

on New Species and Localities of Microscopical Organisms," published in February, 1854. It is illustrated by a plate printed on highly surfaced paper. This plate, in all the copies examined, had become so discolored that many of the figures could not be observed in any detail. Figures of diatoms are of great importance, especially in the case of new species. In an effort to clear up one of these plates, I tried the following treatment. Several sheets of newsprint were placed below the plate to absorb excess moisture. A small piece of absorbent cotton was dipped in hydrogen peroxide and with this the surface of the plate was gently swabbed, using no pressure. The swabbing was continued until no trace of the discoloration remained, after which the remaining moisture was removed with a clean white blotter. The plate was allowed to dry thoroughly and no alteration has taken place in three months since it was treated. The figures are restored to their original clarity.

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PRESENCE OF HOST KEEPS PARASITES ALIVE IN CAPTIVITY

FOR the past two years the Division of Entomology of the Agricultural Experiment Station at Rio Piedras, Puerto Rico, has been engaged in attempting to introduce and establish in Puerto Rico a parasitic wasp, *Larra americana* Saussure, which attacks the "changa" or Puerto Rican mole-cricket, *Scapteriscus vicinus* Scudder. The wasp occurs in considerable abundance at Belem, Pará, Brazil, at some seasons of the year, and because the adults could be collected so easily and by airplane transportation arrive in San Juan by the second morning, the attempt at introduction has up to the present been concentrated on the adults. Most unfortunately, however, the mortality of the wasps in captivity has been rather considerable, so that, under the best methods of shipment that could be devised, the bulk of them arrived at destination dead. To obviate this distressing mortality, the collector at Belem this year, Mr. Luis F. Martorell, has been inducing parasitism in the laboratory on collected mole-cricket and shipping parasitized changas in a screened container inside the larger box containing the wasps.

The difference in mortality is most striking. In the first two shipments made without changas, only one wasp arrived alive. In three succeeding shipments immediately following, accompanied by parasitized mole-cricket, nearly two thirds of the wasps were alive in the first, only one was dead in the second and two had been crushed under the box of soil and changas in the third. So far as one could judge, all conditions were the same for all shipments, except that two were

without and three were with a screened cage containing parasitized mole-cricket. The presence of clean, moist soil, uncontaminated with changa feces, apparently is of no importance in this connection, as had been indicated in shipments containing much larger quantities of soil in preceding years. It should be especially noted that the wasps could not come into actual physical contact with the changas because of the screen covering the box or can containing the earth inhabited by the mole-cricket; thus they could derive no satisfaction in again attempting to parasitize them, and the wasps do not feed upon the changa, for it is the egg and the larva of the wasp which is parasitic, not the adult. The excrement of the mole-cricket is a black, foul-smelling liquid, and when many of them are crowded close together, its odor is powerful. The crickets also chirp and sing, this being another possible comfort to the wasps in captivity, besides being an obvious proof of their hosts still being alive. No attempt will be made to determine whether the smell of or hearing their host is the more powerful in inducing *Larra* wasps to endure the discomforts of captivity, because the value of each shipment is too great to permit of experimentation once a successful method of shipment has been found. But this appears to be the first instance of the mere presence of the host serving to keep introduced parasites alive while en route between the point of collection and that of release. A more detailed account of the entire project is to be published in the *Journal of Agriculture* of the University of Puerto Rico.

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BOOKS RECEIVED

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- BRIDGMAN, P. W. *The Intelligent Individual and Society*. Pp. vi + 305. Macmillan. \$2.50.
- Carnegie Foundation for the Advancement of Teaching. *The Student and His Knowledge*. Bulletin No. 29, 1938. Pp. xx + 406. The Foundation, New York.
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