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The courtship behavior of *Promachus latitarsatus* (Diptera: Asilidae)

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A b s t r a c t: The courtship display of a *Promachus latitarsatus* is described for the first time. This species belongs to a group of which the males have lateral fringes of long, flattened bristles on the hind tarsi. These are a significant signal for the female during the hover flight ahead of the female.

Z u s a m m e n f a s s u n g: Das Balzverhalten von *Promachus latitarsatus* wird erstmals beschrieben. Das Männchen präsentiert während seines Schwebfluges vor dem ansitzenden Weibchen seine auffallend gestalteten Hintertarsen. Diese sind mit senkrecht abstehenden Borsten versehen und dienen dem Weibchen als Erkennungsmerkmal.

Key Words: Insecta, Diptera, Asilidae, *Promachus*, Courtship, Canary Islands.

During a trip to the Island of **Gran** Canaria (Canary Islands) some robber flies could be observed. Until today 26 species of this family are known from the Islands. 19 of them are endemic species (WEINBERG & BAEZ, 1991, 1992a, b). Particularity it was very interesting to see the courtship display of *Promachus latitarsatus* (MACQUART in WEBB & BERTHELOT, 1839). The male initiated the courtship by hovering ahead of a female, which perched on a fence sucking out a bee. During this hovering the male fully extended all legs in a distance of 5 - 10 cm of the female (Fig. 1). In that manner the lateral fringes of long, flattened bristles on the hind tarsi are a distinct signal for the female. In addition the male lifted up his abdomen so that the white haired genitalia can be a second sign. After some seconds the male came up (Fig. 2) and finally sat down near the female (Fig. 3). At that moment the flies have been disturbed and both flew away. Mating could not be observed.

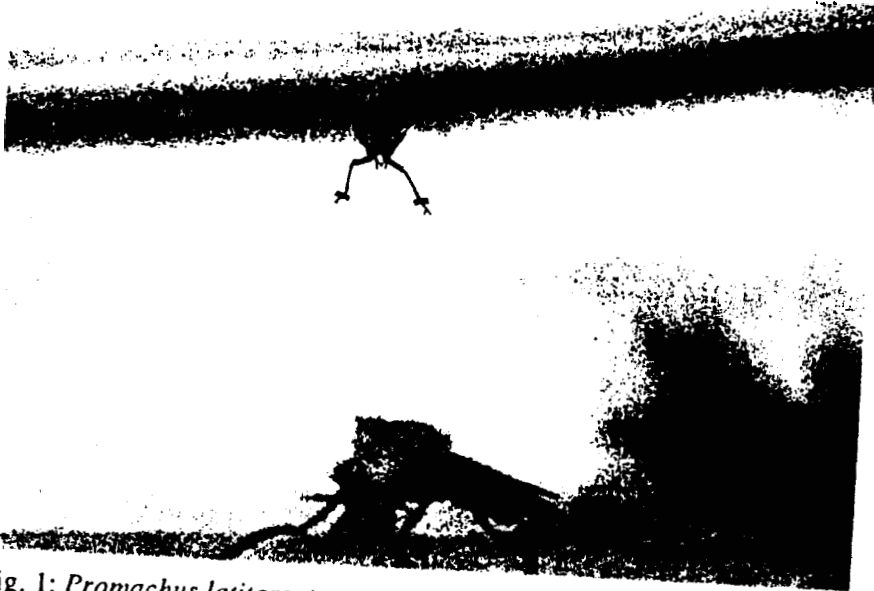


Fig. 1: *Promachus latitarsatus*, courtship display.



Fig. 2: *Promachus latitarsatus*, courtship display.



Fig. 3: *Promachus latitarsatus*, courtship display.

We know that robber flies have an excellent optical system and most of the species perform different courtship displays.

Already FREY (1937) examined the 5 *Promachus* species of the Canary Islands. He found a distinctive mark in the kind of bristles on the hind tarsi of the males. *P. latitarsatus* has long black bristles only on the 2. - 4. tarsomeres, which stand in a right angle to the leg. In contrast *P. vexator* has lateral black bristles on the 2. - 5. tarsomeres which stand in an angle of 30° for example. Other *Promachus* species are distinguished by patches of colored hairs on the first tergites. In general the females have small distinguishing features, they are a little bit different in the color of hairs and tomentum and it is unknown how the males identify them. But on the Canary Islands all five species live separately on different islands and therefore confusion seems to be impossible.

Until today the courtship performance of *Promachus* is described for three species only. HULL (1942) describes a hovering male of *Promachus bastardii* (MACQUART, 1839) in Mississippi. LAVIGNE & HOLLAND (1969) proved a similar hover courtship for *Promachus dimidiatus* Curran, 1927 in Wyoming, but on the other hand the species have been also

observed mating without courtship display. DANIELS (1976) reported about the courtship of a *Promachus* species in Australia. During the hovering, this male folds his first two pairs of legs against the thorax, while the hind legs extend along and below the body and the white hairs on the tibia form a species recognition mark.

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