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THE KARYOTYPE OF VANZOLINIUS DISCODACTYLUS  
AND COMMENTS ON USEFULNESS OF KARYOTYPES  
IN DETERMINING RELATIONSHIPS IN  
THE LEPTODACTYLUS-COMPLEX  
(AMPHIBIA, LEPTODACTYLIDAE)

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Information on karyotypes of several species of the frog genera *Adenomera* and *Leptodactylus* recently has become available. Bogart (In press) described and figured the karyotypes of 16 species of *Leptodactylus* and 3 species of *Adenomera* (reported as the *marmoratus* group members of the genus *Leptodactylus*). We have obtained information on the karyotypes of 9 species of *Leptodactylus* and *Vanzolinius discodactylus*. The purpose of this paper is to describe the karyotype for the previously unreported *V. discodactylus* and offer alternatives to the relationships among the *Leptodactylus*-complex to those proposed by Bogart (In press). It should be pointed out that the genera *Adenomera*, *Leptodactylus*, and *Vanzolinius* have been considered to all belong to the genus *Leptodactylus* until recently.

METHODS AND MATERIALS

The technique and terminology used in preparation and description of the karyotypes follows Patton (1967). Approximately 50 cells were examined from marrow, spleen, or testis tissue of the specimens. The material was examined

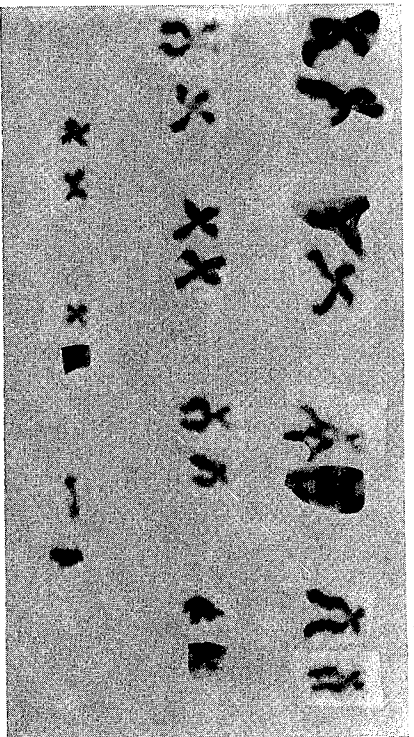


FIG. 1. Karyotype of *Vanzolinius discodactylus*, specimen WRH 464. Chromosome pair number 3 with overlap.

using a phase contrast microscope and the better metaphase figures were photographed. The chromosomal spreads used in the analysis were those with few or no overlapping chromosomes in the condensed state. Each arm of every chromosome was measured and the chromosomes were grouped in pairs according to their size and arm ratio. Our preparations did not allow the location of secondary constrictions.

The specimens were taken from the following localities: *Leptodactylus bohoianus*, *melanomotus*—Costa Rica. *Leptodactylus bufonius*, *chaquensis*, *fuscus*, *latinus*—Argentina: Salta; Embarcacion. *Leptodactylus mystaceus*, *pentadactylus*, *vagneri*, *Vanzolinius discodactylus*—Ecuador: Napo; Limoncocha. Specimens and slides will be deposited at the Natural History Museum, Los Angeles County.

#### THE KARYOTYPE OF *Vanzolinius discodactylus*

The karyotype of *Vanzolinius discodactylus* is characterized as follows: diploid number = 22; three pair of metacentrics (Fig. 1, chromosome pair numbers 5, 8, 9); four pair of submetacentrics (Fig. 1, chromosome pair numbers 1, 2, 6, 10); three pair of subtelocentrics (Fig. 1, chromosome pair numbers 3, 4, 7); one pair of acrocentrics (Fig. 1, chromosome pair number 11); fundamental number = 42.

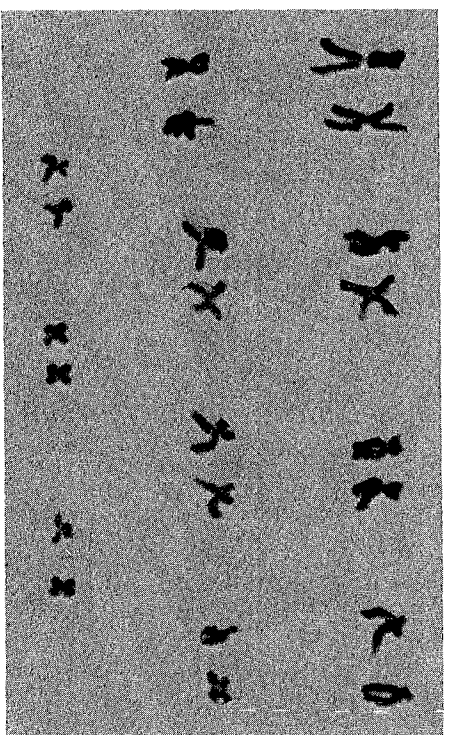


FIG. 2. Karyotype of *Leptodactylus chaquensis*, specimen WRH 1402.

#### KARYOTYPIC COMPARISONS OF *Leptodactylus* SPECIES

The karyotypes of the species of *Leptodactylus* we examined agree with previously published accounts in that all species have a diploid number of 22.

Although Barbieri (1950) reported the diploid number of *L. chaquensis* as  $2n = 22$ , he did not include a metaphase figure of the karyotype. We include a metaphase figure (Fig. 2) of this species for comparative purposes. There are four pair of metacentrics (Fig. 2, chromosome pair numbers 1, 6, 8, 11); five pair of submetacentrics (Fig. 2, chromosome pair numbers 2, 5, 7, 9, 10); and two pair of subtelocentrics (Fig. 2, chromosome pair numbers 3, 4).

Our analysis of chromosome morphology based on centromeric position differs considerably from previously published accounts (Table 1). These differences could be accounted for in three different ways. First, the different karyotypes could be the result of different techniques. Bogart (In press) used the corneal squash technique while we have used the marrow and spleen cell suspension technique. Second, the differences could be due to geographic variation within species. Third, the differences might be due to different interpretations of morphology and of which pairs are ho-

