crocidura* from Przemyśl exhibit greater

similarity to the corresponding features of the subspecies *suaveolens*. In view, however, of the very slight differences occurring between the nominal subspecies and the subspecies *C. suaveolens mimula* Miller, 1901, this author did not decide on allocating the specimens he collected to either of them.

Comparison of the dimensions of skulls of *C. suaveolens* from three different stations in the south of Poland (Tab. 1) with corresponding data for the nominal subspecies presented by Ognev (1928) proves that there are no significant differences between them. The colour of the fur of these animals is also very similar and may in fact be identical. On these grounds the authors allocate the representatives of *Crocidura* living in Poland to the nominal subspecies — *Crocidura suaveolens suaveolens* Pallas, 1811). Hanzák & Rosický (1949) also classify *C. suaveolens* from Slovakia as belonging to this subspecies.

The means of distinguishing the subspecies *suaveolens* from *mimula*, adopted after Elik (acc. to Hanzák & Rosický, 1949), based on slight differences in the character of the dentition, has no sound basis. The criterion of this division is formed by the ratio of height of p^1 to paraconus p^2 . The nominal subspecies is supposed to be characterised by a paraconus lower, and *mimula* by a paraconus higher, than p^1 . As early as 1928 Ognev demonstrated that this character is variable in *C. suaveolens*. Hanzák & Rosický (1949) also express doubt as to its taxonomic value. Our studies showed that all possible combinations of reciprocal size of p^1 and paraconus p^2 , and also their asymmetrical position on both sides of the jaw, are encountered within the population

Table 2.
Comparison of the ratio of height p^1 to paraconus p^2 in *C. suaveolens*.

Reciprocal ratio of height p^1 to paraconus p^2	n	%
Paraconus p^2 on both sides of jaw $< p^1$	24	40.7
Paraconus p^2 on both sides of jaw $> p^1$	13	22.0
Paraconus p^2 on both sides of jaw $= p^1$	7	11.9
Paraconus p^2 on one side of jaw $< p^1$, on other side $> p^1$	3	5.1
Paraconus p^2 on one side of jaw $> p^1$, on other side $= p^1$	4	6.8
Paraconus p^2 on one side of jaw $< p^1$, on other side $= p^1$	8	13.5
Total	59	100.0

investigated (Tab. 2). Dehnel (1949) drew attention to similar asymmetry of dentition in shrews. Use of this feature as a taxonomic criterion is therefore unjustifiable.

Biological remarks. Three age groups were distinguished in the material on the basis of teeth wear. Individuals with unworn, or only very slightly worn, teeth were allocated to group I. These are undoubtedly representatives of the last litters of the given reproduction season. Group II includes individuals exhibiting a medium degree of tooth wear, which probably came from earlier litters of the same reproduction period. Group III, characterised by intensive wear of the teeth, is formed by old adults. The age composition of the animals from both localities taken together is as follows: group I — 72.3%, group II —

12.8%, group III — 14.9%. The number of old adults decreases sharply towards the end of autumn. The last specimen was found in November. If, therefore, it is assumed that the oldest individuals belong to the first of the previous year's spring litters, which according to O g n e v's data (1928) may appear as early as the beginning of June, then the length of life of this species may be considered as approximately 18 months. This is of course the maximum life span in a natural habitat.

Males predominated in the authors' material, forming 54.7% of all specimens. It will not be possible to obtain a more accurate picture of this problem until some time in the future. It became clear that many factors affect the sex ratio in *Soricidae*, and that it may differ in different years (P u c e k, 1959).

There was only one pregnant female in our material (4.X.1958), which had two embryos. This was undoubtedly one of the last pregnancies to occur in *C. suaveolens* during that reproduction season in the areas examined.

Developed sex organs were found in a male as late as October 11th, 1958, but in other males caught towards the end of October and in November, classified as belonging to age group III, the sex organs were indistinguishable visually from those of immature individuals from age group I. The assumption put forward by some researchers (after O g n e v, 1928) that winter reproduction takes place in this species, was not confirmed by our material.

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