

# The Karyotype of *Henochilus wheatlandii*, Garman 1890 (Characidae, Bryconinae)



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## INTRODUCTION

*Henochilus wheatlandii*, the only known species of the genus *Henochilus*, was described by Garman in 1890 based on a single species collected in the Mucuri River, in the east of Brazil. In 1991, new collections were performed in the type locality, with the intention of capturing the species a second time. No *Henochilus* were captured during this campaign, which led to a misinterpretation of the possible extinction of the taxon. Later in 2000, *Henochilus wheatlandii* was collected again, this time out of its type locality in the Rio Doce, to the south of the Mucuri. The rediscovery of populations of *Henochilus* presents a unique opportunity to perform studies and increase knowledge of a poorly understood genus. Morphological studies were performed with the aim of analyzing the phylogenetic relations of *Henochilus* within the subfamily Bryconinae. This type of analysis is of great importance to infer the degree of kinship; however this diagnosis does not provide the necessary information for the establishment of phylogenetic relationships. For this, other types of studies are necessary, such as the study of the karyotype of *Henochilus wheatlandii*.

## METHODOLOGY

In this work, karyotypical studies were performed on four examples of males of *Henochilus wheatlandii* collected in Ferros municipality in the Santo Antônio River, in the sub-basin of the Rio Doce.



Figure 1: Male specimen of *Henochilus wheatlandii*

## RESULTS AND DISCUSSION

All of the specimens presented a diploid number of  $2n=50$  chromosomes, with the formula of  $5m+11sm+5st+4t$  (figure 2). The specimens presented NORs in the largest pair of submetacentric chromosomes (figure 3).

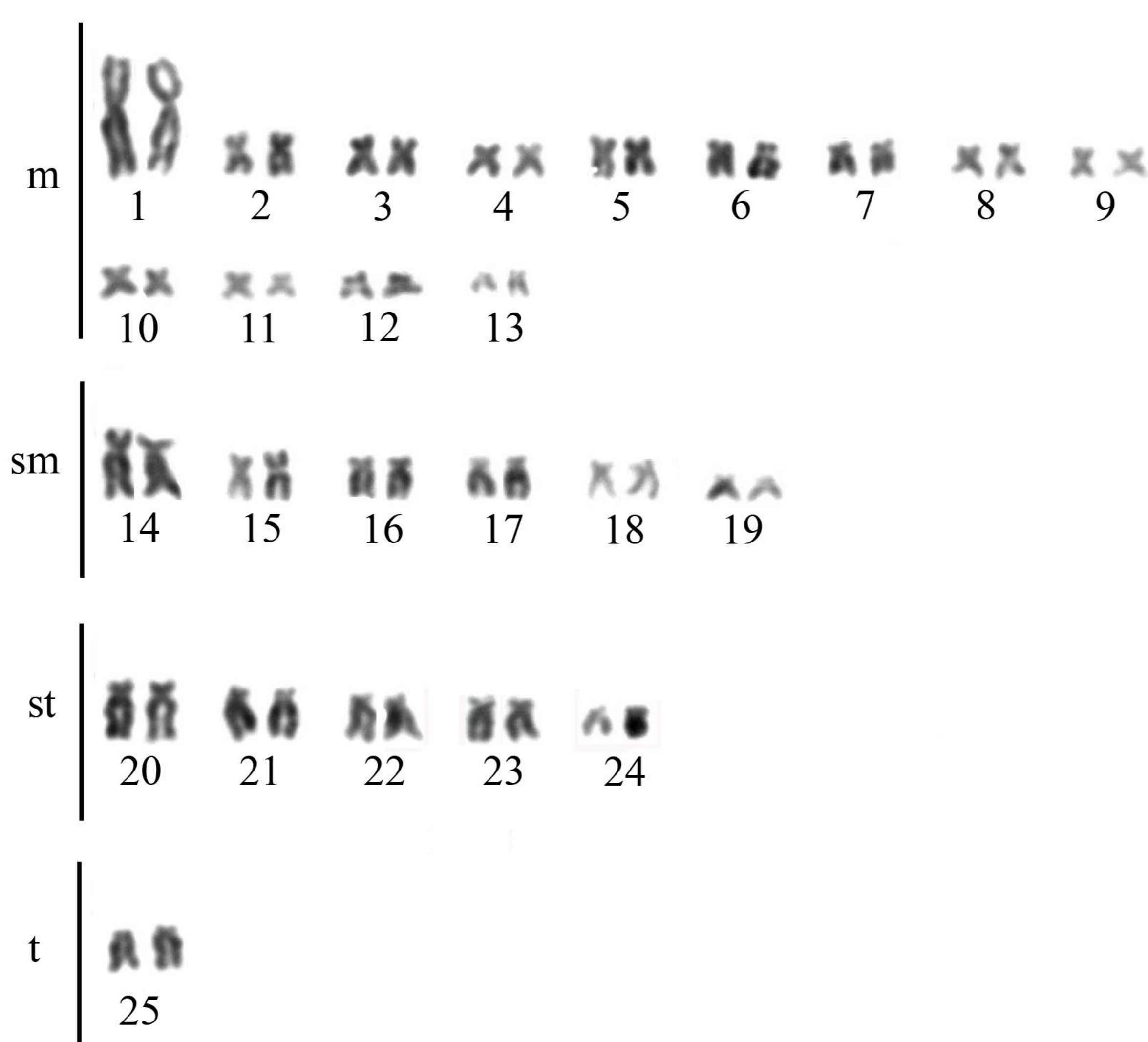


Figure 2: Karyotype of *H. wheatlandii*, colored by Giemsa technique.

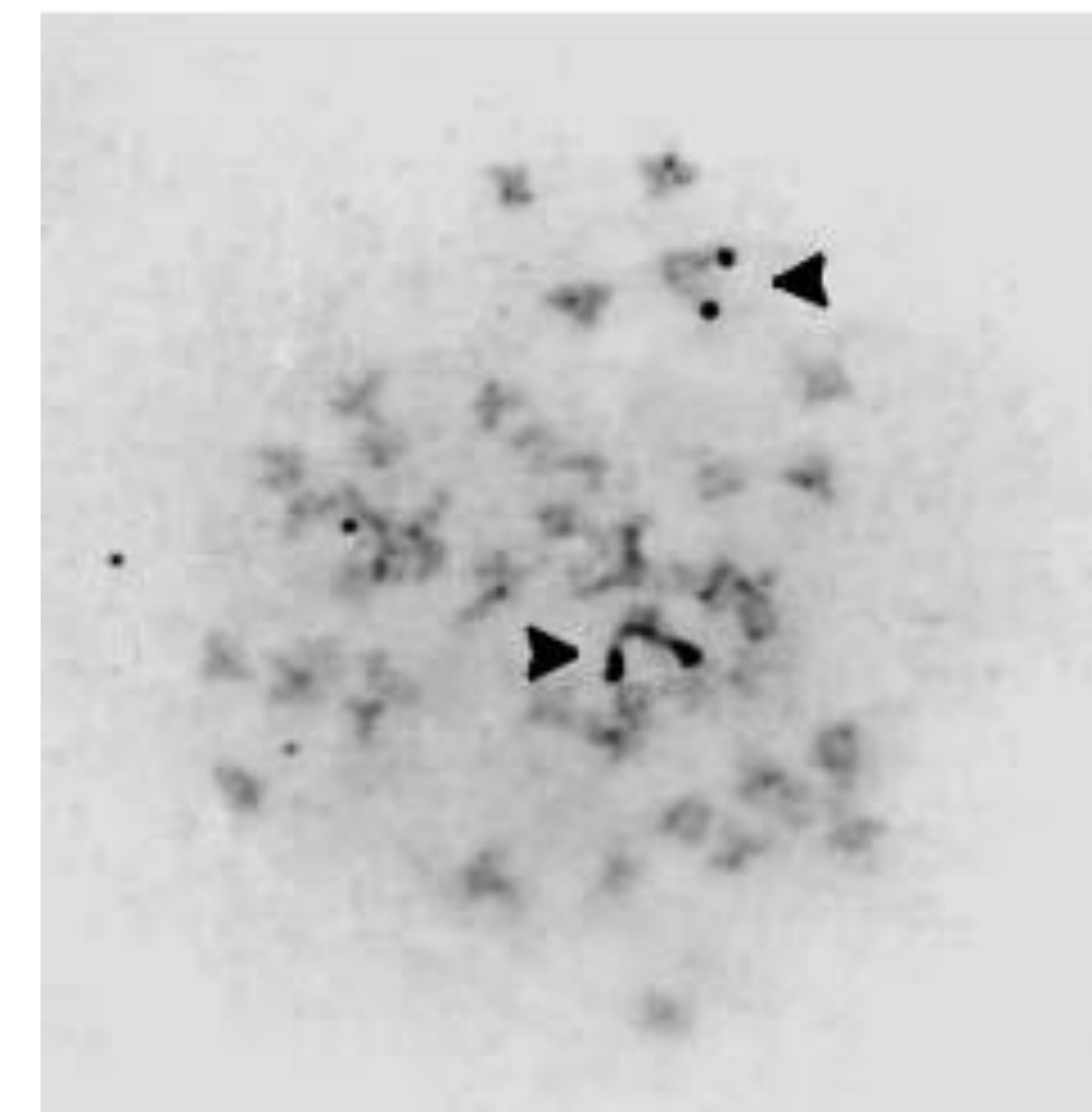


Figure 3: NOR markings in telocentric chromosomes.

The C-Band markings were very conspicuous in three pairs of metacentric chromosomes, in one submetacentric pair and one telocentric pair. Also, centromeric markings were found in one submetacentric pair and one submetacentric pair. 18s rDNA probes were found in a submetacentric pair, and the 5s rDNA probes were evident in the smaller arm of one submetacentric pair. These results indicated that the diploid number  $2n=50$  is conserved in the subfamily Bryconinae, and that the morphological differentiation between the genera *Henochilus* and *Brycon* did not involve changes to the diploid number.

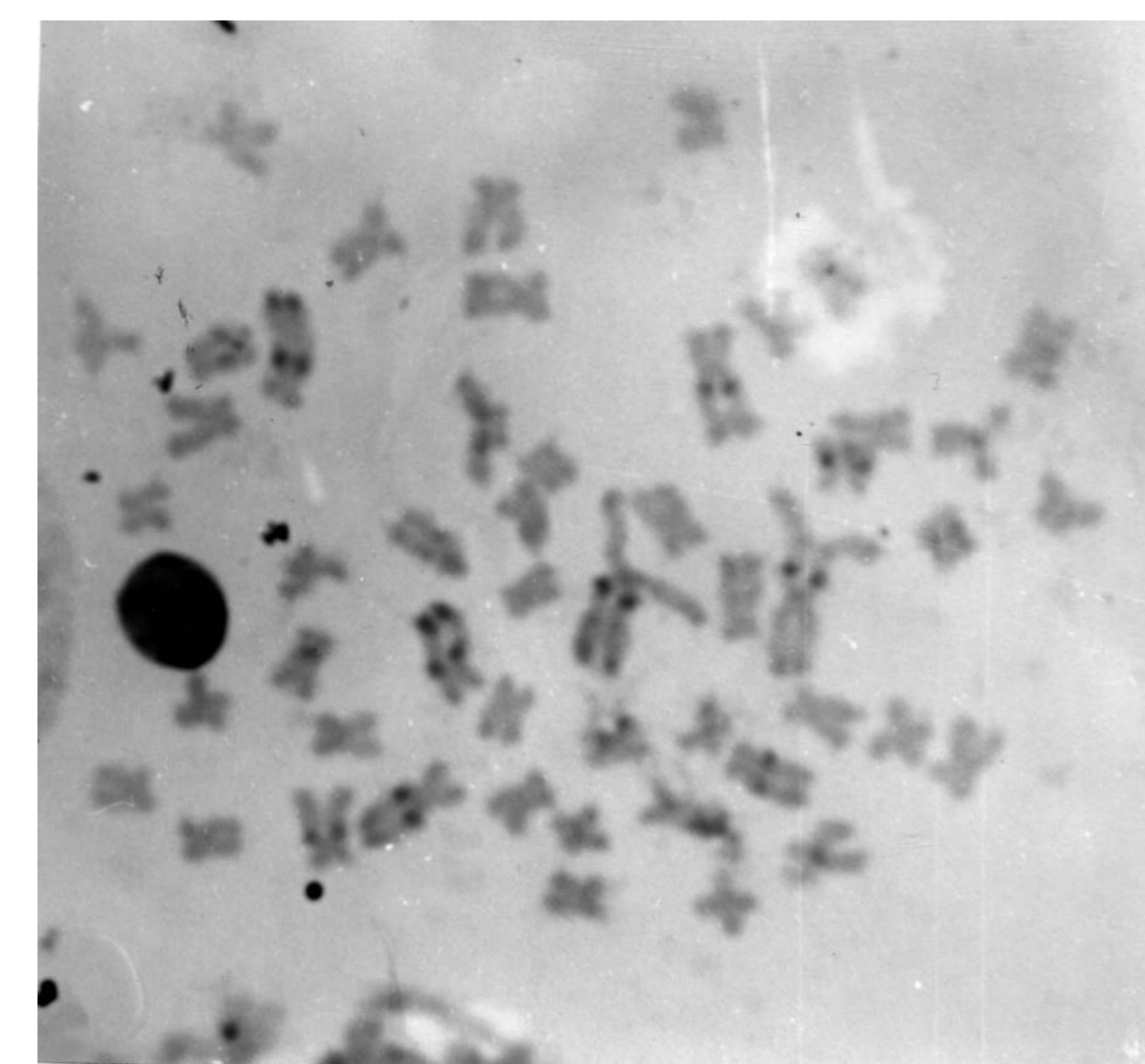


Figure 5: Heterochromatin markings (C-Banding).

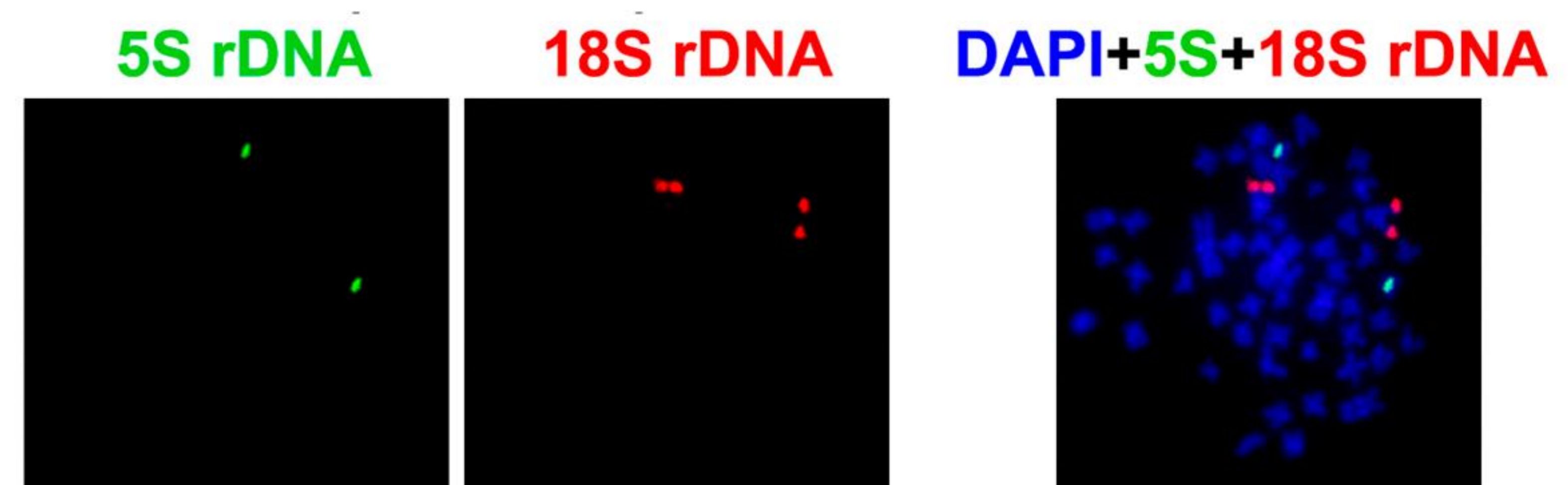


Figure 5. Markings of rDNA 5s 18s probes.

## CONCLUSIONS

Karyotype studies are also essential to understanding the differences between all of the groups, even providing indications of the processes of stability and of chromosomal differentiation between populations.