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Chrysopidae from Equatorial Guinea (Neuroptera, Chrysopidae)

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Abstract

12 species of Chrysopidae collected 1986 and 1987 in Equatorial Guinea (Bioco Island and Rio Muni) are discussed and for some of them new data on their morphology, ecology and distribution are given. *Ankylopteryx tristicta insularis* NAVAS, 1922 is relegated to synonymy with *Ankylopteryx tristicta* NAVAS, 1910. A new combination is proposed: *Chrysopa (Anisochrysa) luaboensis* TJEDER, 1966 has to be transferred to *Mallada*. A larva, probably belonging to a species of *Mallada*, is described.

Zusammenfassung

12 Arten aus der Familie Chrysopidae, die in den Jahren 1986 und 1987 in Äquatorial Guinea (Bioco, Rio Muni) gesammelt wurden, werden besprochen. Für einige davon werden neue Angaben zur Morphologie, Ökologie und Verbreitung gemacht. *Ankylopteryx tristicta insularis* NAVAS, 1922 wird als Synonym von *Ankylopteryx tristicta* NAVAS, 1910 betrachtet. Eine neue Kombination wird vorgeschlagen: *Chrysopa (Anisochrysa) luaboensis* TJEDER, 1966 wird in die Gattung *Mallada* einbezogen. Eine Larve, vermutlich zu einer Art der Gattung *Mallada* gehörend, wird beschrieben.

Introduction

Little is known of the Chrysopidae of Equatorial Guinea and the nearby countries. NAVAS described from Fernando Poo (now Bioco) *Chrysopa conradina* (1910), *Chrysopa pooana* and *Ankylopteryx tristicta* var. *insularis* (1922) and *Musola impar* (1929). Contributions to the fauna of the country were made by TJEDER (1966), BARNARD & BROOKS (1984) and HÖLZEL & OHM (1991). Other records of Chrysopidae in this and the neighbouring Central-african countries - mostly given by NAVAS - are rather unreliable and are only cited when the material could be examined.

On the basis of collections made by the second author in Bioco Island in August, 1986 and in Rio Muni in August, 1987 12 species are recorded and new data on their morphology, ecology and distribution are provided. The material, dry and pinned, is deposited in the collections of the authors.

The localities where the specimens were collected are given with the altitude and coordinates:

Aleña, 20 m, 3.31 N / 8.36 E; Bahia de Venus, 0 m, 3.46 N / 8.43 E; Baney, 385 m, 3.42 N / 8.55 E; Batoicopo, 120 m, 3.38 N / 8.38 E; Dugan, 15 m, 3.28 N / 8.29 E; Malabo, 10 m, 3.45 N / 8.47 E; Moreno, 720 m, 3.25 N / 8.42 E; Pista del Pico Basilé, 1400 m, 3.37 N / 8.48 E; Rébola, 400 m, 3.41 N / 8.51 E; Sampaca, 70 m, 3.44 N / 8.45 E. - Rio Muni: Alepyenkeng, 220 m, 1.50 N / 10.15 E; Bibobindoc, 560 m, 1.47 N / 10.20 E; - Biconete, 120 m, 1.55 N / 10.02 E; - Bingocom, 100 , 1.38 N / 9.52 E; - Bonobono, 60 m, 1.10 N / 9.38 E; - Evesasi, 50 m, 1.23 N / 9.32 E; - Ncoaton, 90 m, 5.05 N / 9.55 E ; - Ncumesong, 670 m, 1.34 N / 10.22 E; - Nfonga, 50 m, 1.52 N / 9.55 E; - Nomenan, 120 m, 1.41 N / 9.58 E; - Ntobo, 40 m, 1.50 N / 9.45 E; - Punta Eviondo, 0 m, 1.54 N / 9.48 E.

Abbreviations: m = male, f = female.

Collected species

Italochrysa similis TJEDER, 1966

Italochrysa similis TJEDER, 1966: 313 (description, figs of male and female genitalia).

Material: Rio Muni: 3 m, 4 f, Punta Eviondo, 9.VIII.1987 on *Panicum sulcatum*; 2 m, Ntobo, 13.VIII.1987 on *Oncocalamus manii*.

The specimens agree very well with TJEDER's description; so far, no records have been published from countries north of Southern Africa.

Distribution: South Africa (Transvaal, Cape Province), Lesotho (TJEDER 1966); Zaire (unpubl.), Rio Muni.

***Dysochrysa furcata* TJEDER, 1966**

Dysochrysa furcata TJEDER, 1966: 338 (description, figs of male and female genitalia).

Material: Bioco: 1 m, Malabo, 3.VIII.1986 at light.

This is the first record of this species from a country outside of South Africa.

***Chrysocerca nigrivultuosa* (KIMMINS, 1955)**

Chrysopa nigrivultuosa KIMMINS, 1955: 6 (description, figs of male genitalia).

Material: Rio Muni: 2 m, Nomenan, 19.VIII.1987 in wet woods.

The species was described from Uganda, and, so far, no other records have been published.

***Ceratochrysa antica* (WALKER, 1853)**

Chrysopa antica WALKER, 1853: 270.

Chrysopa pooana NAVAS, 1922: 109; BARNARD & BROOKS 1984: 366 (syn.).

Musola impar NAVAS, 1929: 368; BARNARD & BROOKS 1990: 196 (syn.).

Ceratochrysa antica (WALKER, 1853): BARNARD & BROOKS 1984: 366 (redescription, figs of male and female genitalia); HÖLZEL 1990: 21 (distribution map).

Chrysopa (Ceratochrysa) atrostrata TJEDER, 1966: 358; BROOKS 1986: 83 (syn.).

Material: Bioco: 1 m, Malabo, 2.VIII.1986; 1 m, 1 f, Bahia de Venus, 3.VIII.1986 on *Rhizophora racemosa*; 1 f, Baney, 5.VIII.1986; 1 m, 1 f, Sampaca, 7. and 15.VIII.1986; 1 f, Dugan, 11.VIII.1986 on *T. cacao*.

NAVAS (1922) recorded 1 ex. from Santa Isabel (as *Chrysopa pooana*) and (1929) 2 exs from Musola (as *Musola impar*). 1 female from Dugan represents the form *atrostrata* (meso- and metanotum and pterostigma mainly black) which has been synonymized with *antica* by BROOKS (1986).

Distribution: Widespread over the Afrotropical Region from Mali and Guinea to Madagascar and the Mascarenes (HÖLZEL 1990).

***Mallada sjoestedti* (VAN DER WEELE, 1909)**

Chrysopa sjoestedti VAN DER WEELE, 1909: 19.

Chrysopa (Anisochrysa) sjoestedti VAN DER WEELE: TJEDER 1966: 421 (redescription, figs of male and female genitalia).

Mallada sjoestedti (VAN DER WEELE): HÖLZEL & OHM 1991: 51 (distribution map).

Material: Rio Muni: 1 m, Nfonga, 11.VIII.1987. - Bioco: 1 m, 1 f, Sampaca, 15.VIII.1986.

This seems to be one of the most common lace-wings of the region; it has been collected in most places where lace-wings collectors have been present.

Distribution: Widespread in Eastern Africa from Natal to Ethiopia, in West-Africa from Senegal, Gambia, Guinea Bissau, Bioco and Rio Muni.

***Mallada luaboensis* (TJEDER, 1966) comb. nov.**

Chrysopa (Anisochrysa) luaboensis TJEDER, 1966: 457 (description, figs of male genitalia).

Material: Bioco: 1 m, 1 f, Malabo, 5. and 8.VIII.1986 at light.

The specimens agree very well with TJEDER's description; so far, only the types from Mozambik have been recorded.

***Chrysoperla congrua* (WALKER, 1853)**

Chrysopa congrua WALKER, 1853: 238.

Chrysopa (Chrysoperla) congrua WALKER: TJEDER 1966: 392 (redescription, figs of male and female genitalia).

Chrysoperla congrua (WALKER): HÖLZEL & OHM 1991: 55 (distribution map).

Material: Rio Muni: 1 m, Nfonga, 11.VIII.1987; 1 m, 3 f, Punta Eviondo, 9.VIII.1987. - Bioco: 1 m, Malabo, 2.VIII.1986; 1 f, Rébola, 4.VIII.1986; 1 f, Moreno, 12.VIII.1986; (1 ex. on *Coffea liberica*, 3 exs on *Panicum sulcatum*, 1 ex. on *T. cacao*, 2 exs on *Elaeis guineensis*).

Distribution: Widespread over the Afrotropical Region from Sierra Leone to Madagascar and the Comoro- and Mascarene-Islands.

***Brinckochrysa stenoptera* (NAVAS, 1910)**

Chrysopa stenoptera NAVAS, 1910: 46.

Chrysopa (Brinckochrysa) stenoptera (NAVAS): TJEDER 1966: 368 (redescription, figs of male and female genitalia).

Brinckochrysa stenoptera (NAVAS): MONSERRAT 1977: 275; HÖLZEL 1987: 265; HÖLZEL & OHM 1991: 56.

Material: Rio Muni: 3 m, Punta Eviondo, 9.VIII.1987 on *Panicum sulcatum*.

Distribution: Widespread over the region, records from Senegal, Gambia, Nigeria, Kenya, Somalia, Mozambik, Zimbabwe, Namibia and South Africa (Transvaal, Natal, Cape Province).

***Glenochrysa conradina* (NAVAS, 1910)**

Chrysopa conradina NAVAS, 1910:42.

Glenochrysa conradina (NAVAS): KIMMINS 1940: 449.

Not in present material. NAVAS described the species from "Fernando Poo" (= Bioco).

Distribution: Equatorial Guinea (Bioco), Nigeria, Senegal.

***Ankylopteryx tristicta* NAVAS, 1910**

Ankylopteryx tristicta NAVAS, 1910: 50; SEMERIA 1982: 119 (redescription, figs of male genitalia).

Ankylopteryx tristicta insularis NAVAS, 1922: 111 - syn. nov.

Material: Rio Muni: 1 m, Ncumesong, 14.VIII.1987; 1 m, Ncoaton, 14.VIII.1987; 1 f, Biconete, 12.VIII.1987. - Bioco: 1 m, Rébola, 4.VIII.1986; 2 m, 1 f, Malabo, 5.VIII.1986; 2 m, Pista del Pico Basilé, 6.VIII.1986; 2 f, Sampaca, 7.VIII.1986; 1 m, Dugan, 11.VIII.1987; (3 exs on *Theobroma cacao*, 1 ex. at light).

A. tristicta was described from Congo (Brazzaville). The type female, in coll. MNHN Paris, could be checked. Later NAVAS (1922) described *A. tristicta insularis* from Bioco Island. This specimen has been checked too; it shows no remarkable differences to *A. tristicta* from Congo and is therefore regarded as synonymous. SEMERIA (1982) described a series of 10 specimens from Cameroon. As usual in most *Ankylopteryx*- species the dark spots on thorax are not reliable for identification; very often they may not be present. Also the markings of the wings represent rather unreliable characters as the present series from Bioco and Rio Muni demonstrate. Rather constant features are to be found in the male genitalia which are figured as follows: Apex of male abdomen fig.1, gonarcus with entoprocessus and pseudopenis figs 3 and 4.

Distribution: Congo, Cameroon, Rio Muni, Bioco.

***Ankylopteryx splendidissima* GERSTAECKER, 1885**

Ankylopteryx splendidissima GERSTAECKER, 1885: 45.

Material: Rio Muni: 6 m, 1 f, Punta Eviondo, 9.VIII.1987 on *Elaeis guineensis*; 1 f, Bonobono, 17.VIII.1987; Bioco: 5 m, Sampaca, 7. and 15.VIII.1986 on *Theobroma cacao*; 2 m, 6 f, Aleña, 11.VIII.1986 on *T. cacao*.

As the genital structures of this species, so far, have not been described these are figured as follows: Apex of male abdomen fig.2, gonarcus with entoprocessus and pseudopenis figs 5 and 6.

Distribution: Cameroon, Nigeria (unpubl.), Rio Muni, Bioco.

***Parankylopteryx polysticta* (NAVAS, 1910)**

Ankylopteryx polysticta NAVAS, 1910: 48.

Ankylopteryx feana NAVAS, 1929: 370; HÖLZEL & OHM 1991: 59 (syn.).

Ankylopteryx (Parankylopteryx) neavei NAVAS: TJEDER 1966: 509 (redescription, figs of male genitalia); HÖLZEL & OHM 1991: 59 (syn.).

Parankylopteryx polysticta (NAVAS): HÖLZEL & OHM 1991: 59.

Material: Rio Muni: 2 m, 1 f, Bibobindoc, 14.VIII.1987; 2 m, Ncumesong, 14.VIII.1987; 1 f, Evesasi, 17.VIII.1987; 1 f, Bingocom, 19.VIII.1987. - Bioco: 1 m, Rébola, 4.VIII.1986; 1 without abdomen, Batoicopo, 7.VIII.1986; 1 f, Aleña, 11.VIII.1986; (2 exs on *Theobroma cacao*, the others in very wet woods).

Distribution: Records, so far, from Uganda, Kenya, Zambia, Zimbabwe, Somalia, Zaire (unpubl.), South Africa (Cape Province, Transvaal), Rio Muni, Bioco.

***Parankylopteryx tenuis* HÖLZEL, STELZL & OHM, 1991**

Parankylopteryx tenuis HÖLZEL, STELZL & OHM, 1991: 68 (description, figs of male and female genitalia).

Material: Rio Muni: 1 f, Alepyenkeng, 12.VIII.1987; 1 m, Bibobindoc, 14.VIII.1987 on *Theobroma cacao*. - Bioco: 1 f, Sampaca, 7.VIII.1986; 1 m, Dugan, 11.VIII.1986.

Distribution: Senegal, Gambia, Rio Muni, Bioco.

Chrysopidae spec., larva

Two specimens collected on *Theobroma cacao* in Bioco, Sampaca, 15.VIII.1986.

Description: Both specimens covered themselves with vegetal debris that the larvae used to make a shell formation, circular, thin, slightly convex and fixed to the larva with the dorsal setae of the abdomen (figs 7, 8). General colouration yellowish with brown, dark shadows on head (fig.10) and more light dots on tergites of the thorax (fig.9). Antennae with scapus pale brown, flagellum darker in the basal half and yellowish in the distal half. Legs pale brown, femora darker, pretarsus dark brown with large brown arolium. Chaetotaxy hyaline, darker in the lateral tubercles of the four first abdominal segments, disposition as in figs 9-13. Lateral tubercles of pro- meso- and metathorax with 6, 4 and 4 large serrate setae (fig.13). The four first abdominal segments with many dorsal hooked setae (fig.12), in the other abdominal segments only long serrate setae as shown in fig.11.

Most probably the larvae belong to a species of the genus *Mallada* which cover the whole body with debris. Larvae belonging to the genera *Ceratochrysa*, *Brinckochrysa* and *Chrysoperla* never carry debris, those of *Ankylopteryx* and *Parankylopteryx* cover only parts of the body. Larvae of the genus *Dysochrysa* are, so far, unknown.

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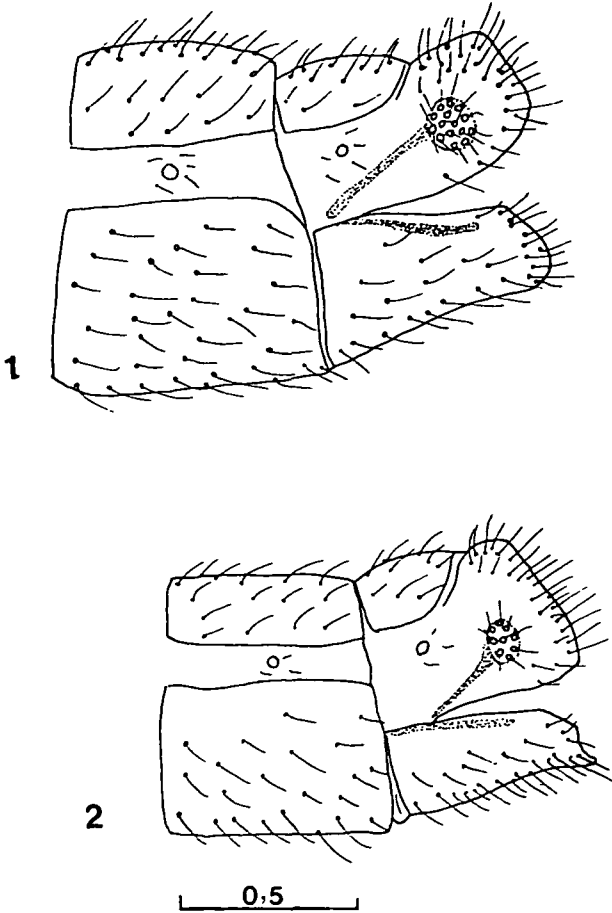


Fig. 1: *Ankylopteryx tristicta* NAVAS, 1910, apex of male abdomen laterally.

Fig. 2: *Ankylopteryx splendidissima* GERSTAECKER, 1885, apex of male abdomen laterally.

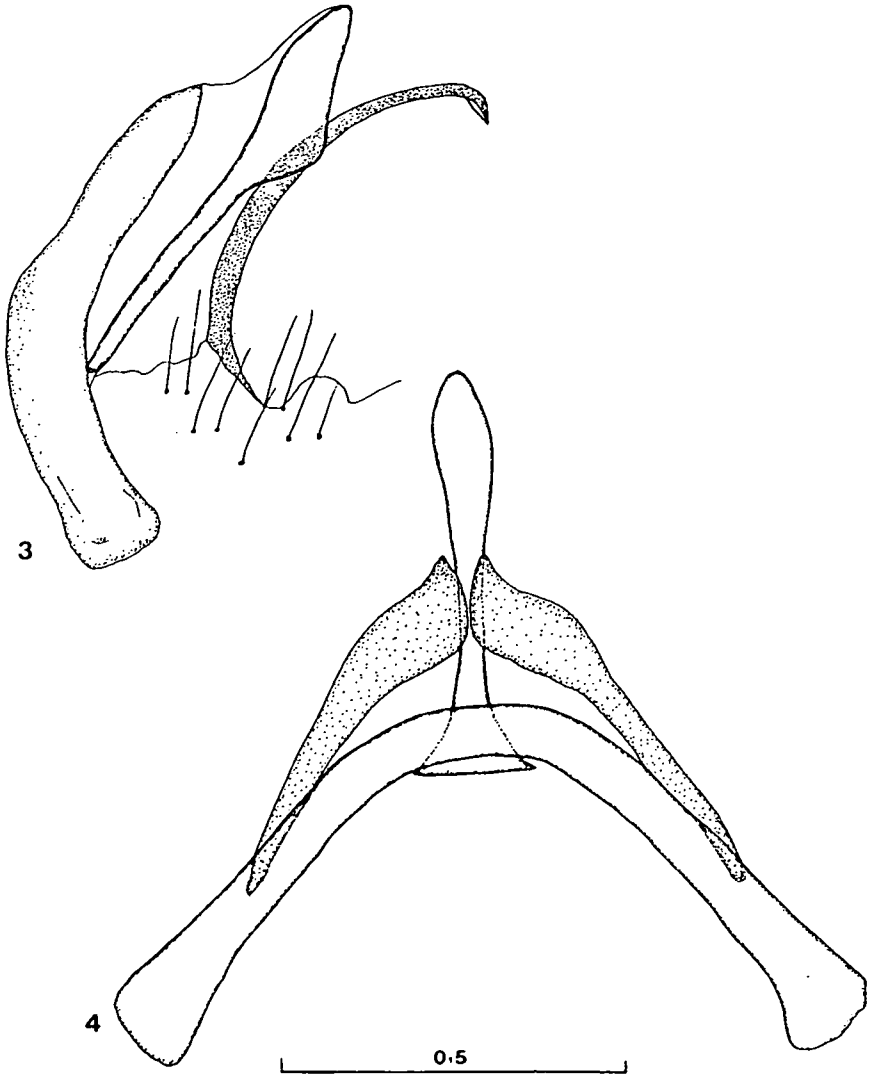


Fig. 3-4: *Ankylopteryx tristicta* NAVAS, 1910 - 3) gonarcus with arcessus and entoprocessus laterally; 4) same dorsally.

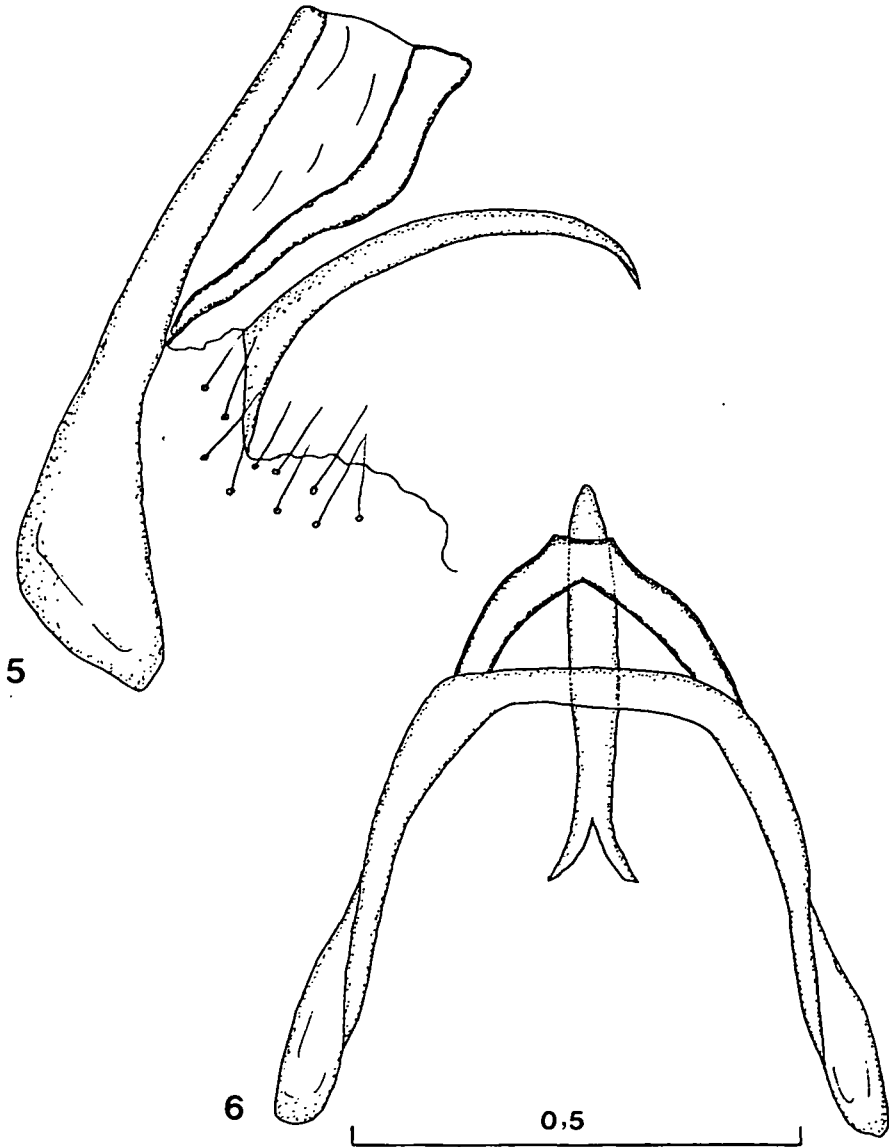


Fig. 5-6: *Ankylopteryx splendidissima* GERSTAECKER, 1885 - 5) gonarcus with arcessus and entoprocessus laterally; 6 same dorsally.

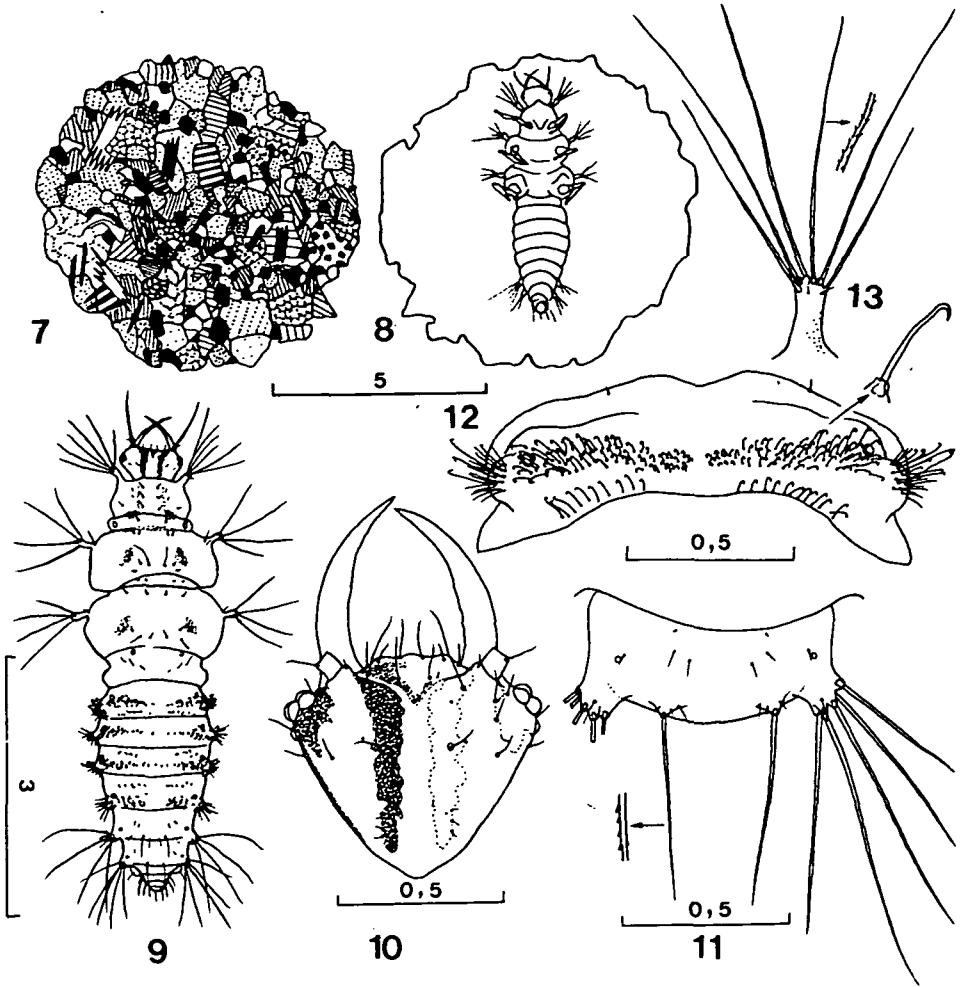


Fig. 7-13: Larva of *Mallada* spec. - 7) dorsal aspect of the shell; 8) ventral view with larva; 9) dorsal general aspect; 10) head, pigmentation (left side) and chaetotaxy (right side), dorsal view; 11) setae of 7th abdominal segment, dorsal view, a part of a seta enlarged; 12) setae of the first abdominal segment, dorsal view, a seta enlarged; 13) right tubercle of pronotum, dorsal view, a part of a seta enlarged.

Scale in mm.

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