

TWO CASES OF INTERSPECIFIC MATING IN AUSTRALIAN DRAGONFLIES (ANISOPTERA: AESHNIDAE, LIBELLULIDAE)

A male *Austroaeschna obscura* Theischinger and a female *A. sigma* Theischinger were caught flying down from a bush in wheel position, at Watagan Mountains, near Morriset, New South Wales, in the morning of 26 April 1979, just when the sun appeared after light warm rain. Both individuals were mature but not old.

Generally, *A. obscura* occurs only N of the Hunter River, whereas *A. sigma* is only known from S of the Hunter. The Watagan Mountains (about 40 km S of the Hunter) are the only locality where these two species, apparently components of a superspecies, are known to coexist. Elsewhere, *A. obscura* is usually found in warmer, dryer and lower altitude situations than *A. sigma*.

Considering the striking differences in the structure of the glans penis and in synthoracic colour pattern (G. THEISCHINGER, 1982, *Aust. J. Zool.*, Suppl. 87: 1-67), successful interspecific mating of *A. obscura* and *A. sigma* is surprising, the fact that despite of many visits to the Watagan Moun-

tains no hybrid material was collected, is not.

A male *Austrocordulia leonardi* Theischinger and a female *A. refracta* Tillyard were collected in copula along Nepean River, near Maldon Bridge, New South Wales, on 14 November 1980, at about 10:30 a.m. The insects were observed flying in wheel position for at least 15 s, about 2-10 m above the ground, 20 m above and more than 50 m from the water, finally across a road, before being caught. In the net, the insects, both mature but rather young, separated immediately.

*A. leonardi* is known only from three localities, all S of and close to Sydney (G. THEISCHINGER, 1973, *Annl. naturh. Mus. Wien* 77: 387-397, and this record), and in all these places it coexists with the widely distributed (eastern Australia, from Cape York to Victoria) *A. refracta* (J.A.L. WATSON et al., 1991, *The Australian dragonflies*, CSIRO Canberra - Melbourne).

In spite of sympatric occurrence and similarity in larval ecology (both species are often found under the same rocks), successful mating of *A. leonardi* and *A. refracta* must be considered as remarkable because of the great differences in male anal appendages and secondary genitalia as well as in female genitalia (THEISCHINGER, 1973, *l.c.*; G. THEISCHINGER & J.A.L. WATSON, 1978, *Aust. J. Zool.* 26: 399-431). Even more surprising, however, is the fact that these two species came to mate on a hot sunny morning. Adults of *A. leonardi*, a black and yellow patterned dragonfly, have hitherto been found to be active only on bright sunny days (THEISCHINGER, 1973, *l.c.*, and unpublished), whereas continuous flight activity of the unicolorously greyish- to blackish brown and generally crepuscular (WATSON et al., *l.c.*) *A. refracta* has never been observed in bright day light (R.J. TILLYARD, 1909, *Proc. Linn. Soc. N.S.W.* 33: 737-751; G. Theischinger, unpublished).

It is probably needless to say, that none of more than two dozens of *Austrocordulia* adults and of hundreds of exuviae from the above locality show intermediate specific characters.

For both described interspecific matings should be noted that some degree of discomfort may have been experienced by the individuals involved which possibly facilitated capture.

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