

## Abstract

Snakes form with almost 3700 described species more than one third of all squamate reptiles. The vast majority of snake species belong to the group Caenophidia, which is the best explored group of snakes for sex chromosomes. In contrast, sex chromosomes of the two other groups of snakes – Scolecophidia and Henophidia have so far been paid little attention. All snakes studied so far possess genotypic sex determination. Representatives of all Caenophidian families were observed with a female heterogamety sex determination system ( $ZZ/ZW$ ) and it was widely accepted that this system was common to all snakes. This claim was recently refuted when a male heterogamety ( $XX/XY$ ) was confirmed in a python (*Python bivittatus*) and a boa (*Boa imperator*), two representatives of Henophidia. In Henophidia, besides the  $XX/XY$  system, the  $ZZ/ZW$  system was reported in the only known representative of this group with heteromorphic sex chromosomes - *A. sp. cf. dumerili*. Sex chromosomes or sex determination systems are unknown in Scolecophidia. Caenophidian heteromorphic sex chromosomes have enabled the study of the phenomena associated with the gradual differentiation of sex chromosomes. These include W chromosome degeneration, the accumulation of repetitive elements, the fast Z phenomena, gene dosage compensation, and others. This work summarizes current knowledge about sex determination systems and sex chromosomes and their evolution in snakes.