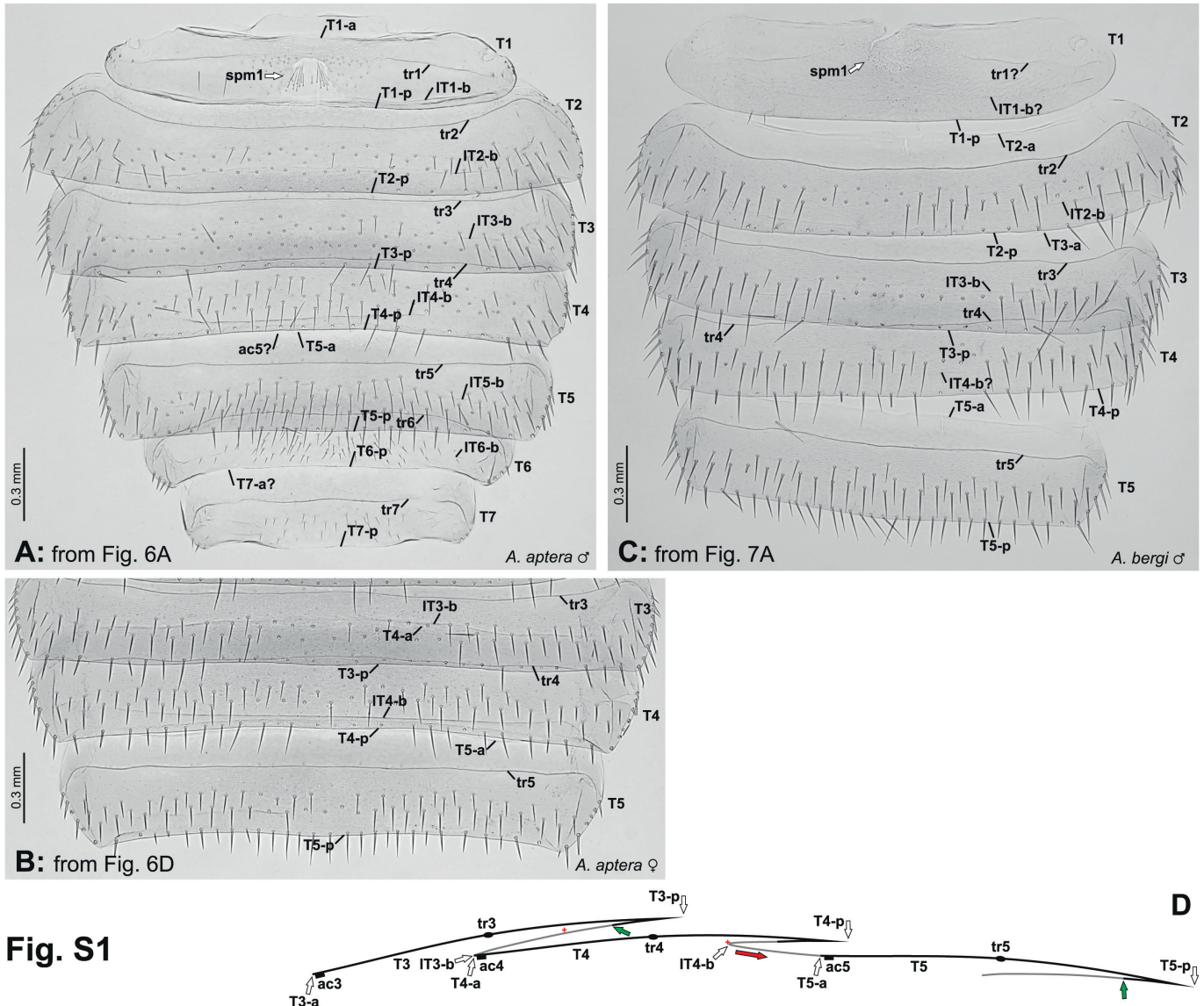


## Supplement 2

**Figure S1:** Explanation of transversal lines on abdominal dorsum



**Fig. S1**

**Figure S1.** Explanation of transversal lines on abdominal dorsum, exemplified by *Attaphila aptera* male T1–7 (Bo 1227) (A, identical with Fig. 6A, with a fairly regular succession of lines), *Attaphila aptera* female T3–5 (Bo 1253) (B, identical with Fig. 6D but cut, with a fairly regular succession of lines), and *Attaphila bergi* male T1–5 (Bo 1274) (C, identical with Fig. 7A, with a fairly irregular succession of lines due to distortion of tergites). Lower picture (D) showing a schematic longitudinal section of 3 successive tergites and 2 intertergal membranes, partly in maximally shortened (left = anterior side) and partly in strongly extended (right = posterior side) condition. — **Abbreviations and symbols:** *acn* antecosta (numbered at *n*); *ITn-b* movable anterotergal bending line (numbered at *n*); *Tn* tergite (numbered at *n*); *Tn-a* anterior border of tergite = anterior tergal margin (numbered at *n*); *Tn-p* posterior border of tergite = posterotergal bending line (numbered at *n*); *trn* transversal ridge of tergite (numbered at *n*) [all numbering according to assignment to a segment; ? added to questionable identifications]. + (in red) showing corresponding positions in the two included intertergal membranes; red arrow indicating posterior movement of parts in right half (by extension of abdomen); green arrow indicating position of posterior tergal margin (while the sclerotisation fades out gradually in this area in the specimens). dorsal exoskeleton: sclerites (tergites) as black lines, membrane (intertergal) as grey lines.

## Additional explanatory text

Along the dorsal side of the abdomen (dorsum), the cuticle bends back and forth by almost 180° near each anterior and posterior margin of a tergite (**Tn**; *n* = placeholder for a segment number), i.e. near the junction between tergite and adjoining intertergal membrane (Fig. S1D). Each posterotergal bending line (labeled **Tn-p**) is usually fixed as the tergal sclerotisation extends a bit beyond the bending line (gradually fading out, thus no clear sclerite margin as in Fig. S1D – pointed to by green arrows – is visible). Each anterotergal bending line (labeled **ITn-b**) can shift in correlation with movements (mainly extension and shortening of abdomen; red + in Fig. S1D marks the corresponding level in two successive intertergal membranes, and the red arrow indicates the extending movement in the posterior one); the position of the bending line is especially unstable after maceration and dissection; with maximal shortening, the anterotergal bending line **ITn-b** coincides with the anterior margin of the following tergite (labeled **Tn<sup>+</sup>-a**), but with strong extension it is far in front of it. In addition to the bending lines, each tergite (**Tn**) itself contributes several transversal lines: The abovementioned posterior margin of the tergite is usually not visible as a line, as the sclerotisation fades out gradually (shown as discrete only in Fig. S1D, and indicated by green arrows). The anterior margin (**Tn-a**) is variously discrete or gradually fading and thus of varied distinctness in the figures. Shortly behind the ante-

rior margin an antecosta is to be expected (**acn** in Fig. S1D), but this is rarely distinct, and its remains were not traced herein (antecostae **acn** are of great theoretical importance, as they are assumedly derived from the embryonic intersegmental grooves and thus mark the borders between successive abdominal segments; therefore bending line **Tn-p** and the bending line **ITn-b** following it posteriorly are assigned to the same segment). Near midlength of a tergite there is usually a tergal transversal ridge (**tr**), whose course is of taxonomic relevance. Along the lateral flanks of the abdomen, the cuticle bends down to the ventral side; the lateral bending line (not labeled), as seen from above, is fixed as the sclerotisation also extends ventrally.

The taxonomic descriptions consider mainly the following lines: The posterotergal bending lines, called the posterior borders of tergites (**Tn-p**, fixed and discrete); the anterior margins of tergites, called the anterior borders of tergites (**Tn-a**, fixed but rarely discrete); the lateral bending lines of tergites, called the lateral borders of tergites (not labeled, fixed and discrete); and the tergal transversal ridges (**trn**, fixed and usually discrete). Note that the anteroposterior succession of the transversal lines is not always regular due to a longitudinal shift of part of the series of tergites, i.e. due to an extension or a contraction of part of the abdomen (e.g. ridges **trn** either behind or in front of posterior borders **Tn-p**, as evident from **tr4** compared to **tr5** in Fig. S1D).