

A GRAPHIC METHOD OF RECORDING THE ACT OF YAWNING AND OTHER FORMS OF MOVEMENT OF THE MOUTH

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During the investigation of the motor components of unconditioned and conditioned reflexes a good deal of attention has been paid to the study of movements of the mouth [1, 2, 3].

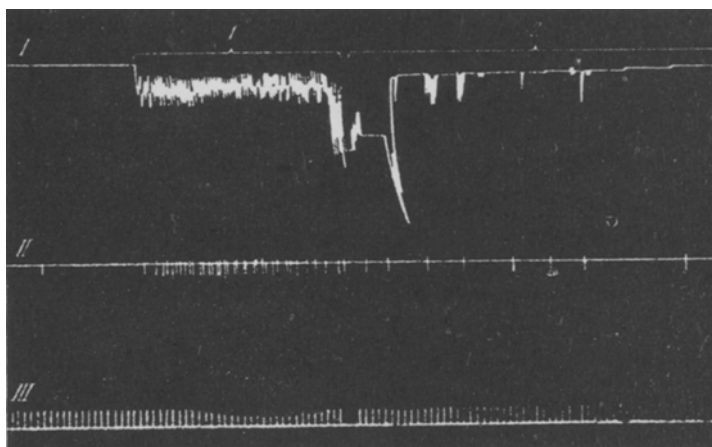


Fig. 1. I) Tracing of movements of the mouth: 1) during eating, 2) licking; II) tracing of secretion of saliva; III) time marker (2 seconds).

The methods suggested for recording the movements of the mouth in dogs are based on the principle of air transmission: the mouth of the animal is surrounded by a rubber band, and when yawning movements occur and the mouth is opened this transmits pressure to a rubber balloon attached under the lower jaw or to the dorsum of the nose of the animal.

However, when the amplitude of the movements is great, for example, during the act of yawning or in some forms of defensive reflexes, the pneumatic method is unsound because in such cases the balloon will always experience the maximum pressure and the tracing will show the mouth movements disproportionately.

A silk thread, many times longer than the circumference of the wide-open mouth of the animal, is glued at its center to the skin of the lower jaw of the animal. Both ends of the thread, passed round the muzzle of the dog on each side, are taken through the limbs of a light glass Y-tube into a composite glass tube, fixed at one end to a cork disc which is glued to the skin of the dorsum of the nose of the animal, and at the other end to the cross-beam of the stand. The composite glass tube is formed of sections of drawn glass tubing joined together with rubber connecting tubes. The length of the tube is sufficient to allow free change of position of the animal on the apparatus. The ends of the loop of thread, after passing through the composite glass tube, are connected

to the recording lever and with each increase in the circumference of the loop the pen of the recording lever is deflected downwards. The return movement of the lever, which is counterpoised, occurs when the diameter of the loop is reduced as the animal closes its mouth. The composite glass tube system effectively damps any general movements.

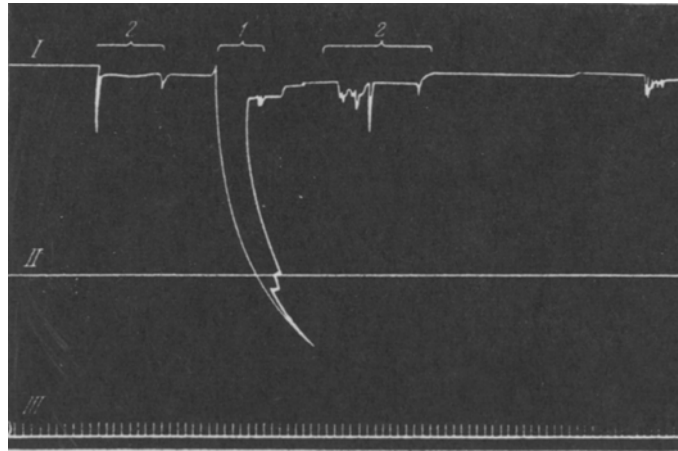


Fig. 2. I) Tracing of movements of the mouth: 1) yawning, 2) licking; II) tracing of secretion of saliva; III) time marker (2 seconds).

Since the length of thread inside the glass tube at any given moment cannot change appreciably, the only part of the silk thread which can affect the position of the recording arm is the loop around the animal's mouth. Since this loop is freely extensible to any degree to which the animal may open its mouth, the recording will reflect completely the character of the movements of the mouth.

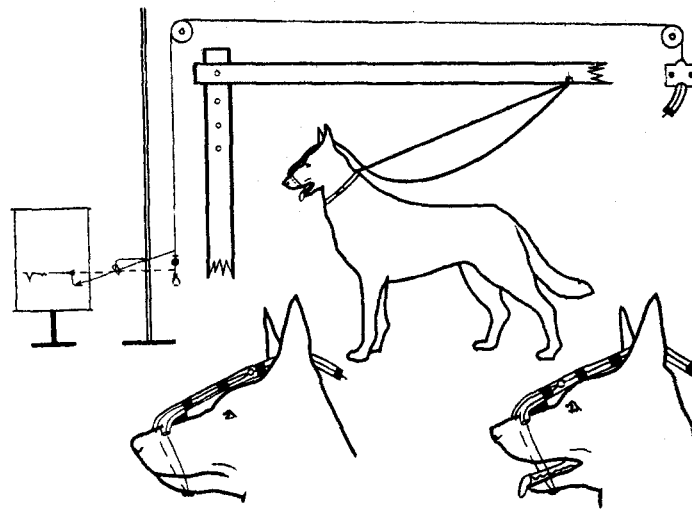


Fig. 3. Diagram of recording of movements of the mouth.

The method suggested may be used in tracing the mouth movements with amplitudes from the very slightest to the maximum.

The outline of the recording and the form of the tracing are shown in Figs. 1, 2 and 3.

SUMMARY

Mechanical transmission by way of a silk thread contained in a glass tube is proposed for registration of mouth movements. Registration of all forms of mouth movements is possible.

LITERATURE CITED

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* In Russian.