

## Three New Cestodes from Reptiles Collected on Amami-oshima Island, Japan

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### Abstract

Three and one tapeworm specimens were obtained by Dr. Alain Chabaud and Dr. Odile Bain from the small intestine of one lizard, *Lygosoma (Ateuchosaurus) pellopleurum* and one gecko, *Gehyra mutilata* respectively, that they collected on Amami-oshima Island on October 13, 1992. Two specimens from the lizard resemble the members of the genus *Megacapsula* but markedly differ from them in that uterus finally breaks up into a few egg capsules, which are arranged in the posterior part between both longitudinal osmoregulatory canals of proglottid, so they were assigned to *Paucicapsula amamiensis* n. g., n. sp. The other specimen from the lizard was assigned to the new species *Oochoristica okinawaensis* n. sp. which differs from other closely related species of the genus in the smaller number of testis. The specimen from the gecko was assigned to *Oochoristica japonensis* n. sp. which differs from the most closely related species *O. javaensis* in the shape of proglottid and neck, the size of sucker and the number of testis.

**Key words:** *Paucicapsula amamiensis* n. g., n. sp., *Oochoristica okinawaensis* n. sp., *Oochoristica japonensis* n. sp., *Lygosoma (Ateuchosaurus) pellopleurum*, *Gehyra mutilata*, morphology

### Introduction

Family Anoplocephalidae Cholodkovsky, 1902, subfamily Inermicapsiferinae Lopez-Neyra, 1943 contains five genera, of which only the genus *Megacapsula* Wahid, 1961 consists of parasites of lizards from Rhodesia. In Japan, Hasegawa (1990) recorded *Oochoristica chinensis* from *Gehyra mutilata* on Amami-oshima Island. This paper deals with the morphological description of the new species *Paucicapsula amamiensis* n. g., n. sp. and *Oochoristica okinawaensis* n. sp. from one lizard and *O. japonensis* n. sp. from one gecko collected on Amami-oshima Island.

### Materials and Methods

Three and one tapeworm specimens were obtained by Dr. Alain Chabaud and Dr. Odile Bain from the small intestine of one lizard, *Lygosoma (Ateuchosaurus) pellopleurum* and one gecko *Gehyra mutilata* respectively, that they collected on Amami-oshima Island on October 13, 1992.

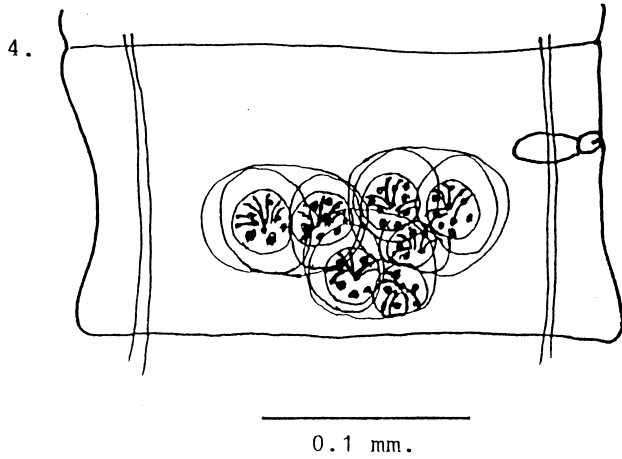
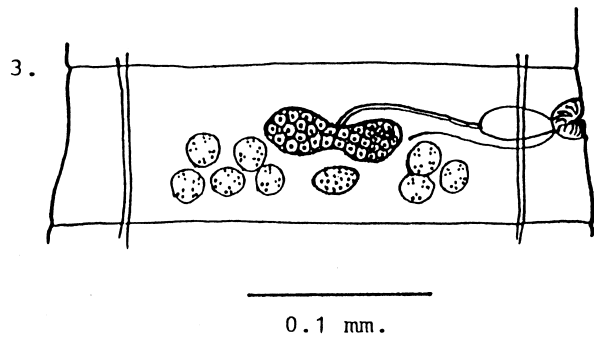
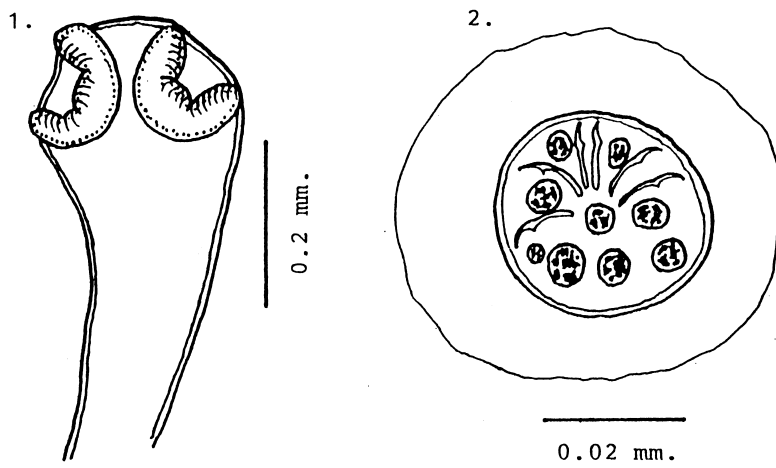
The specimens preserved in 90% alcohol were sent to the author by Dr. Chabaud on October 20, 1992. The specimens were washed in running water for 24 hours and then fixed in 70% alcohol, after pressed between two slides. The fixed specimens were stained with Heidenhain's hematoxylin, dehydrated in an alcohol series, cleared in xylene, and mounted with Canada balsam. All measurement are given in millimeters.

### Description of species

Inermicapsiferinae Lopez-Neyra, 1943  
*Paucicapsula amamiensis* n. g., n. sp.  
(Figs. 1–4)

Strobila 15.5 in length, 0.25 in maximum width; most proglottids wider than long, but some almost square, acraspedote. Scolex 0.25 long by 0.25 wide. Sucker rounded, 0.12 in diameter. Neck 1.2 long by 0.12 wide. Genital pores irregularly alternate, located at anterior one-third of proglottid margin.

Mature proglottid 0.12 long by 0.2 wide. Genital atrium muscular, 0.020 by 0.023. Cirrus pouch cylindrical, 0.063 long by 0.03 wide, crossing longi-



Figs. 1-4 *Paucicapsula amamiensis* n. g., n. sp.  
 Fig. 1 Scolex  
 Fig. 2 Egg  
 Fig. 3 Mature proglottid  
 Fig. 4 Gravid proglottid

tudinal osmoregulatory canal. Vas deferens located near midline, not coiled. Testes rounded, 7–8 in number, 0.015–0.018 in diameter, divided in two groups: 3 poral and 4–5 aporal, on each side of proglottid, posterior to ovary. Vagina opening posterior to male genital opening. Ovary transversely elongate, bilobate, situated in midline of proglottid, 0.075–0.080 by 0.063 in size. Vitelline gland ovoid, 0.02 by 0.013 in size, just behind ovary.

Gravid proglottid almost square, 0.25 long by 0.25 wide; in early stage, the uterus appears in the posterior part of proglottid as a transverse sac which finally breaks up into 3–5 egg capsules. These capsules situated in posterior part and between both longitudinal osmoregulatory canals; each capsule containing two or three eggs. Eggs rounded, 0.05 in diameter. Onchosphere 0.020–0.025 in diameter, containing several large granules with a diameter of 0.005–0.007; embryonic hooks 0.015 long.

Host: *Lygosoma (Ateuchosaurus) pellopleurum*, (Japanese name: Heriguro-himetokage)

Habitat: Small intestine

Locality and date: Amami-oshima Island, October 13, 1992

Type specimens: Holotype and paratype deposited in Meguro Parasitological Museum, MPM Col. No. 19577

#### *Paucicapsula* n. g.

Diagnosis: Family Anoplocephalidae Cholodkovsky, 1902, subfamily Inermicapsiferinae Lopez-Neyra, 1943. Medium size tapeworm. Genital pores irregularly alternating. Cirrus pouch crossing poral longitudinal osmoregulatory canal. Gravid uterus breaking down into a few egg capsules containing a few eggs each, located in posterior half of proglottid between both longitudinal osmoregulatory canals. Onchospheres with large granules. Parasites of lizards.

Type species: *Paucicapsula amamiensis* n. sp.

### Discussion

Family Anoplocephalidae Cholodkovsky, 1902, subfamily Inermicapsiferinae Lopez-Neyra, 1943 consists of five genera: *Thysanotaenia* Beddard, 1911, *Megacapsula* Wahid, 1961, *Metacapsifer*

Spasskii, 1951, *Inermicapsifer* Janicki, 1910, and *Pericapsifer* Spasskii, 1951 (Schmidt, 1986). The genus *Megacapsula* Wahid, 1961 is the single genus consisting of lizard parasites with egg capsules each containing several eggs. Wahid (1961) described that the character of the uterus is important in the taxonomy of different groups of cestode. In the genus *Megacapsula* the uterus appears in the anterior part of proglottid as a transverse sac which finally breaks up into great number egg capsules. These capsules are located in the whole parenchyma of proglottid, each containing one to ten eggs. However in the present species the uterus appears in the posterior half of proglottid as a transverse sac and finally breaks up into a few egg capsules. These capsules are located in the posterior half of proglottid between both longitudinal osmoregulatory canals, each containing two to three eggs. Consequently the present species should be assigned to the new genus and species, *Paucicapsule amamiensis* n. g., n. sp.

*Oochoristica* Lühe, 1898

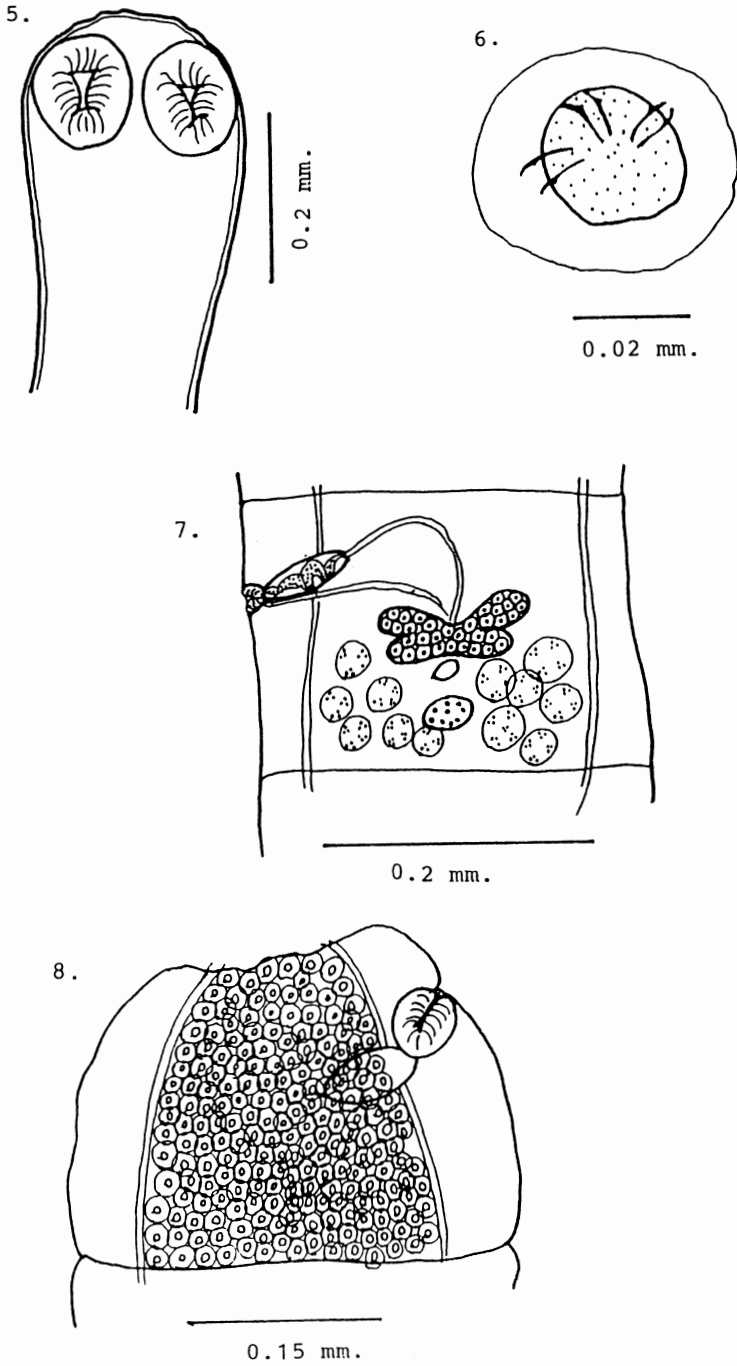
*Oochoristica okinawaensis* n. sp.

(Figs. 5–8)

Strobila 6.2 in length, 0.37 in maximum width. Proglottids wider than long, acraspedote. Scolex 0.50 long by 0.27 wide, not clearly set off from neck. Suckers 0.1 in diameter. Neck 0.35 long by 0.2 wide. Genital pores irregularly alternating, located at anterior one-third of proglottid margin.

Mature proglottid 0.16 long by 0.3 wide. Genital atrium muscular, 0.063 long by 0.075 wide. Cirrus pouch cylindrical, 0.083 long by 0.033 wide, crossing longitudinal osmoregulatory canal. Vas deferens not coiled. Seminal receptacle absent. Testes rounded, 12–13 in number, 0.08 in diameter, divided in two groups on each side of proglottid: 6 poral and 6–7 aporal; do not reach ovarian anterior edge. Vagina opening posterior to male genital one. Ovary 0.075 across, bilobate, each lobe subdivided into two smaller lobes and located at midline of proglottid. Vitelline gland ovoid, 0.025 by 0.020 in size, behind ovary.

Gravid proglottid, 0.3 long by 0.37 wide. Uterus when matures, breaking up into egg capsules with only one egg each, filling whole space of proglottid between both longitudinal osmoregulatory canals.



Figs. 5-8 *Oochoristica okinawaensis* n. sp.

Fig. 5 Scolex

Fig. 6 Egg

Fig. 7 Mature proglottid

Fig. 8 Gravid proglottid

Eggs spherical, 0.045 by 0.030. Onchosphere 0.025 by 0.030; embryonic hooks 0.0125 long.

Host: *Lygosoma (Ateuchosaurus) pellopleurum* (Japanese name: Heriguro-himetokage)

Habitat: Small intestine

Locality and date: Amami-oshima Island; October 13, 1992

Type specimens: Holotype deposited in Meguro Parasitological Museum, MPM Coll. No. 19578

### Discussion

Forty two and 30 species of the genus *Oochoristica* Lühe, 1898 have been reported from lizards by Schmidt (1986) and Della Santa (1956) respectively. Of these species those with the strobila less than 15 in length are the following 6 species: *O. anniellae* Stunkard et Lynch, 1944, *O. lygosomae* Burt, 1933, *O. lygosomatis* Skinker, 1935, *O. mandapemensis* Johri, 1958, and *O. theileri* Fuhrmann, 1924. The present species differs from *O. anniellae* in the presence of neck (0.35 by 0.2 vs. absent), the situation of genital pore (anterior one-third vs. one-fourth), and the smaller number of testis (12–13 vs. 60–70), from *O. lygosomae* in the smaller size of sucker (0.1 vs. 0.14 in dia.) and cirrus pouch (0.07–0.075 by 0.033–0.035 vs. 0.175 by 0.055), the smaller number of testis (12–13 vs. 17–18) and the shape of ovary (bilobed vs. 5–7 digitate lobules), from *O. lygosomatis* in the larger size of scolex (0.27 by 0.50 vs. 0.22–0.24), the smaller size of cirrus pouch (0.070–0.075 by 0.033–0.035 vs. 0.125 by 0.07), and the smaller number of testis (12–13 vs. 14–18), from *O. mandapemensis* in the larger size of scolex (0.27 by 0.50 vs. 0.16), and the smaller number of testis (12–13 vs. 30–40), and from *O. theileri* in the absence of cirrus spines (without vs. with spines), the smaller number of testis (12–13 vs. 26–30), and the smaller size of ovary (0.075 vs. 0.20–0.24) and Vitelline gland (0.025 by 0.020 vs. 0.08–0.1 in dia.).

*Oochoristica japonensis* n. sp.

(Figs. 9–12)

Strobila 36.6 in length, 1.4 in maximum width. Proglottids wider than long. Scolex 0.130 long by

0.213 wide. Sucker round, 0.1 in diameter. Neck absent. Genital pores irregularly alternating, located at anterior one-third of proglottid margin.

Mature proglottid 0.12 long by 0.95 wide. Genital atrium 0.025 long by 0.05 wide. Cirrus pouch pyriform, 0.12–0.15 long by 0.03–0.05 wide, crossing longitudinal osmoregulatory canal. Vas deferens much coiled. Testes 18–19 in number, 0.025–0.030 by 0.013–0.018 in size, arranged in two groups on each side of proglottid: 9 poral and 9–10 aporal, not reaching ovarian anterior edge. Ovary multilobated, located at midline of proglottid, 0.45 wide. Vitelline gland transversely elongated, 0.1–0.11 by 0.025–0.038, just behind ovary. Vagina opening posterior to male genital one.

Gravid proglottid 0.8 long by 1.4 wide. Egg capsules 0.08 in diameter, filling whole proglottid space, containing one egg each. Eggs 0.040–0.043 by 0.035–0.038 in size. Onchosphere 0.028 by 0.025; embryonic hooks 0.015 long.

Host: *Gehyra mutilata* (Japanese name: Onnadakeyamori)

Habitat: Small intestine

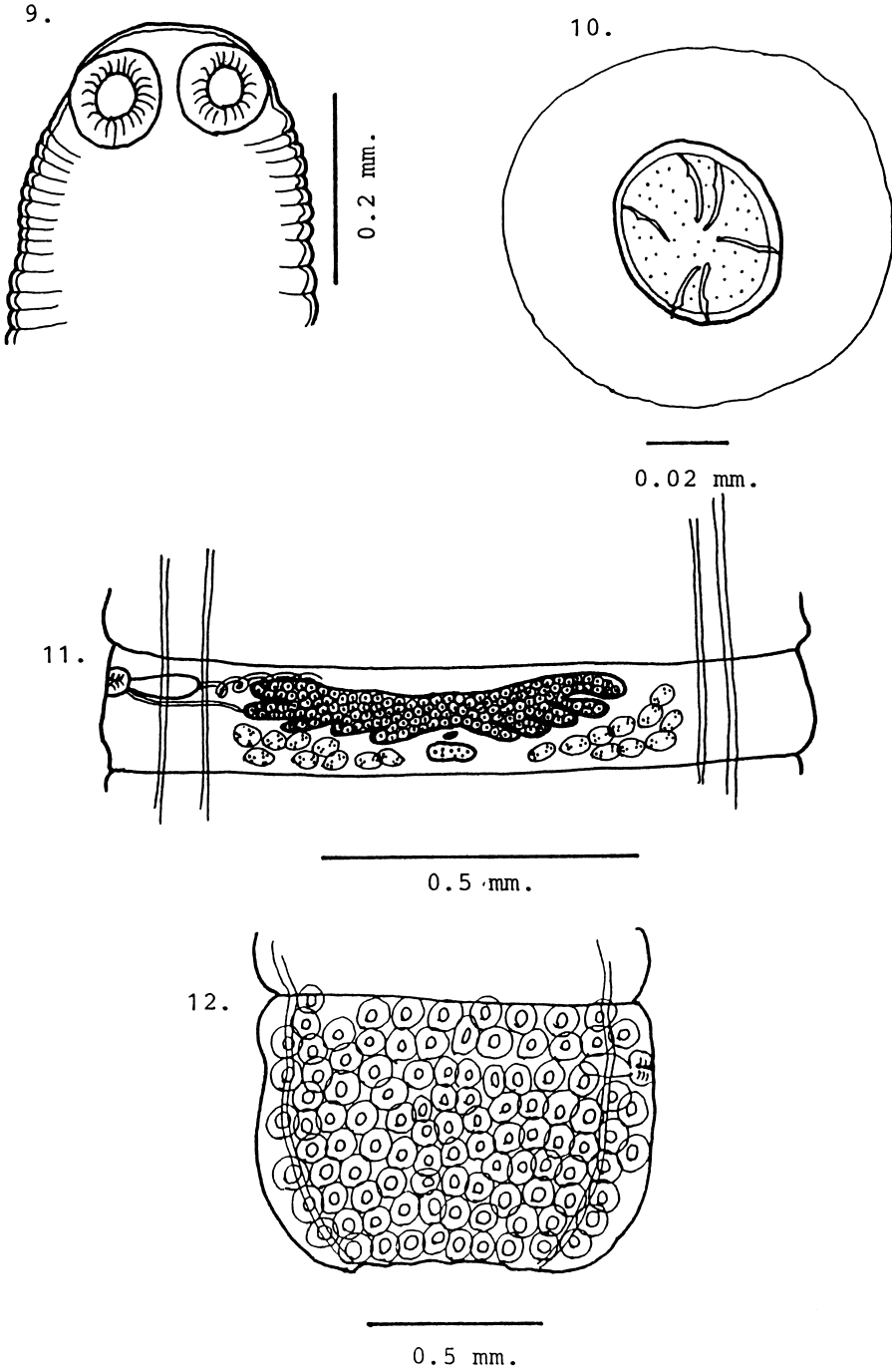
Locality and date: Amami-oshima Island, October 13, 1992

Type specimens: Holotype deposited in Meguro Parasitological Museum, MPM Coll. No. 19579

### Discussion

A total of 8 species of the genus *Oochoristica* Lühe, 1898 have been reported from the gecko (Malhotra and Capoor, 1984, Schmidt, 1986). In Japan, *O. chinensis* Jensen et al., 1983 was recorded from *Gehyra mutilata* at Amami-oshima Island (Hasegawa, 1990).

The present new species closely resemble *O. javaensis* Kennedy et al., 1982 in the size of strobila (36.6 vs. 34.6–44.3 long) and cirrus pouch (0.12–0.15 by 0.03–0.05 vs. 0.114–0.153 by 0.040–0.056), the position of genital pore (anterior one-third), and the host species (*Gehyra mutilata*). However, it differs from that species in the shape of strobila (all proglottids wider than long vs. longer than wide), the absence of neck (absent vs. 0.85–1.35 by 0.111–0.198), the larger size of sucker (0.1 in diameter vs. 0.047–0.051 by 0.047–0.049), and the smaller



Figs. 9-12 *Oochoristica japonensis* n. sp.

Fig. 9 Scolex

Fig. 10 Egg

Fig. 11 Mature proglottid

Fig. 12 Gravid proglottid

number of testis (18–19 vs. 25–31).

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