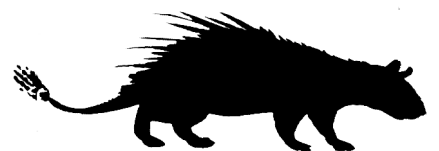


**La cría del puerco espín de cola de pincel (*Atherurus africanus*)**



Sección 5.1.

**The biology and use of the African brush-tailed porcupine (*Atherurus africanus*, Gray, 1842) as a food animal. A review**

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## The biology and use of the African brush-tailed porcupine (*Atherurus africanus*, Gray, 1842) as a food animal. A review

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The brush-tailed porcupine (*Atherurus africanus*) is a hystricomorph rodent, which frequents the forests of West and Central Africa. With an average weight of 3 kg, it is a favourite source of meat for urban and rural populations of Gabon, Nigeria, Cameroon or Congo. Hunted in large quantities, its price is often higher than that of other game or domestic animals. Although its current productivity in captivity is limited to a single young per birth and two to three births per year per female, this species could be a good candidate for minilivestock programmes in African forest areas if its current reproductive potential in captivity could be improved. Further research should be encouraged on its biology and reproduction since the current level of hunting for this species is probably not sustainable. Captive breeding programmes could play a role in assessing a better knowledge of the species' biology, and in reducing the effects of intensive hunting in areas where this activity is no longer sustainable.

**Keywords:** brush-tailed porcupine; *Atherurus africanus*; minilivestock; game farming; reproductive biology; African rodents; Central Africa; wildlife utilization.

### Introduction

In many African countries, wildlife represents a significant source of food and financial resource for rural and urban populations, despite the fact that its contribution to national economies is frequently overlooked. This is particularly true in areas with large portions of rainforest where the raising of livestock is difficult and traditional hunting remains the main way of obtaining animal protein (Martin, 1985; Anadu *et al.*, 1988). In this context, several authors have emphasized the possible benefits of raising some species of wild animals in captivity (Martin, 1983; Peters, 1988; Viemeyer, 1991; Feer, 1993; Féron, 1995). In recent years, more importance has been accorded to non-conventional species production in the tropics, to produce local animal protein and find sustainable ways of development. Minilivestock is the term used to describe the production of small-sized economically useful wild animals that can be raised in small-scale farming units and used as food or animal feeds (Hardouin, 1992, 1995).

The brush-tailed porcupine (*Atherurus africanus*, Gray, 1842) is a rodent that lives in equatorial Africa and is particularly popular as a game species in its area of distribution.

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For that reason, it has been often suggested that this species could be a candidate for ranching or farming in order to produce local meat in a sustainable way (Anadu *et al.*, 1988; Infield, 1988; Vietmeyer, 1991; Blom *et al.*, 1993; Feer, 1993). However, information on the biology of that species is very scarce and very few trials have been undertaken so far to investigate its zoonotic potential (Rahm, 1962a). Since 1994, Vétérinaires Sans Frontières (France), has established a rodent farming project in Gabon to study the potential of local rodents, including the African brush-tailed porcupine, to be raised in captivity at a local level. The aim of this paper is to produce a review of the relevant literature, which is sparse and dispersed in many disciplines and to present current knowledge of the biology of this tropical rodent. This provides the basis to discuss its potential as a minilivestock species in Central and West Africa.

### Taxonomy and morphology

The brush-tailed porcupine (*Atherurus africanus*, Gray, 1842) is a rodent from the Suborder Hystricomorpha, family Hystricidae which represents the Old World Porcupines species that are divided into three genera, *Hystrix*, *Atherurus*, and *Trychis*, and distributed among the Asian and African continents. *A. africanus* and its Asian counterpart *A. macrourus*, are the only two representatives of its genus. *A. africanus* is an animal with an elongated body measuring 40 to 50 cm from snout to vent, short legs and short rounded ears. Its adult weight in Gabon averages 3 kg in both sexes. Its dentition consists of 4 incisors and 16 molars. Dental formula is  $II + 0C + 4M/II + 0C + 4M$ . The upper part of its body is covered with long spines that reach their maximum length in the middle of the spinal column. Most of those quills are flat and have a groove on their dorsal surface. From the middle back to rump, they become round and thicker. The base of the quills is clear or translucent and the rest is dark. The tail is long and can measure up to 26 cm in length. Its base is covered with a mixture of hair and quills; the middle part is scaly and hairless and it ends with a tuft of white bristles in the shape of a brush. Its scientific name comes from the Greek terms *Ather* (= ear) and *Oura* (= tail), meaning ear-shaped tail. Otherwise quite a silent animal, when disturbed, it produces an intimidating sound by rattling its tail with its quills, and stomping the floor with its hind leg. This behaviour aims to divert the predator's attention from the more vulnerable head and thorax. The feet are webbed, armed with nails and have smooth soles. They have five digits on the hind foot and the forefoot with a reduced thumb and short nails.

### Distribution and natural history

This species is found essentially in rainforest areas of the African continent, mainly in West and Central Africa but also in forest of Kenya, Uganda and high altitude forests of Democratic Republic of Congo up to 3000 m (Nowak and Paradiso, 1983). It is also present in the island of Bioko (Equatorial Guinea) and other small islands of the African Atlantic coast. The species can live in deep forest but tolerates secondary vegetation, and is fond of feeding on human crops such as manioc, banana, palm trees or peanut plantations. Brush-tailed porcupines also feed on forest fruits, insects, roots, carrion and earthworms (Rahm, 1956; Nowak and Paradiso, 1983). They like to live near water sources and are good swimmers although they rarely cross those natural barriers. They are nervous and fast moving animals that can climb trees and jump up to 1 m. These rodents are strictly