

Nature of Light Emitted by Fireflies.

THE nature of the light emitted by fireflies (*Malacodermidæ* fam., genus *Luciola*) has hitherto been very little investigated. The idea that it is phosphorescent seems to have been generally accepted. On observing the beautiful green fluorescence of the light emitted by the insect when it is put in a glass tube, we were struck by the close resemblance of this light to that of the Crookes's tube. Could it be like that of the X-rays?

An inquiry was instituted to see how it affects photographic plates through different media. Various media were tried, and the results obtained by interposing wood, dark brown leather, flesh, and black paper are described below. It may be remarked here that the light emitted by the insect is so fitful and faint that it is rather difficult to keep it steady, and it will be too much to expect this faint light to give more than shades of varying depth on the plates. It was observed that the capacity of the insect to affect the photographic plate depends on the length of the exposure. When the insect was put on a naked plate for a few seconds, it did not affect the plate, but when it was similarly held on the plate for one minute, its effect was distinctly visible. After a series of experiments, therefore, two hours' exposure in the case of paper and flesh, and three hours' exposure in the case of leather and wood, were considered sufficient.

(1) An extra rapid photographic plate was placed in a dark slide, and three insects were then placed on the slide beneath a watch glass; the whole plate was affected and gave dark grey print after an exposure of three hours. Without the insect, the plate gave a black print on a two minutes' exposure to lamp-light.

(2) An extra rapid photographic plate was enclosed in English tanned leather of a dark brown colour 1 mm. thick. The three insects were placed on the leather, with the result that the plate gave a dark grey print after three hours' exposure; a similar plate, similarly enclosed, when exposed to lamp-light for two minutes gave a black print.

(3) The three insects were placed in a small tube open at one end, which was enclosed in a piece of flesh (mutton) 1.5 mm. thick; this was placed on a naked plate in a dark room. Where the light was not intercepted by the glass of the tube, the plate showed a white print after an exposure of two hours. A similar plate was covered with a piece of flesh of similar thickness and exposed to lamp-light; the resulting print was dark grey after two minutes' exposure.

(4) A similar plate was enclosed in black paper and the insects placed on it beneath a watch glass; the resulting print was, after two hours' exposure, light grey; while a plate similarly covered exposed to lamp-light for two minutes was very slightly affected, and gave a very dark grey print. The plate exposed to lamp-light without any media for two minutes gave a light grey print.

It was seen that the insect light approaches lamp-light in the intensity of its effect on the photographic plate, even when the different media opaque to light are interposed between the two.

The light emitted by the insect cannot therefore be taken as phosphorescent. It may be, perhaps, premature to conclude that some of the rays emitted by the insect are X-rays, but it may be safely asserted that these rays are, at least, similar to X-rays and ultra-violet light in so far as they render certain opaque media transparent and are intercepted by glass. We hope this short note may be the precursor of elaborate experiments on the subject leading to some definite results.

Dehra Dun, November 2.

PURAN SINGH.
S. MAULIK.

Trematode Generic Names Proposed for the "Official List of Zoological Names."

(1) THE International Commission on Medical Zoology, appointed by the Graz International Zoological Congress, has made its first report on the names of Trematode genera parasitic in man.

(2) Four members, namely, Blanchard (Paris), Monticelli (Naples), Stiles (Washington), and Zschokke (Basel), unanimously agree that the following eleven names are, from the present point of view of systematic zoology and nomenclature, the correct names for the genera in ques-

tion, and that the species cited as genotypes are the correct types according to the International Rules of Zoological Nomenclature:—

Clonorchis Looss, 1907, February 1, 147-152, type *sinensis*.

Dicrocoelium Dujardin, 1845a, 391, type *lanceatum* = *lancoelatum* (= ? *dendriticum* sub judice).

Fasciola Linnæus, 1758a, 644, 648-649, type *hepatica*.

Fasciolopsis Looss, 1899b, 557, 561, type *buskii* (seu *buski* teste Blanchard).

Gastrodiscus Leuckart in Cobbold, 1877e, 233-239, type *sonsinoii* (seu *sonsinoi* teste Blanchard).

Heterophyes Cobbold, 1866a, 6, type *aegyptiaca* = *heterophyes*.

Metorchis Looss, 1899b, 564-566, type *albidus*.

Opisthorchis Blanchard, 1895f, 217, type *felineus*.

Paragonimus Braun, 1899g, 492, type *westermanii* (seu *westermanni* teste Blanchard).

Pseudamphistomum Luehe, 1908, 428-436, type *truncatum*.

Watsonius Stiles and Goldberger, 1910, 212, type *watsoni*.

(3) The following commissioners have not voted:—Jaegerskioeld (Gothenburg), Looss (Cairo), Luehe (Koenigsberg), Pintner (Vienna), and Shipley (Cambridge).

(4) Notice is hereby given that the undersigned will wait until July 1, 1912, for any zoologist to raise any objection to any portion of this report, and that on that date all names to which valid objection is not raised will be forwarded to the International Commission on Zoological Nomenclature with the motion that these names be included in the "Official List of Zoological Names" provided for by the Graz Zoological Congress.

(5) All correspondence on this subject should be addressed to the undersigned.

C. W. STILES.

(Secretary International Commission on Zoological Nomenclature.)

Hygienic Laboratory, Washington, D.C.,

November 11.

Dews in 1911.

IT may interest readers of NATURE to know that between July 31 and September 5 this year I collected a total amount of dew equivalent to one-fifth of an inch of water, whilst in 1909, between August 3 and September 12, about one-tenth of an inch was collected. That is to say that this year the dews were twice as heavy as in 1909, or we may state that during the above-mentioned period of this year the deposit of dew in my instrument was equivalent to 20 tons of water per acre. Of course, most of this was evaporated, but that amount of water could have been collected with adequate means.

This year has been disastrous to the so-called dew-ponds, and I would remind readers of the view expressed in a letter to NATURE of May 14, 1908, that the ponds are "simply water butts in which rain-water is stored." A pond on the summit of St. Boniface Down, Ventnor, which I visited on September 1 this year, was absolutely dry.

I have been led to write this note because Mr. Martin, in his interesting letter in last week's NATURE, p. 77, says that "this year the absence of rain for so long brought about a remarkable absence of dew." This was not my experience, except on two or three clear nights when the air seemed to be very dry.

The details of my measurements and of my instrument I hope to publish elsewhere.

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November 18.

The Colours of Fishes.

INTEREST as to the sources of colours in birds and insects has been revived by Prof. Michelson in *The Philosophical Magazine* for April, and by Mr. Mallock at the Royal Society. The inquiry will be assisted if fishes may also be included. Nature reveals no more vivid form of shifting tints than we see in the common mackerel, which is a fish without scales. In August I was able to watch them immediately after the fish had been taken from the sea I