

Microscopic Observation of the Bournier's Apparatus of Idolothropinae (Thysanoptera, Tubulifera)

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Bournier's apparatus (BA) is a structure found in the female reproductive system of some tubuliferous thrips. It was first described in a Mediterranean species of Idolothropinae by Bournier (1962), and has been confirmed to exist in some Oriental species of the same subfamily by Haga (1975, 1988) and Ueda and Haga (1987).

The BA is located between the cuticular and cellular layers of the dorsal wall of vagina near the opening of the spermathecal duct. It is composed of a widened anterior part or the cluster, and narrow posterior part, the stem, and both parts are consisting of many bundles of fibrous materials. No muscular systems develop in and around the BA (Ueda and Haga, 1987). Sizes, shapes and locations of those parts vary among species. This made BAs representing a particularly species-specific character in every tested species (Haga, 1988). BA's function is still unknown.

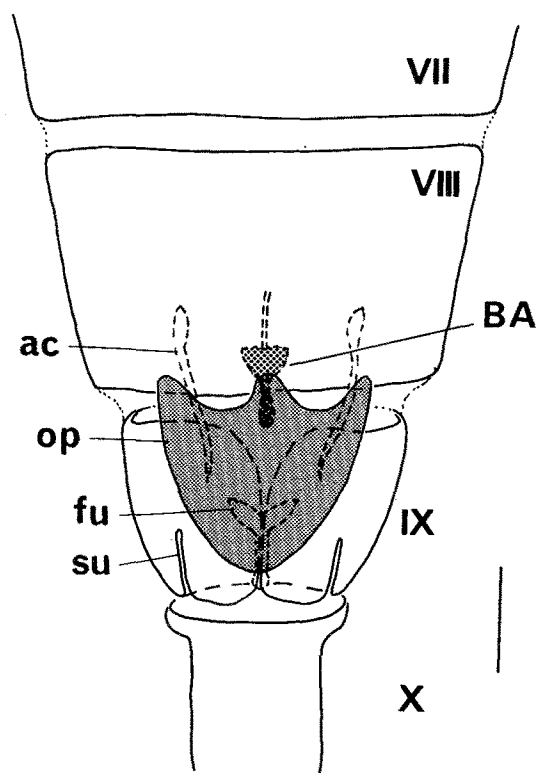


Fig. 1 Schematic demonstration of BA in *Bactrothrips brevitubus* abdomen as the ventral view. Scale = 0.1mm. ac: acicula, BA: Bournier's apparatus, fu: fustis, op: operculum su: tergosternal suture, VII-X: seventh to tenth (tube) abdominal segments.

As the BA is small and lies deep in the body (Fig. 1), it can hardly be observed in specimens totally mounted in balsam, even if their integuments have been well decolorized. It is necessary for further studies to demount such specimens by means of mild solvent, *e. g.* EGME (Ethylenglycolmonoethylether, = Cellosolve), because they must be dissected to remove BA-set (consisting of BA-bearing vaginal wall and vagina-holding endoskeletons, namely, a pair of aciculae and a fustis) without any damages on their taxonomic characters. The BA can only be observed through phase-contrast lenses at a high magnification.

I have simplified a procedure for preparation of specimens for microscopy, which is shown in Fig. 2. Details of the procedure will be published elsewhere. Removed BA-set must be mounted on the same slide adjoining as the main body is mounted (Fig. 3).

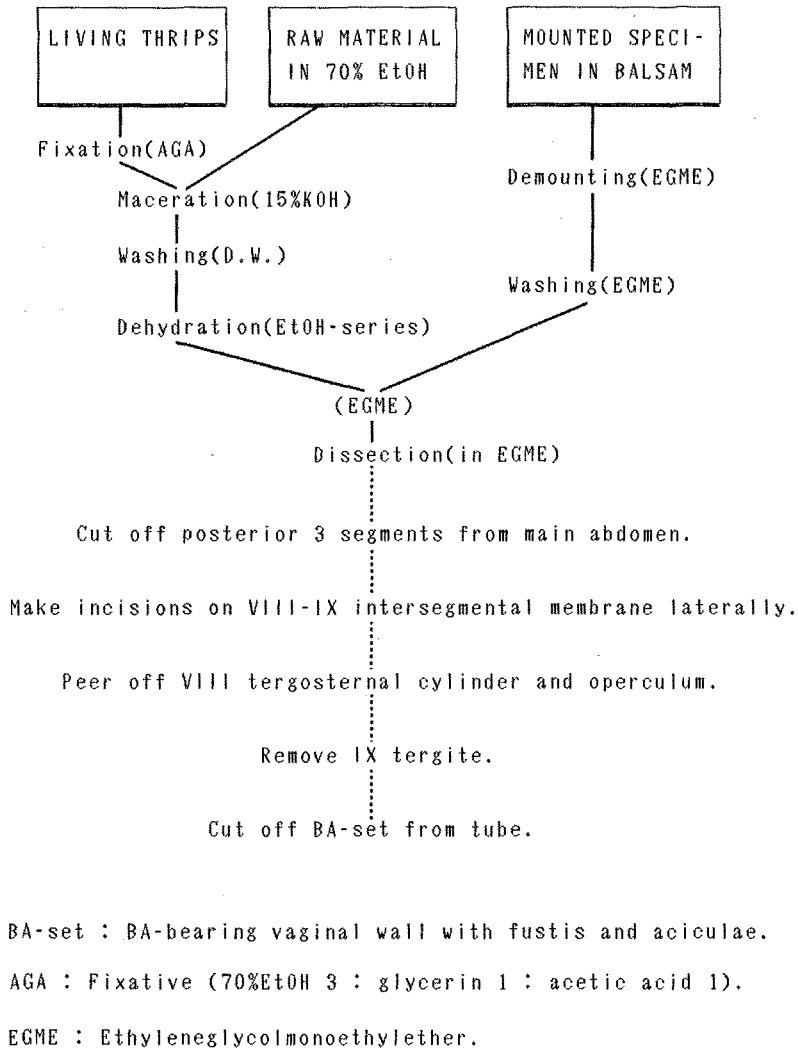


Fig. 2 A procedure of processing BA for microscopic preparation.

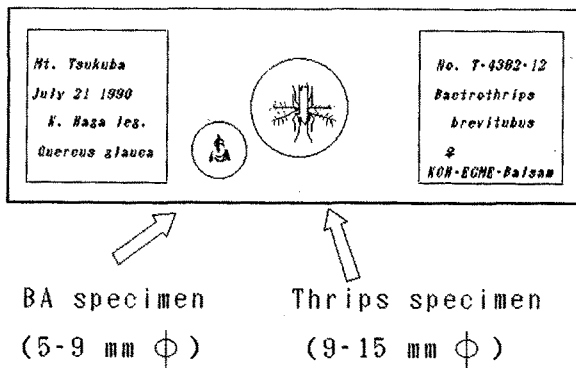


Fig. 3 Taxonomic specimen of a thrips and its BA-set mounted on a glass slide.

References

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