

a single pair of imaginal tubules. The Russian investigator has established the same interesting fact for *Tinea pellionella* and *Blabophanes rusticella*.

On these cases, avowedly exceptional even among Tineidæ, Cholodkowsky bases his dinephric hypothesis. The return in the imago to an apparently simpler condition of the Malpighian vessels than obtains in the larva, is regarded by him as a kind of atavism. To characterize this form of reversion, which is regular and periodic in its occurrence, he introduces the term "atavisme périodique." But it is clear that this atavism, if atavism it be, must extend to ancestral conditions exceedingly remote—postulating 2 as the primitive number of Malpighian tubules in Arthropods—since the number 2 occurs only in very few insects, and only in cases where a secondary reduction from a greater number furnishes a more plausible explanation (Coccidæ).

Cholodkowsky assumes that the basal

trunk represents the primitive Malpighian vessel. I would regard both it and the secondary trunk as comparatively recent acquisitions, since I find it difficult to see, on Cholodkowsky's supposition, why the number of vessels should be so constant throughout the order and at the same time agree with the number observed in the older and more primitive orders (Orthoptera, Neuroptera, Panorpata). Moreover, it is generally admitted that the Trichoptera stand very near the hypothetical ancestral Lepidopter, and it has been shown that both the embryo and imaginal Trichopter have 6 discrete Malpighian tubules. On Cholodkowsky's supposition it would be necessary to regard the urinary vessels in the lower orders as less primitive than those of the Lepidoptera, an assumption which certainly has very little in its favor when we stop to consider the extent to which other organs have been modified in the Lepidoptera.

ENTOMOLOGICAL NOTES.—The 13th part of Kolbe's Einführung in die kenntnis der insekten completes the first volume of the work, and with it the account of the morphology and physiology of insects; it concludes with a bibliography of the organs of generation. Although only two of the twelve main divisions contemplated have been treated, another volume will doubtless complete the work.

In the Contemporary review for September, Weismann has a deeply interesting article on the All-sufficiency of natural selection, supporting his well known views of the intransmissibility of acquired characters, and in which his main arguments are drawn from the study of ants. "All-sufficiency" is a strong term, and if it were generally con-

ceded would prove a distinct bar to progress; working hypotheses, on the other hand, lie at its very foundation.

In recent information regarding the Cambridge botanic garden given in the last number of the Harvard graduates magazine, Prof. G. L. Goodale speaks of the damage done by white ants as follows: "In one part of the wall the ants had taken away nearly all the wood, leaving the painted surface untouched and apparently sound. From this wall they had made their way into floor timbers hitherto supposed to be free from any pest."

Mr. Townsend (Ins. life, 5: 317) identifies the oestrid larva described by him in the current volume of Psyche, p. 298, as *Cuterebra fontinella* Clark.

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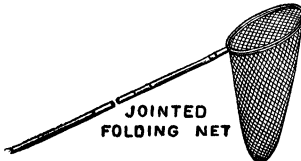
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