

## **ODONATA OBSERVATIONS ON THE CHAGOS ARCHIPELAGO, BRITISH INDIAN OCEAN TERRITORY: A REVIEW AND UPDATE**

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**Abstract** – 6 Odonata species have been previously recorded from the island atolls of the Chagos Archipelago. 4 of these were recorded during 1996, together with another 2 spp. that were new to the Chagos. Past records are reviewed and updated with the records from the 1996 expedition to give a detailed distribution of the spp. within the Archipelago. The origins of the Chagos Odon. are briefly discussed, together with the habitats occurring on the Archipelago.

### **Introduction**

The Chagos Archipelago, British Indian Ocean Territory, is the largest and most isolated coral at-

oll complex in the world. It contains five island atolls centred at 6°S, 72 °E, in the middle of the Indian Ocean (EDIS, 1993). For a detailed description of the Archipelago see FOREIGN & COMMONWEALTH OFFICE (1993).

During February and March 1996, the authors surveyed 24 of the 58 islands of the Chagos Archipelago for insects, (including dragonflies and damselflies), as members of the 1996 'Friends of the Chagos' international scientific expedition. Many of these islands have never been visited by entomologists before. The survey was carried out, in part, to provide information for a conservation management plan.

### Species list

The classification follows DAVIES & TOBIN (1984, 1985). - Annotations: ○ Collected during the Percy Sladon Trust Expedition of 1905 (LAIDLAW, 1907; CAMPION, 1913); ◇ Collected by A.M. Hutson in 1971 (HUTSON, 1981); ■ Collected during the 1996 expedition (BARNETT & EMMS, 1996).

#### COENAGRIONIDAE

- *Agriocnemis pygmaea* (Ramb.): ◇ Diego Garcia.
- *Ischnura senegalensis* (Ramb.): ○ Diego Garcia. ■ Diego Garcia - the incinerator/landfill site, the Wharf, and at Point Marianne. ■ Ile Lubine (Egmont Atoll).

#### AESHNIDAE

- *Anax guttatus* Burm.: ■ Ile Diamante (Peros Banhos Atoll). ■ Moresby Islands (Peros Banhos Atoll). ■ Ile Yeye (Peros Banhos Atoll).

#### LIBELLULIDAE

- *Diplacodes trivialis* (Ramb.): ○ Salomon Atoll. ○ Ile Diamante (Peros Banhos Atoll). ○ Diego Garcia. ◇ Diego Garcia. ■ Ile Boddam (Salomon Atoll). ■ Ile Poule (Salomon Atoll). ■ Ile Lubine (Egmont Atoll). ■ Diego Garcia - the incinerator/landfill site, the plantation, the Wharf, and Point Marianne.
- *Pantala flavescens* (Fabr.): ◇ Diego Garcia. ■ Diego Garcia - the incinerator/landfill site, the plantation, the Wharf, Point Marianne and Mini-mini.
- *Tramea limbata* (Desj.): ○ Chagos Archipelago. ◇ Diego Garcia. ■ Ile Lubine (Egmont Atoll). ■ Diego Garcia.
- *Zygomma petiolatum* Ramb. ○ Peros Banhos Atoll.
- *Macrodiplax cora* (Br.): ■ Diego Garcia.

### Discussion

In general, the insects of the Chagos Archipelago appear to be derived from the Indo-Australian region. For example, in the case of the Macrolepidoptera, 14 of the 22 larger moths and butterflies recorded on the Archipelago have a purely Indo-Australian distribution (BARNETT & EMMS, 1996).

The Chagos Odonata also appear to be mainly of Oriental origin. The two species which are the exception to this are *I. senegalensis*, which has a range encompassing tropical Africa as well as the

Orient (DAVIES & TOBIN, 1984), and *P. flavescens*, which is distributed throughout the tropics and warmer temperate regions of the world (WATSON et al., 1991).

The majority of the islands in the Chagos are small (averaging approximately 41 ha). Diego Garcia is the exception and is the largest island on the Archipelago with a land mass of 2,719.5 ha (SYMENS, 1996). The islands of the Archipelago are low (the highest elevation is about three metres on Diego Garcia) and consist of sand and poor soil over coral rock. Terrestrial habitats are dominated by coco-palm plantations, but there are still scattered remnants of the native hard-wood forests that once covered the islands, especially on the islands of the Great Chagos Bank. Other habitats include open areas, many of which are dominated by *Carex* spp. Thickets of the pioneering plants *Scaevola sericea* and *Tournefortia argentea* surround the peripheries of many islands, often forming dense impenetrable stands. Insects are abundant on all of the islands, but the numbers of species are low. A total of 95 species were identified on the 1996 expedition (BARNETT & EMMS, 1996).

Diego Garcia has a substantial freshwater lens and a number of small lakes have recently been created at the water purification plant. There are also several brackish/freshwater lakes formed by dynamic natural processes and known as 'Barachois' (BELLAMY, 1979), as well as numerous ditches and ephemeral pools which are topped up by the heavy rainfall of the region. This is between 2,290 and 2,540 mm per annum (FOREIGN & COMMONWEALTH OFFICE, 1993). 6 of the 8 Odonata species recorded for the Chagos are present on Diego Garcia.

Barachois are also found on a few islands of the other atolls (e.g. Ile Anglaise on the Salomons, Ile Yeye on Peros Banhos and Iles Lubine and Sipaille on Egmont). These provide standing brackish/freshwater where no other source is available.

The Odonata found on the Chagos are known to be capable of breeding in shallow, stagnant, ephemeral pools (e.g. LIEFTINCK, 1953; ROWE, 1987; WATSON et al., 1991). Some are also described as salt-tolerant, e.g. *A. pygmaea* and *I. senegalensis* (LIEFTINCK, 1953). Local breeding was confirmed for the two species *D. trivialis* and *T. limbata* which were seen to oviposit into fresh-

water ditches on Diego Garcia during the 1996 expedition. Others are known to travel large distances in the adult stage, e.g. *P. flavescens* (WATSON et al., 1991), and are therefore not so reliant on freshwater habitats on every island, or even every atoll that they inhabit. *D. trivialis* is recorded as often being seen in dry places far from water (LIEFTINCK, 1953) and this may explain the large numbers of this species seen on Iles Boddam, Poule and Diamante, where there was no standing freshwater (the nearest was a Barachois on Ile Anglaise).

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