

A POSSIBLE ECONOMIC IMPACT OF LIBELLULID LARVAE ON PRODUCTION OF FRESHWATER SHRIMPS IN GUADELOUPE, FRENCH WEST INDIES (ANISOPTERA: LIBELLULIDAE)

Guadeloupe has relatively few permanent aquatic habitats. Annual precipitation is on average four times higher in the wettest month as compared to the driest season and varies from 1000 mm in the East of Grande Terre to more than 11000 mm at the top of the Soufrière. In addition, aquatic habitats suffer by serious agricultural, industrial and domestic pollution, im-

pacting the odonate biodiversity. In this context, the rise of aquaculture (particularly freshwater shrimps, locally called "ouassous") is of importance since it has a favourable effect on dragonflies. In 2000, there were in Guadeloupe 13 shrimp farming sites, with a total basin surface of ca 20 ha. The basins represent permanent odonate breeding habitats, their physicochemical properties are regularly monitored and controlled, and they are providing an abundant and regular food resource throughout the year.

On 1 and 5 May 2003, we surveyed the odonate communities in two *Macrobrachium rosen-*

bergi (Man, 1879) farming sites at Basse Terre (Petite Plaine at Pointe Noire and Vauchelet), and counted 12 breeding odonate species, some of which are rare (e.g. *Tramea binotata* [Ramb.]) or not very common (e.g. *Ischnura hastata* [Say]).

It seems, the odonate presence in shrimp farming ponds has a negative effect on shrimp production. As recorded at Pointe Noire, an approx. 20% decrease of post-larvae production was noticed for several years, mainly due to *Pantala flavescens* predation on shrimps. There are two rearing basins at this site, the largest of these has a surface of ca 100 m². During two days, 2302 exuviae were collected there and numerous final instar larvae were observed.

The owner of the farm is eager to find a

mode of preventing dragonfly ovipositing in the ponds. It could only be suggested to tighten nets over the water, which would keep off the ovipositing *Pantala*, *Tramea* and *Orthemis*. At present, the owners are placing in the basins some adult shrimps that predate on the larvae of aquatic insects. Some fish also occasionally pass in the locks.

Studies on various shrimp farms in the Caribbean are in progress, with the objective to increase our knowledge on odonate ecology in this type of habitats, and on economic impact of larval dragonflies on freshwater shrimp production.

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