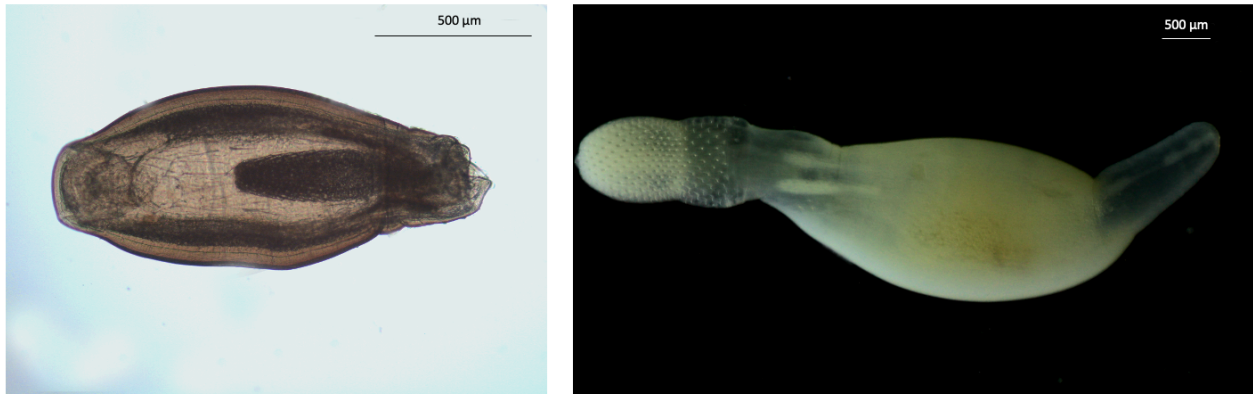


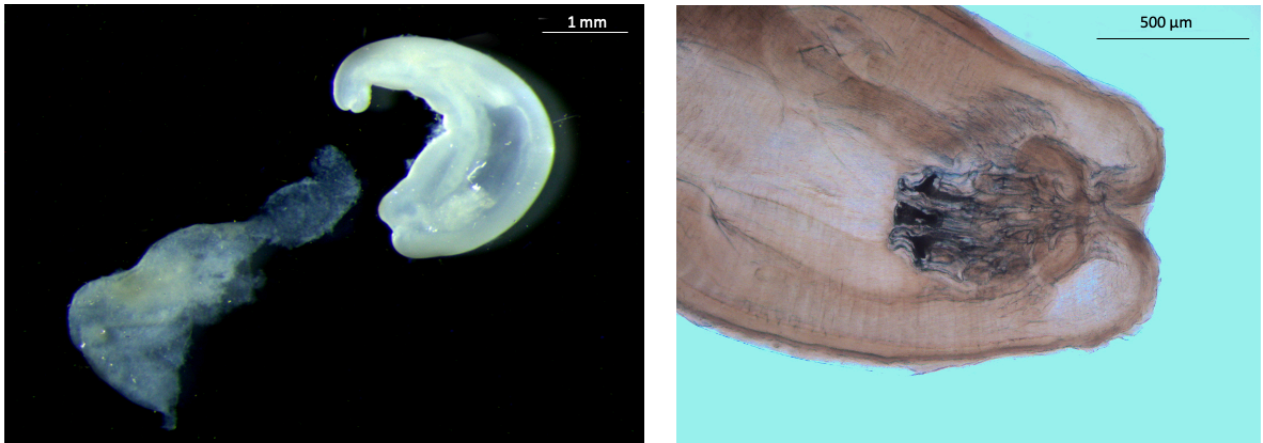
**Main morphological features used for macroscopic diagnosis of each parasite taxa**

**Fig. S1** Larval stage of *Sphaerirostris picae*.

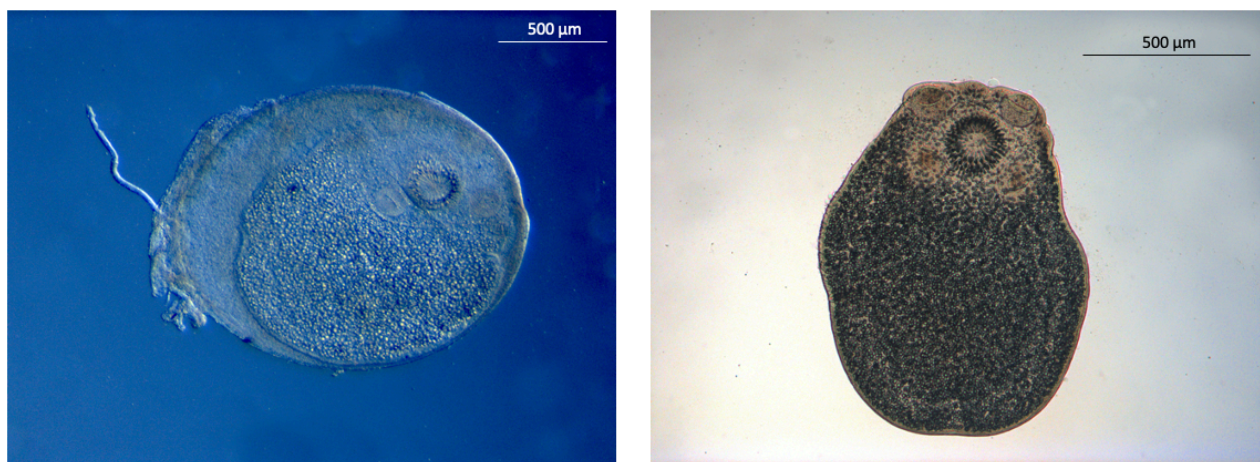


Fusiform and whitish cysts containing a cystacanth with trunk cylindrical, spindle shaped, gradually tapering toward both ends; proboscis provided with hook rows and separated in two parts by a constriction. Anterior proboscis ovoid, with hook length increasing apically. Posterior proboscis cylindrical with more widely spaced armature. Neck short and lemnisci visible (Table S1a) [48].

**Fig. S2** Larval stage of *Macracanthorhynchus hirudinaceus*.



Spherical cyst containing a cystacanth provided with thick wall and cylindrical proboscis bearing hooks in circular rows. Length of hooks increasing apically, with the longest one measuring 276.5 μm (Table S1a) [38, 44, 52].

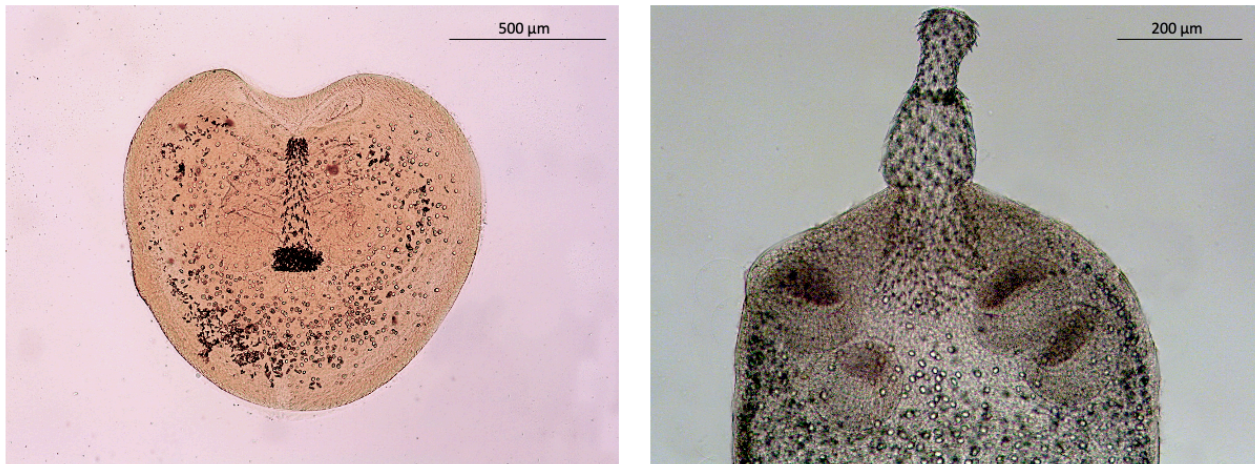


**Fig. S3** Larval stage of *Diplopylidium acanthotetra*.

Single, multiple (in clusters) or merging cysts of spherical shape. Cysticercoid characterized by numerous calcareous corpuscles and circular

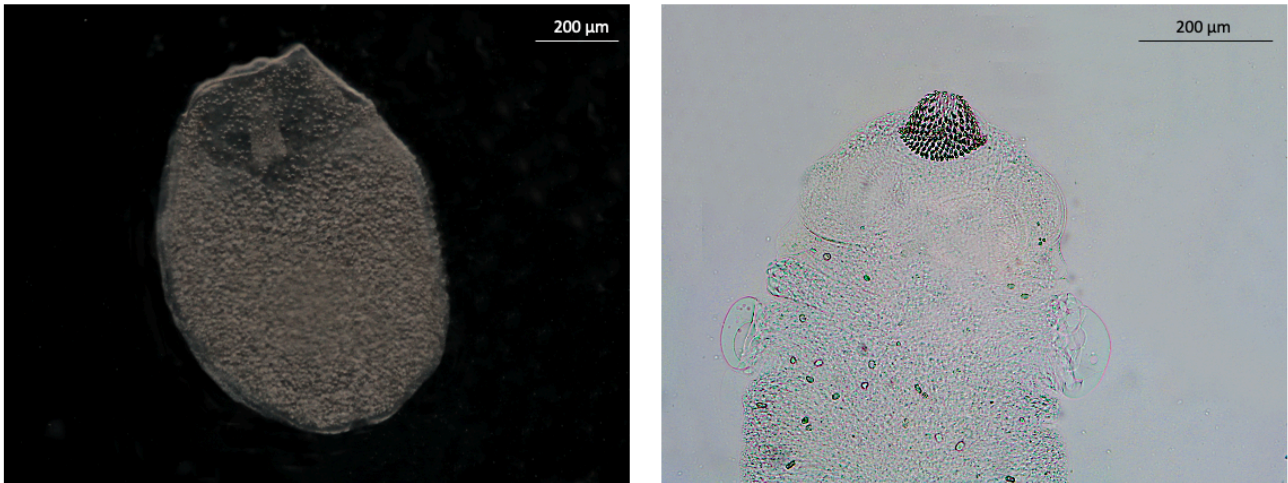
rostellum, armed with hooks arranged in four circles (Table S1b) [29, 36, 39, 53].

**Fig. S4** Larval stage of *Joyeuxiella echinorhyncoides*.



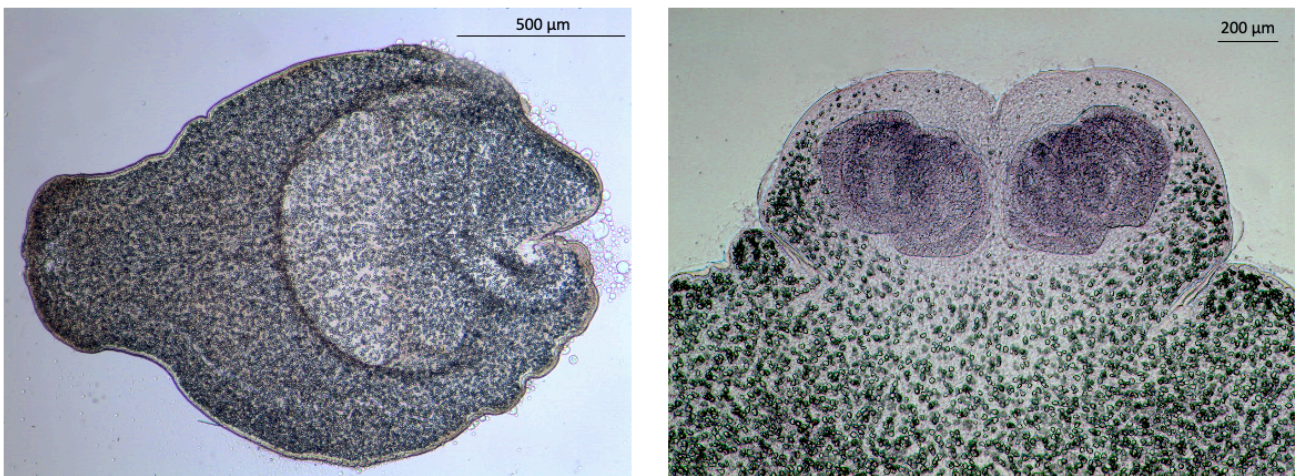
Single, multiple or merging cysts of spherical shape, containing a cysticercoid (more than one in case of merging cysts) heart-shaped characterized by tubular rostellum armed with hooks over the entire length, including the base invaginated (Table S1b) [29, 41].

**Fig. S5** Larval stage of *Joyeuxiella pasqualei*.



Spherical cyst containing a cysticercoid characterized by conical rostellum, armed with several alternating circles of thorn-shaped hooks (Table S1b) [29, 41, 54].

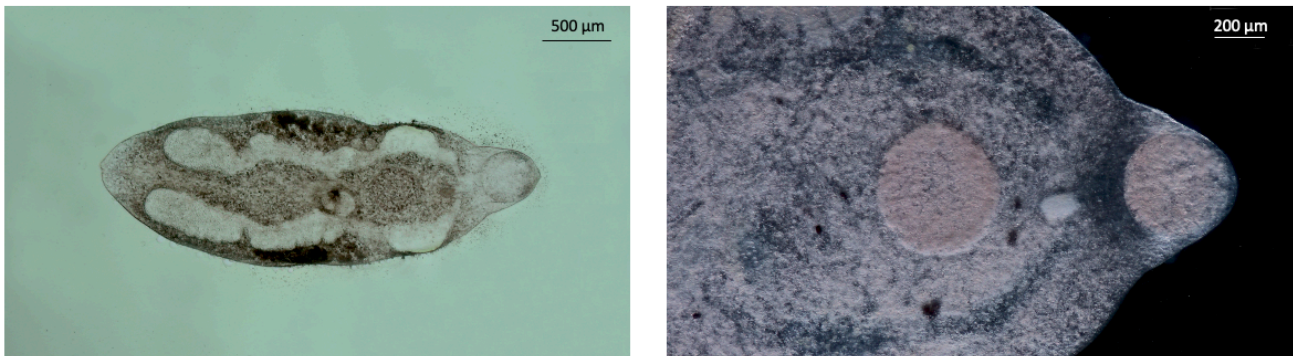
**Fig. S6** Larval stage of *Mesocestoides lineatus*.



Single or multiple spherical cysts containing a flattened and non-segmented tetrathynidium of pleomorphic shape (mostly longitudinally elongated),

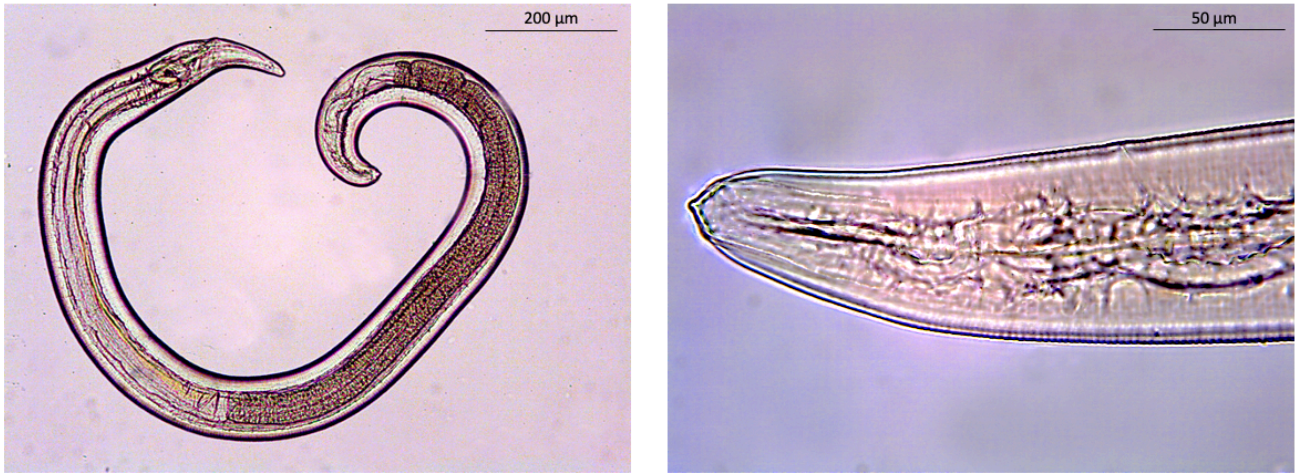
characterized by lacking rostellum and the presence of four visible suckers (Table S1b) [16, 46, 50].

**Fig. S7** Adult of *Paradistomum mutabile*.



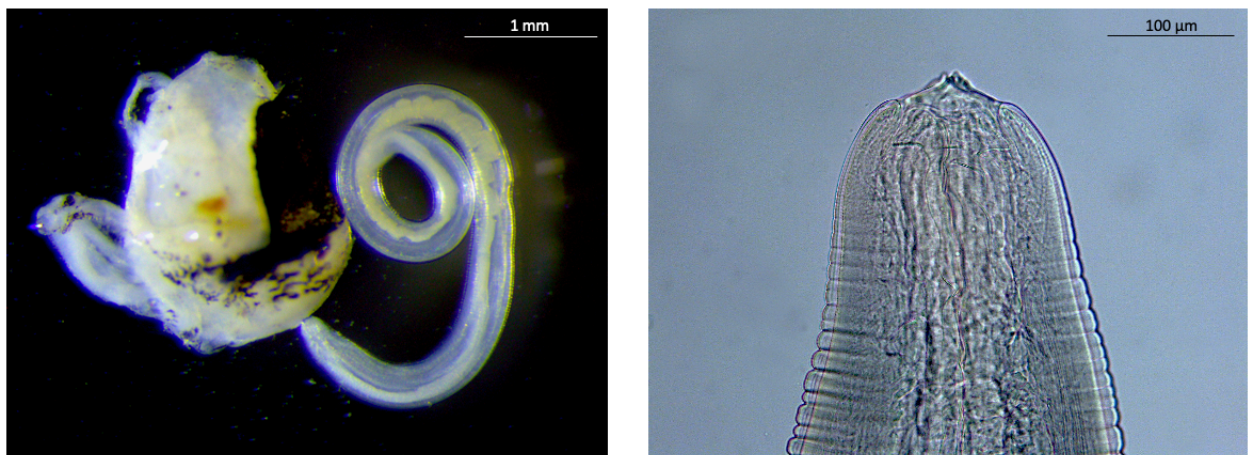
Adult digenea (4854-2525 x 2304-831µm, based on four specimens) characterized by clearly visible oral (412-260 µm wide) and ventral (602-274 µm wide) suckers, branched tubular uterus containing eggs of 52-45 µm length, a pair of branched vitellogen glands and intestinal caeca extend into posterior quarter of the body [37, 43].

**Fig. S8** Nematode larval stage of the Family *Acuariidae*.



Spherical cyst containing a third-stage larvae spiralized, characterized by cephalic region with triangular lips and lateral cordons extending from the anterior end (Table S1c) [51].

**Fig. S9** Larval stage of *Physaloptera* sp..



Spherical cyst containing a spiralized third-stage larvae characterized by thin and smooth cuticle and long muscular-glandular oesophagus. The

cephalic region presents a collarete and the rounded anterior end consists of two well-developed lateral pseudolabia (Table S1c) [55].

**Fig. S10** Adult of *Parapharyngodon micipsae*.

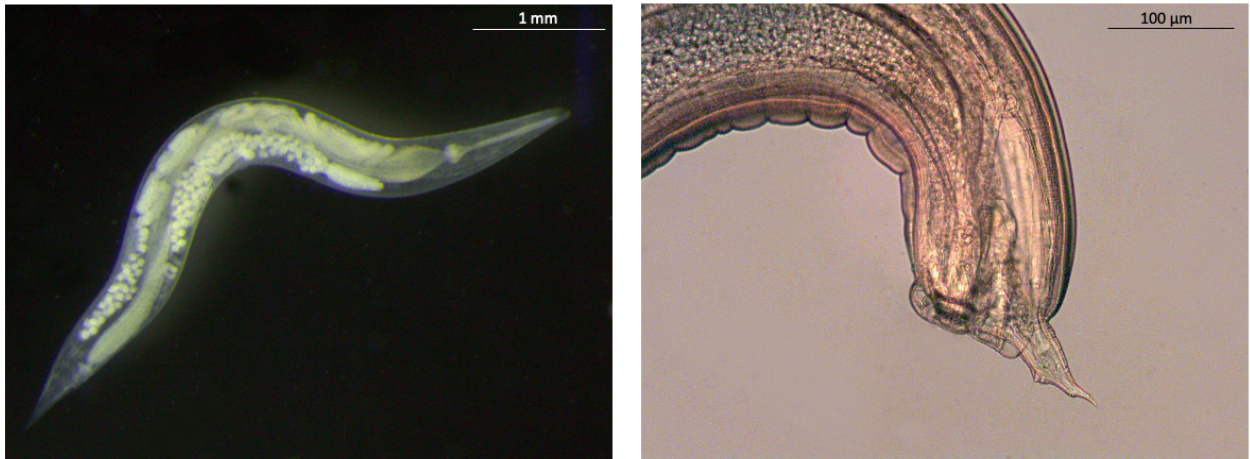


General - Small nematode, light-colored, fusiform and cuticle with distinct transverse striations.

Male - Body truncated posteriorly with lateral alae well developed. Three pairs of cloacal papillae and one on the tail. Spicule well sclerotized, sharp at the end.

Female - Body with cuticle annulations, anterior end bluntly pointed, posterior end tapered to fine spike. Oesophageal isthmus long and wide, as well as the bulbus (Table S1d) [40, 47, 56].

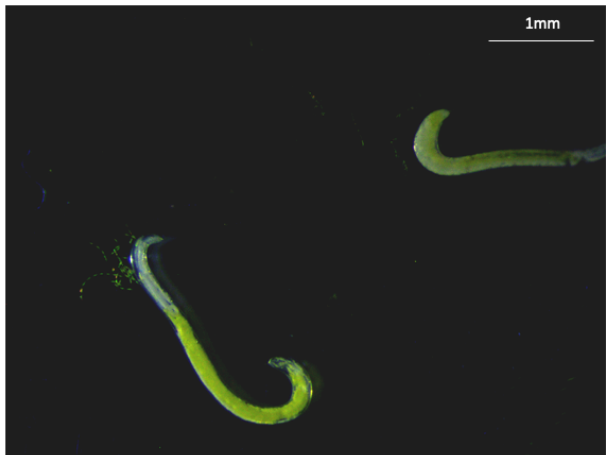
**Fig. S11** Adult of *Moaciria icosiensis*.



General - Small nematode with oesophagus divisible into anterior pharynx, corpus and posterior valved bulb.

Male - Body with a pair of equal spicules, characterized by proximal end truncate and distal tapered, ending in a sharp tip. Gubernaculum of arrow shape and well-developed

Female - Body stout characterized by thick cuticle and fine transverse striations. Vulva provided with minute vulvar lips, slightly protruding, just anterior to mid-length of body. Amphidelphic uterus. Tail thin and tapering to a fine point. Eggs numerous and smooth-shelled (Table S1e) [45, 56].



**Fig. S12** Adult of *Spauligodon aloisei*.

General - Small nematode of fusiform shape. Body with cuticle fine cross-striations and filiform tail with spines.

Female (single gender recorded) - Body (6500-5400 μm, based on two specimens) tapering anteriorly and posteriorly cylindrical. Esophagus (including bulb) length of 480-420μm; eggs (130-110μm) with truncated ends and tail length of 650-630 μm [42, 56].

**Table S1** Morphometric measurements (L: length; W: width) of helminths collected from reptiles (all measurements are given in micrometer).

**1a)** Acanthocephalan larval

stages.

<b>Species (n)</b>	<b>Cyst (L x W)</b>	<b>Cystacanth (L x W)</b>	<b>Proboscis (L)</b>
<i>S. picae</i> (11)	2450-1064 x 940-508	2122-1239 x 823-480	809-520
<i>M.</i> <i>hirudinaceus</i>	2205 x 1703	4180 x 2384	700
(1)			

**1b)** Cestode larval stages.

<b>Species (n)</b>	<b>Cyst (L x W)</b>	<b>Cysticercoid (L x W)</b>	<b>Rostellum (W)</b>	<b>Rostellum (L)</b>
<i>D. acanthotetra</i> (8)	2749-1200 x 2368- 1500	2600-936 x 1924- 803	346-182	-
<i>J. echinorhyncoides</i> (7)	2300-1053 x 1600- 1019	1700-810 x 988-603	-	503-286
<i>J. pasqualei</i> (6)	2000-800 x 1450- 900	2300-780 x 1340- 703	-	180-110
<i>M. lineatus</i> (5)	791-523 x 615-431	1619-1150 x 1345- 848	-	-

**1c)** Nematode third-stage larvae (total body length: TBL; muscular oesophagus length: MOL; glandular oesophagus length: GOL; tail length: TL).

<b>Genera (n)</b>	<b>Cyst (L x W)</b>	<b>TBL</b>	<b>MOL</b>	<b>GOL</b>	<b>TL</b>
Acuariidae specimens (5)	1200-451 x 581- 486	2717-2100	355-200	1200-800	120-101
<i>Physaloptera</i> sp. (4)	3500-2000 x 3340-1600	8800-7266	383-280	2300-1900	230-190

**1d)** Adult nematode *Parapharyngodon micipsae* (total body length: TBL; oesophagus + bulbus length: OBL; spicule length: SL; anus-tail length: ATL; egg length: EL)

<b>Genders (n)</b>	<b>TBL</b>	<b>OBL</b>	<b>SL</b>	<b>ATL</b>	<b>EL</b>
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Males (2)	2931-1630	658-390	80-60	-	-
Females (2)	4700-4500	1216-1193	-	500-414	89-80

**1e)** Adult nematode *Moaciria icosiensis* (total body length: TBL; oesophagus + bulbus length: OBL; spicule length: SL; anus-tail length: ATL; egg length: EL)

<b>Genders (n)</b>	<b>TBL</b>	<b>OBL</b>	<b>SL</b>	<b>ATL</b>	<b>EL</b>
Males (4)	4500-4178	955-777	315-290	-	-
Females (1)	5600	900	-	550	63-87

