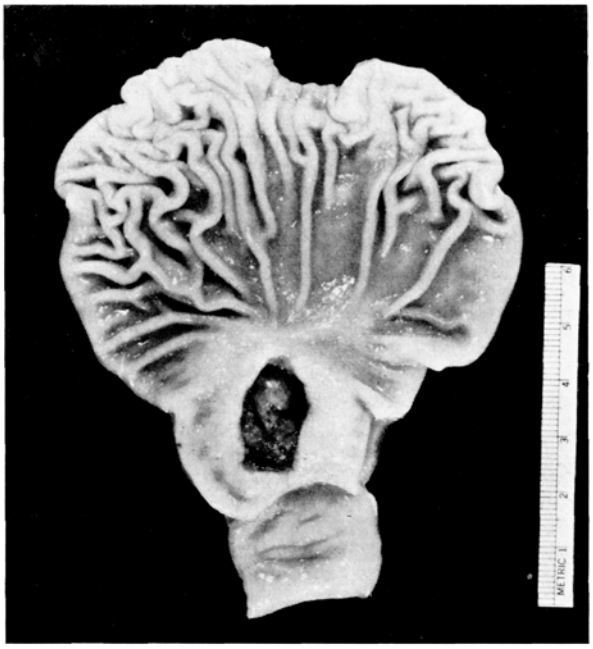

Fig. 3. Gross appearance of gastric ulcer in the cat antrum at 7 days after induction.

Fig. 4. Photomicrograph of the cat ulcer shown in Figure 3. ×18.

difficult to induce experimental acetic acid ulcers in the antrum by the injection method. The rapid healing of the gastric ulcer produced in cats by acetic acid observed here is similar to the rapid healing reported after nicotine, formalin and silver nitrate injection in cats[1–3], and after the mechanical induction of gastric defects in cats as described by GUNTER[9]. Thus, it can be concluded that the chronicity of the gastric ulcer in the rat is not necessarily related to the acetic acid itself, but to a special characteristic of the rat. Presumably, normal gastric mucosal regeneration times are similar for both species[10–13]. Inasmuch as the chronicity of the experimental, acetic acid ulcer model in the rat uniquely resembles human peptic ulcer, this model may be quite useful for the study of human ulcer and the evaluation of pharmacologic agents used for this disease.

Zusammenfassung. Methode zur experimentellen Erzeugung eines Magengeschwüres beim Tier, das weitgehend mit dem menschlichen Magengeschwür übereinstimmt.

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Photo-Orientation in the Larvae of the Waxmoth *Galleria mellonella* L. Reared Under Constant Dark and Constant Light Conditions

The larvae of *G. mellonella* live in the permanent darkness of the beehives, where they feed on wax. In the laboratory, they show distinct negative phototaxis. The present communication deals with the effect of constant darkness and constant light on the pattern of phototactic behaviour in these larvae.

The larvae were reared in the laboratory at 30 °C and 40% relative humidity under the two different lighting conditions mentioned above. The apparatus for testing the phototactic behaviour consisted of a black circular arena 50 cm in diameter. This was illuminated from one side by a projector lamp in such a way that uniformally decreasing light intensities were obtained on it opposite the source of illumination. The intensity at the centre of the arena was 3800 Lux.

During an experiment, 10 larvae were released, 1 at a time, in the centre of the arena. They crawled away either straight along the radius coinciding with the light axis, or often at a certain angle to it. The angle made by each of them with the light axis while crawling across the periphery of the arena was recorded. The angles to the right and left of the light axis were treated identically as absolute values. The mean deviation calculated from these 10 readings of the photo-orientation angle served as a measure for the degree of average photonegativity of the larvae at that hour. Thus, the increase in mean deviation indicated the decrease in photonegativity and vice versa. Variations in the degree of photonegativity were calculated every 2 h for 24 h in a) freshly hatched larvae, b) 24-day-old larvae and c) 40-day-old larvae which were about to pupate. Investigations were carried out separately for larvae reared in constant darkness and for those reared in constant light. Each larva was used only once during the course of these experiments.

The results are shown in Figures 1 and 2. Freshly hatched larvae from a culture in constant darkness showed a marked decrease in photonegativity during the mid-day and mid-night hours and also to some extent around sunrise (Figure 1a). With the increase in the age of the larvae, a change was observed in the general pattern of photo-orientation (Figures 1b and 1c). A continuous period of lower photonegativity now extended from mid-day to mid-night with a peak at sunset. In general, there was a progressive repulsion to light with the increasing age of the larvae.

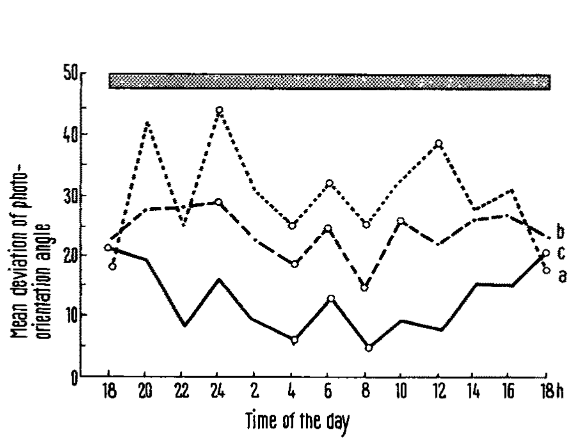

Fig. 1. Variations in photonegativity during 24 h in larvae reared in constant darkness. Larvae: a) freshly hatched, b) 24-day-old and c) 40-day-old. The peaks and troughs indicated by circles were found to be significant by calculating standard errors.

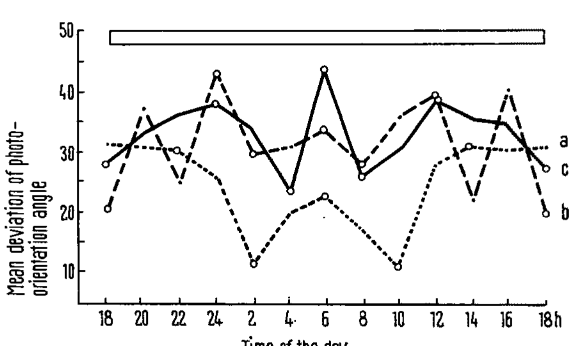

Fig. 2. Variations in photonegativity during 24 h in larvae reared in constant light. Larvae: a) freshly hatched, b) 24-day-old and c) 40-day-old. The peaks and troughs indicated by circles were found to be significant by calculating standard errors.

Freshly hatched larvae from constant light conditions showed a pronounced and continuous period of lower photonegativity from mid-day to mid-night hours and also for a few hours around sunrise (Figure 2a). After a change in this photo-orientation pattern with age (Figures 2b and 2c), at 40 days, just before pupation, the previously uninterrupted period of lower photonegativity extending from mid-day to mid-night split into two separate periods by a trough around sunset. It was further noted that the repulsion to light decreased with age in these larvae.

Phototaxis is common in insects which may try to keep a light source at a fixed angle to their side (Birukow[1,2], Tenckhoff-Eikmanns[3] and Brandt[4]). From the present studies, it is evident that the larvae of *G. mellonella* show 24-h patterns of phototactic behaviour. These patterns are undoubtedly influenced by the age of the larvae and the lighting conditions to which they are subjected during development. Further, rearing in constant darkness and constant light have affected the phototactic behaviour of the larvae differently, the two effects bearing a reciprocal relation to each other. The biological explanation for this must be sought in the behaviour of these larvae in their natural biotope. The presence of an endogenous phototactic rhythm pointing to a spontaneously working bio-oscillator (Harker[5] and Sollberger[6]) is suspected in view of constancy of some peaks in the curves.

Zusammenfassung. Larven von *G. mellonella* sind negativ phototaktisch. Der Grad der Photonegativität verändert sich während 24 h. Durch Dauerdunkel und Dauerlicht wird das phototaktische Verhalten der Larven reziprok verändert. Wahrscheinlich handelt es sich um eine endogene Photoorientierungsrhythmik.

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Action diurétique et natriurique du Chlorpropamide chez le Rat. Comparaison avec le Tolbutamide

L'effet rénal du Chlorpropamide n'a été étudié qu'à partir du moment où l'on mit en évidence, de façon tout à fait fortuite, son action antidiurétique dans le diabète insipide de l'Homme[1]. Depuis, son action substitutive a été largement employée avec succès en clinique et les rapports sur son activité thérapeutique se sont multipliés[2-6].

L'expérimentation, soit sur organe isolé[7-9], soit sur l'animal entier[10-13] a essayé de faire connaitre son mécanisme d'action. C'est également ce que nous avons entre-