The biological function of the midventral gland seems to be to demarcate territory. In the wild, *Rhombomys opimus* can often be seen to rub its abdomen against the soil. The presence of the gland in both sexes and in very young animals, as well as the fact that the gland functions throughout the year (observations were carried out on *Rhombomys opimus* maintained in the laboratory), indicates that it plays no part in the sexual function of gerbils.

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Water Content in the Tissues of Desert Animals

WHEN studying *Gerbillus pyramidum* and *Jaculus jaculus*, Khalil and Abdel-Messeih¹ claimed that the tissues of desert mammals contained less water than did those of non-desert ones. Several other workers (for example, the Schmidt-Nielsen²) found that desert animals lost less water through their skins. The data obtained by Khalil and Abdel-Messeih¹ suggest that the low water content in the tissues of desert animals (including the skin) contributes to the decreased loss in water and thus represents an important adaptation of animals to the environmental conditions of the desert.

I endeavoured to study the water content of the tissues of wild *Rhombomys opimus*, *Meriones meridianus*, *Spermophilopsis leptodactylus* and *Lepus tolai* in the Kara-Kumy desert. Samples were taken from freshly killed adults in winter (January) and in summer (June), excluding *Rhombomys opimus*. Samples of the skin (thoracic back without its hair), of the bone (femur) and of muscles (thigh muscles) were taken. Dehydration was performed in vials in a thermostat at 103° C and the water content of the tissues was calculated for the initial weight. The results of these analyses are given in Table 1.

The data obtained reveal a regularity noticed by all previous workers: the bones contained the least amount of water while the muscles contained the greatest. I was unable to confirm the data of Khalil and Abdel-Messeih¹ concerning the lower water content in the tissues of desert animals. A comparison of desert animals with non-desert ones shows that the water content of their skin and muscle is almost the same (see Table 1); however, the water content of bones of desert animals is somewhat less.

Table 1. WATER CONTENT IN THE TISSUES OF SOME MAMMALS
(The mean data in per cent)

Species	Season	No. of specimens	Percentage of water content in		
			Skin	Bones	Muscles
<i>Rhombomys opimus</i>	Summer	5	65.2	28.6	79.1
<i>Rhombomys opimus</i>	Winter	10	56.9	33.7	76.7
<i>Meriones meridianus</i>	Winter	3	61.3	28.8	74.1
<i>Spermophilopsis leptodactylus</i>	Summer	6	65.7	29.1	80.8
<i>Spermophilopsis leptodactylus</i>	Winter	7	61.6	16.9	75.6
<i>Lepus tolai</i>	Summer	4	65.6	—	75.8
<i>Lepus tolai</i>	Winter	2	66.2	—	75.9
<i>Gerbillus pyramidum</i> *	—	10	39.3	27.1	74.9
<i>Jaculus jaculus</i> *	—	6	48.7	26.8	74.8
Cow, sheep, pig*	—	—	—	—	78-79
Dog*	—	—	55-77.3	58	68-87.3
Albino rat*	—	—	58.1-64.7	—	74.4-76.5
Rabbit*	—	—	75	—	80
Monkey*	—	—	70	61	79
Man*	—	—	58.9-72	50-55	75-78

* Data are taken from refs. 1 and 3-13.

No significant seasonal differences were revealed when winter and summer animals of the same species were compared (see Table 1). It is of interest here that a somewhat higher water content was found in both the muscles and skin of *Rhombomys opimus* and *Spermophilopsis leptodactylus* in summer.

These findings suggest that small water losses through the skin in desert animals taken for investigation cannot be explained by a difference in their water content from that of non-desert animals. Histological investigations¹⁴ show that no morphological adaptations are present in the skin of desert animals for decreasing their water losses. On the basis of these data, it can be concluded that decreased water loss through the skin in desert animals is related to peculiarities in their endocrine and biochemical systems.

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Phenomenon of Swarming in Nematodes

THE phenomenon of swarming has been observed by one of us¹ in thirteen species of plant-parasitic and free-living nematodes embracing all sub-classes of the class Nematoda. Additional reports of swarming of plant parasitic species have come from Germany², Kenya^{3,4}, and Florida⁵. Staniland's original use of the term "swarming"⁶ for massing of a *Rhabditis* sp. in response to light has priority. However, in view of the unique character and general nature of the phenomenon investigated at Louisiana State University Laboratories⁷⁻¹⁰, it is proposed to retain for it the term "swarming" and to refer to Staniland's "swarming" as Staniland's phenomenon.

Work on swarming is being continued in our laboratory, and this communication presents evidence for the induction and specificity of swarming in the genus *Tylenchorhynchus* (Tylenchida).

Dependence of swarming induction in *Tylenchorhynchus martini* Fielding 1956 on rapid and abundant host plant development¹⁰ was confirmed by results of nutrient-sand culture experiments with rice. Swarming, after 60-75 days, occurred only where host plants were supplied with inorganic nutrient solutions containing all essential elements. Under these conditions, the use of organic supplements—asparagine, glutamine and amino-acids from acid-hydrolysed casein—had no effect on the induction of swarming, although development of rice plants was stimulated. Inasmuch as induction of the anabiotic state in nematodes occurs in unfavourable environments¹¹, these results reaffirm the distinctions between swarming and anabiosis. The basic outwardly visible distinction between the two phenomena is that swimmers must pull apart at a point of contact in directions perpendicular to the plane of contact; anabionts can separate by gliding motions parallel to the plane of contact.

Further evidence on specificity of swarming reactions comes from the demonstration that *T. martini* and *T. claytoni* Steiner 1933 swarm together. These results, combined with the fact that *T. martini* and an undescribed