

REPRODUCTION BEHAVIOUR DURING HEAVY RAINFALL OF *OXYSTIGMA WILLIAMSONI* GEIJSKES IN SURINAM (ZYGOPTERA: MEGAPODAGRIONIDAE)
During a stay in Surinam (1 February-15 April, 1989) I conducted research on a running water system in the tropical rain forest, 100 km SW of Paramaribo (5°48'N, 55°85'W). I visited the Siparikreek and the Tibitiriver for 14 days.

Although it was supposed to be "the short dry season", from February to April, it rained in the afternoon nearly every day. On 18 February I observed dragonflies near the Siparikreek, 50 m downstream from the bridge connecting Zanderij and Witagron. Most Odonata disappeared as heavy rainfall started around 14.25 h. A few minutes later I noticed a zygopteran flying low over the water surface, with its abdomen slightly pointed down, at an angle of about 10 degrees. It turned out to be a patrolling male of *Oxystigma williamsoni* Geijskes. Other males were perching on the shore vegetation at a height of 5-10 cm. Soon after this, a female was seen ovipositing alone in a floating leaf. The male grasped her and they flew in tandem into the forest. Between 14.44 and 14.48 h four couples arrived at the site where the first female had been seen ovipositing. During oviposition,

the pairs maintained the tandem position. When rainfall decreased around 14.55, single patrolling males disappeared. But when a few minutes later the rain increased, they were again seen flying low over the water or perching on shore vegetation. At 15.00 I had to leave the site.

On 21 February I revisited this locality. During a short, light rain shower, around 14.00, no reproductive activity was noticed. At 18.00, however, heavy rain started and a male *O. williamsoni* was again noticed perching close to the site where the ovipositing tandems had been seen a few days earlier. At 18.20 a pair started ovipositing in tandem with only the female totally submerged. Close to them a male was perching. This place, the only spot where reproductive behaviour was seen, was a small clearing along the creek with some marsh plants growing in the water. Ovipositing was seen only at the downstream side, where only three leaves were used for oviposition, even though more suitable substrate seemed to be present. Eggs (0.9x0.2 mm) were perpendicularly inserted into soft floating leaves (maximum 30 eggs per cm²). An illustration of a leaf with eggs is given by D.C. GEIJSKES (1976, *Odonatologica* 5: 213-230).

Non-reproductive activity was observed in the forest near the creek, where solitary males were perching on twigs at a height of 0.5 m from 9.45 tot 17.40. A juvenile individual was found

on 29 March near a small brook upstream the bridge.

These observations allow the following tentative statements'. (1) Reproductive activity of *O. williamsoni* probably takes place only during heavy rainfall. With the description of this species GEIJSKES (1976, *op. cit.*) included some field notes in which he wrote about the curious phenomenon of oviposition during heavy rainfall. My observations suggest that all reproductive activity takes place during heavy rainfall, the first case to be reported for a zygopteran. This kind of behaviour has only been described before for two anisopteran species (*Malgassophlebia*, Libellulidae) from the tropical rainforest of Makakou, Gabon (J. LEGRAND, 1979, *Revue fr. Ent.* (N.S.) 1: 3-12, 1986, in: P.S. Corbet, [Ed.], *Current topics in dragonfly biology*, Vol. 2, pp. 17-18, Soc. Int. Odonatol., Biltoven). — (2) Mating time seems to be about 15 minutes. — (3) All individuals were seen near a small creek and near the sandy part of the Siparikreek — which both will dry up during normal dry seasons — not farther downstream on the sluggish part of the Siparikreek or on the Tibitiriver. GEIJSKES (1976, *op. cit.*) refers to the species as common in Surinam near creeks.

M.T. Wasscher, Minstraat 15 bis, 3582 CA Utrecht, the Netherlands.