

DESCRIPTION OF THE TRUE LARVA OF *TAURIPHILA AUSTRALIS* (HAGEN, 1867) FROM LIMONCOCHA, ECUADOR (ANISOPTERA: LIBELLULIDAE)

M.J. WESTFALL, Jr*

International Odonata Research Institute, Department of Plant Industry,
Florida Department of Agriculture and Consumer Services, P.O. Box 147100, Gainesville,
Florida 32614-7100, United States

Received and Accepted June 5, 1998

The final instar is described from reared material. The photograph in figure 335 of J.G. NEEDHAM & M.J. WESTFALL (1955, *A manual of the dragonflies of North America*, Univ. Calif. Press, Berkeley) is said to be of a *Dythemis* species, probably *nigrescens* Calvert, 1899, not of *Tauriphila australis*.

INTRODUCTION

Five valid species are included in the genus *Tauriphila* Kirby, 1889: *T. argo* (Hagen, 1869) (South and Central America, and Cuba), *T. australis* (Hagen, 1867) (South and Central America and southern United States), *T. azteca* Calvert, 1906 (Central America), *T. risi* Martin, 1896 and *T. xiphea* Ris, 1913 (both from South America).

In 1936 NEEDHAM & FISHER described a larva which they designated as *Tauriphila* sp. This was from the same lot of larvae collected by Dr J.G. Needham in the southwestern United States and photographed for figure 335 of the 1955 NEEDHAM & WESTFALL Manual.

After the 1955 Manual appeared Dr Angelo M a c h a d o sent me a reared *T. argo* specimen from Brazil and it was apparent that our figure 335 of the Manual was not a *Tauriphila*. I decided that the Needham specimens must be of a species of *Dythemis*, possibly *nigrescens*, which had not been reared or described. I had the *T. argo* larva drawn but never published it. In 1994 this species was finally described by COSTA & DEASSIS. In their paper they wisely expressed doubt that our figure

* **Present address:** 2235 Old Hamilton Place, 600A, Gainesville, Georgia 30507, United States

of *T. australis* was of a *Tauriphila*. In 1996 RODRIGUES CAPITULO described the larva of *T. risi*, overlooking the description of *T. argo*. He compared *risi* with our figure of supposed *australis* and gave a revised generic key showing these two at different places in the key.

In November of 1980 my wife and I spent a month at the Wycliffe Bible Translators station in Limoncocha, Ecuador. I found *T. australis* flying on the lake so searched for the larvae. 20 larvae were collected in various instars, including 11 in the last instar. These were taken alive to Florida where 2 females emerged.

DESCRIPTION OF FINAL INSTAR

Figures 1-5

Material. — 2 ♀ exuviae with reared adults collected 22-XI-1980 in a lake at Limoncocha, emerged 26-XII-1980 and 4-I-1981 in Gainesville, Florida; 9 last instar larvae with swollen wing pads also collected at same place in November 1980.

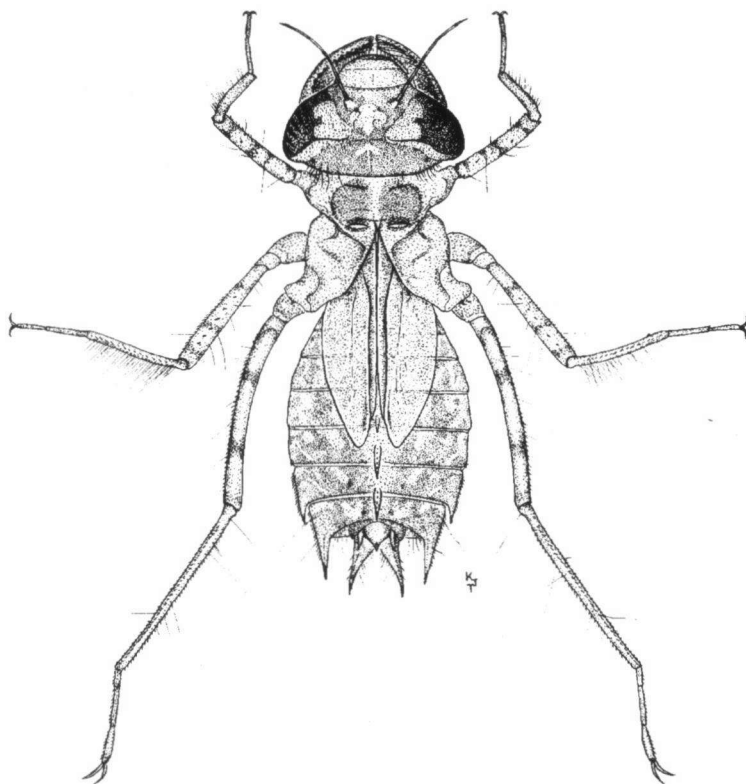


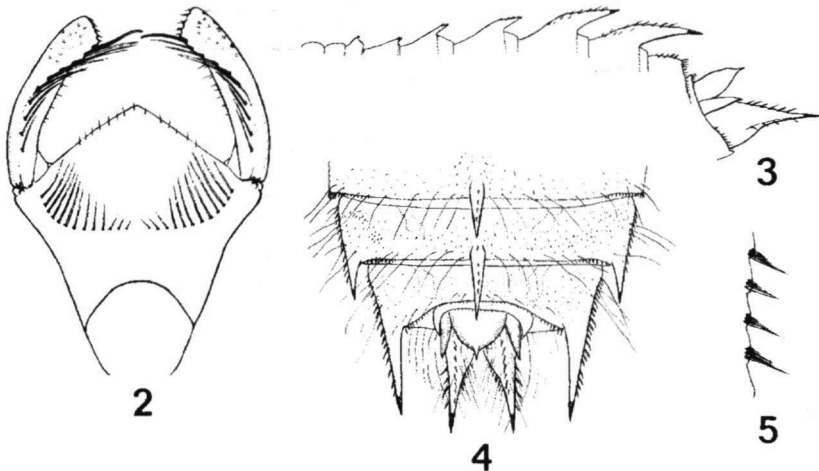
Fig. 1. *Tauriphila australis* (Hag.), dorsal view of last instar larva.

General color light brown without significant color pattern, except the eyes are black, and the femora have 2-3 faint darker cross bands.

HEAD. — Wider than thorax. Eyes rounded laterally with darker stripes as shown in figure. Antennae 7-segmented. Labium large, reaching the mesepisternum. Prementum with 12-13 premental setae each side, increasing in size from midline outwards; distal margin with 6-8 very thin setae each side. Labial palp large with small brownish spots; each palp with 9 palpal setae, with a distal moveable hook which is larger than distal setae; distal margin of palp with very shallow crenulations as shown in Figure 5, each bearing from 1 to 5 small setae.

THORAX. — Supracoxal process very small. Wing pads reaching to 1/2 length of abdominal segment 7. Legs long, with hairs especially numerous on tibiae of first two pairs; femora with 2-3 faint dark cross bands.

ABDOMEN. — Cylindric, widest at segment 6. Middorsal hook on segments 3 to 8, small on 3 to 5, that of 6 reaching to the posterior border of that segment, that on 7 reaching to about 1/2 the length of segment 8, and that of 8 extending to or slightly beyond the distal border of segment 9 in the midline; the hooks on segments 7 and 8 bear hairs along their dorsal border. Lateral spines are present on segments 8 and 9, straight, that of segment 8 about 3/4 the middorsal length of that segment, that of segment 9 about twice the middorsal length of segment 9. Cerci and epiproct about equal in length and 1/3 length of paraprocts, the paraprocts reaching posteriorly to slightly beyond the tips of lateral spines of segment 9. Epiproct broad, rounded on sides, a little wider than long and with a sharp spine at apex; cerci distinctly pointed.



Figs 2-5. *Tauriphila australis* (Hag.), last instar larva: (2) labium; — (3) left lateral view of abdomen to show dorsal hooks and appendages; — (4) enlarged dorsal view of end of abdomen; — (5) portion of inner margin of palpal lobe to show crenulations and setae.

M e a s u r e m e n t s (in mm). — Total length (excluding antennae): 18.5; length of hind femur 7, of hind tibia 8; length of abdomen 9.5.

It is evident from the descriptions of the larvae of the three species that have been described that they are very similar. They all belong to the group with no dorsal hook on abdominal segment 9.

ACKNOWLEDGEMENTS

I wish to thank the Wycliffe Bible Translators, and especially WAYNE FITCH who was stationed in Quito, Ecuador in 1980, for making it possible for us to spend the month of November at Limoncocha studying the Odonata. The Fitch family was also very helpful in many other ways during our stay in Ecuador. Special thanks are also due to Dr KENNETH J. TENNESSEN for executing the illustrations.

REFERENCES

- COSTA, J.M. & C.V. DE ASSIS, 1994. Description of the larva of *Tauriphila argo* Hagen, 1869 from Sao Paulo, Brazil (Anisoptera: Libellulidae). *Odonatologica* 23(1): 51-54.
- NEEDHAM, J.G. & E. FISHER, 1936. The nymphs of North American libelluline dragonflies (Odonata). *Trans. Am. ent. Soc.* 62: 107-116, pls 6-7 excl.
- NEEDHAM, J.G. & M.J. WESTFALL, 1955. *A manual of the dragonflies of North America (Anisoptera) including the Greater Antilles and the provinces of the Mexican border*. Univ. California Press, Berkeley-Los Angeles.
- RODRIGUES CAPITULO, A., 1996. Description of the last instar larva of *Tauriphila risi* Martin (Anisoptera: Libellulidae). *Odonatologica* 25(4): 391-395.
- WESTFALL, M.J., 1964. Notes on the Odonata of Cuba. *Q. Jl Fla Acad. Sci.* 27(1): 67-85.