

instinct, that the permanent homes of locusts are situated in sterile land, and it would have been well to remove the common misconception that the winged swarms are the chief enemies of the agriculturist; it is against the march of the larvæ, here graphically described in the words of an eye-witness, that he has specially to guard.

There are a few inaccuracies and examples of loose expression, of which one or two may be mentioned. The author states that "the anterior portion of the intestine is the smaller, and is frequently spoken of as the colon," whereas elsewhere he alludes specifically to the ileum, which is often distinguishable. Certain glands in connection with the uterus are twice called the "serific," once the "sebific" glands; which term is meant is not clear. He adapts the term "instar" from Fischer to denote the form of an insect during a "stadium," that is, between consecutive ecdyses, but elsewhere he speaks not quite consistently of different instars as connoting a change of form, as well as of stadium. The reference to Chatin's views on the morphology of the mandible, would lead one to suppose that Chatin had found articulated mandibles in *Embia*. This is not the case; Chatin merely compared the parts of the mandibulate mass with the joints of the maxilla, and did so for many mandibulate insects and not *Embia* alone.

The standard which this work sets, if followed throughout the series, will leave the "Cambridge Natural History" without a rival. The book is one to be read not merely by entomologists, whose work it will certainly influence, but by general zoologists. The attention paid to insects in zoological teaching is quite disproportionate to the place they occupy in the animal kingdom; but hitherto zoologists have had no guide to what is best worth knowing on the subject.

The volume presents all the beauty and finish which mark its precursor in the series. The illustrations, original or from original papers, are admirable; some of these we are permitted to reproduce. Fig. 120 has been drawn in an inverted position and is not quite clear, and a much better figure of *Cylindrodes* than the one given, accompanies Gray's original account of the genus.

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MEDICAL APPLICATIONS OF RÖNTGEN'S DISCOVERY.

THE new photography has received the official recognition which is usually given to scientific discovery in Germany. Prof. Röntgen has been honoured by the Emperor, and the Prussian Minister of War has caused experiments to be made in order to discover whether the method can be applied successfully to army surgery. A series of photographs of bone injuries have shown so clearly the nature of the wounds and the position of imbedded projectiles that it has been determined to carry on the experiments on a larger scale.

Medical science seems likely to benefit much by the application of Prof. Röntgen's discovery. The *British Medical Journal* thinks, as an aid to diagnosis of obscure fractures and internal lesions generally, the new photography will be of great value. From our contemporary we note that already a beginning has been made in this direction, and Prof. Mosetig, of Vienna, has taken photographs which showed with the greatest clearness and precision the injuries caused by a revolver-shot in the left hand of a man, and the position of the small projectile. In another case the same observer detected the position and nature of a malformation in the left foot of a girl with entire success. Prof. Lannelongue, of Paris, has also been successful in photographing some of his cases in his ward at the Trousseau Hospital, and, assisted by MM. Oudin and Barthélemy, has submitted to the Academy of Sciences several negatives of human limbs. One of them represented a diseased thigh-bone. The

destroyed central portions had been penetrated by the light, forming white blotches on the plate. Another photograph was that of a tuberculous affection of the bone in a child's hand. The disease had been diagnosed, but photography brought complete confirmation to the diagnosis.

The Berlin correspondent of the *Lancet*, referring to the practical use being made of the discovery, says in one case a finger which had sustained a compound fracture, and from which a sequestrum had been removed, was photographed by the new process, and the regeneration of the bone was thereby made visible. In another case the position of a piece of glass embedded in the tissues was ascertained by the same method. Similar reports come from other Universities, as, for instance, from Berne, where Prof. Kocher has photographed a needle in a woman's hand; it had made its way under the skin some time ago, and had not been found by any other means.

A CONTRIBUTION TO THE NEW PHOTOGRAPHY.

NUMEROUS pictures are now being taken by means of the new method. The accompanying illustration, which we owe to the kindness of Prof. Nernst, and the original of which was made by him in the Physical-chemical Laboratory at Göttingen, represents a human hand as



photographed by means of the Röntgen rays. It will be seen that the flesh is very nearly transparent for these rays, while the bones, the gold ring, the piece of wire, and the glass tube are practically opaque. The ring and wire, which were naturally in contact with the flesh of the fingers, appear in the illustration as if suspended in the air

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