

Review

Unhealthy environmental controversy involving exotic and native land snails in Brazil

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A diagnostic about the conservation status of the Brazilian native land snails, severely threatened by human actions and attempts for the eradication of the invasive exotic mollusc species *Achatina (Lissachatina) fulica* (Bowdich, 1822) is presented. Purposely introduced in the country in 1988 for human food purposes (continental malacoculture), this species ended up being officially banned later in 2003, triggering many public actions, directly involving the "unprepared" Brazilian population through the means of social communication, aimed at their control and eradication of the environment. Consequence of this procedure, premature and alarmist, today many species of native and endemic terrestrial snails, poorly known scientifically, are under increased threat of extinction in Brazil and, very probably, in other South American countries.

Key words: Exotic mollusc, eradication, native snails, conservation, Brazil.

INTRODUCTION

A serious and worrying malacological conflict of conservation is present today in Brazil (and other South American countries): on behalf of public funding carried forward in an attempt to control and eradicate the vast Brazilian territory of exotic invasive African snails

Achatina (Lissachatina) fulica (Bowdich, 1822), representative of the Family ACHATINIDAE Swainson, 1840, controversially together large and medium endemic native terrestrial snails, currently in evident situation of threatened extinction, are being indiscriminately decimated for the population as a result of public alarmist campaigns (Agudo-Padrón, 2011a: 42, 2012) (Plate 1).

Even small arboreal native species poorly known are being interchanged, collected and destroyed in the last years (Aquino, 2011c) (Plate 2). This disastrous situation should be occurring, simultaneously, in other locations and countries of the continent.

ANALYSIS OF THE CONTEMPLATED SITUATION

Based on the available technical literature (Simone, 2006), we have besides the most traditional families of South American giant and medium native and endemic gastropods, including the Families: MEGALOBULIMIDAE

Leme, 1973 genus *Megalobulimus* (Miller, 1878) (Plate 4) and STROPHOCHEILIDAE, (Thiele 1926 (genus *Strophocheilus* Spix, 1827, *Anthinus* (Albers, 1850), *Mirinaba* (Morretes, 1952) and *Speironepion* (Bequaert, 1948), involved at least 82 forms each. Besides, we have some native forest snails of the Family BULIMULIDAE Tryon, 1896 (Plate 2), mainly the Subfamily ORTHALICINAE (Albers, 1850), all native species which are just more similar, phenotypically, to the invasive exotic African snail (Aquino, 2011a, 2012) (Plate 3). These snails sum up to a total of approximately 21 forms taxonomically recognized in the territory of Brazil and South America. More snails not well known or studied and virtually all have been included in some degree of danger. These are classified and included in the genera *Orthalicus* (10 species), *Sultana* (2 species) and *Corona* (9 species).

Due to their appearance, eventually species of the genus *Thaumastus* (Albers, 1860) (16 species), forestal snails representatives of the Subfamily BULIMULINAE (Tryon, 1867; Simone, 2006; Colley, 2012), may become also endangered (Coelho, 2005).

Some other species of native snails, family BULIMULINAE, *Auris bilabiata* for example (Broderip and



Plate 1. Encouraged by public campaigns “badly conducted” , the population “unprepared” capture and destroys indiscriminately every snail that is on its way (upper). Following growth of the exotic *Achatina (Lissachatina) fulica* (Bowdich, 1822): as in size, native snail species can become easily confused with the ones in Plate 2. Source: Agudo-Padrón (2011).



Plate 2. Small native arboreal snails *Drymaeus papyraceus* (Mawle, 1823) (BULIMULIDA E) . Source: Agudo-Padrón (2011).



Plate 3. Florestal native snails *Orthalicus cf. prototypus* Pilsbry, 1899 captured “simultaneously” with African snails in semi-rural areas in Northeastern Brazil. Source: Aquino (2011).



Plate 4. Native south american sandbanks megasnails *Megalobulimus elongatus* (Bequaert, 1948) and invasive African snails *Achatina (Lissachatina) fulica* (Bow dich, 1822) ... w ho is w ho for the lay men ?
Source: Agudo- Padrón (2010).

Sowerby, 1829) reared for beauty and scarcely known scientifically are being destroyed in the frenzy created by collective panic (Aquino, 2011 b).

The “fatal” potential visual confusion caused by the invasive African snail with native endemic species (Plates 2, 3, 4) have been singled out by experts in the literature (Thiengo and Fernandez, 2005; Coelho, 2005; Colley and Fischer, 2009; Pimpão, 2010).

DISCUSSION AND CONCLUSION

The conservation status of native continental molluscs and the parallel occurrence of invasive alien species in the southern region of the country have been subject of extensive discussions and questions in recent times (Agudo-Padrón, 2009, 2010, 2011 b-g; Agudo-Padrón and Lenhard, 2010).

Today, the exotic invasive *Achatina (Lissachatina) fulica* is present in all Brazilian territory (with exception of “Pampa” biome, in the southernmost), and the Atlantic Slope of the Southern Cone already settled in the neighboring country of Argentina (Gregoric et al., 2011), beyond the Paraguay and other South American territories (Borrero et al., 2009).

Observing the current situation in practice (referential notices and field experience), the public “badly conducted actions” for the control and eradication of *Achatina*

(*Lissachatina) fulica* in Brazil, officially opened in 2003 with the “prohibition” of the species in the country – initially introduced in 1988 through the Paraná State, PR, Southern region (Globo, 1992, 1994; Teles and Fontes, 2000; Thiengo et al., 2007; Colley and Fischer, 2009), and a second time at the beginning of the 1990s, through the “Santos” Port in “Praia Grande”, São Paulo State, SP, Southeastern region (Armellini and Santana, without specific date) and consequent “premature release” into the environment of animals in livestock management regime (continental malacoculture or “escargot” farming) for fear of possible law sanctions, today these situations are becoming an important element much more

damaging to our suffered native and endemic terrestrial molluscs, itself occurring as wildlife amongst the giant African invasive snail, unconsciously accelerating the extinction process of the first, which must urgently be re-evaluated and re-oriented by the corresponding and/or responsible authorities.

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