

4. Die Temperaturempfindlichkeit ist abhängig von der Anzahl der Thermorezeptoren, da die «Schrecktemperatur» der *einseitig* des letzten Antennengliedes beraubten Tiere eine Mittelstellung zwischen normalen und beiderseits amputierten Tieren einnimmt.

5. Nach den bisherigen mikroskopischen Untersuchungen zu urteilen, sind auf den Endgliedern nur Sensillae trichoideae vorhanden, die jedoch in zwei verschiedenen Typen vorkommen. Welcher Haartyp als Thermorezeptor anzusprechen ist, konnte noch nicht eindeutig bestimmt werden.

Die Versuche werden noch fortgeführt und sollen insbesondere auf weitere Tierarten ausgedehnt werden. Die eingehende Beschreibung wird später an anderer Stelle erfolgen.

HERBERT GEBHARDT

Zoologisches Institut der Universität Mainz, den 28. März 1951.

Summary

A temperature gradient is described in which the temperature of the air is measured. The "avoiding reaction" of normal and partially amputated insects is established, and a comparison of the results shows that in *Dorcus parallelepipedus* L. (Coleoptera) the 3 distal segments of the antennae and the maxillar palps are sensitive to temperature. Of great importance is the last segment of the antennae in *Pyrrhocoris apterus* L. (Heteropterae), because after its removal, the "avoiding reaction" suddenly increases at 4°C. Probably the trichoid sensillae are specialized receptors for temperature; their number seems to be important for the sensitivity to temperature.

Observations on Staining Affinity and Morphology of Mammalian Spermatozoa

LASLEY *et al.*¹ and BLOM² used Opal blue-eosin and Negrosin-eosin stains for the differentiation of live and dead sperm respectively. The underlying principle of the staining technique is that the dead sperm take up the stain while the live ones remain unstained. BLOM³, KEATY and HAMLEN⁴, and HAQ and ROLLINSON⁵ used

¹ J. F. LASLEY, G. T. EASLEY, and F. F. MCKENZIE, *Anat. Rec.*, 82, 167 (1942).

² E. BLOM, *J. Fertility and Sterility* 1, 176 (1950).

³ E. BLOM, *Skandinavisk Vet. Tidskr.* 33, 428 (1943).

⁴ E. C. KEATY and E. C. HAMLEN, *J. Clinical Endocrinol.* 6, 286 (1945).

⁵ I. HAQ and D. H. L. ROLLINSON, *Vet. J.* 104, 41 (1948).

Methyl-violet, Eosin-hematoxylin and Haemalum-eosin stains for studying sperm morphology respectively. Little information is available with regard to the comparative staining affinity of mammalian spermatozoa. In the present note the differences in the staining affinity, swelling ability, granularity, and an abnormality of the galea capitis have been recorded.

During the routine microscopic examination of the ram semen smears stained with ROMANOWSKY stains, it was observed that the galea capitis of a few of the sperm were more deeply stained than the rest of the sperm (fig. 1a). This indicates that the degree of staining affinity of the galea capitis varies with the individual sperm. When the ram semen samples were submitted to the so-called temperature shock and then stored for varying periods under adverse conditions, the galea capitis of the sperm appeared somewhat swollen and it presented a granular appearance (fig. 1b). It was observed that a few of the ram sperm showed a typical depression at the anterior end of the sperm head (fig. 1c). This condition was observed during spring season when the young Suffolk ram begins to show a seasonal decline in the reproductive processes. This peculiar abnormality might be connected with the arrested process of spermatogenesis which was observed on microscopic examination of the testes of the ram but its exact etiology needs further investigation. The results and the staining technique will be described in detail elsewhere.

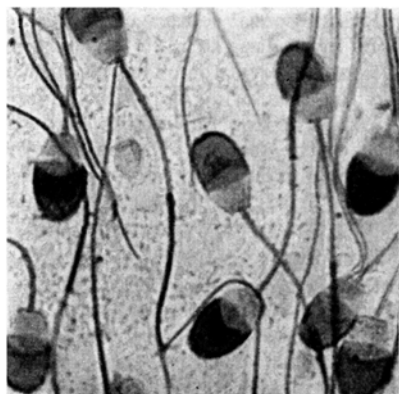
I am thankful to Drs. A. WALTON and J. L. HANCOCK for their help and to Mr. J. A. F. FOZZARD for the microphotographs.

M. MAQSOOD

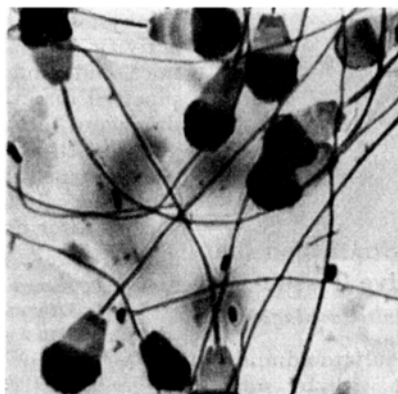
School of Agriculture, University of Cambridge, England, January 19, 1951.

Zusammenfassung

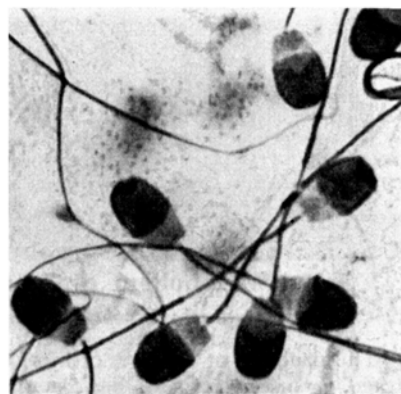
Mikroskopische Untersuchung der nach ROMANOWSKY gefärbten Ausstriche von Schafbocksamen ergab, daß der Grad der Farbaufnahmebereitschaft der Galea capitis je nach dem einzelnen Samen schwankt. Unter ungünstigen Bedingungen erscheint die Galea leicht gequollen und gekörnt. Eine typische Eindellung am Vorderende des Samenkopfes konnte im Frühling beobachtet werden, wenn der Schafbock eine jahreszeitliche Abnahme seines Begattungstriebes aufweist. Diese merkwürdige Anomalie könnte mit der gehemmten Spermatogenese im Zusammenhang stehen, welche bei mikroskopischer Untersuchung der Schafbockshoden festgestellt wurde.



a



b



c

Fig. 1a.—Differences in the staining affinity of ram sperm. $\times 1300$. Fig. 1b.—Swelling ability and granular appearance of galea capitis of ram sperm. $\times 1300$. Fig. 1c.—A typical head abnormality of the ram sperm. $\times 1300$.