

# SCIENTIFIC PROCEEDINGS.

## ABSTRACTS OF COMMUNICATIONS.

One hundred and thirty-ninth meeting.

*College of the City of New York, April 16, 1924.*  
*President Jackson in the chair.*

185 (2417)

**The response of marine worms to unilateral tension of their musculature.**

By A. R. MOORE.

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It has been shown that in *Lumbricus*<sup>1</sup> and *Nereis*<sup>2</sup> the anterior segments of the animal respond to passive bending of the posterior part, by active turning of the head in a direction parallel with the new orientation of the tail. This has been termed the homostrophic reflex. The receptors for the reflex are distributed throughout the animal but the efferent nerves are limited in their origin to the anterior 20 segments in *Lumbricus*, and to the first 2 or 3 segments in *Nereis*. The afferent impulses travel forward by way of the ventral nerve cord. Bending of the head end does not affect the direction of backward locomotion, hence the mechanism of the homostrophic reflex exhibits polarity. Similar observations<sup>3</sup> have been recorded for *Diplopods* and for the larvæ of *Tenebrio molitor*.

A systematic study has shown the homostrophic reflex to play a part in the behavior of a number of nereid worms of the Mediterranean, namely, *Eunice gigantea*, *Eunice siciliensis*,

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<sup>1</sup> Moore, A. R., *J. Gen. Physiol.*, 1922-23, v, 327.

<sup>2</sup> Moore, A. R., *J. Gen. Physiol.*, 1922-23, v, 451.

<sup>3</sup> Crozier, W. J., and Moore, A. R., *J. Gen. Physiol.*, 1922-23, v, 597.

*Halla parthenospeia*, *Nephtis scolopendroides*, *Sthenelais dendrocephis*, and *Psammolyce arenosa*. In these forms the homostrophic reflex disappears with removal of the head ganglia. In the case of very long forms, such as *Halla* (80 cm.), bending the body posterior to the middle is without effect, but if the bend is made 20 cm. back of the head, the latter promptly orients itself at right angles to the segments immediately behind it.

No evidence of homostrophy was found in the nemertine worm, *Cerebratulus marginatus*, nor in the flatworm *Yungia aurantiaca*, nor in the *Sipunculida*. It thus appears necessary to the occurrence of the homostrophic reflex that the ganglia of the central nervous system be numerous and extensively distributed as in the segmented animals.

## 186 (2418)

### The variation of complement of guinea pigs during scurvy.

By MATHILDE L. KOCH and ARTHUR H. SMITH.

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Since one of us (K) had observed that an intestinal infection markedly lowered the complement titer in guinea pig blood, it became of interest to follow the variation in titer throughout the development and cure of scurvy which, though not now classed as an infectious disease, is accompanied by a definite alteration in the blood vessel walls. The scurvy-producing diet consisted of soy bean meal (autoclaved) 86 per cent, dried yeast 3 per cent, sodium chloride 3 per cent, calcium lactate 3 per cent, and cod liver oil 5 per cent, to which was added 1.0 gm. per day dried boiled cabbage. Scurvy develops in 13 to 16 days in 200 gm. guinea pigs on this food, while merely changing from cooked dried cabbage to fresh cabbage causes this diet to suffice for normal growth in these animals.

The pigs were bled from the heart under light ether anesthesia, twice in the fore period when fresh cabbage was being fed,