The evidence indicates that the particles contain deoxyribose nucleic acid. It is concluded that the $100\text{-m}\mu$ particles (Fig. 2), with which the iridescence of the cytoplasm is associated, are the virus. The virus bodies are not simple spheres, but are somewhat irregular in shape and composite, many smaller particles being embedded in each. They thus resemble the viruses of the cytoplasmic polyhedroses of the midgut of lepidopterous larvæ[1,2], rather than the rod-shaped viruses of the nuclear polyhedroses.

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[1] Smith, Kenneth M., and Xeros, N., *Nature* **173**, 866 (1954).

[2] Xeros, N., *Nature*, **170**, 1073 (1952).

Factors affecting the Larval Spot Colours of the Emperor Moth, *Saturnia pavonia* L.

FROM time to time the variation in the colour of the spots of the larvæ of *Saturnia pavonia* has attracted attention. These spot colours do not develop until the fourth and fifth instars. The spots of any given larva are similarly coloured; but the colour itself may vary within the range of pale lemon-yellow through orange to pink. From the selective breeding experiments of Poulton[1], it was apparent that the colour differences between larvæ could not be attributed to a simple genetical basis.

I have observed that the spot colour of the individual larva changes progressively throughout the duration of the instar, being pale lemon-yellow immediately after the moult and generally orange or pink by the time of the next moult or ensuing pupation. This progressive colour change has been found not to be simply dependent on the larval age within the instar but to be primarily a response to the intensity of the light to which the larva is exposed throughout the instar, the spots of larvæ which are kept in the dark remaining yellow. With larvæ exposed to light the rate of the colour change is most rapid in the few hours immediately following the moult. Larvæ which have been kept in the dark for the first three days after the moult show little colour change when exposed to normal daylight for the remainder of the instar. The final spot colour of the fourth instar does not appear to influence the spot colour of the fifth instar.

Experiments have been carried out and are continuing on the relationship between the rate of response and the light intensity in order to determine the nature of the response and to ascertain if it depends on a trigger-type reaction. The response appears to be locally determined and is not dependent on light entering the ocelli. The actual colour change itself involves two major components, the change from yellow to orange occurring in the underlying epidermal cells while changes from yellow through orange to pink occur in the overlying cuticle.

Fuller details will be published later.

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[1] Poulton, E. B., *Trans. Ent. Soc. Lond.* (1887).

Identity of *Gammarus tigrinus* Sexton 1939

Gammarus tigrinus Sexton[1] was described from saline waters in the Avon area, and has since been recorded from fresh and saline waters in several places in England and Ireland[2,3]. A map showing the known localities will appear in volume 12 of the *Proceedings* of the International Association of Theoretical and Applied Limnology.

Because it is unknown from other parts of Europe, and is closely related to the North American species *G. annulatus* Smith, Spooner[3] has suggested that it is probably a recent introduction from the New World. At the suggestion of Dr. S. G. Segerstråle, of Helsinki, I asked Dr. E. L. Bousfield, of the National Museum of Canada, if he could assist me in identifying the species. He informed me that he had long been of the opinion that it was the common North American freshwater and oligohaline brackish species *G. fasciatus* Say, which it resembles in being distinctly striped when alive—a character not shown by the brackish-water species *G. annulatus*. Comparison between specimens of *G. fasciatus* kindly sent to me by Dr. Bousfield and British specimens of *G. tigrinus* has fully confirmed this belief. The name *G. tigrinus* must therefore be superseded by *G. fasciatus*.

This species occurs widely in eastern North America, and is common in weedy places (Clemens[4]). In Great Britain it is also found in weedy places on muddy substrata, a type of habitat not favoured by any of the native species, although often colonized here by *Crangonyx gracilis* Smith, which is also of North American origin. In view of this, and of the importance of amphipods as food for fishes, *G. fasciatus* may well prove to be a useful animal for introduction into fish-ponds. At Wyken Slough, near Coventry, a muddy weedy lake, it would appear to be the main food organism for a large and varied population of coarse fishes.

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[1] Sexton, E. W., *J. Mar. Biol. Assoc.*, **23**, 543 (1939).

[2] Hynes, H. B. N., *Nature*, **167**, 152 (1951).

[3] Spooner, G. M., *Nature*, **167**, 530 (1951).

[4] Clemens, H. P., Contr. Stone Lab. Ohio, 12 (1950).

The Maximum of the Planck Energy Spectrum

THE spectral distribution of energy radiated from a black body is well known to exhibit a maximum. For example, the thermal radiation from a 6,000-deg. black body (to which the sun approximates) is chiefly concentrated towards the visible wave-lengths and falls off in the infra-red and ultra-violet.

It is natural to inquire where this maximum falls, and Wien's law is usually called on to supply the answer. This law is often quoted in the form:

$$\lambda_m T = 0{\cdot}2897 \text{ cm. deg.},$$

where λ_m is the wave-length where the maximum falls and T is the temperature of the black body. (Numerical values are based on the following values of fundamental constants: $h = 6{\cdot}623 \times 10^{-27}$, $c = 2{\cdot}99772 \times 10^{10}$, $k = 1{\cdot}3803 \times 10^{-16}$.) Thus, at 6,000 deg. the formula gives $\lambda_m = 4{,}829$ angstroms, which is towards the middle of the visible spectrum.

The derivation of the formula reminds us that the spectral concentration of energy is measured by the