



## First description of the male of the wheat thrips, *Anaphothrips obscurus* (Thysanoptera: Thripidae)

MAJID MIRAB-BALOU & XUE-XIN CHEN<sup>1</sup>

*Institute of Insect Sciences, Zhejiang University, 268 Kaixuan Road, Hangzhou 310029, CHINA*

<sup>1</sup>*Corresponding author. E-mail: xxchen@zju.edu.cn*

*Anaphothrips obscurus* (Müller), a common pest on the leaves of cereal crops (Ananthakrishnan, 1984), lives on grasses in many parts of the world. However, males of this species have remained unknown, together with the males of 12 more of the 79 species recorded worldwide in the genus *Anaphothrips* Uzel (Thysanoptera: Thripidae). In the west and northwest of Iran during 2008–2009 we found males of *A. obscurus* on rice and wheat crops, and this sex is here described and illustrated for the first time.

In a key to European species, zur Strassen (2003) mentions a male of *A. obscurus*, but with no indication of any specimens or locality on which this record was based. Subsequently, zur Strassen expressed doubts about the validity of his record, and indicated that it might refer to some other species (Mound & Masumoto, 2009). Among the Nearctic species of *Anaphothrips* males of six species remain unknown (Nakahara, 1995), including *obscurus*, *amoenus*, *grandiocularis*, *mexicanus*, *paludicola* and *tenebrosus*. And in Australia, in addition to *A. obscurus*, males of seven further species remain unknown, *exocarpoidea*, *geijera*, *keatsi*, *nimbus*, *orchis*, *varii* and *whyalla* (Mound & Masumoto, 2009).

Hood (1938) made reference to males of *A. obscurus*, and Priesner (1964) indicated that the male of this species was known only from the United States but had never been described properly. According to Stannard (1968) the male of *obscurus* was described by Shull (1909) under the synonymous name *striatus*. The two specimens he described were from Huron County, Michigan, but Nakahara (1995) recognized that one of these males, deposited in the British Museum (Natural History), is the male of *sandersoni*, not *obscurus*. Moreover, a male collected in 1909 at Urbana, Illinois and determined by Hood as *obscurus* is a misidentification of *A. decolor*, and a few males determined as *A. striata* from Iowa in the USNM proved to be *A. cameroni*. Stannard stated that "Certainly the male of this species, if it exists in North America, is rare", and (Nakahara, 1995) concluded that as no males of *A. obscurus* were found amongst the material he examined there is no valid record of the male.

Two species of *Anaphothrips* are reported from Iran (Bhatti & zur Strassen, 2009), *A. obscurus* and *A. sudanensis*. During 2008 and 2009, in association with typical females of *A. obscurus* we found several males. The identity of these specimens was confirmed by Laurence Mound at Canberra, Australia, and their collection details are: **IRAN**: Miyaneh, Azarbaijan-e-sharghi province, 47° 724' N, 37° 413' E (1113m), 26.vi.2009, 15.vii.2009, coll. M. Mirab-balou, from *Oryza sativa* (4 slides in ZJUH; 2 slides in Insect Collection, Department of Entomology, South China Agricultural University; 1 slide in Australian National Insect Collection, Canberra; 1♂, **IRAN**: Yeknabad, Hamedan province, 48° 483' N, 34° 867' E (1742m), 25.v.2008, coll. M. Mirab-balou, from wheat, *Aestivum triticum*, in Institute of Insect Sciences, Zhejiang University, Hangzhou, China.

The specimens were prepared onto slides following Mirab-balou & Chen (2010). Measurements and figures 1–4 were made with a Leica DM IRB microscope and a Leica MZ APO microscope with a Leica Image 1000 system; figures 5–10 were prepared by Laurence Mound with a Leica DM2500 using DIC and processed through Automontage software. Nomenclatural details of all taxa mentioned in this paper are given in Mound (2010).

**Description.** *Macropterous male.* Body and legs brownish yellow, brown markings on pronotum, laterally on mesonotum and metascutum, medially on tergites (Fig. 1); Antenna 9-segmented, II without microtrichia, III–IV with sensorium forked (Fig. 2), VI–VII broadly joined by oblique suture; VI with pedicel, VI completely divided (Fig. 3); antennal segment I yellow, II–IV yellowish brown, V–IX darker brown. Head about 1.2 times longer than wide, sculpturing on occiput reticulate (Fig. 4); eyes with 6 pigmented facets; mouth cone conical, extending to between procoxae (Fig. 4). Pronotum as long as head and weakly sculptured medially, transversely striated; metascutum reticulate, median setae well behind anterior margin, a pair of metascutal campaniform sensilla (MCS) present (Fig. 5); forewings pale, veins weakly shaded, first vein with about 9 setae, second vein with about 7 setae; clavus with 4 veinal setae (Fig. 5); the wing tip with long microtrichia that arise ventrally at the tip (Fig. 6). Abdominal lateral tergites