

## NOTES ON SPECIES OF THE GENUS *AGRIA* R.-D. (DIPTERA, SARCOPHAGIDAE)

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*A key is given for the identification of females of all Holarctic species included into this genus, and keys are provided for distinguishing third instar larvae and puparia of two Palearctic species. In addition to these, the description of the A. monachae (Kr.) female has been expanded.*

Key words: *Agria mamillata* (Pand.) – *Agria monachae* (Kr.) – *Agria punctata* R.-D. – Sarcophagidae – *Agria* R.-D.

While working on the key for determining the Sarcophagidae of Poland I was faced with difficulties in distinguishing females of the genus *Agria* R.-D. Up till now there has been no key to determine females included into this genus. The descriptions of some species belonging there were insufficient and inadequately illustrated. Later, attempts were made at distinguishing these flies but never were all Holarctic species taken into consideration. There were different solutions to the question and the same characteristics were illustrated in different ways. This can easily be traced while comparing figures by Karazeeva (1964), Artamanov (1981), Verves (1982) and Pape (1987).

The female terminalia of the genus *Agria* R.-D. seem to be somewhat variable. The number of setae on the epiproct is rather constant and at present seems to be the best character for the definitive separation of the species. Receptacula seminis show a fairly small variability within the species. In my opinion the shape of receptacula seminis is also a good characteristic for distinguishing females. The present key has been based mainly on the bristleness of the epiproct and on the shape of receptacula seminis.

Diptera of the genus *Agria* R.-D. are parasitoids of pests of crop plants. It could also be useful to know the preimaginal stages of their development. Therefore is why I provide keys for identification of puparia and third instar larvae.

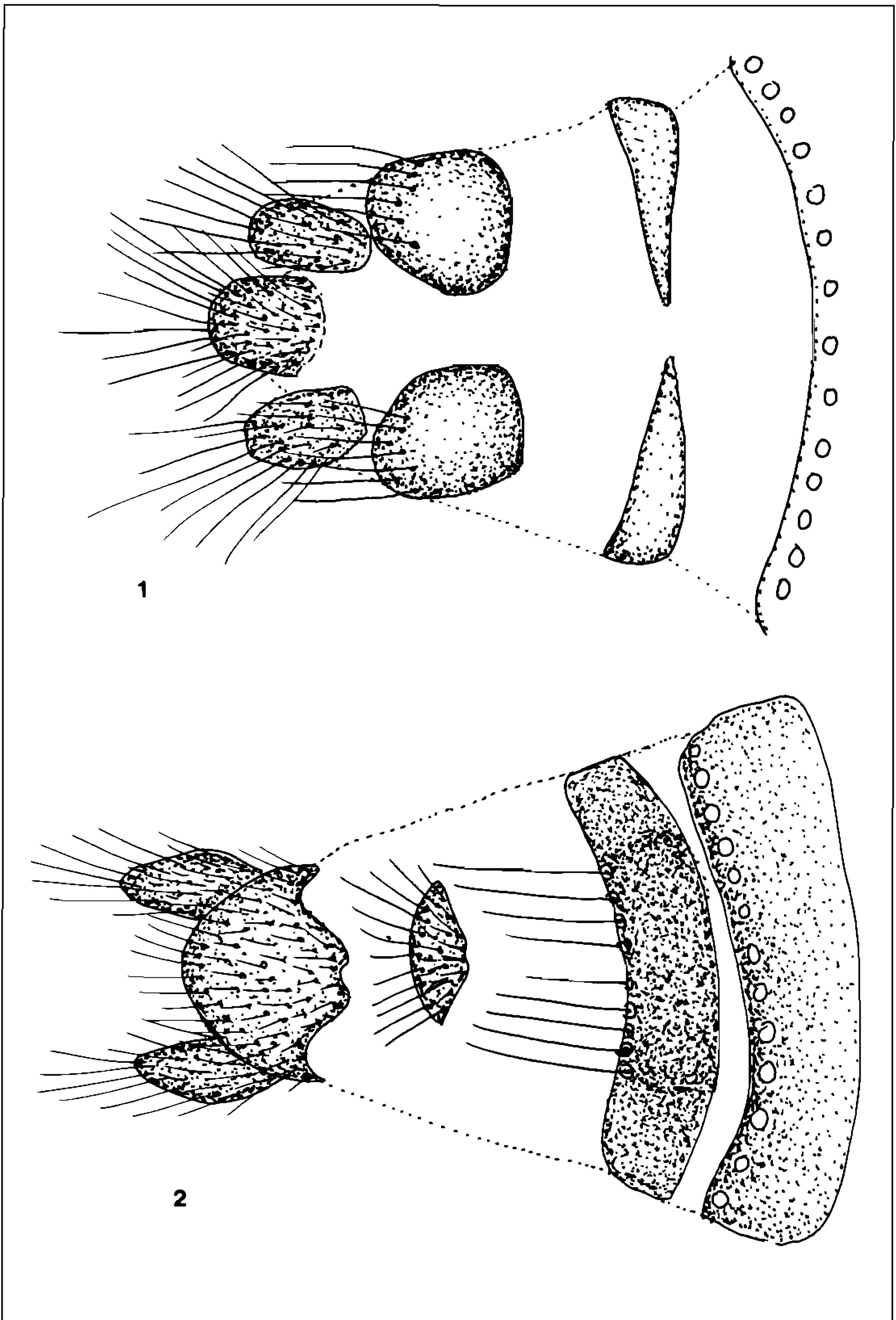
The present paper is based mainly on material collected in Poland and kept in the collections of the Institute of Zoology PAS in

Warsaw. Data on the material were published in a paper by Draber-Mońko (1973). Some part of the material was bred on *Hyponomeuta evonymella* L. and *Dendrolimus pini* L. The females of *A. monachae* (Kr.) were lent to me by Dr Yu. G. Verves to whom I am greatly indebted for this.

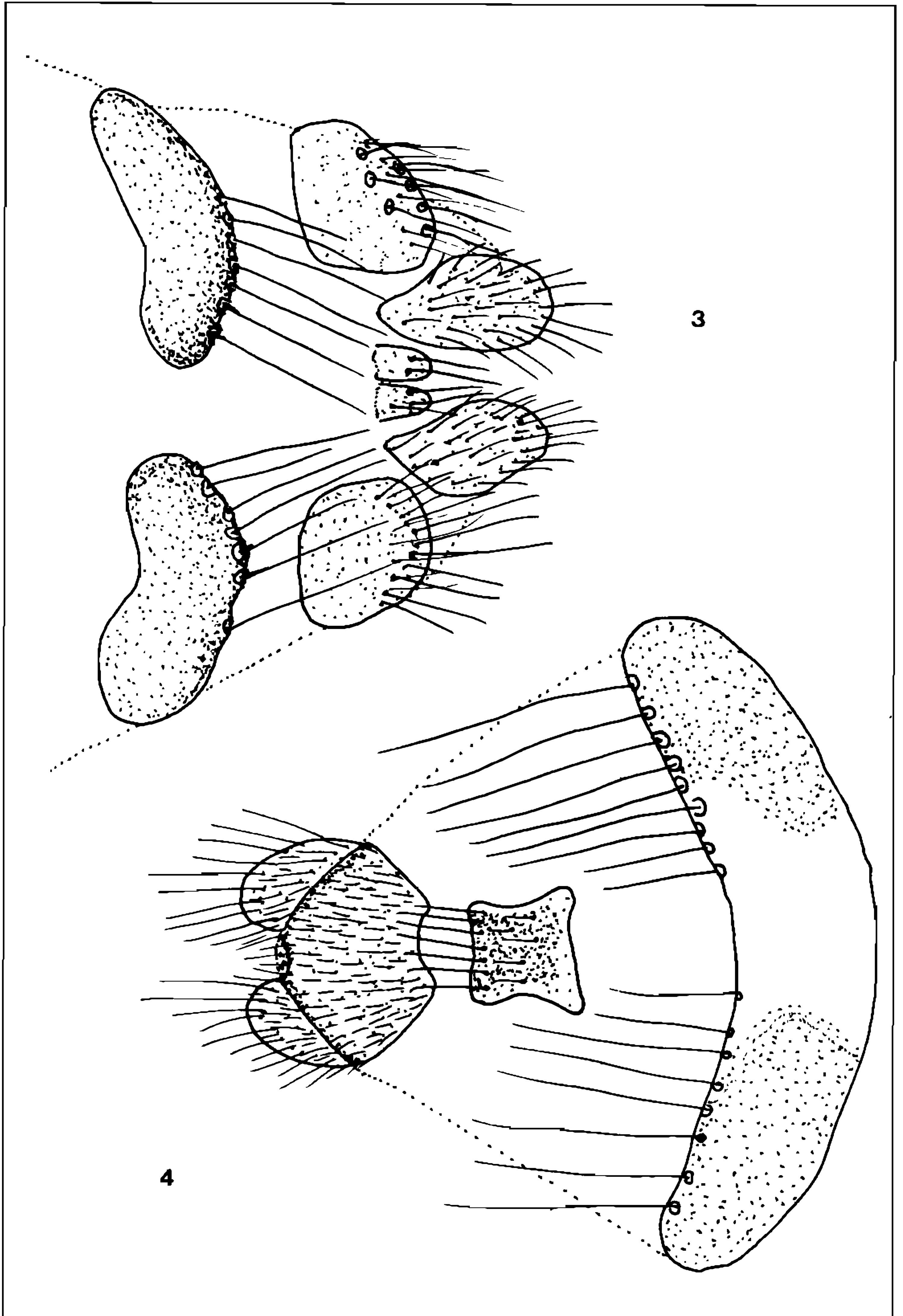
This paper is dedicated to Professor Hugo de Souza Lopes, a outstanding dipterist, on the occasion of his 80th birthday.

### KEY TO THE DETERMINATION OF FEMALES OF THE GENUS *AGRIA* R.-D

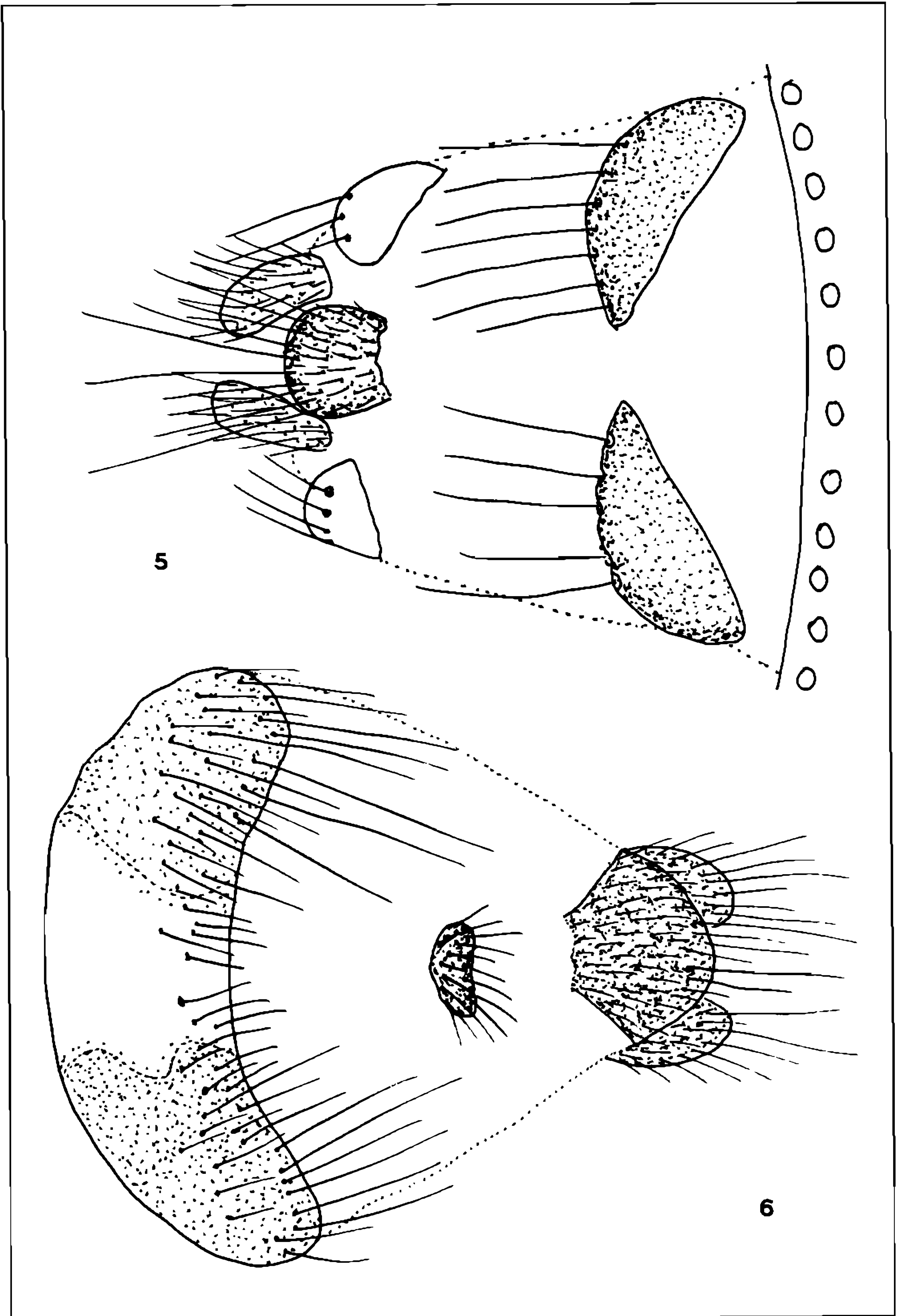
1. Basicosta russet. Base and the anterior margin of the wing smoky-coloured. Terminalia as in Fig. 1, 2. Tergite VIII very big and bright red. . . . . *A. monachae* (Kr.)  
– Basicosta pale yellow. Wings transparent, pale. Terminalia varied in shape. Tergite VIII small or greatly reduced, russet or reddish-russet . . . . . 2
2. Epiproct (Tergite IX) divided into two plates with 2-3 long setae on each part (Fig. 3). Receptacula seminis elongated (Fig. 8) . . . . .  
. . . . . *A. mamillata* (Pand.)  
– Epiproct (Tergite IX) not divided, with several long setae. Receptacula seminis oval or spherical . . . . . 3
3. Sternite IX fan-shaped (Fig. 6). Tergite IX with the posterior margin flat or with a cavity in the middle (Fig. 5). Receptacula seminis spherical as in Fig. 7 . . . . .  
. . . . . *A. punctata* R.-D.  
– Sternite IX elongated. Tergite IX with a rounded posterior margin. Receptacula seminis oval. A species occurring in North America. . . . . *A. housei* Shewell



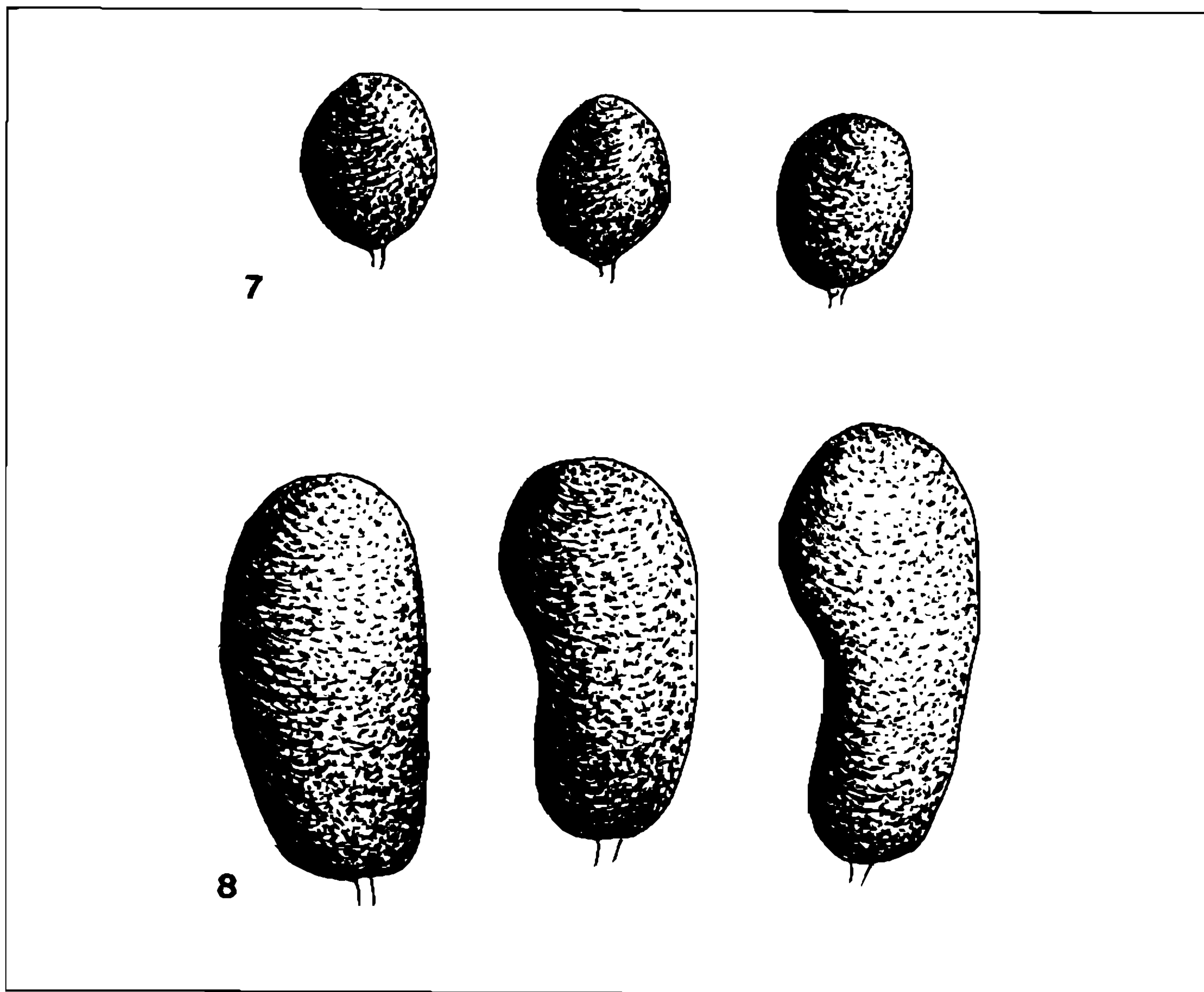
*Agria monachae* (Kr.), female terminalia. Fig. 1: dorsal view. Fig. 2: ventral view.



*Agria mamillata* (Pand.), female terminalia. Fig. 3: dorsal view. Fig. 4: ventral view.



*Agria punctata* R.-D., female terminalia. Fig. 5: dorsal view. Fig. 6: ventral view.



Receptacula seminis. Fig. 7: *A. punctata* R.-D. Fig. 8: *A. mamillata* (Pand.).

EXPANDED DESCRIPTION OF THE FEMALE  
*AGRIA MONACHAE* (KRAMER)

Body length 5-7 mm. The width of frons at vertex is one-third of the width of the head. Frontal stripe black, with parallel edges, 2.5-3 times as wide as orbital plate. 7-9 pairs of frontal (fr) bristles. Two pairs of strong, slanting orbital bristles (orb). External vertical setae (vte) distinct, almost twice as long as post-ocular setae (poc) and almost thrice shorter than internal ones (vti). Parafacial plate narrow, with silver polinosity, its width almost the same as half of the width of the third segment of the antennae. Gena constitute nearly one-fourth of the height of the eye. Antennae black, distal part of the second segment slightly russet. Facial ridges and carena facialis black. Abdomen dark coloured. Tergite I + II black, practically devoid of pollinosity. The pattern of black spots and pollinosity on the other tergites

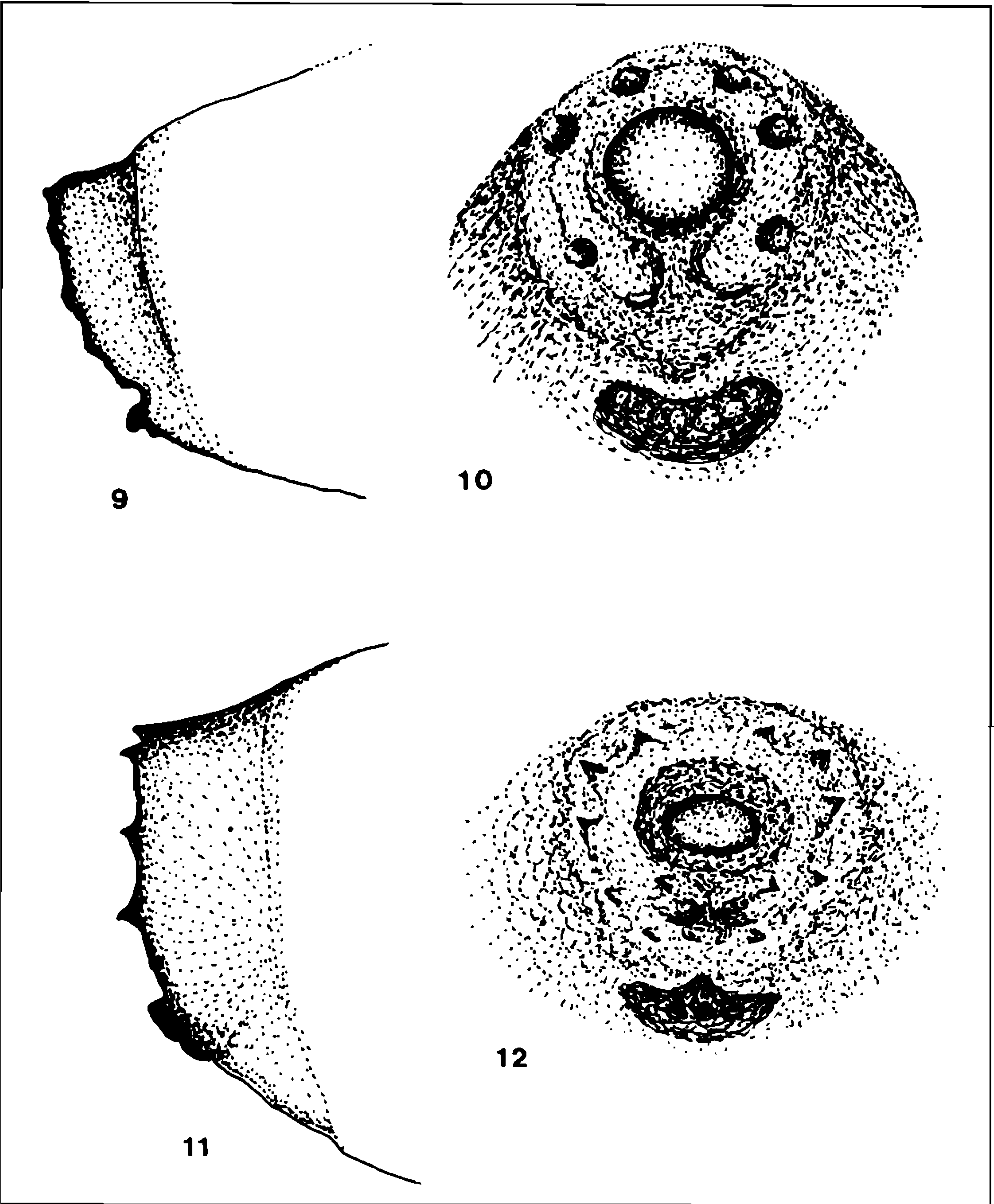
similar to that in representatives of the genus *Brachicoma* Rond. Tergite VI black, short with 12-30 strong setae. Tergite VII very short, reddish, consists of two plates with few bristles 1-3, occasionally with none. According to Artamanov: "Tergite VIII big, convex, bright red with 6-7 setae, clearly visible (easy to notice) against the background of the other, black sclerites". Tergite IX (epiproct) with a rounded posterior edge, with numerous strong setae. Sternite VII elongated. Sternites VIII and IX have the shape of a fan. The other characters as in the male (Kurahashi, 1975; Verves, 1982).

Material studied: USSR, Khabarovskiy Kray, the Ditshun River. 30.vii.1980, leg. Ozjerov.

KEY TO THE DETERMINATION OF PUPARIA

1. Puparium black-russet. In the profile last segment situated obliquely in relation to the





Puparia. Fig. 9: *A. mamillata* (Pand.), lateral view. Fig. 10: idem, posterior end. Fig. 11: *A. punctata* R.-D., lateral view. Fig. 12: idem, posterior end.

body axis (Fig. 9). Around the round opening leading to posterior tracheae there are six fairly wide, big tubercles with flattened apices (Fig. 10).

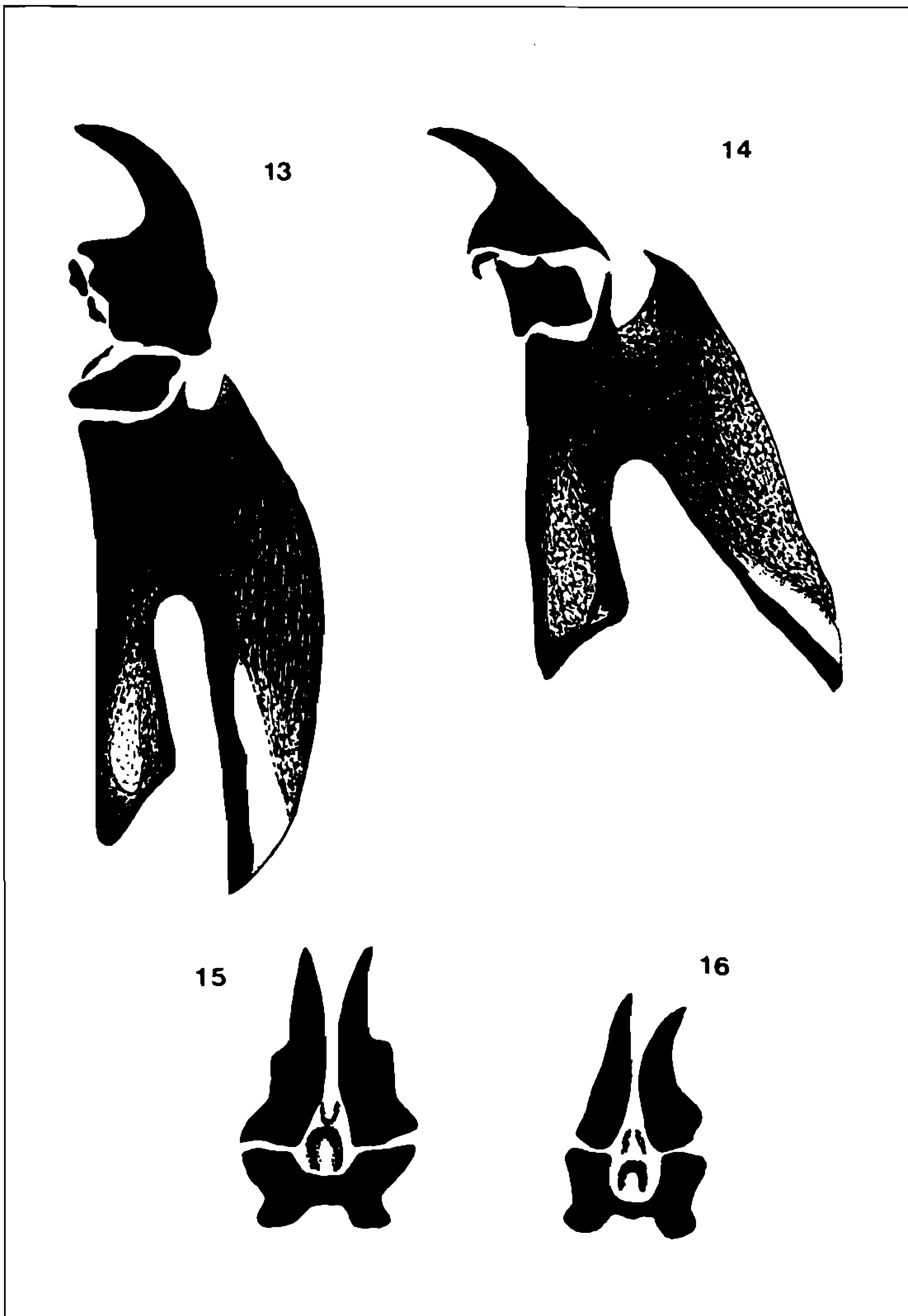
Body length 7-9 mm. Anterior trachea consists of 11-18 parts. Anal plate oval . . . . .

. . . . . *A. mamillata* (Pand.)

– Puparium russet. In the profile last segment

situated perpendicularly to the body axis (Fig. 11). Around the oval opening leading to posterior tracheae there are twelve medium size tubercles with pointed apices (Fig. 12).

Body length 5-7 mm. Anterior trachea consists of 12-16 parts. Anal plate crescent-shaped (Fig. 12) . . . . . *A. punctata* R.-D.



Cephalopharyngeal skeleton, third instar larvae. Fig. 13: *A. mamillata* (Pand.), lateral. Fig. 14: *A. punctata* R.-D., lateral. Mouthhook and intermediate sclerite, dorsal view. Fig. 15: *A. mamillata* (Pand.). Fig. 16: *A. punctata* R.-D.

KEY TO THE DETERMINATION OF THIRD  
INSTAR LARVAE

1. Mouthhook wide in its anterior part, and with a small spine at the base of its posterior part (Fig. 13). Intermediate sclerite with slanting sides at the dorsal (Fig. 15) . . . . .  
 . . . . . *A. mamillata* (Pand.)  
 Mouthhook narrow in its anterior part, and with a big sharp spine at the base of its posterior part (Fig. 14). Intermediate sclerite with parallel sides at the dorsal (Fig. 16) . . . . .  
 . . . . . *A. punctata* R.-D.

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