

the same as above are shown in Fig. B. As can be seen, prominent development of the component Y and marked reduction of the component G are the main differences from the results for the fovea. In connexion with this finding, it should be noted that the same features are also typical characteristics of the results obtained from the foveæ of green-blind subjects. For a certain reason the component Y escaped Motokawa's notice in his previous study of colour-blindness², but our further work on a considerable number of subjects has provided irrefutable evidence that Y is the most conspicuous component existing in the foveæ of anomalous trichromats and dichromats. Various difficulties encountered by the three-colour theory of Young, such as the similarity of the luminosity curve of a deuteranope to that of normal man, preservation of sensitivity to yellow of dichromats, etc., may easily be accounted for in terms of the component Y.

K. MOTOKAWA
M. EBE
Y. ARAKAWA
T. OIKAWA

Department of Physiology,
Tôhoku University,
Sendai.

¹ Motokawa, K., *J. Neurophysiol.*, 12, 291 (1949).

² Motokawa, K., *J. Neurophysiol.*, 12, 465 (1949).

³ Hartridge, H., *Phil. Trans.*, B, 232, 519 (1947).

⁴ Hartridge, H., "Recent Advances in the Physiology of Vision" (London, 1950).

⁵ König, A., *S.B. Akad. Wissensch.*, 559 (Berlin, 1897).

⁶ Willmer, E. N., and Wright, W. D., *Nature*, 156, 119 (1945).

⁷ Wright, W. D., *Nature*, 151, 726 (1943).

Viability of *Ascaris lumbricoides* Eggs 'Preserved' in Formalin

In March 1950, a faecal specimen was collected from a patient in the Brisbane General Hospital, who was infected with *Ascaris lumbricoides*. This was preserved by the addition of hot 10 per cent formalin. The material was used afterwards in May and August to teach the Willis salt flotation method for demonstrating helminth infection. Nothing unusual was noted.

On November 15, 1950, this same preserved faecal specimen was used in a practical examination in parasitology. During the examination, attention was directed by one of the students to the fact that developed larvæ were actively moving within many of the *Ascaris* eggs. The temperature was 77° F. Later examination of the specimen, on a cooler day (temperature 70° F.), showed the larvæ within the eggs to be inactive; but when the slide was warmed slightly they became quite active.

Analysis in November by Mr. J. P. Callaghan, in this laboratory, showed that the concentration of formalin in the specimen was not less than 6 per cent (2.4 per cent formaldehyde).

Another faecal specimen was preserved by the same method, but relatively less faeces were mixed with an equivalent amount of formalin. When the analysis was carried out (in November) this proved to have a concentration of 18.5 per cent formalin (7.4 per cent formaldehyde). This specimen had been kept in a jar with a screw top which would permit evaporation of the water and probably polymerization of the aldehyde. The *Ascaris* eggs in this specimen had not developed at all.

The temperature-range from March 29 to November 15, 1950, was between 42.8° F. min. and 92.7° F. max.

This observation stimulates thought as to the limits of formalin concentrations in which nematode eggs can be preserved. The lower limit may indicate the point below which bacterial growth is inhibited and the development of the nematode egg stimulated, the upper limit being the concentration of formalin necessary for killing, fixing and preserving the eggs.

DOROTHEA F. SANDARS

Queensland Institute of Medical Research,
Herston Road,
Brisbane.
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Balanoglossus gigas Fr. Müller rediscovered on the Brazilian Coast

THE largest known species of Enteropneusta was discovered by Fritz Müller on the Brazilian coast, at a place named Armação da Piedade, in the State of Santa Catarina. Fritz Müller's notes in which he describes the animal were fortunately collected and published in the year 1898¹ by Dr. Hermann von Ihering, former director of the Museu Paulista of São Paulo. In those notes (p. 36), Fr. Müller said that he caught many tornaria larvæ from 1860 onwards in the plankton off the same beach. The first *Balanoglossus* was captured in 1884, and in the following year many others were caught. The extraordinary size of the animals (1.5 m. in length) justified the name *Balanoglossus gigas*. Some of the specimens were sent to Spengel², who gave them in 1893 a new description and re-named them *Ptychodera gigas*. In a later monograph on the Hemichordata, recently published, van der Horst³ re-described the same animal under the name of *Balanoglossus gigas* Fr. Müller.

Since 1885 no other *Balanoglossus gigas* has been captured on the Brazilian coast. In 1948 some signs of the existence of Enteropneusta were detected by Prof. W. Besnard, on the shore of São Sebastião, on the northern littoral of the State of São Paulo. At that time a few fragments of the animal were collected and kindly sent to the Department of General and Animal Physiology for study. Since then, several trips have been made to obtain this Enteropneusta, but only broken portions of the animal were dug out from the deep galleries they burrow in the beach.

Last September, during a short visit to São Sebastião, a new attempt was made to get a complete animal. At the lowest tide numbers of the coiled 'castings' may be seen on the beach. To catch the animal it is necessary to make a large hole of 1.0-1.5 m. in diameter and 0.3-0.5 m. in depth. The animal forms a kind of tubular gallery by means of the abundant mucus secreted by the skin. When these tubular galleries are opened, there is a strong odour like iodoform and the animal may be seen moving slowly in the gallery with the posterior end kept upright. To get a complete specimen, it is necessary to open the gallery carefully, following the different parts of the body, to reach the proboscis. In this way one complete *Balanoglossus* was captured. The living animal was 1.8 m. in length. Large fragments of several other specimens of about the same size were also taken.