

**STRONGYLOIDES FERREIRAI RODRIGUES, VICENTE & GOMES, 1985
(NEMATODA, RHABDIASOIDEA) IN RODENT COPROLITES (8.000-2.000
YEARS BP), FROM ARCHAEOLOGICAL SITES FROM PIAUÍ, BRAZIL**

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Eggs and larvae of Strongyloides ferreirai Rodrigues, Vicente & Gomes, 1985 are identified in Kerodon rupestris (Wied.) coprolites dated from 8.000-2.000 years BP (Before Present), collected from archaeological sites from the northeast of Brazil.

Key words: coprolites – parasites in archaeological material – paleoparasitology – *Kerodon rupestris* (Wied.)

Coprolites found in South American archaeological sites are characterized by their zoological diversity. Sites of prehistoric human occupation were also used by wild animals and their desiccated faeces were preserved in the sedimental layers. Thus, animal coprolites are commonly found and dated by radiocarbon through their association with the remains of hearth.

For the diagnosis of the zoological origin of the coprolites, fresh faeces from animals of the region were obtained for comparison with the archaeological material. In this process morphological comparisons and the study of microscopic remains, including intestinal parasites, are made (Araújo et al., 1982).

This paper reports on the presence of *Strongyloides ferreirai* Rodrigues, Vicente & Gomes, 1985 eggs and larvae, and eggs of *Trichuris* sp. found in coprolites identified as of the rodent *Kerodon rupestris* (Wied.), collected in archaeological sites from Piauí state, Brazil.

MATERIAL AND METHODS

The coprolites were sent to our laboratory by the archaeological staff headed by Dr Niède Guidon, from the “Fundação Museu do Homem Americano”. They were collected from six archaeological sites in São Raimundo Nonato, Piauí, northeast of Brazil as described below:

Toca do Paraguaio – relative dating: 5,000-6,000 years BP;

Caldeirão Rodrigues – radiocarbon dating: 7,610 ± 80 years BP (GIF-sur-Yvette, Radiocarbon Laboratory, France – 6438);

Toca do Morcego – relative dating: 2,000-8,000 years BP;

Gongo I – radiocarbon dating: 2,090 ± 110 years BP (GIF – 3223);

Boqueirão do Sítio da Pedra Furada – radiocarbon dating: 7,230 ± 80 years BP (GIF – 7742);

Baixa do Cipó – relative dating: 5,000-7,000 years BP.

The coprolites were found free in the sedimental layers, sometimes in groups of up to 100 specimens or more. All the specimens had homogeneous morphology, measuring 1.0 to 1.7 cm x 0.3 to 0.5 cm and a brownish colour, suggesting rodent faeces (Fig 1). In the laboratory they were rehydrated in aqueous solution of trissodium phosphate (Callen & Cameron, 1960). After 72 hours the colour of the solution was observed and parasitological examination was performed after spontaneous sedimentation in conical glass jars (Lutz, 1919).

Small animals of the region were trapped for morphological comparisons of their faeces, which were allowed to desiccate at the local temperature. At the laboratory the faeces were rehydrated and examined by the same technique used for the coprolites. Nine specimens of three rodents species were taken alive to the laboratory: *Kerodon rupestris* (Wied, 1820), *Trichomys apereoides* Lund, 1839 and *Galea spixii* (Wangler, 1831).

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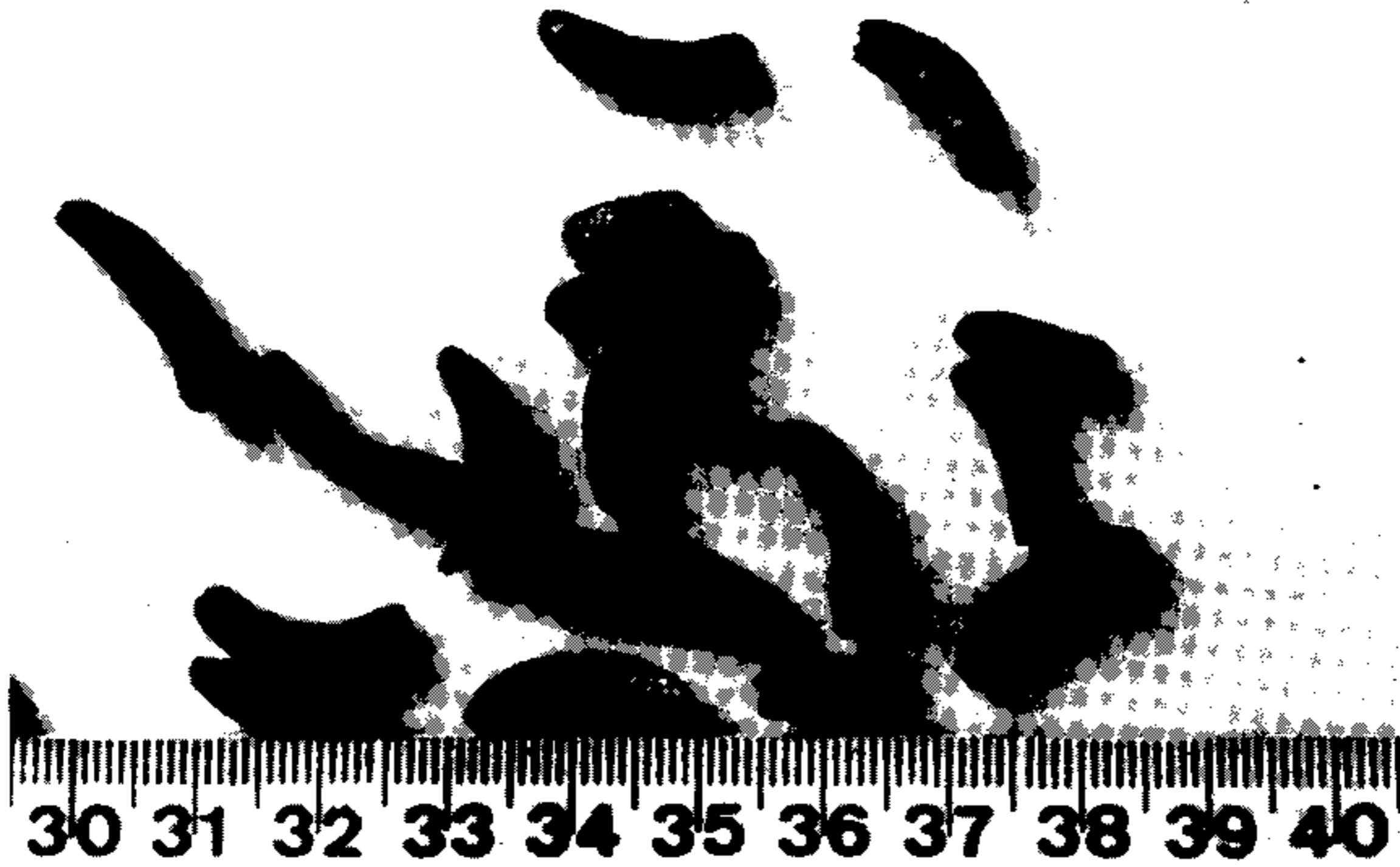


Fig. 1: *Kerodon rupestris* coprolites.

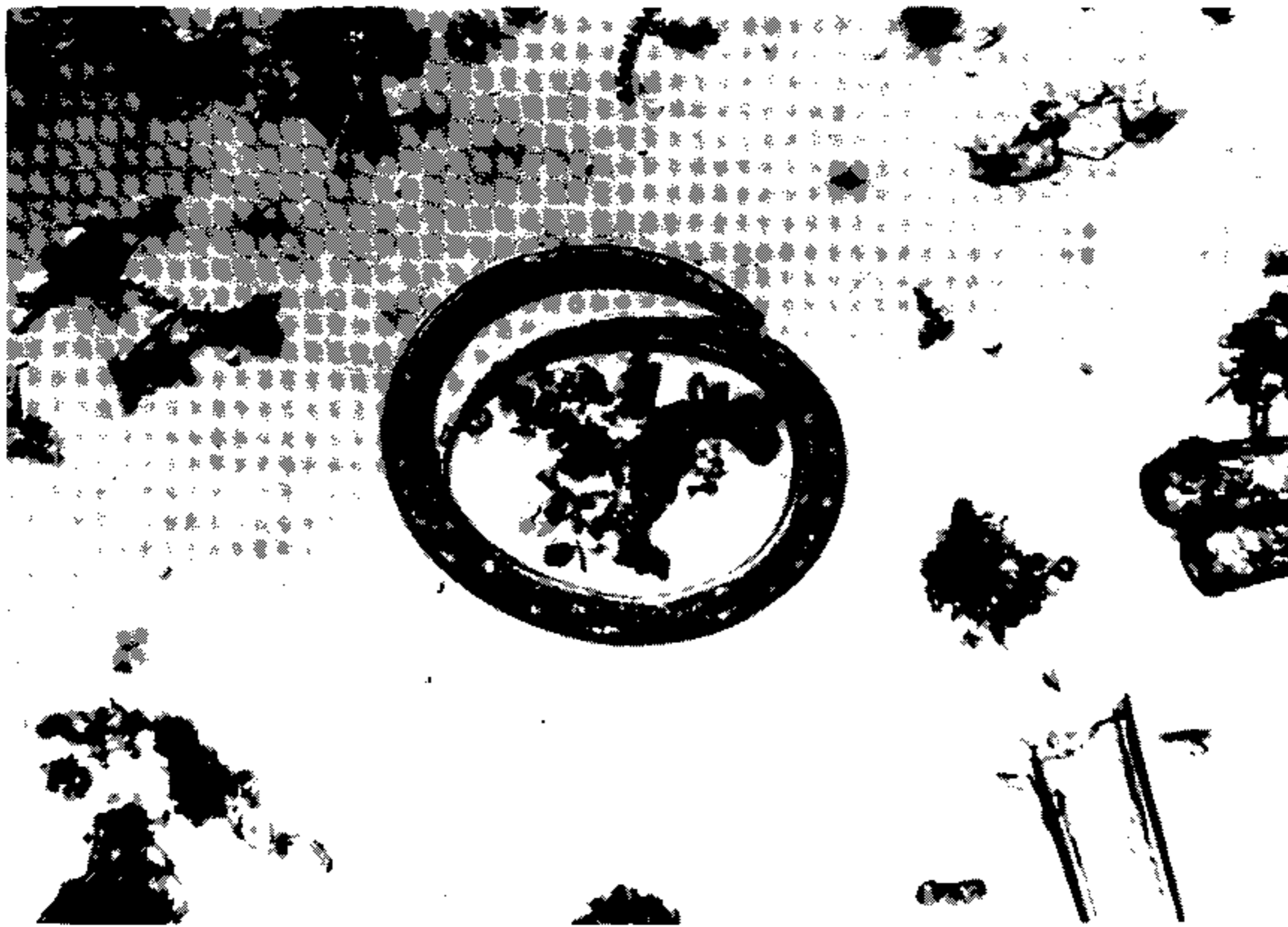


Fig. 2: larva found in the *Kerodon rupestris* coprolites (100x).

RESULTS

Larvae and thinly shelled eggs identified as *Strongyloides ferreirai* Rodrigues, Vicente & Gomes, 1985 were found in all the samples of the six archaeological sites (Fig. 2). In three samples, associated with the larvae, eggs of *Trichuris* sp., measuring $61.96 \times 31.65 \mu\text{m}$ ($\bar{X} 10$) were observed. All samples turned the rehydration solution to a brown-opaque colour.

DISCUSSION

The archaeological material was identified as *Kerodon rupestris* (Wied, 1820) (Rodentia, Caviidae) coprolites by comparing them with the recent faeces of this animal species. They differ from other rodent faeces by the size and by being kidney-shaped with a groove on the concave face (Fig. 1).

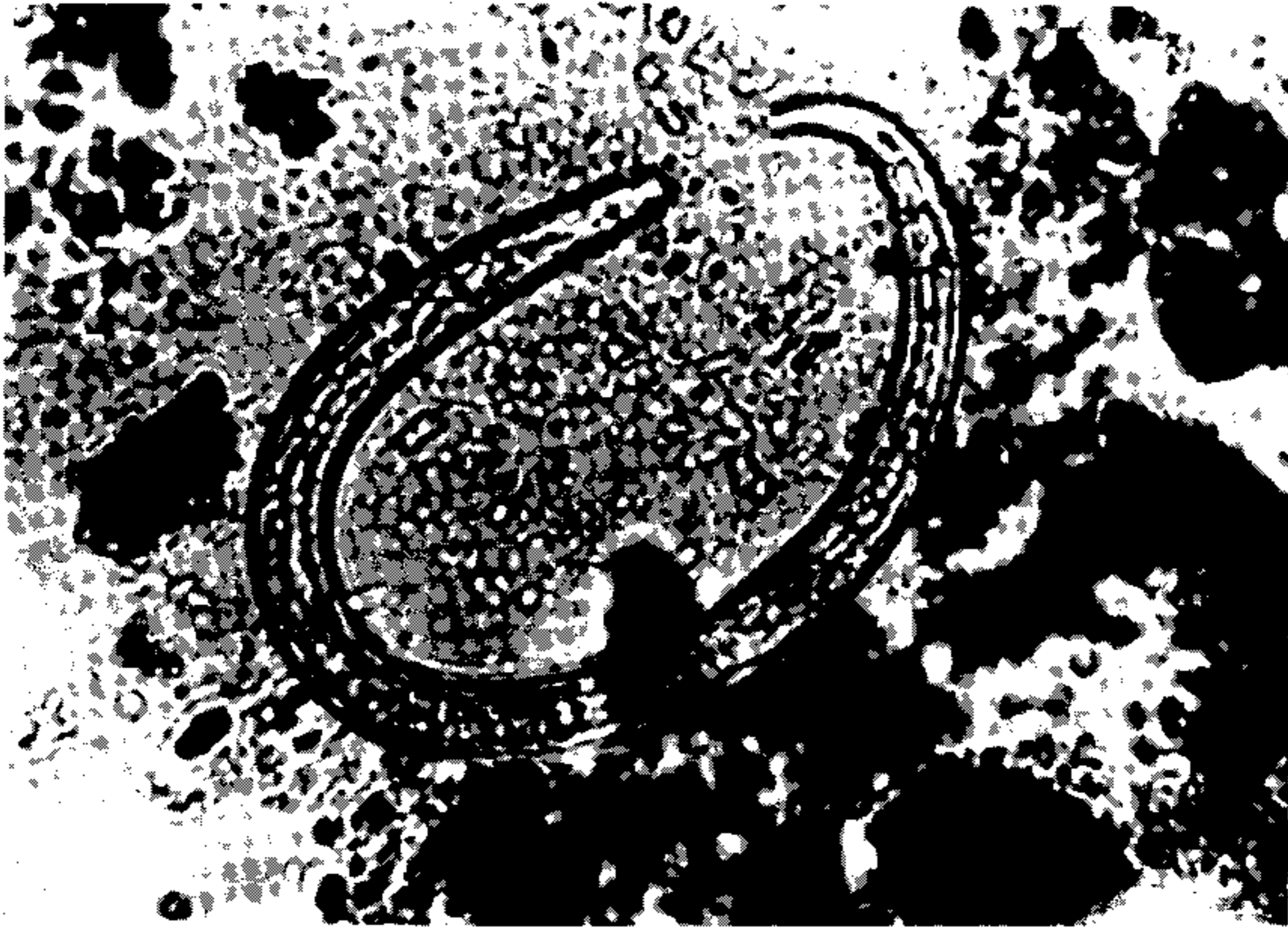


Fig. 3 : *Strongyloides ferreirai* larva found in *Kerodon rupestris* fresh faeces (160x).

Kerodon rupestris (Wied, 1820) is a rodent found in Brazilian semi-arid rocky environment, where it breeds and feeds (Lacher, 1981). Their habitats are easily identified by the deposition of great amount of their faeces in rock depressions. In the archaeological region of south-eastern Piauí it is still a common inhabitant (Chame et al., 1984).

The larvae found in the coprolites could only be identified after the necropsy of two specimens of *Kerodon rupestris* (Wied, 1820) trapped at the region of São Raimundo Nonato. Rodrigues et al. (1985) described the larvae as belonging to the new species *Strongyloides ferreirai* Rodrigues, Vicente & Gomes, 1985 by the finding of mature forms of the parasite and larvae with the same characteristics as those found in the coprolites (Fig. 3). *Trichuris* eggs were only found in the coprolites and, at the moment, it is impossible to know if they belong to a new or known species, not described in this host.

The parasitic fauna of South American wild animals is not completely studied and, as exemplified in this paper, new species of parasites can be found in archaeological material. Their specific diagnosis can only be established with the capture of animals whose faeces have morphological characteristics and alimentary

contents that can be compared with the coprolites.

RESUMO

Strongyloides ferreirai Rodrigues, Vicente & Gomes, 1985 (Nematoda, Rhabdiasoidea) em coprólitos de roedores (8.000-2.000 anos AP = Antes do Presente), de sítios arqueológicos do Piauí, Brasil — Ovos e larvas de *Strongyloides ferreirai* Rodrigues, Vicente & Gomes, 1985 foram identificados em coprólitos de *Kerodon rupestris* (Wied.), datados de 8.000 a 2.000 anos AP, coletados em sítios arqueológicos do nordeste do Brasil.

Palavras-chave: coprólitos — parasitos em material arqueológico — paleoparasitologia — *Kerodon rupestris* (Wied.)

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