

# A karyological study of *Geoemyda punctularia punctularia* (Daudin, 1802) from the Amazon region of Brazil (Chelonia, Emydidae)

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## Resumo

*Geoemyda punctularia punctularia* tem número diplóide de 56 cromossomos e número fundamental 72. O cariótipo mostra seis pares de cromossomos metacêntricos, dois pares submetacêntricos, três pares acrocêntricos e 34 microcromossomos. Na meiose do macho visualiza-se 28 bivalentes em diacinese e 28 cromossomos em metafase II. Não foi evidenciado heteromorfismo sexual.

## INTRODUCTION

The Emydidae (Chelonia) family is represented in the Amazon Region of Brazil by the subspecies *Geoemyda punctularia punctularia* (Daudin, 1802).

## MATERIALS AND METHODS

The chromosomes of 8 males and 4 females *Geoemyda punctularia punctularia* were studied.

Each animal received subcutaneously 0.015 ml per 10 grams body weight of a 1% aqueous colchicine solution. The animals were killed 4 hours later and chromosomes preparations were made from spleen tissue and testis. The chromosomes were prepared using a modification on the technique of Gorman *et al.* (1967) which is presently used routinely in this laboratory. This method has been described in detail by Ayres *et al.* (1968, 1969) and Sampaio *et al.* (1969, 1971).

## RESULTS

The somatic complement and cells in meiosis are present in Figs. 1 and 2.

*Geoemyda punctularia punctularia* has a diploid number of 56 chromosomes and fundamental number of 72.

Chromosomes of one, 2, 5, 8, 9 and 10 pairs are metacentric. The 3 and 4 pairs are submetacentric. The 6, 7 and 11 pairs are acrocentric and from 12 to the 28 pairs are microchromosomes.

In meiosis of the male there are 28 bivalents in diakinesis and 28 chromosomes in metaphase II. The bivalents in pachytene are in perfect homology. Many polyploid meiotic cells were found.

## DISCUSSION

High diploid number and the presence of microchromosomes have been described in the literature for many species of Chelonia. Van Brink (1959) found 50 chromosomes in *Chrysemys bellii bellii*. Sasaki and Itoh (1967)

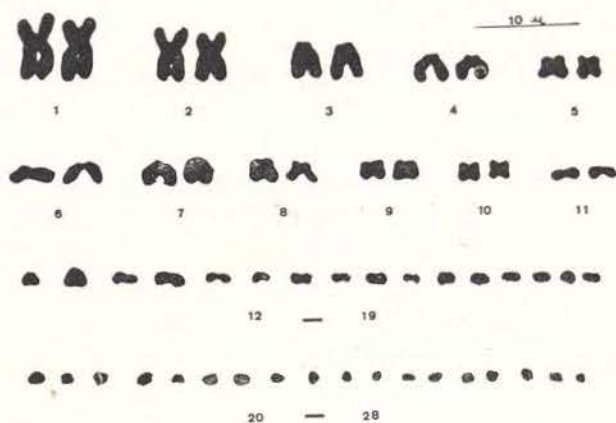


Fig. 1 — Male Karyotype of *Geoemyda punctularia punctularia*.

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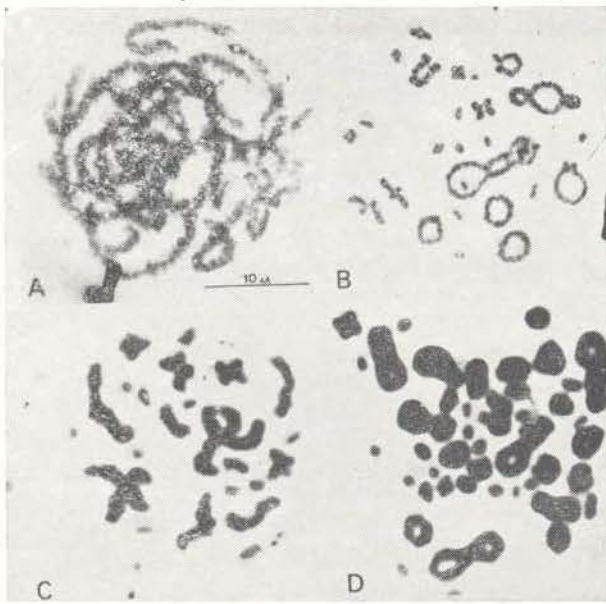


Fig. 2 — Meiosis of *Geoemyda punctularia punctularia*. Pachytene (A), diakinesis (B), metaphase II (C) and cell polyploid in diakinesis (D).

described karyotypes with 52 chromosomes, with many microchromosomes in *Clemmys japonica* and *Geoclemys reevesii*. These species have similar karyotypes to the species of the genus *Geochelone* (Sampaio *et al.* 1969, 1971). Barros *et al.* (1972) described a diploid number of 56 chromosomes in *Kinosternon scorpioides scorpioides* and *Kinosternon scorpioides carajasensis*.

The subspecies described in this paper has high diploid number with many microchromosomes (34). There is no sexual chromosome heteromorphism which is similar to the many chromosomes described for other Chelonia. The karyotype of *Geoemyda punctularia punctularia* is very similar to that members of the genus *Kinosternon* (Barros *et al.* 1972). The karyotypes differences may be the result of pericentric inversions.

## SUMMARY

*Geoemyda punctularia punctularia* has a diploid number of 56 and fundamental number of 72. Six pairs of chromosomes are metacentric, 2 are submetacentric, 3 are acrocentric and the rest are microchromosomes. There are 28 bivalents in diakinesis and 28 chromosomes in metaphase II. There is no sexual heteromorphism.

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