

The occurrence of white spots in the region of head in shrews is known from many records. Crowcroft (1957) associates them with the growth of new hair where it was plucked during copulation. These spots were observed in sexually active females, and such cases are not regarded as white spotting. On the other hand, there are no grounds to refrain from speaking about white spotting in the case of such spots in sexually inactive young animals, especially in males. In order to carry out an exhaustive analysis of this anomaly it is necessary to collect still more specimens.

## REFERENCES

- Allen G. M., 1935: An albino shrew. *J. Mamm.*, 16: 223. Bree, P. I. H. van, Chanudet F. & Saint-Girons M. C., 1963: Notes sur des colorations chez les Musaraignes (*Insectivora*, *Soricidae*). *Mammalia*, 27: 300—305. Cabrera A., 1932: Los mamíferos de Marruecos. Madrid, pp. 1—361. Christian J. J., 1947: Note on light colored *Blarina*. *J. Mamm.*, 28: 403. Crowcroft P., 1957: The life of shrews. Max Reinhardt: 1—166. London. Dexter R. W., 1961: An albino shrew from Ohio. *J. Mamm.*, 42: 96. Elder W. H., 1960: An albino *Cryptotis* from Missouri. *J. Mamm.*, 41: 506—507. Findley J. S., 1955: Possible himalayan color pattern in the masked shrew. *Ib.*, 37: 257. Gelder R. G., van, 1959: An albino *Sorex vagrans*. *Ib.*, 40: 438. Hamilton W. J. jr., 1939: Albino *Blarinas*. *Ib.*, 20: 252. Harrison, D. L., 1957: A remarkable pied Common shrew (*Sorex araneus* Linn.). *Naturalist, Lond.*, 862: 92. Heptner, V. G., 1939: The turkestan desert shrew, its biology and adaptive peculiarities. *J. Mamm.*, 20: 139—149. Heron-Royer, M., 1883: Cas d'albinisme partial chez la Musaraigne commune. *Bull. Soc. Zool. France*: 134—135. Jackson, H. H. T., 1928: A taxonomic review of the American long-tailed Shrews. *N. Am. Fauna*, 51: 1—238 + I—VI. Jones, T. S., 1962: Albinism in an African shrew (*Crocidura schweitzeri*). *Mammalia*, 26: 135. Mohr, E., 1931: Die Säugetiere Schleswig-Holsteins. Altona, Elbe: 1—136. Murray, L. T., 1939: An albino *Blarina* from Indiana. *J. Mamm.*, 20: 501. Pearce, J., 1934: Albinism in the *cinereus* Shrew. *Ib.*, 15: 67. Saint-Girons, M. C., 1963: Notes faunistiques sur les Mammifères de la région de Besse-en-Chandesse (Ruy-de-Dôme) *Rev. Sci. nat d'Auvergne*, 27: 1—14. Sélys-Longschamps, E., de, 1839: Etude de micromammalogie. *Revue des Musaraignes, des Rats et des Campagnols*. Roret: 1—165. Paris. Shapiro, J., 1950: Notes on population dynamics of *Microtus* and *Blarina* with a record of albinism in *Blarina*. *J. Wildlife Mgmt.* 14: 359—360. Sime, P. R., 1940: Albino short-tailed shrew from Connecticut. *J. Mamm.*, 21: 214. Ulmer, F. A., jr., 1940 a: Albinism in *Blarina*. *J. Mamm.*, 21: 89. Ulmer, F. A., jr., 1940 b: A Delaware record of albinism in *Blarina*. *J. Mamm.*, 21: 457. Williams, M. W., 1962: An albino short-tailed shrew from Vermont. *J. Mamm.*, 43: 424—425.

Mammals Research Institute, Polish Academy of Sciences, Białowieża.

Zolo PESHEV

IS *SOREX CAECUTIENS* LAXMANN, 1788 TO BE FOUND IN BULGARIA?

CZY ZOSTAŁ ZNALEZIONY W BULGARI *SOREX CAECUTIENS* LAXMANN, 1788?

In 1951 Markov in a short note reported the existence of *Sorex macropygmaeus* Miller, 1901 (= *S. caecutiens* Laxmann, 1788) in Bulgaria. The five specimens which gave rise to this information were caught on the Moussala Ridge in the Rila Mts. near the Maritsa Forester's Lodge.

Somewhat later Markov (1957), published a monograph on the insectivorous mammals of Bulgaria. In this work he again reported the finding of *S. macropygmaeus*. The material (6 ♀♀ and 4 ♂♂) was collected in the same place, in the Rila Mts. These ten specimens probably include the material mentioned in his first report.

The identification features given by Markov (1955) refer to the size of body, skull, tail and hind foot, the colouring and unicuspid teeth. About the latter this author writes that they "are grouped into two pairs, the first two being almost equal and somewhat larger than the next two, which are also almost equal, but larger than the fifth one" (Markov, 1957; p. 189). On the other hand, the key tables give the following: "the unicuspid teeth are grouped into two pairs (1 = 2 > 3 = 4)" (Markov, 1957; pp. 163 and 193).

*S. caecutiens* (= *S. macropygmaeus*) is distributed in the USSR over "the area between the western state borders and on the east to the Anadiria, Choukotka, the Kurilo islands and Sakhalin; northwards — to the northern peripheries of the Tundra region; and southwards — to the Central Ukraine, the mountainous region, South Bashkiria, North Khazakhstan and the mountainous regions of South Siberia, and also over the coastal regions. Beyond the Soviet borders it is to be found in Poland, Finland, Mongolia, China, Korea and Japan" (Stroganov, 1957; p. 207).

The description of the basic form — *S. caecutiens caecutiens* Laxmann, 1788 (= *S. macropygmaeus araneoides* Miller, 1901) is made on the basis of specimens caught on the southwestern shore of the Baikal Lake.

Taking into consideration the distinguishing features according to which Markov (1957) classified his specimens from the Rila Mts., which far from coincide with the systematic features of *S. caecutiens*, and the area of this specimen I have my doubts as to the exactness of his classification.

According to a detailed taxonomic characteristic of *S. caecutiens* Stroganov (1957) the differences between this species and *S. araneus* lie in the following more important features:

1. A fundamental difference between the copulation organs of both species; whereas the penis of *S. caecutiens* is cylindrical, with a crown on the end, that of *S. araneus* is conical, with a tapered end and without a crown.
2. The specific position and form of the tori of the hind foot; the outer palmar tubercle of *S. caecutiens* is round, while the inner is oval in longitudinal direction; of *S. araneus* the two promaxillar tori (inner and outer) are equally large and equally oval in longitudinal direction.
3. Differences in the structure of Pm<sub>1</sub>; the height of this tooth in *S. caecutiens* is smaller than half of the length of the longitudinal axis at the basis of its crown; in *S. araneus* this height is about two-thirds of the length.
4. The obvious differences in the structure of the chewing surfaces of the unicuspid teeth; of *S. caecutiens* they are sharpened like a well-roughened file, while those of *S. araneus* are either blunt or smooth.
5. The outer features and craniological peculiarities of the two specimens can also be of a cognitive character; diagnostically they are insignificant.

In classifying his material Markov (1957) did not mention any of those features which are diagnostical for *S. caecutiens*.

I examined very carefully the numerous *Sorex* material in the collection at the Chair of Zoology of Vertebrate Animals at the Sofia University, gathered from all parts of our country. In addition, 61 skulls and 67 skins of *S. araneus* and 2 specimens of *S. minutus* were collected during special trips to the Maritsa For-

ester's Lodge in the Rila Mts. (about 1600 m above sea level). I had also the opportunity of examining the two specimens of *Sorex caecutiens* caught at Ossinovo on the Enissey River, sent me by R. Zimina, scientific worker in the Biogeography Department of the Institute of Geography, Soviet Academy of Sciences, Moscow, and of making direct comparisons.

None of the specimens of my material show the same features as *S. caecutiens*. I was not, unfortunately, able to examine the ten specimens collected by Markov. In any case, I am inclined to assume that he was misled and erroneously classified his materials from the Rila Mts. as *Sorex caecutiens*. The population of the Mussala Ridge in the Rila Mts. I classify as *Sorex araneus* Linnaeus 1758. Table 1 gives the craniological measurements.

**Table 1.**  
Some craniological dimensions of *Sorex araneus* L. from Rila Mts. (Bulgaria)

| Condylobasal length | Zygomatic breadth | Lachrimal breadth | Breadth of brain-case | Depth of brain-case | Maxillary tooth-row | Mandibular tooth-row |
|---------------------|-------------------|-------------------|-----------------------|---------------------|---------------------|----------------------|
| 18.5—20.2           | 4.6—5.5           | 3.2—3.9           | 8.5—9.9               | 5.3—6.0             | 7.8—9.0             | 6.9—8.4              |
| 19.33               | 5.01              | 3.52              | 9.37                  | 5.65                | 8.34                | 7.74                 |

In general, the genus *Sorex* is represented in Bulgaria by two species — *S. araneus* and *S. minutus*. For the time being the subspecies pertaining of the Bulgarian population of *S. araneus* is difficult to classify. Some of the features of the Mount Vitosha population are quite similar to those of the Martino subspecies *S. araneus petrovi* Martino, 1939 (Peshev & Yotova, 1962). The Rila Mts. specimens also exhibit this similarity with *S. araneus tetragonurus* Hermann, 1780. Some authors (Petrov, 1939; Hamar, 1962 and others) also mention the difficulties they met with in the subspecific classification of *S. araneus*. All this induces me to conclude that *S. araneus* is a somewhat plastic form and that we encounter here a "broad transitory line" between the subspecies, of these species. Terentiev (1957) assumes that "most of the subspecies mentioned represent occasional combinations, due to the general subspecies changeability". Further on Terentiev accepts that "...the study of series with increasing volume in most cases leads to the acknowledging of a very broad transitory line or in short to an uninterrupted geographical changeability", called by Huxley "biographical changeability".

#### REFERENCES

- Markov, G., 1951: Novi vidove bozajnici za faunata na Blgarija (*Insectivora*). Izv. na Zool. in-t BAN, 1: 344—346, Sofija. Markov, G., 1957: Nasekomojadnite bozajnici v Blgarija. BAN, Fauna na Blgarija, 3: 1—285, Sofija. Pešev, C. & Jotova, T., 1962: Prinos km izučavaneto na *Sorex araneus* L. ot Vitoša planina. Godišnik na Sofijskija univ., 55, Biol. 1: 215—227, Sofija. Stroganov, S., 1957: Zveri Sibiri, Nasekomojadnye. AH SSSR: 1—267, Moskva. Terent'ev, P., 1957: O primenimosti ponjatija "podvid" v izučenii vnutrividovoj izmenčivosti. Vest. Leningr. Univ., 21, 4, Leningrad.

Dept. Zool., State University, 49 Moskovska Str., Sofia.