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Data on mucus production in some species of snails and slugs.

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Zusammenfassung
Der Autor untersuchte das Verhältnis von Gewicht und Schleim an vier Nackt- und 5 Gehäuseschneckenarten.

Abstract
The author examined the mucus - weight ratio of 4 slug and 5 snail species.

Introduction

The amount of mucus discharged by snails and their mucus - body weight ratio have scarcely been examined before. The mucus discharged, as being loss of weight, can influence the way and the amount of food intake. The article gives the different amounts of mucus discharged by different species and also their ratio of body weight.

Material, method

I carried out researches in May, June, July, August and October 1975. In September 1976 and in June 1982. I weighed the amount of mucus discharged daily by the sample animals using analytical scales. Each examination lasted six days. I examined the sample animals belonging to the same species, either paralelly or with a few months' difference.

Samples *of Deroceras, Tandonia and Limax cinereoniger* species were collected, two respectively, in the hornbeam grove oak-wood of Síkfőkút region. I fed the *Deroceras* and *Tandonia* samples with *Lamium galeobdolon* leaves, the *Limax cinereoniger* ones with *Russula albida* fungi, and the *Helix pomatia* samples taken at the same place were fed with *Evonymus* shrub leaves. The *Bradybaena* samples were collected in the Fraxino-Alnetum fenwood of Kiskőrös region, the *Chilostama banatica* samples were found in the Fraxino-Ulmentun fenwood of Bagiszeg (Upper Tisza region) and were fed with oak leaves. The *Perforella vicina* samples were found in the Fraxino-Ulmentum gallery forest of Bátorliget and were fed with oak leaves and elder leaves.
The sizes of the snail samples examined can be seen in table 1. The samples collected were fully developed animals, the sizes of which approaching the maximum sizes given in literature (Kerney et al 1983). I also examined the average mucus - length ratio of the same animals taking samples on six consecutive days.

Results

The first conclusion to be seen in the mucus - body weight ratio is that the amount of mucus differs from species to species and its weight expressed in grams is rather low. It was the highest in case of *Limax cinereoniger*. It is relatively low in *Helix pomatia* as they are of the highest body weight of all (Table 1).

The result is different in case of snails and slugs. Slugs, as having no shell, discharge ten times the amount of mucus (5-18%) produced by snails (0,58-2,79%). The difference between the different species is significant, too. The shell reduces the evaporization of the discharged mucus, therefore the mucus discharge promoting the motion of the animals is obviously much less in the case of snails.

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In the case of the fully-developed and nearly maximum length species the average weight also supports the above mentioned statement (Figure 1). In case of slugs even the relatively short length goes with high mucus production. In case of snails the big body size (i.e. the size of the shell into which the body can be drawn in) goes with very little mucus production.

Summary

Regarding our results we can see that there are tenfold differences between the mucus production of snails and slugs. Disregarding the differences within the certain species we can see that slugs produce tenfold the amount of mucus than snails do, irrespective of their body-length. Therefore, it can also be understood why slugs prefer moving in humid weather rather than in dry and prefer night to daytime. Both body evaporization and mucus production is much less in the case of shell protected species.

Literature

KERNEY, M.P., R.A. D. CAMERON & J. H. JUNGBLUTH (1983): Die Landschnecken Nord- und Mitteleuropas. - 384 pp., Paul Parey: Hamburg-Berlin.

Tab. 1: Data on mucus production of snails and slugs: Size, average body-weight, average mucus weight, mucus - body weight ratio and number of samples taken

Species	Size (mm)	Average weight (gram)	Average mucus weight (gram)	Mucus in the ration of body weight (%)	Number of samples from 6 consecutive days
Pomatias rivulare EICHWALD 1829	15,8 x 14	0,6186	0,0036	0,5885	13
11,5-16 x 10,8-14,2					
Tandonia budapestensis (HAZAY 1881)	5,6	0,4355	0,0866	18,5945	2
Limax cinereoniger Wolf 1803	18	10,0372	1,1669	10,1781	6
Deroceras agreste (LINNÉ 1758)	6	0,0461	0,0022	5,0444	2
Deroceras reticulatum (O. F. MÜLLER 1774)	6	0,3629	0,0485	18,0489	10
Bradybaena fruticum (O. F. MÜLLER 1774)	18,2 x 22	1,9862	0,0281	1,6830	10
Perforatella vicina (ROSSMÄSSLER 1842)	10,5 x 14,1	0,4827	0,8712	0,8712	11
Chilostoma banaticum (ROSSMÄSSLER 1838)	17,9 x 29,5	1,7518	0,7054	2,7945	4
Helix pomatia LINNÉ 1758.	45,6 x 47,2	29,0234	0,4108	1,4313	3

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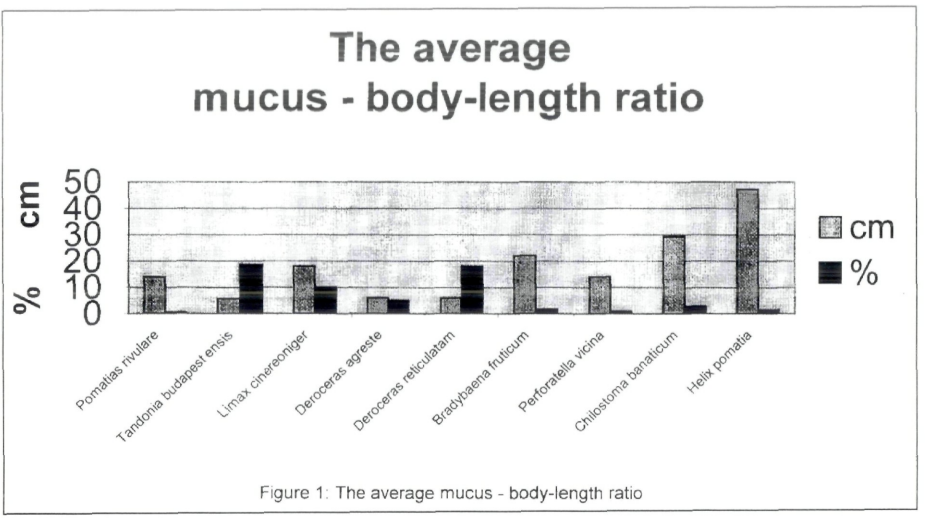

Fig. 1: The average mucus - body length ratio.

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