THE TRANSMISSION OF TYPHUS FEVER BY LICE.

In a recent paper* some interesting experiments are recorded by Drs. T. Goldberger and T. F. Anderson, which indicate that not only the body louse *(Pediculus vestimenti)* but the head louse *(P. capitis)* also may transmit the virus of typhus fever. These authors had previously shown that Brill's disease, which appears to be endemic in New York City, is identical with the typhus fever of Mexico, which, accordingly, may be identical with the European typhus fever. Evidence of the ability of lice to transmit typhus fever has been previously adduced by several investigators. In 1909, Nicolle, Comte and Conseil demonstrated that body lice *(P. vestimenti)*, which had been allowed to feed upon an infected bonnet monkey *(M. sinicus)*, were able to transmit typhus fever to two other monkeys, somewhere between the first and seventh day after feeding. In the following year, Ricketts and Wilder, who were working in Mexico, reported the successful transmission of the virus of typhus fever by *P. vestimenti* from man to monkey and from monkey to monkey. They were also able to infect a monkey by intradermal inoculation with the abdominal contents of infected lice, and similar experiments were successfully carried out by Wilder in 1911. Drs. Goldberger and Anderson commenced their work in 1909. They have confirmed the results of previous workers in regard to the body louse *(P. vestimenti)* and have also shown that the head louse *(P. capitis)* is able to transmit Mexican typhus fever from man to monkey by the subcutaneous injection of a saline suspension of crushed and infected head lice and almost certainly by its bite. The typhus virus is able to retain its virulence in the body of the head louse for twenty to twenty-four hours. The authors' conclusions are as follows:

1. The body louse *(P. vestimenti)* may become infected with typhus. The virus is contained in the body of the infected louse and is transmissible by subcutaneous injection of the crushed insect or its bite.

2. The head louse *(P. capitis)* may become infected with virus. The virus is contained in the body of the infected louse and may be transmitted by cutaneous injection of the crushed insect, and, we believe, also by its bite.

These results are of great interest to the entomologist. One by one our most common insects affecting man have been shown to be important factors in the transmission of disease; the house fly carries typhoid and

*"The Transmission of Typhus Fever, with Special Reference to Transmission by the Head Louse *(Pediculus capitis)*." "*Public Health Reports*" of the U.S. Public Health and Marine Hospital Service, Washington. W.C. 27, No. 9, 1st March, 1912, pp. 297-307.

certain other infectious diseases; the flea carries the plague bacillus; the bed bug has been shown to be transmitting agent of the causative organisms of the serious tropical Black Fever or Kala Azar, and the louse transmits typhus fever. That all the insects directly attendant upon man's person are disease carriers is not a pleasant fact for contemplation!

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TO THE EDITOR OF THE CANADIAN ENTOMOLOGIST:

In your journal of October, 1908, pp. 370–373, I published an account of the attempt made by Hendel to revolutionize the nomenclature of Diptera by introducing generic names from an obscure early paper of Meigen's, which were published without any described species being associated with them—in other words, without types.

Mr. Hendel based his action at the time on his interpretation of the rules of nomenclature of the International Zoological Congress, expressing great regret at the overturning of names, but protesting that the rules compelled it; later, in Wiener Entomologische Zeitung, XXVIII, 33–36, 1909, he took up my argument from the rules themselves, and endeavoured to show that I had not interpreted them correctly. So far, his action was as if forced by these rules. It was interesting, indeed, to find (W. E. Z., XXX, 89–92, 1911), that he has revolted against the rules commission of the I. Z. C., on a minor problem, the mode of designation of types, and refuses to follow them. I cannot help but regret that he did not revolt sooner, so as to spare us the trouble about Meigen's 1800 paper. I think he is perfectly right in his present contention, which relates to point g under Article 30, as amended at the Boston meeting, 1907. But my present purpose is merely to show the embarrassment of a too sweeping acceptance of any rules of nomenclature.

American dipterists have shown a commendable disposition to sit tight during this nomenclatural flurry, and already the worst seems past. On the general question of the validity of a genus without a type, I have noticed two expressions recently that are of interest. One is by S. A. Rohwer, in Technical Bulletin, No. 20, Bureau of Entomology, p. 70. He was fixing the types of saw-fly genera, and used the following language: "In this paper a genus is considered to be without standing until it contains a species; and genera which were founded without species take the first species placed in them as the type, and date from the time when that species was placed in them." If this rule were followed, Meigen's 1800 genera would date from 1908. The other case I found in the CANADIAN ENTOMOLOGIST itself, 1912, p. 50, where Mr. Girault is discussing the genus Trichaporus, and says: "No species was mentioned as belonging to it; under the code it is therefore without status."

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