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Studies on the Herpetofauna of the Canary Islands. II. The Karyotype of the Lizard, *Chalcides sexlineatus*

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Chalcides sexlineatus is an endemic scincid from Gran Canaria (Canarian Archipelago). The chromosomes of this species have not been studied despite this species' being interesting because of its geography and isolation. We offer the first karyological data on *Chalcides sexlineatus* from 17 males and 15 females of this species captured in the vicinity of Tafira Alta (Gran Canaria).

Mitotic metaphase plates were obtained from bone marrow and blood preparations made from colchicine treated animals as described elsewhere (Cano et al., 1984). Male meiosis was studied from testes preparations using the air-drying technique of Gorman et al. (1967). Thirty mitotic metaphases from each animal were photographed, chromosome lengths measured and karyotypes constructed. The karyotype shown in the Fig. 1E, is clearly bimodal (Avdulov, 1931), there being an obvious difference in chromosome lengths between the five pairs of big chromosomes and the remainder of the chromosomes. These differences in chromosome size are also evident in various meiotic phases (Fig. 1A–D). In meiotic metaphase I (Fig. 1A–B) five large and nine distinctly smaller bivalents are seen. In the group of large bivalents, the four biggest show 3–4 chiasmata and the fifth, smaller and ring-shaped, only two. Differences in chromosome size are also obvious in meiotic metaphase II (Fig. 1C–D). All chromosomes of the species set are apparently metacentrics, although the exact morphology of some of the smallest chromosomes is not easy to define with accuracy. A few of them might possibly be submetacentrics. The chromosome lengths in *Chalcides sexlineatus* vary considerably from 8.17 microns of the longest pair and 0.79 microns of the shortest. The NF (Nombre Fondamental; Matthey, 1949) in the species is 56. We found no evidence of sex chromosome heteromorphism.

At the present time, various species of Scincidae have been analyzed from the karyological point of view (Gorman, 1973; De Smet, 1981). These studies show little karyotypic variability. Diploid chromosome numbers are relatively low

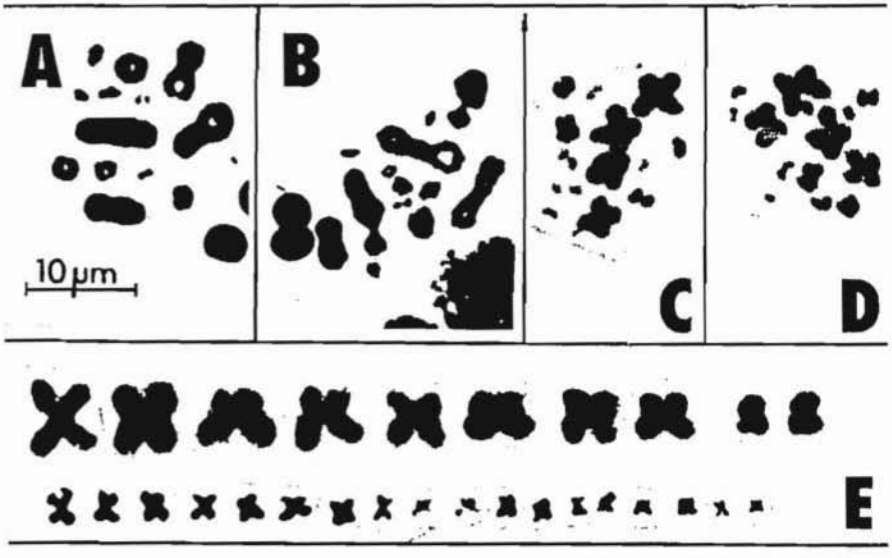

FIG. 1. Chromosomes of *Chalcides sexlineatus*. A, B.—Meiotic Metaphase I showing 14 bivalents. C, D.—Meiotic Metaphase II, R = 14. E.—Karyotype showing 5 pairs of large and 9 pairs of distinctly smaller chromosomes.

ranging from 24 to 32. Generally speaking, 2n = 26 is the characteristic number for the genus *Eumeces*; 2n = 28 for the genus *Chalcides* and 2n = 32 for *Mabuya*. *Chalcides chalcides* and *C. ocellatus* are the only two species of *Chalcides* that have been studied karyologically up to now (Dallai and Talluri, 1969), and they also have 2n = 28. These two species together with *Chalcides polylepis*, are the closest geographical representatives of this genus to *Chalcides sexlineatus*, endemic to Gran Canaria Island; and also *Chalcides viridanus* (endemic species from Tenerife, Gomera and Hierro in the same Archipelago) have the same number of chromosomes (Pasteur, 1981).

Morphologically, the karyotype of *C. sexlineatus* is practically indistinguishable from that of *C. ocellatus tiligugu*, which lives mainly in NW Africa and in very restricted areas of Europe. On the other hand, the *Chalcides sexlineatus* karyotype differs significantly from that of *Chalcides chalcides* which also occurs in NW Africa, but occupies more widespread areas in Southern Europe (Arnold and Burton, 1978). These three species have the same diploid chromosome number (2n = 28), but different NF. These are 46 for *C. chalcides* and 56 for *C. sexlineatus* and *C. ocellatus*. Chromosome pairs 6–10 in *C. chalcides* are clearly acrocentric (Dallai and Talluri, 1969), while in *C. sexlineatus* (Fig. 1) and *C. ocellatus* they are metacentric (Dallai and Talluri, 1969). In all species, these pairs are apparently the same length; thus, they differ only in the respective position of the centromeres; median in *sexlineatus* and *ocellatus* and subterminal in *Chalcides*.

Finally, the karyotypic differences seen between these species, can be readily explained in terms of five pericentric inversions, which may well have caused the centromeric shifts affecting the previously mentioned pairs, and in turn, brought about the observed changes in chromosome morphology.

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History and Spelling of the Name *Heterodon platirhinos*

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The eastern hognose snake was originally described by Linnaeus (1766) under the binomen *Coluber simus*, but this name was later mistakenly associated with the southern hognose snake (Edgren, 1953). The International Commission on Zoological Nomenclature (1956) suspended the law of priority in this case because of the long history of usage. They confirmed use of the name *Heterodon simus* for the southern hognose snake and designated the next oldest name "*platyrhinos* Latreille, 1801, as published in the combination *Heterodon platyrhinos*" for the eastern hognose snake.

Authorship of the genus name *Heterodon* is confused in the early literature, some authors ascribing it to Latreille and others to Palisot de Beauvois. Latreille (1801) began his description of the eastern hognose snake, "Le citoyen Beauvois a lu à l'Institut un mémoire sur ce nouveau genre de serpens" and stated that Beauvois had supplied the specimen on which his description was based. However, I have been unable to find a reference to any published description of the genus or species by Beauvois. There are references in volume one of the Institut de France, Académie des Sciences, Procès-verbeaux Seances (1795–99) to memoirs on snakes that were submitted to the Institut by Beauvois. However, Beauvois' memoirs were apparently never published and the description by Latreille is, therefore, the earliest for the genus *Heterodon*. It contains the oldest available specific name for the eastern hognose snake which was spelled *platirhinos*.