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Anatomical Characters and Systematics of *Anodontites trapesialis* (Lamarck, 1819) from South America (Mollusca, Bivalvia, Unionoida, Muteloidea)

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Here is an anatomical concept of *Anodontites trapesialis* (Lamarck, 1819) (Bivalvia, Unionoida, Mycetopodidae) from South America. This complementary anatomical study, with a systematic interest, refers to a group of anatomical data, exclusive for this species, that may be analized to identify this wide-ranging South-American species, with such a variable shell. Diagnosis of *A. trapesialis:* trapezoid large shell, thin wall, smooth periostracus. Mantle border without tentacles, even in incurrent and excurrent canals. Presence of a fourth mantle fold well developed. Palps smooth outward, internally with relativelly large, easily view folds, and a smooth margin. Gills with transversal wide folds. Thin walled anal papilla. Evidence in some specimens of pallial cardinal muscle. Hermaphroditic gonad.

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Introduction

With the dissection of hundreds of Mycetopodidae specimens, of several species from several South American Basins, it has been possible to identify some of the specimens by means of the shell characters, as *Anodontites trapesialis* (Lamarck, 1819). These have a series of anatomical characters which are also exclusive, and this group of characters easily separates them from other species of the same family.

Anatomical data on *A. trapesialis* are not new, but are found in Simpson (1900) and Mendes (1939), and are more completely described by Veitenheimer (1973) and Hebling (1976). The present paper is a complement of these works, clearing the group of anatomical data exclusive of this species, partly inedited, within a systematical and comparative interest.

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This work is also the base of a series, with the objective of showing anatomical characters exclusive of each Mycetopodidae species, and how those analysis can be used in systematical and filogenetical studies. This series of works is here beginning with *A. trapesialis* because this species is generally the most common of the family (in collect sites) and has the upper cited works refering to it.

Methods

Those collected specimens were dissected by normal technique. The ciliary tract exibition of pallial cavity organs was made by means of carmine and graphit ponders. This same technique is also used in stomach, which is previously opened by means of a median-dorsal incision.

Specimens from collections were also studied, shells and fixed specimens, these were also dissected by the same technique.

Serial sections of 10 μm of some organs were also obtained by current technique, stained by HE or Malory.

In the description, those data found in Veitenheimer (1973) and Hebling (1976) were not noted down. These works may be consulted for complementing some structure descriptions.

In the synonymic list, the type locality is in bracket; (syn) = synonymy; (ssp) = subspecies; R = river.

Systematics

Anodontes trapesialis (Lamarck, 1819)

Anodonta trapesialis Lamarck, 1819:87 [des eaux douces étrangères à celles de l'Europe, M.N.M. Genebra 1086/83, coll. Lamarck, sic Mansur & Valer (1992)]; Hupé 1857:86 (syn).

Anodonta exotica Lamarck, 1819:87 [les rivières de l'Inde? (Geneva Museum)]; Lamarck, 1835:569; Orbigny, 1846:621; Gray, 1847:197; Hupé, 1857:86; Ihering, 1890:158 (syn); Corsi, 1900:456; Johnson, 1952:66; Figueiras, 1965:250 (syn); Bonetto, 1967:466 (syn); Mansur, 1970:35 (syn).

Anodonta sinuosa Lamarck, 1819:87 [?]; Lamarck, 1835:569; Adams & Adams, 1857:503; Paetel, 1890:184; Haas, 1931:100 (syn).

Anodon crassus Swainson, 1823:167 [South America]; Spix, 1827:27 (syn); Ihering, 1890:158 (syn).

Anodonta trapezialis Blainville, 1825:538; Lamarck, 1835:568; Küster, 1853:31; Hupé, 1857:85; Adams & Adams, 1857:504; Clessin, 1876:235; Ihering, 1890:147; Fisher & Crosse, 1900:692; Haas, 1931:100 (syn); Haas, 1969:568 (syn).

Anodon giganteus Spix. 1827:27 (tab. 19. f. 1-2) [R. Solimões]; Orbigny, 1835:39 (syn); Orbigny, 1846:621 (syn); Hupé, 1857:85 (syn); Ihening, 1890:158 (syn); Simpson. 1900:924 (syn); Haas; 1931:100 (syn); Mansur, 1970:35 (syn).

Anodon anserinus Spix, 1827:29 (t. 21, f. 1-2) [R. Solimes]; Orbigny, 1835:39 (syn); Hupé, 1857:86 (syn); Sowerby in Reeve, 1867:31(125), Ihering, 1890:158 syn); Haas 1931:100 (syn).

Anodon radiatus Spix, 1827:31 (tab 23, f. 1) [Prov. Minarum]; Orbigny, 1835:39 (syn), Haas, 1931 :100 (syn).

Anodon susannae Gray, 1834:31 (t. 23, f. 1) [South America]; Simpson, 1900:924 (syn); Mansur,1970:35 (syn).

Anodon penicillatus Gray, 1834a:57 [Paraguay Rivers]: Simpson, 1900:924 (syn). Haas, 1931:100 (syn); Haas, 1969:568 (syn); Bonetto, 1967:460 (syn); Bonetto & Mansur, 1970:256 (syn).

Anodontes exotica; Orbigny, 1835:39.

Anodontes exotica var. *elongata* Orbigny, 1835:39 [Montevideo, Uruguay].

Anodontes exotica var. *oblonga* Orbigny, 1835:39 [lacubus Corrientes, Argentina].

Anodontes exotica var. *larga* Orbigny, 1835:39 [Parana, Prov. Corrientes, Argentina].

Margarita trapezialis; Lea, 1836:53

Margarita radiata; Lea, 1836:51.

Margarita sinuosa; Lea, 1836:54; Lea, 1838:32.
Margarita anserina; Lea, 1838:31.
Anodonta esula Gray, 1847:197; Marshall, 1925:8 (syn).
Margaron trapezialis; Lea, 1852:52.
Margaron anserina; Lea, 1852:52.
Margaron sinuosa; Lea, 1852:53.
Anodonta forbesiana Lea, 1860:119 [Uruguay]; Ihering, 1890:158; Paetel, 1890:179; Corsi, 1900:457; Bonetto, 1967:460 (syn); Bonetto & Mansur, 1970:256 (syn).
Anodonta anserina; Chenu, 1862:416; Adams & Adams, 1857:504; Clessin, 1876:80; Paetel, 1890:177; Fischer & Crosse, 1900:692.
Anodon moretonianus Sowerby in Reeve 1867:9(21) [R. Paraná]; Simpson, 1900:924 (ssp).
Anodon scriptus Sowerby in Reeve, 1867:4(9) [?, Cuming coll.]; Haas, 1931:100 (syn); Johnson, 1971:93 (holotype BMNH).
Anodon subsinuatus Sowerby in Reeve,1867:7(14) [?, Cuming coll.]; Johnson, 1971:95 (holotype BMNH lost); Ihering, 1890:158 (syn); Simpson, 1900:924 (syn); Haas, 1931:100 (syn).
Anodon sinuosus; Sowerby in Reeve, 1867:8 (16).
Anodon giganteus; Sowerby in Reeve, 1867:37(152).
Anodon areolatus Sowerby in Reeve, 1867:10(28) [?, Cuming coll.]; Simpson, 1900:924 (syn); Haas, 1931:100 (syn); Johnson, 1971:79 (holotype BMNH lost).
Anodon exoticus; Sowerby in Reeve, 1867:16(57); Johnson, 1971:83.
Anodon rio-platensis Sowerby in Reeve, 1867:26(101) [Rio Plata]; Ihering, 1890:158 (syn); Haas, 1931:100 (syn); Figueiras, 1965:250 (syn); Olazarri, 1966:19 (syn); Mansur, 1970:35 (syn); Quintana, 1982:135 (syn).
Anodon forbesianus; Sowerby in Reeve, 1867:30 (119).
Margaron radiatus; Lea, 1870:83.
Margaron forbesiana; Lea, 1870:81.
Anodonta bahiensis Küster, 1873:20 [Bahia]; Paetel, 1890:176; Simpson, 1900:924 (syn); Ortmann, 1921:622 (syn); Haas, 1931:100 (syn).
Anodonta exoticus; Clessin, 1876:178.
Anodonta angustata Clessin, 1876:226 [Brasil]; Paetel, 1890:176; Haas, 1931:100 (syn); Haas, 1969:570 (syn).
Anodonta radiata; Ihering, 1890:158.
Anodonta riograndensis Ihering 1890:158 [Rio Grande]; Haas, 1931:100 (syn): Figueiras, 1965:250 (syn); Haas, 1969:568 (syn), Bonetto, 1967:460 (syn); Mansur, 1970:35 (syn), Bonetto & Mansur, 1970:256 (syn); Johnson, 1971:93.
Anodonta penicillata; Paetel, 1890:183.
Anodonta rioplatensis; Paetel, 1890:184
Anodonta subsinuata; Paetel, 1890:185.
Anodonta susanae; Paetel, 1890:185.
Columba exotica; Paetel, 1890:188.
Columba gigantea; Paetel, 1890:188.
Columba trapezialis; Paetel, 1890:188.
Glabaris bahiensis; Ihering, 1893:115.
Glabaris radiata; Ihering, 1893:115.
Glabaris trapezialis; Ihering, 1893:121; Ihering, 1910:132.
Glabaris riograndensis; Ihering, 1893:119.
Glabaris susannae; Ihering, 1893:118.
Glabaris subsinuata; Ihering, 1893:121.
Glabaris exotica; Ihering, 1893:121.
Glabaris trapesialis var. *cygneiformis* Pilsbry, 1896:563 (pl. 26 fig. 4-5) [Maldonado, Uruguai]; Simpson, 1900:925; Haas, 1931:100 (syn); Figueiras, 1965:250 (syn); Haas, 1969:570 (syn); Mansur, 1970:35 (syn); Bonetto & Mansur, 1970:256 (syn); Quintana, 1982;135 (syn).
Glabaris simpsonianus Pilsbry. 1896:564 (pl. 27, f. 13) [R. La Plata]; Simpson, 1900:925; Haas, 1931:100 (syn); Haas, 1969:568 (syn); Mansur, 1970:35 (syn); Bonetto & Mansur, 1970:256 (syn).
Glabaris crassus; Simpson, 1900:917.
Glabaris trapesialis; Simpson, 1900:923.
Glabaris trapesialis var. *anserinus*; Simpson, 1900:924.
Glabaris trapesialis var. *exoticus*; Simpson, 1900:924.

Glabaris trapesialis var. *scriptus*; Simpson, 1900:924.
Glabaris trapesialis var. *moretonianus*; Simpson, 1900:925.
Glabaris trapesialis var. *rioplatensis*; Simpson, 1900:925.
Glabaris radiatus; Simpson, 1900:925.
Glabaris sinuosus; Simpson, 1900:925.
Glabaris forbesianus; Simpson, 1900:927.
Glabaris dulcis; Ihering, 1910:132 (taf. 12, fig. 5) [Faz. Sacramento, S. Domingos, MG]; Haas, 1931(syn).
Anodontites trapezialis anserinus; Baker, 1913:667.
Anodontites darochai Marshall, 1916:528 (fig. 68) [Ceara, Brazil (USNM)]; Haas, 1939:276 (syn).
Anodontites aurora Marshall, 1916:529 (fig. 69) [Ceara, Brasil (USNM)]; Haas, 1939:276 (syn); Morretes, 1949:26.
Anodontites trapesialis anserina; Ortmann, 1921:622, Morretes, 1943:125, Morretes, 1949:27.
Anodontites trapesialis scripta; Ortmann, 1921:622; Morretes, 1949:27.
Anodontites riograndensis: Ortmann, 1921:624: Fierson, 1923:8; Mendes, 1939:481; Morretes, 1949:27; Burckup & Burckup, 1957:11.
Anodontites forbesiana; Ortmann, 1921:627; Mendes, 1939:481; Morretes, 1949:27.
Anodontites rioplatensis; Ortmann, 1921:629.
Anodontites trapezialis; Doello-Jurado, 1924:239; Olsson & Wurtz, 1951:8; Oliveira et al., 1981:440.
Anodontites trapesialis; Marshall, 1925:8; Lucena, 1951:98; Hebling, 1976; Vertenheimer & Mansur, 1978:37; Alvarenga et al., 1979; Elias, 1984.
Anodontites trapesialis trapesialis; Haas, 1931:98; Morretes, 1949:27; Burckup & Burckup, 1957:11; Haas, 1969:568; Bonetto, 1967:466; Mansur & Valer, 1992:93 (fig. 7).
Anodontites trapesialis forbesianus; Haas, 1931:100; Bonetto & Ezcurra, 1962; Parodiz & Bonetto, 1963:181 (lasidium); Schade, 1965:220; Figueiras, 1965:250; Bonetto & Ezcurra, 1965; Olazarri, 1966:19; Haas, 1969:570; Mansur, 1970:35; Vertenheimer, 1973; Quintana, 1982:135; Mansur et al., 1988:97 (fig. 18-19); Mansur et al., 1991:48 (fig. 5).
Anodontites exoticus exoticus; Haas, 1931:100; Haas, 1939:276; Haas, 1969:570.
Anodontites exoticus susannae; Haas, 1931:101; Olazarri, 1966:19; Haas, 1969:571.
Anodontites exotica; Pilsbry, 1933:73.
Anodontites marcusi Mendes, 1939 [R.S. Domingos, GO (DZSP, lost)]; Haas, 1969:571 (syn).
Anodontites trapesialis darochai; Haas, 1939:276; Morretes, 1949:27.
Anodontites trapesialis var. *exotica;* Johnson, 1952:65; Heard & Vail, 1976:22.
Anodontites trapezialis cygneiformis; Castellanos, 1965.
Anodontites trapesialis susannae; Bonetto, 1967:465; Bonetto & Mansur, 1970:256; Rosso de Ferradás, 1974:181; Vidrine & Bereza, 1979:51; Olazarri, 1979:169; Persia & Olazarri, 1985:625.
Anodontites trapesialis radiatus; Bonetto. 1967:466.
Anodontites exoticus; Oliveira et al., 1981:438.
Anodontites giganteus; Oliveira et al., 1981:439.
Anodontites ansseriana; Oliveira et al., 1981.439.

Diagnosis

Large shell, trapezoid outline, thin walled, glassy and smooth periostracum. Mantle with well developed fourth fold, tentacles in excurrent and incurrent canals lacking. Palps with smooth outer surface, with inner large folds, easily view, smooth inner margin. Wide transversal ctenidial folds. Anal papilla thin walled. Pallial cardinal muscle sporadically developed. Hermaphroditic gonad.

Description

Shell. Very large sized, some species have more than 200 mm.

Outline: varies since long and elliptical (Fig. 1B) to short and square (Fig. 1F)

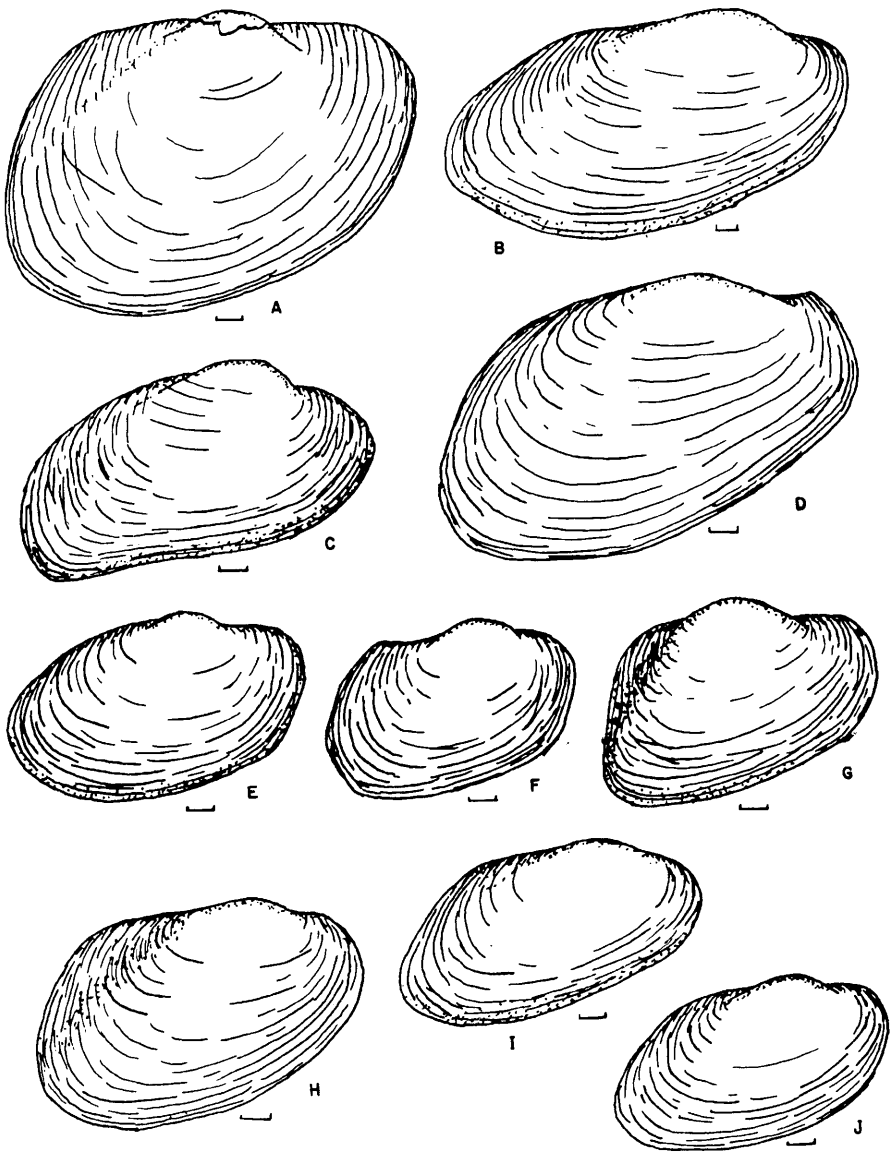

Fig. 1. Shell variation of *Anodontites trapesialis*, sampled by some specimens: A) MZUSP 26109, Rio Amazonas, AM; B) MZUSP 13366, Joinville, SC, Bonetto id; C) MZUSP 26132, Rio Uruguai, RS; D) MZUSP 299, Iguape, SP; E) MZUSP 26118, Payssandu, Uruguai, Bonetto id.; F) MZUSP 13392, Depto Durazno, Uruguai, Bonetto id.; G) MZUSP 27981, Rio Tietê, Barra Bonita, SP; H) MZUSP 27887, Rio Pardo, Ribeirão Preto, SP; I) MZUSP 27890, Rio Canoas, Mococa, SP; and J) MZUSP 27888, Rio Pardo, Ribeirão Preto, SP. Scale = 1 cm.

as extreme of trapezoid forms. Anterior margin rounded, generally lesser than posterior (Fig. 1B) or with the same size (Figs. 1C+F). Ventral margin varies since rounded, ample and convex to straight and a rather concave (Fig. 1S). Posterior margin varies since rounded and ample to suddenly straight (Fig, 1S). Transversal section varies from compressed to cylindrical.

Surface: smooth in anterior and median regions, poorly concentrically undulate. Posterior region generally with discrete projections of grooth lines. Sculpture lacking, very rare some radial lines as in MZUSP 13366 specimens (from Santa Catarina, Brazil).

Color: posterior region dark-brown. Anterior and median regions vary from dark-brown to pale-green. Very rare color details, some specimens have scattered dark-green V-shaped spots, better view in inner shell surface.

Umbones: vary since outstanding (Figs. 1F+G) to inlaid (Figs. 1B+H). Sited on ringe center (Figs. 1A+G) to its anterior third part (Figs. 1B+H).

Hinge: without teeth (very rare a low bilateral cardinal lobe as in MZUSP 5670 specimens). Hinge dorsal margin varies from concave (Fig. 1F), straight (Fig. 1G), convex (Figs. 1A, B, C, E, H + J) or sigmoid (Fig. 1D) with tall anterior portion (like *Leila)* as in MZUSP 15299, 27033, 27032 and 299 specimens.

Ligament: tenuous in all lenght of hinge, posterior end with a triangular enlargement, with form varying since regained to anterior, ventral and posterior animal regions, and the tip varies since rounded to slender and sometimes, coiled. The enlargement form can differ even from a valve to other of the same specimen. More rarely, this enlargement is square or trapezoid.

Thickness: thin and fragile, rarely a little thicked, as in MZUSP 26112 and 14876 specimens (both from Uruguay). Nacre border thin and parallel to shell margin.

Muscle scars: some specimens have the anterior muscle scar fused, L-shaped. For more details see Hebling (1976).

Mantle. Color: varies since pale-beige to brown.

Margin: trifolded (Fig. 2), tentacles lacking, even in incurrent canal (see Hebling, 1976 and Veitenheimer, 1973).

Lobes Union: only in limit between the incurrent and excurrent canals. Excurrent canal opened, once lacking union, as all Mycetopodidae (see Mansur, 1974), but, as also observed Hebling (1976), it stay with dorsal half closed in active animal.

Well developed fourth fold (Fig. 2), subparallel and off to mantle border, begin gradually in anterior third part and finishes in pallial union of incurrent-excurrent canals as shown in Fig. 3. The Fig. 2 shows this fold in a serial sections. Even young specimens have this fold.

This fourth fold alters the wanting ciliary tract model of mantle, the ponder put anteriorly to this fold on posterior region is not transported directly outside, it is anterio-posteriorly transported, cross quickly the fourth fold and arrives in rejection tract, this, in those animals, has anatomical limit (dorsaly the fourth fold and ventraly the third fold of border, see Fig. 4). This rejection tract transports the ponder posteriorly, until inferior region of incurrent canal, where is exteriorized (Fig. 3).

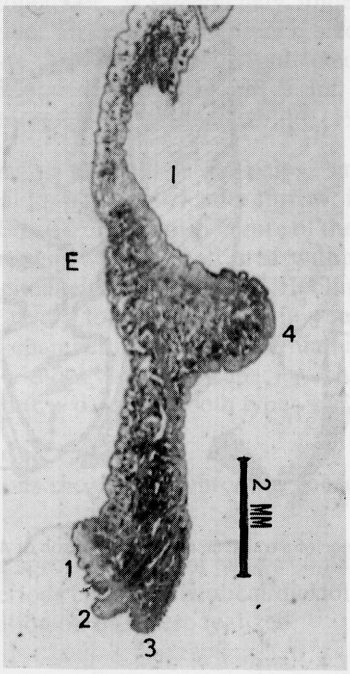

Fig. 2. Transversal section of posterior region of mantle border of *A. trapesialis*, showing trifolded border (1, 2 and 3) and the fourth fold (4). HE, 7 µm.

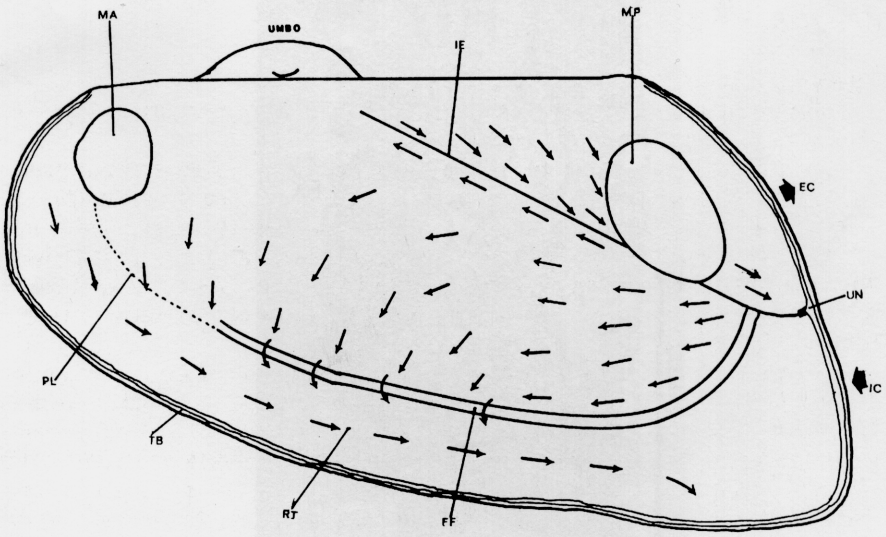

Fig. 3. Schematic representation of ciliary tracts of left mantle lobe of *A. trapesialis*, inner view.

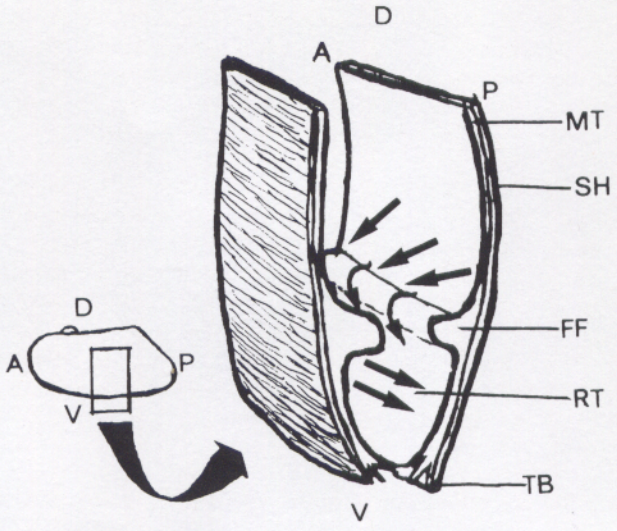

Fig. 4. Tridimencional scheme of a transversal median portion of *A. trapesialis* showing the ciliary tracts.

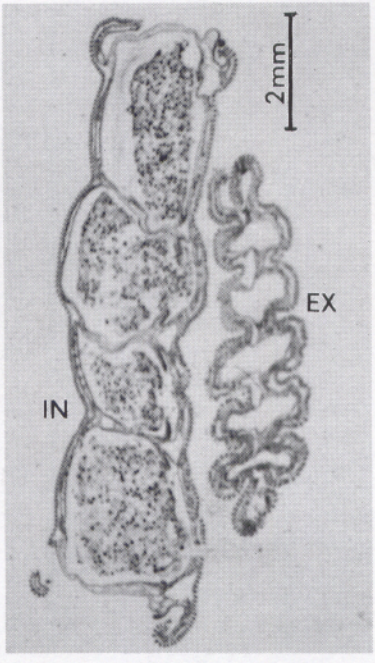

Fig. 5. Gill of *A. trapesialis,* longitudinal partial section, note the eggs in marsupium. HE, 7 µm.

Ctenidium. As all Mycetopodidae, is conspicualy folded transversaly. In this species these folds are wide. The outer demibranch size varies since larger to smaller than the inner one. In the specimens collected in spring station the marsupium of inner demibranch generally has a lot of eggs (Fig. 5). For microanatomical and hystological details see Hebling (1976).

Digestive system. Circular to eliptical labial palps, smooth velvet-like outer surface, with only a central longitudinal slender furrow; inner surface with wide radial folds, easily view (Fig. 6), those finish before of the margin, with a smooth marged. Posterior palpi region with a small area without folds. Stomach and intestine described by Veitenheimer (1973) and Hebling (1976). The style is always present (Fig. 8, E) very long and curved in young specimens. Rectum exposed in supractenidial chamber once the pallial union is lacking. Triangular anal papilla, thin walled without occlusion capacity. The papilla tip (Fig. 7) is single (a + b) or bifurcated (c + d) and, in both types varies since short (a + c) to long (b + d).

Viceral mass. Serial sections show hermaphroditic gonad, mixed with digestive gland (Fig. 8 and 9).

Circulatory system. These specimens do not have a constant rhythm of the heart, there is long diastolical periods between sistolical/diastolical normal periods. No control or better investigation on this were realized.

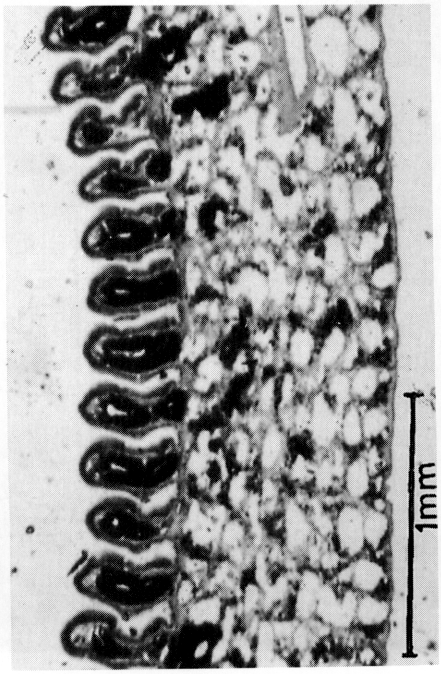

Fig. 6. Left-out hemipalp, longitudinal section. HE, 7 μm .

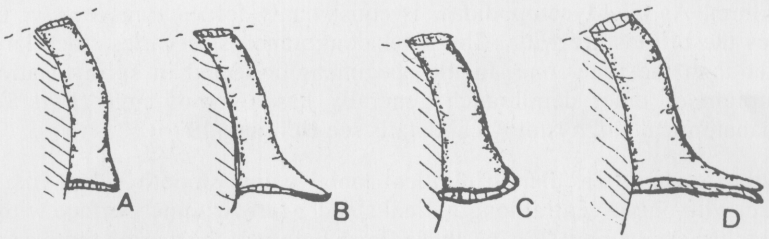

Fig. 7. Scheme of anal papilla, mainly variation fashions: A) short and simple; B) long and simple; C) short and bifurcated, and D) long and bifurcated.

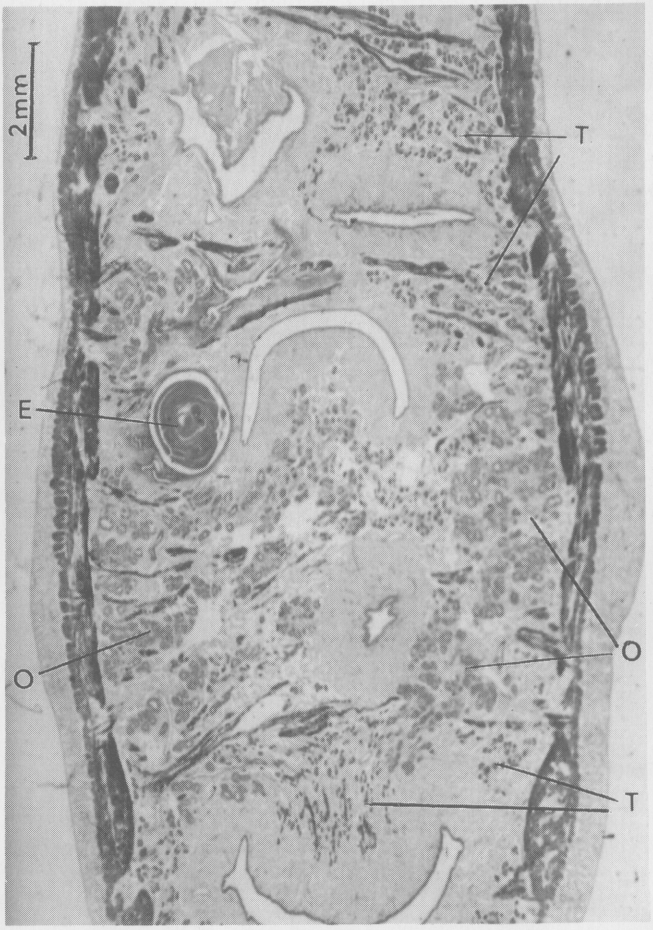

Fig. 8. Viceral mass, transversal section, median third. Malory, 7 μm .

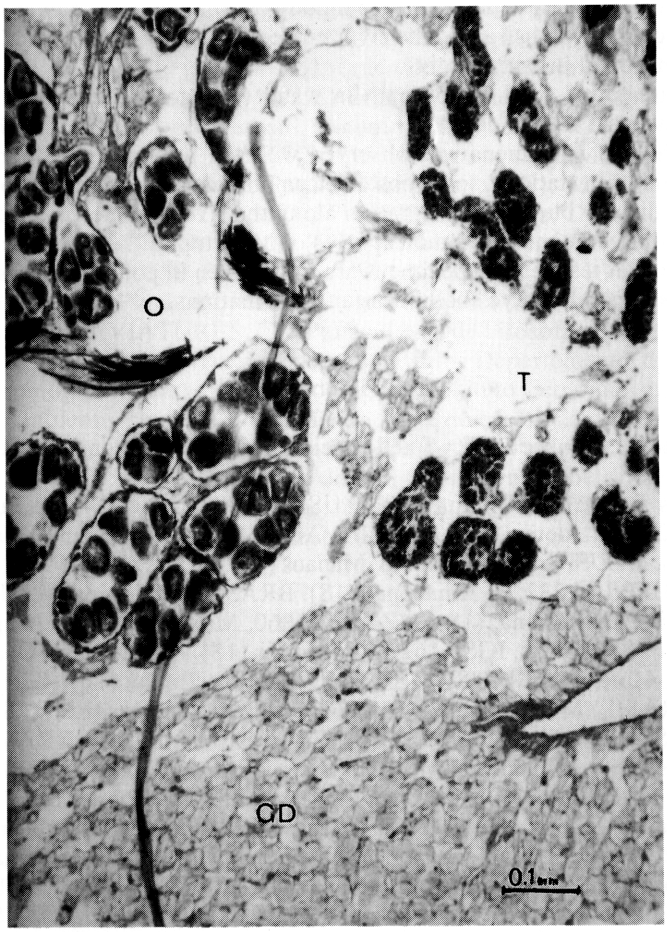

Fig. 9. Detail of Fig. 8. Malory, 7 μm.

Main muscle system. Well described by Hebling (1976). The cardinal pallial muscle is reduced and not view, and also it scars into the shell, but in MZUSP 5682 and 5688 specimens (both from Itaqui, RS, Uruguay river) this muscle is developed, producing a small scar in umbonal cavity of each valve.

Range. *Anodontites trapesialis* occurs in all main hydrografical basins of South America, East of Andes. Only is apparently absent in low São Francisco River and extreme south basins.

Habitat. With the collects, some complementary environmental data are possible to be refered:

This species only occurs in fresh-water habitat, never was found near coast courses.

The substract varies since sandy to muddy or compact clay. Never were found in gravel or rocky substracts. The river current is also an important factor, they never were found in fast currents.

They are found until 20 m depth in water (dredges), but generally are collected between 1 to 2 m depth.

Migration of specimens was observed with the low or right river level, according with rain stations, some obstacle can obstruct this migration and then the specimen dies by buryment. Migration along the river was never observed.

Generally is the most common species of Mycetopodidae in collect sites, has some pollution resistence, specimens are found even in polluted rivers, but these specimens generally have shell or organ deformations.

Material examined

Abbreviatures: S = shells: F = fixed specimens; L = specimens life examined. R = River.

Amazonas Basin: PERU, Iquitos, MZUSP 27032: R. Itala, Roca Fuerte (1S); MZUSP 27031: idem (2F). BRAZIL, Acre, MZUSP 26789: R. Jurua (1F). Amazonas, MZUSP s/n: R. Solimões, Manaus (15L); MZUSP 26109: R. Amazonas (1S); MZUSP/LM 232: R. Amazonas (1S). BRASIL, Tocantins, MZUSP 26110: R. Araguaia, Leopoldina, (1S); MZUSP 25360. Mato Grosso, R. Araguaia. Ilha do Bananal (2S). Goias, IGSP 162 R. Tocantins (1S). Northeastern Coast Basins: BRASIL, Maranhão MZUSP 27033: R. Munim, Baião (1F). São Francisco Basin: BRASIL, Minas Gerais, MZUSP 26122: R. São Francisco (2S); MZUSP 5670: R. São Francisco, Pirapora (2S). Eastern Coast Basins: BRASIL, Rio de Janeiro, MZUSP 15299: Atafoma, São João da Barra (3S); MZUSP 184: Lagoa Feia (3S) MZUSP 26131: R. Mortes, Campos (2S). São Paulo, MZUSP 26126: R. Ribeira de Iguape, Juquiá (1S); MZUSP 26115: R. Iguape, Xiririca (1S); MZUSP 299: Iguape (1S); MZUSP 26790: Juquiá (1S). Santa Catarina, MZUSP 13366: Joinvile (2S); MZUSP 18747: R. Itapoçu (2S); MZUSP 26111: idem. (2S); IGSP 314: Presidente Vargas (2S). Rio Grande do Sul, MZUSP 26117: Belém Novo (4S); MZUSP 2264: R. Camaquam (1S); MZUSP 2265: Pelotas (2S); MZUSP 2260: R. Camaquam (2S). Paraná Basin: BRASIL, Mato Grosso do Sul, MZUSP 27960: Passo da Lontra, Pantanal Sul, (1F); MZUSP 27892: Pantanal, Passo da Lontra (4F); UFMS 239: R. Abobral, Corumbá (1F); UFMS s/n: R. Nioaque, Nioaque (1F); UFMS s/n: R. Abobral, Corumba (2F); UFMS 120: R. Miranda, Salobra (3S); MZUSP 14577: R. Miranda, Salobra (3S); MZUSP 13380: R. Pardo (1S). São Paulo, MZUSP 26078: R. Pardo, Ribeirão Preto (1F); MZUSP 27887/9: R. Pardo, Ribeirão Preto (246L); MZUSP 26380: iden (2L); MZUSP 27890: R. Pardo, Mococa (195L); FFRP s/n: R. Tietê, Barra Bonita (1F); FFRP s/n: R. Piracicaba, Piracicaba (11F); FFRP s/n: R. Tietê, Barra Bonita (2F); MZUSP s/n: R. Piracicaba, Piracicaba (6L); MZUSP 26119: Vila Olinda (7S); FFRP s/n: R. Tietê, Barra Bonita (4S); FFRP s/n: R. Pardo, Ribeirão Preto (6S); MZUSP 15544: R. Tietê, Tietê (1S); MZUSP 27891: R. Tietê, Barra Bonita (126L); MZUSP 26113: R. Xiririca, Ed. Paulista (1S); MZUSP s/n: Represa Billings, Santo Amaro (5L); MZUSP 26124: R. Paranapanema, Pontal do Paranapanema (1S); MZUSP 25358: R. Tietê, Junqueira (2S). Paraná, MZUSP

26406: R. Itaipu, Foz do Iguassu (2F). Rio Grande do Sul, MZUSP 5682: R. Uruguai, Itaqui (13F); MZUSP 5688: R. Uruguai, Itaqui (3S); MZUSP 5688: R. Itaqui (2S). URUGUAY, MZUSP 26118: R. Uruguai, Paissandu (1S); MZUSP 26123: R. Morzon, Cardena (1S); MZUSP 26116: R. Pando, Piedra Sola, Canelones (1S); MZUSP 26128: Lagoa Arazati, Colonia (4S); MZUSP 14876: R. Pereyra, San José, Cerro Largo (3S); MZUSP 26125: R. Tacuari (1S); MZUSP 14014: R. Pando (1S); MZUSP 26112: R. Parido, Piedra Sola (1S); MZUSP 26137: R. Cuarein, Layado, Artigas (2S); MZUSP 13392: R. Cuadra, Durazno (1S); ARGENTINA: Chaco, MZUSP 15019: R. Resitencia (1S); La Plata, MZUSP 254: R. La Plata (1S); MZUSP 5688: idem. (5F); MZUSP 8049: R. Santiago (1S); MZUSP 246: R. La Plata (8S); MZUSP s/n: Patagonia (3S); MZUSP 245: R. La Plata (1S); ABBREVIATURES: FFRP: Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto da Universidade de São Paulo, Departemento de Biologia, Seção de Zoologia. Reference Collection. IGSP: Instituto Geológico da Secretaria do Meio Ambiente do Estado de São Paulo. Coleção de moluscos recentes. MZUSP: Museu de Zoologia da Universidade de São Paulo. R: River. UFMS: Universidade Federal de Mato Grosso do Sul. Centro Universitário de Corumbá, Departamento de Ciências Biológicas. Study material of Biologist Simone do Valle Leone, the numbers mean collect stations.

Discussion

The data found in "Diagnosis" are characteristic of *Anodontites trapesialis* if compared with the other Mycetopodidae species. Even with the observed large conchological variation rate, those anatomical characters, if analysed, permit an easy identification, by having a lesser variation degree. No character, conchological or anatomical, was found as exclusive of some hydrographical basin specimens, what, for the moment, precludes a subspecific division (based on morfological characters).

This wide range of *A. trapesialis* may be compared with those of several fish species, also wideranged. Perhaps this phenomenon is due to the lack of effective barriers among the South American macrobasins, and the very recently isolated East Coastal microbasins. For more details is suggested Flower (1950), Ab'Saber (1962), Parodiz (1969), Fittkau et al. (1969), Menezes (1970) and Mezzalira (1974). The fish geografical distribution analysis is very important in analysing the same of Mycetopodidae, because its larvae during its parasitary phase (lasidium) is dispersed by fish.

Conclusion

1) There is a group of anatomical characters exclusive of *Anodontites trapesialis* (Lamarck, 1819).
2) There is large variation of conchological characters. No character exclusive of a basin specimen was found.
3) A lesser variation of anatomical characters was observed. Those analysis permit an easy identification.

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Abbreviations

E: style sac
EC: excurrent canal
EX: outer demibranch
FF: fourth fold of mantle
GD: digestive gland
IC: incurrent canal
IE: outer demibranch insertion
IN: inner demibranch
MA: anterior adductor muscle
MP: posterior adductor muscle
MT: mantle
O: ovavius
PL: pallial line
RT: rejection tract
SH: shell
T: testiculous
TB: trifolded border
UN: lobe union