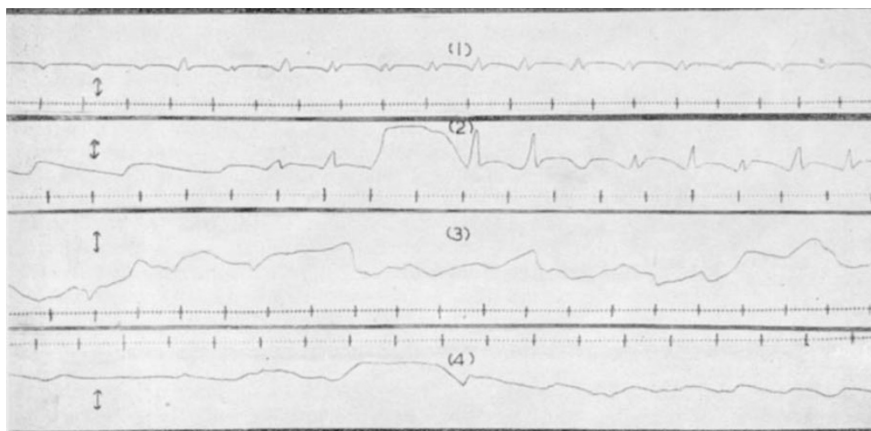


Nystagmus following an Emotional Disturbance

SINCE it is possible that eye movement research will have important clinical applications¹, the photoelectric corneal reflex method^{2,3} has been applied to the study of a case of nystagmus.

The subject is a male, twenty-two years of age, and, apart from the nystagmus, free from pathological conditions. The history is that, at the age of nine years, an enforced change from left- to right-handedness produced a nervous crisis the aftermath of which was the nystagmus. There is now no subjective disturbance in vision, and, to the best of the subject's knowledge, the nystagmus has not changed since its inception. The movements are visible to the unaided eye and any emotional upset causes a considerable increase in their magnitude; the movements appear to be confined to the side-to-side direction.

Figs. 1 and 2 show side-to-side binocular fixation records for the left and right eye respectively for the subject sitting up. The magnitude of the movement necessitated the use of wedges⁴ rather than straight-edges; even so, no satisfactory record of the



(1) and (2). Side-to-side records for the left and right eye respectively. \uparrow [Towards [the time-line corresponds to a rightward movement.
(3) and (4). Up-and-down records for the left and right eye respectively. Towards the time-line corresponds to an upward movement.

Time (increasing to right) marked by dots, 50 per sec., and by lines at 1/5 sec. intervals. Amplitude shown at side; height of arrowed line represents a rotation of 2° for Figs. 1 and 2, of 20° for Figs. 3 and 4; it is assumed that the separation of the centre of curvature of the cornea and the centre of rotation of the eye is 5.3 mm.

movements of both eyes simultaneously has yet been obtained. Figs. 1 and 2 show the nystagmus some 7 min. from the beginning of fixation; initially, the movements are too large to record with the existing apparatus; this is also the case after prolonged fixation. At an intermediate stage, as the beginnings of Figs. 1 and 2 show, the phenomenon disappears almost entirely. It appears that the nystagmus is of neither the usual pendular nor the usual jerky type⁵; it is, however, characteristically regular, interval 0.23(7) sec.

Figs. 3 and 4 show up-and-down records for the left and right eye respectively under the same conditions as for Figs. 1 and 2. These records are not very different from those of normal subjects³.

It would appear that these results provide one more illustration of the close linkage between psychological and physiological phenomena.

I am greatly indebted to Mr. J. S. Swain for acting as subject in this investigation; and I wish to

express my thanks to Dr. W. D. Wright for helpful criticisms. I also acknowledge the continued financial support of the Medical Research Council.

MARY P. LORD

Technical Optics Section,
Imperial College of Science and Technology,
London, S.W.7. July 31.

¹ Lord, M. P., *Brit. J. Physiol. Optics*, 7, 150 (1950).

² Lord, M. P., *Brit. J. Ophthalmol.* (in course of preparation).

³ Lord, M. P., *Nature*, [166, 349 (1950)].

⁴ Lord, M. P., and Wright, W. D., *Nature*, 163, 803 (1949).

⁵ Duke Elder, W. S., "Text Book of Ophthalmology", 1, chapter 13 (1932).

Penicillin in the Aquarium

AXOLOTLs were hatched from eggs in the laboratory and kept in an open tank. Progress was satisfactory until they were about 1 in. long (8 weeks), when considerable numbers died suddenly, suggesting an epidemic infection. Two days previously there had been an unusual number of people present in the room. As many pathogenic agents are susceptible to penicillin, we added 10 units/ml. to the water of the aquarium, which was then not changed for 24 hr. After this, there were no more deaths. Shortly after-

wards we had similar losses among our edible frogs, kept in a shallow tank. Penicillin was added to the water, a higher concentration—20 units/ml.—being used to allow for the slower entry into the larger animals. There was an immediate and striking reduction in the mortality-rate to a figure no greater than normally experienced with these animals at that season.

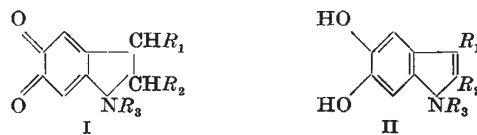
Though no attempt was made to demonstrate a pathogen beyond the microscopic observation of a Gram-positive diplococcus in both cases, we feel that the observations might be of interest to others responsible for the maintenance of aquaria.

H. K. KING

Biochemistry Department, Johnston Laboratories,
University, Liverpool 3. July 28.

Synthesis of 5:6-Dihydroxyindole Derivatives: an Oxido-reduction Rearrangement Catalysed by Zinc Ions

It has recently been shown¹ that adrenochrome (I, $R_1 = \text{OH}$, $R_2 = \text{H}$, $R_3 = \text{Me}$) is rapidly converted into the isomeric 3:5:6-trihydroxy-1-methylindole



(II, $R_1 = \text{OH}$, $R_2 = \text{H}$, $R_3 = \text{Me}$) by the action of zinc acetate in aqueous solution. We have now found