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The South American Fur Seal *Arctocephalus australis* is one of the most widely distributed South American otariid species. It occurs on the Atlantic coast southwards from Brazil, breeding mainly at island rookeries off Uruguay and Argentina, down to the coast of Chubut province, Isla de los Estados and the Malvinas (Falklands) Islands (Carvalho 1975; Vaz-Ferreira 1982), with a single record from South Georgia Islands (56°0'S & 33°0'W) close to the Antarctic continent (Daneri et al. 1997). Estimated population size for *A. australis* is 300,000 specimens (Campagna 2008).

In Brazil, during winter months (June–September), specimens of *A. australis* are regularly found along the Rio Grande do Sul and Santa Catarina coasts (Castello & Pinedo 1977; Pinedo 1990; Simões-Lopes et al. 1995; Oliveira 1999, 2013; Prado et al. 2016). According to Pinedo (1986), both *Otaria flavescens* (South American Sea Lion) and *A. australis* specimens arriving on the southern coast of Brazil would come from their breeding colonies in Uruguay, only 250km south of the Rio Grande breakwaters. Occasionally, vagrants have been recorded along the southeastern coast of Brazil (Vieira 1955; Moura et al. 2011). Although reported along the northeastern coast of the country at Salvador, Bahia (13°S) (Castello 1984), *A. australis* seems to rarely moves north of Rio de Janeiro (23°S).

On 01 May 2015, fishermen noticed in the surf zone an unidentified large animal resembling a dark

## HUMAN CONSUMPTION OF A VAGRANT SOUTH AMERICAN FUR SEAL *ARCTOCEPHALUS AUSTRALIS* (CARNIVORA: OTARIIDAE) IN BRAZIL

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fish (probably an Atlantic Goliath Grouper *Epinephelus itajara*) or a live Capybara *Hydrochoerus hydrochaeris* in the locality of Ponta do Ramo (14°29'S & 39°1'W), Ilhéus, Bahia, northeastern Brazil. On checking more closely with a raft the fishermen noted a seal-like creature. Although severely wounded, it was still alive when first spotted and behaved aggressively towards the fishermen during the capture, consistent with previous observations by the authors. Numerous shark bites were observed in the rostrum and flippers, the peduncle was severely lacerated and the intestines were protruding (Images 1,2). The wounds were probably recently inflicted and were so severe that the animal did not survive after capture, thus the fishermen decided to butcher the carcass and share the meat among their

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companions.

The specimen was identified as an adult of South American Fur Seal based on the combination of the characteristic coloration of the pelage, head shape, body size, the relatively large eye size, and mainly due to the pronounced three cusped teeth in post canines (Reppening et al. 1971; Drehmer & Ferigolo 1996). The skull and mandibles were saved and are deposited in the Zoology Laboratory at Universidade Estadual de Santa Cruz under reference CMARF 1200.

As noted by Moura & Siciliano (2007), pinnipeds are not a familiar sight to beach-goers in the tropics and their occurrence often attracts people. Unfortunately, the interaction with humans can be negative and often result in harassment and injuries. These injuries include direct anthropogenic aggression like shooting marks or broken bones (Oliveira et al. 2001; Machado et al. 2012), mainly related to fishing activity. Also, there have been reports of pinniped entanglement in fishing nets (Moura & Siciliano 2007; Machado et al. 2015) and shark bites and wounds (Souto et al. 2009) as an indirect consequence of their long journey in tropical seas. Sharks represent a significant cause of mortality of pinnipeds in tropical or temperate regions (Riedman 1990), as indicated by the emblematic record of a Leopard Seal *Hydrurga leptonyx* found in the stomach contents of a tiger shark captured in a long-line off the northern Rio de Janeiro coast (Rosas et al. 1992).

Consumption of South American Fur Seal by humans along the Atlantic coast dates back at least 6,000 years among Fuego-Magellanic canoe peoples (Schiavini 1987), and by Charrua Indians along the Uruguayan coast (Reeves et al. 1992). Afterwards, the commercial exploitation of fur seals on the Uruguayan coast remained from 1515 to 1991 (Ximenez & Langguth 2002). It was the longest presumably sustained operation of seal hunting in the world (Reeves et al. 1992) and Uruguay was also the last country in South America to prohibit it in 1991 (Ximenez & Langguth 2002; Oliveira et al. 2009).

The present record, however, is of special concern as human consumption of a South American Fur Seal seems to be unusual in Brazil. Pieces of meat as heavy as 8 kg were shared among fishermen and their relatives. In addition, small pieces of blubber were used as bait in the local shark long-line fishery. This fact raises two points involving both public health and the killing of wild animals for consumption. As a matter of fact, consumption of aquatic or marine bushmeat is affecting biodiversity worldwide, and the trade includes marine species such as cetaceans, sea turtles and sirenians (Clapham & van Waerebeek 2007). This note adds a pinniped species



**Image 1.** Fisherman holding the South American Fur Seal *Arctocephalus australis* carcass found on the beach of Ponta do Ramo, Ilhéus, Bahia, Brazil, on 01 May 2015. Detail of the wound on the rostrum.



**Image 2.** Fishermen holding the South American Fur Seal *Arctocephalus australis* carcass found on the beach of Ponta do Ramo, Ilhéus, Bahia, Brazil, on 01 May 2015. Note the lacerations of the peduncle and rostrum.

on the list of animals involved in the marine bushmeat issue in northeastern Brazil. Consumption of an injured and presumably weak marine mammal carcass points to an increasing risk of contact between potentially harmful viruses, bacteria and fungi and humans. Pinnipeds arriving on Brazilian beaches are invariably exhausted and sick, and Velozo et al. (2009) concluded that these feeble animals tend to develop diseases such as tuberculosis due to their diminished immunological capacity. Tuberculosis was first confirmed by Bastida et al. (1999) in a vagrant Subantarctic Fur Seal *Arctocephalus tropicalis* from Argentina. *Mycobacterium tuberculosis* complex was identified as the etiological agent of the disease. Following early reports, new findings of tuberculosis affecting South American Fur Seals and Sea Lions in Argentina were documented (Bernardelli et al. 1996). In addition, Blanc et al. (2009) first reported about influenza viruses A and B circulation in *A. australis* from Uruguay. These etiological agents circulate among pinnipeds in Argentina and Uruguay affecting all ages and genders (Arbiza et al. 2012). Other investigations elucidate the causes of mortality in South American Fur Seals. Among 78 pups of *A. australis* examined from Isla Guafo, Chile, Seguel et al. (2011) found the primary cause of death to be enteritis with microscopical lesions of bacteremia, followed by starvation, trauma, drowning and stillbirth.

In relation to this, Velozo et al. (2009) reported on a vagrant *A. tropicalis* in Bahia, in the nearby area of the present case specimen, diagnosed with tuberculosis. In that event, the agent was identified as *Mycobacterium avium*.

This line of evidence suggests a potential risk for human health when handling and consuming pieces of blubber and meat from a wild pinniped. In general, this process is conducted in very poor hygiene conditions as well its conservation and post-consumption. This note represents an alert to public health specialists and wildlife authorities in Brazil. It calls the urgency of an outreach campaign advertising to the potential risks of ingesting bushmeat either from land or aquatic sources.

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