

A Biometric Description of Common Dormice from Gorce (Beskid Wysoki Mts), Southern Poland

CHARAKTERYSTYKA BIOMETRYCZNA ORZESZNIC Z GORCÓW (BESKID WYSOKI)

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Białas I., Chętnicki W. & Kupryjanowicz J., 1989: A biometric description of common dormice from Gorce (Beskid Wysoki, Mts), Southern Poland. Acta theriol., 34, 43: 648—651 [With 1 Table]

Of 2526 small mammals, twenty-nine common dormice, *Muscardinus avellanarius* (Linnaeus, 1758), were caught in Gorce National Park from 1981 till 1983. It was ascertained that average body and skull measurements of *M. avellanarius* from the Gorce were greater than those of animals from other Polish populations. The average body weight of mature females was 19.5 g and was significantly higher than the body weight of mature males (16.0 g), whereas a male hindfoot was significantly longer (17.0 mm) than a female hindfoot (15.8 mm).

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1. INTRODUCTION

The common dormouse in the mountainous regions of Poland have been found in the West Sudety (Chudoba *et al.*, 1973), West Beskidy (Chudoba & Humiński, 1968; Chudoba & Haitlinger, 1971; Haitlinger & Szyszka, 1975; Haitlinger & Szyszka, 1977; Juchiewicz *et al.*, 1986) and East Beskidy (Grodziński, 1957; Buchalczyk & Markowski, 1979). However, little is known about this species. Craniometric features of this group of animals, which occur in mountainous regions as well as in the remaining parts of Poland (Sidorowicz, 1959; Buchalczyk & Markowski, 1979; Białas *et al.*, 1982; Kałuża, 1987) have not been thoroughly described. Our aim was to present biometric features of dormice from the Gorce.

2. MATERIAL AND METHODS

Small mammals were caught in Gorce National Park at the end of August and the beginning of September from 1981 till 1983. Mammals were caught with pitfalls and map traps using wicks soaked in browned oil and flour as bait. The pitfalls were placed in different biotopes, 20 pitfalls in a line every 12 m, and 40 snap traps (in twos at a pitfall). Generally there were 79 catching lines placed in the Gorce area (28,440 trap-nights). The variety of examined biotopes was described in the work on small mammals of Gorce National Park (Białas *et al.*, 1989). Twenty-nine dormice were among 2526 small mammals caught there. Animals were weighed with accuracy to 0.1 g. Also their sex and

sexual activity were determined. The statistical significance of differences between the averages of respective measurements was checked by the *t*-Student test at $\alpha=0.05$.

3. RESULTS AND DISCUSSION

In the years 1981, 1982, 1983, respectively, 15, 3 and 11 *M. avellanarius* were caught in both deciduous and coniferous forests: 3 in *Alnetum incanae*, 11 in *Fagetum carpaticum*, 3 in *Abieti-Piceetum montanum* 4 in *Fagetum carpaticum /Piceetum tatricum*, (in the ecotone), and 7 in *Piceetum tatricum*. One *M. avellanarius* was caught on the wet meadow *Cirsietum rivularis*. The fact that dormice left the wood was observed earlier (Chudoba & Humiński, 1968; Haitlinger & Szyszka, 1977).

The body dimensions of dormice caught in the Gorce were comparable to those of that species from other areas of Poland (Pucek, 1984), of Czechoslovakia (Pelikán *et al.*, 1979) and of Northern Europe (Siivonen, 1979). However, *M. avellanarius* from the Gorce had greater head and body lengths (about 3 mm greater) and longer hindfeet than animals of that species from Kampinos Forest (Sidorowicz, 1959).

Table 1

Biometrical measurements of *Muscardinus avellanarius* caught in Gorce National Park in 1981—1983 (linear measurements in mm; mean value \pm SD) N_1 — number of morphometrical measurements, N_2 — number of craniometrical measurements. Abbreviations of cranial measurements: CbL — condylobasal length; ZyB — zygomatic breadth; BcB — brain—case breadth; BcHp — brain—case height per bullae; BcHb — brain—case height between bullae; IC — interorbital constriction; UTRL — upper tooth row length; LTRL — lower tooth row length; DL — diastema length; MdL — mandibular length. * The differences between neighbouring values are statistically significant (*t* — test; $\alpha = 0.05$).

| Measurement | Adultus | | | Subadultus |
|--------------------|------------------|----------------|------------------|----------------|
| | Males | Females | Total | |
| N_1 | 5 | 4 | 9 | 12 |
| Body weight (g) | 16.0 \pm 2.2 * | 19.5 \pm 1.7 | 17.6 \pm 2.6 * | 12.6 \pm 5.1 |
| Head & body length | 77.4 \pm 3.5 | 79.9 \pm 2.8 | 78.5 \pm 3.3 * | 66.7 \pm 6.2 |
| Tail length | 71.8 \pm 4.2 | 72.7 \pm 6.0 | 72.2 \pm 4.8 * | 65.9 \pm 7.0 |
| Hindfoot length | 17.0 \pm 0.4 * | 15.8 \pm 0.6 | 16.4 \pm 0.8 | 16.2 \pm 0.8 |
| Ear height | 13.0 \pm 0.5 | 13.1 \pm 0.5 | 13.0 \pm 0.4 * | 11.5 \pm 1.2 |
| N_2 | 2 | 4 | 6 | 5 |
| CbL | 21.1 \pm 0.8 | 22.1 \pm 0.5 | 21.8 \pm 0.8 * | 19.4 \pm 1.1 |
| ZyB | 12.8 \pm 0.5 * | 13.8 \pm 0.3 | 13.4 \pm 0.6 * | 11.9 \pm 0.5 |
| BcB | 11.6 \pm 0.2 | 11.9 \pm 0.2 | 11.8 \pm 0.3 * | 11.2 \pm 0.3 |
| BcHp | 9.4 \pm 0.1 | 9.5 \pm 0.2 | 9.4 \pm 0.2 * | 8.9 \pm 0.2 |
| BcHb | 8.2 \pm 0.6 | 8.0 \pm 0.2 | 8.1 \pm 0.2 | 7.8 \pm 0.4 |
| IC | 3.6 \pm 0.1 | 3.4 \pm 0.2 | 3.5 \pm 0.1 | 3.5 \pm 0.1 |
| UTRL | 4.9 \pm 0.1 | 4.7 \pm 0.1 | 4.8 \pm 0.1 | 4.7 \pm 0.1 |
| LTRL | 4.7 \pm 0.1 | 4.6 \pm 0.1 | 4.6 \pm 0.1 | 4.6 \pm 0.2 |
| DL | 5.5 \pm 0.1 * | 6.4 \pm 0.2 | 6.1 \pm 0.5 * | 5.3 \pm 0.3 |
| MdL | 11.6 \pm 0.0 * | 12.1 \pm 0.2 | 11.9 \pm 0.3 * | 11.0 \pm 0.5 |

They were also heavier and had longer head and body lengths (about 6 mm for females and 1 mm for males) and hindfeet lengths than the dormice caught in West Bieszczady Mts (Buchalczyk & Markowski, 1979). Also ear height noted in *M. avellanarius* from other areas of Poland (Sidorowicz, 1959; Pucek, 1984) and Czechoslovakia (Pelikan *et al.*, 1979) was smaller than the data presented in this work.

Skull measurements of mature *M. avellanarius* in general agreed with those given for dormice from other Polish populations, however, the averages CbL, BcB and DL (for explanation of abbreviations see Table 1) of dormice from the Gorce were greater than the average values of those measurements of dormice from Kampinos Forest (Sidorowicz, 1959). On the other hand immature animals from the Gorce were smaller than the immature dormice from Knyszyn Forest, except the values of measurements IC, UTRL and LTRL which were similar in both populations (Białas *et al.*, 1982).

Among mature males and females of dormice from the Gorce there were statistically significant differences in body weight (females were heavier) and in hindfoot length. The average hindfoot length of males was about 1.2 mm longer than that of females. The values of other body measurements were smaller in males than in females (Table 1). A reversed tendency was observed in the population of dormice from West Bieszczady Mts where males were larger than females (Buchalczyk & Markowski, 1979).

The hindfoot length, which was significantly greater in males than in females, did not differ when mature animals were compared with immature ones. It seems to be a feature connected with sex. From among craniometric features ZyB, DL and MdL were significantly greater in females than in males (this also indicates that females in the examined populations were larger than males) and in mature individuals in comparison with immature ones. The measurements of CtL, BcB and BcHp were significantly greater in mature animals than in immature ones (Table 1).

On the basis of results we can assume that *M. avellanarius* from a mountainous population were a little bigger than animals from lowland populations. A similar relationship in *Clethrionomys glareolus* (Schreber, 1780) was observed by Haitlinger (1970). Morpho- and craniometric features seem to indicate that female dormice caught in the Gorce were larger than males. We may suspect that some of these parameters are connected with sex whereas others, with the age of the examined animals. However, the small sample size used for the analysis does not allow too far reaching conclusions.

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