

O seu pronotum é semicircular, differindo assim do pronotum adulto que, na sua parte posterior, apresenta cinco angulos bem pronunciados, do qual o do meio se avança um pouco sobre os elyteros. Este caracter permanece até o estado nymphal.

Algumas larvas apresentaram a primeira muda, tres mezes após o nascimento, e no maximo quatro mezes para as restantes.

Depois se estabelecem mudas em numero de quatro, com intervallos de tres a tres mezes e meio, de modo a obtermos o insecto adulto no fim de 12 a 13 mezes. Outras larvas porem, apresentam metamorphoses tambem em numero de quatro, com intervallos maiores de 4 a 4 mezes e 1/2, sendo necessario nesse caso 16 a 18 mezes para a transformação de uma larva em imago. Foi este o tempo maximo que observamos para a evolução completa do insecto. Na ultima muda passam-se tambem os phenomenos da nymphose, transformando-se então a nymphapha aptera em insecto alado. Morphologicamente as nymphas não differem muito das larvas senão, quanto ao tamanho, coloração mais escura, e presença de rudimentos de azas.

Como em outros blattideos as azas apparecem primeiro brancas, e somente mais tarde depois de exposição á luz tomam a sua coloração normal, castanho escura.

Explicação das Figuras

Rhyparobia Maderae — Fabr.

1 — Ootheca logo ao ser expulsa. (Tamanho natural, photographia).

2 — Larva, alguns dias após a sahida do ovo — (duas vezes augmentada, desenho).

3 — Nympha. (Tamanho natural, photographia).

NOTE ON THE BIOLOGY OF RHYPAROBIA MADERAE, FABR.

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The *Rhyparobia Maderae* (Fabr) is a large domestic, cosmopolitan cockroach found at times in great numbers in many localities of this State (São Paulo, Brasil). In houses infested by *Rhyparobia* the other species, (*Periplaneta* and *Phyllodromia*) are rare.

Rhyparobia is the domestic species which gives out the worst scent, and this can be almost unbearable when the insects are chased.

Our observations were made in S. Paulo during the period extending from September 1925 to March 1927, at laboratory temperature which during that time varied between a minimum of 14.° C. to a maximum of 20.6.° C.

The cockroaches were kept in wooden boxes with windows of wire gauze to permit ventilation. Same observations were made under natural conditions.

The mating takes place principally during the warm and rainy season. The female opens her wings and draws them along the ground in a continuous vibration producing a slight sound. The male draws near and turns his body in an opposite direction, to that of the female, placing the posterior extremity of his abdomen against the posterior extremity of the abdomen of the female. Copulation may last from 20-30 minutes. The insects do not remain quiet during the act but move slowly about.

The exact time between copulation and the laying of the egg capsule was not observed. On the average the first larvae, 25 in number, came out of the capsule twenty days after the laying. The egg capsule does not remain long suspended to the genital tract of the female but was placed in the darkest corner of the box adherent to the wall. Although the female was kept alone for 18 months no more eggs were laid before she was mated again. The egg capsule is 17 mm. long and 4 mm. thick. It is bright yellow round on one side and grooved on the other. There are grooves along its length corresponding to the cementing of the eggs together. The larvae free themselves from the egg capsule without help from the female.

During the first days the free larvae hide under the adult cockroach which becomes restless and active in contrast to its usual slow gait.

The food consisted in sweetened milk, bread, biscuits, etc. The larvae however feed principally on the chitinous tissue legs, wings, thorax of other dead cockroaches placed in the box.

The larvae are dark chestnut-brown, markedly oval in form, and their pronotum is wider than the abdomen. This distinguishes them from the larvae of *Leucophaea Surinamensis* Fab. in whom the abdomen is wider than the pronotum.

In some larvae the first metamorphosis was three months after birth and in the remainder it was at the utmost four months after birth.

The metamorphoses were four in number at intervals of three to three and a half month so that the insect was adult at 12 months. The longest time needed was of 16-18 months, with a metamorphoses each four to four and a half months.

In the last metamorphoses there is the change to the nymphal stage. The nymphs differ from the larvae only in size, darker color and the presence of rudimentary wings.

