the earlier in the day oviposition begins the longer guarding lasts). How do males decide to release their females or to go on holding them? The duration was recorded in the field of 24 L. virens vestalis post-copulatory tandems started between 11 and 14 hrs. For each tandem pair, the amount of disturbance by unpaired males was recorded, which was inferred by the wing warning or flight reactions of the tandem males. These kept their females in tandem for longer times if they experienced a more consistent disturbance by unpaired males and vice versa (r = 0.88; p < 0.001). Since disturbance to the mating pairs is probably higher, and their guarding duration longer, when free males are more abundant, tandem males adjust guarding duration to the likelihood that the released females are remated. Also, since population density increases from 10 to 13-14 hrs, then it decreases from 13-14 to 15 hrs, males of tandems starting oviposition earlier experience, on average, a more consistent disturbance than those of tandems starting oviposition later, this determining the negative correlation of the guarding duration with its starting time.

ECOLOGICAL NOTES ON THE GENUS EPIPLEONEURA IN SURINAME

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The genus Epipleoneura is represented in Suriname by five species: E. lamina, E. pereirai, E. fuscanea, E. spatulata and E. capilliformis, arranged here in order of abundance. To obtain information on the ecology of these species, labels and specimens of the Epipleoneura material collected in Suriname was studied. Additional information was obtained from field work in 1989 and 1990. In the ecological analysis E. capilliformis is excluded because of its rare appearance.

All four Epipleoneura species have been found the year round. Three species have maximal flight periods which coincide with dry or rainy seasons: E. lamina in both dry season, E. fuscanea during the long rainy season and E. spatulata during the short rainy season.

The creeks in the savannah region are the richest habitat for Epipleoneura species in Suriname and it is the most important habitat for the uncommon E. spatulata. This latter species often co-occurs with the other Epipleoneura species. On two creeks in the savannah region all four species co-occur.

In the interior E. lamina and E. pereirai are spatially separated: the first species occurring on creeks, the latter on rivers. Both species prefer flying in the sun near shady places and may fly during soft rain showers. There are size differences within E. pereirai. Individuals from a river in the interior (the Palumen river) are bigger on average than
those from a creek in the savannah region (the Troelindekreek).

HABITAT SELECTION IN ANISOPTERA - AN EXPERIMENTAL APPROACH

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After a short maturation period away from the larval habitat adult Anisoptera return to the water where the reproduction activities take place. As in most species the oviposition sites serve as rendezvous, the highly mobile adults of both sexes must be able to detect habitats favourable for the egg and larval stages. In order to find the cues by which the individuals recognize the egg laying sites, two types of experiments were carried out, that is manipulation of the natural oviposition places and establishment of dummy sites. The experiments were performed with selected species of Libellulidae, Corduliidae and Aeshnidae.

*Leucorrhinia peetoralis* is a highly selective species with respect to the egg-laying place. It choose stagnant moorland waters partly covered with vertical or horizontal vegetation structures. If these are removed, the adult individuals disappear. After replacing the vegetation by floating dummies they return.

*Somatochlora arctica* breeds in puddles of bogs and similar habitats. Choice experiments with dummies of black plastic foil and other materials revealed that both sexes are attracted chiefly by coarse patterns of light reflexes on dark ground. Females responded by inspection flights and oviposition movements, males by patrol flights and site defence. Additionally they exhibited repeated surface touching which might be interpreted as tactile examination of the site. Individuals of *Aeshna juncea* showed similar behaviour towards the dummies.

In *Perithemis mooma* besides visual also tactile cues definitely play an important part in recognizing oviposition substrata. If males, being in search of egg-laying sites, encounter substrata which fit into their visual scheme they make repeated short dips and touch the ground with the tarsi of their hind legs for 0.01 - 0.02 s. Choice experiments showed that during such flight manoeuvres the individuals examine the substratum with their tactile sensory system. It is assumed that in finding suitable oviposition places visual and tactile processes are involved, these being hierarchically structured.