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WING SYMMETRY AND FLIGHT ACTIVITY

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We compared bilateral structures (wings) of flying versus non-flying insects (see below) in two lines of *P. megistus* which differed only by their laboratory maintenance time: PM1 (more than five generations in insectarium) and PM2 (one or two generations under laboratory conditions). Insects were processed according to Schofield (1980) and observed through a period of 30 days. During this time the insects that had flight (gf, for "good" flyers) had their wings extracted for morphometry. At the end of this period the same number of insects that did not fly (bf, for "bad" flyers), were used as a control and submitted to the same analysis.
Fluctuating asymmetry (FA) was estimated at nine distances (A, B, C, D, E, H, 1, 2 and 3). FA occurs as a result of random deviations in the development of bilaterally symmetric traits, and is considered as a useful trait for monitoring stress in the laboratory and in natural environments (Parsons, 1990). For each sample, FA values were calculated for each character as the sum of the squared signed differences between sides divided by the number of individuals sampled, i.e., $((Li-Ri)^2)/N)$. This is equivalent to index 5 of Palmer and Strobek (1986) which they state is best able to discriminate true differences in FA. As the index to estimate asymmetry is a variance, differences between samples were tested for significance using tests of homogeneity of variances (Ho: s1=s2). Due to low sample size, statistical analysis was not applied to PM2 females (only two individuals).
The PM1 bf females (6 insects) were more asymmetric than their gf counterparts (5 insects) at four wing traits (A, B, D, E), while the PM1 (9 insects) or PM2 (4 insects) bf males showed less symmetry at two traits (2, 3 in PM1 and 2 in PM2) (gf=7 insects and bf=7 insects). Conversely, one character out of nine was found more asymmetric in gf either from PM1 (character 3 for PM1 females and E for PM1 males) or PM2 males (character D). All together (PM1, PM2, males and females), 8 comparisons out of 27 revealed higher FA values in bf versus 3/27 in gf. These results suggest that more wing asymmetry may be related to less flight activity.
Qualitative differences between wings were observed too, though apparently not related to flying capacity. Indeed, two out of the 82 wings studied had unilateral defects, one in a gf (suppressed media) and another one in a bf whose cubital vein was making a projection towards the lower part of the wing. It is not known whether such deformities also occur in natural populations.
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ACTIVITY OF *Triatoma infestans* SALIVA ON THE SCIATIC NERVE OF THE RAT

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The life cycle and population dynamics of triatomines depend critically on their interactions with the vertebrate hosts. Experiments with laboratory animals and human volunteers demonstrated a negative correlation between host irritation and the number of bugs that feed successfully. As a result, the average amount of blood ingested by bugs feeding on non-anaesthetized hosts is inversely proportional to bug density and this density-dependent regulation of bloodmeal size seems to play a major role in regulating the size of bug populations. The degree of reduction in bloodmeal size relative to increasing bug population density depends on the triatomine species, reflecting the different levels of host irritation provoked by the feeding bugs. In laboratory conditions, *Triatoma infestans* presented a greater ability than *Rhodnius prolixus* and *Panstrongylus megistus* to obtain bloodmeals from non anaesthetized mice. In the present study the *T. infestans* saliva was assayed on isolated nerve of the rat. Saliva of adult bugs was collected using a capillary tube inserted in each insect proboscis, followed by electric stimulation on the thoracic ventral side. Experiments were performed on the sciatic nerve of the rat and compound action potentials (CAP) were recorded using the single sucrose-gap method. Both nerves were carefully removed and maintained in Ringer solution. After removing the conjunctiva sheath, the nervous trunk was sectioned and set up in an electrophysiological register chamber. The saliva incubation with the sciatic nerve of the rat elicited a dose-dependent effect, reducing the CAP amplitude. This result suggests that the saliva of *T. infestans* may act on nervous fibers decreasing the nervous signal conduction and, consequently, the perception of the insect by the host.
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