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"Xenopus paratropicalis" is not a valid name

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Mechkarska *et al*. (2011) recently provided an analysis of antimicrobial peptides in two species in the frog family Pipidae — *Xenopus andrei* and "*Silurana paratropicalis*". We provide a review of the species associated with the latter taxon name and argue that this is not a valid name.

The species that Mecharksa *et al*. (2011) referred to as "*Silurana paratropicalis*" apparently was first mentioned by Graf & Fischberg (1986) as *Xenopus* "*species nova VII*", a tetraploid species with 40 chromosomes that was collected from two sites in Cameroon (Longyi and Nkoemvone). Tymowska (1991) described and illustrated the karyotype for "*Xenopus* sp. nov. VII" and explicitly proposed that this species is closely related to the tetraploid *X. epitropicalis* and diploid *X. tropicalis*. Tymowska (1991) indicated that a description was in preparation, but no formal description was published subsequently. Two years later, three publications (Flajnik *et al*. 1993; Sato *et al*. 1993; Shum *et al*. 1993) used the name "*Xenopus paratropicalis*" for a tetraploid 40-chromosome species obtained from the Université de Genève, the same institution at which "*Xenopus* sp. nov. VII" was bred for work by Graf & Fischberg (1986) and Tymowska (1991). The following year, Herrmann (1994) also briefly mentioned "*Silurana paratropicalis*" as a "form assigned to *epitropicalis*" (our translation). To the best of our knowledge, all of these authors (Graf & Fischberg 1986; Tymowska 1991; Flajnik *et al*. 1993; Sato *et al*. 1993; Shum *et al*. 1993; Herrmann 1994) were referring to the same species bred in Genève. Salamone (2006) provided a short synopsis of a graduate thesis detailing the description of "*Silurana paratropicalis*" and another species of *Xenopus*, but this note, published in a newsletter, does not contain a description; these descriptions remain unpublished. Herrmann (1994), Salamone (2006), and Mechkarska *et al.* (2011) refer "*paratropicalis*" to *Silurana* following Cannatella & Trueb (1988), though Pauly *et al*. (2009) recently suggested that recognizing *Silurana* as a genus distinct from *Xenopus* was a "mistaken" taxonomic decision. To our knowledge, Herrmann (1994), Salamone (2006), Mechkarska *et al*. (2011) are the only publications to mention "*paratropicalis*" since 1993.

Because the first published use of "*Xenopus paratropicalis*" occurs before 1999, the name is evaluated based on the criteria established by ICZN (1985). Article 13ai (ICZN 1985) states that new scientific names published after 1930 must be "accompanied by a description or definition that states in words characters that are purported to differentiate the taxon" or an appropriate reference to a published statement that does. Because neither a description nor definition accompanies the name "*Xenopus paratropicalis*" in Flajnik *et al*. (1993), Sato *et al*. (1993), or Shum *et al*. (1993), this species-group taxon name is not a valid name per the criteria established by ICZN (1985). Each of these publications lists that "*Xenopus paratropicalis*" has "40 chromosomes" but *X. epitropicalis* is also listed as having 40 chromosomes, and thus these two taxa cannot be differentiated based on this information. While Sato *et al*. (1993) provided an image of a Southern blot (their figure 5) showing a banding pattern potentially differentiating *Xenopus epitropicalis* and "*X. paratropicalis*", there is no description "in words" of these differences as per requirement of ICZN (1985). Further, the published uses of "*paratropicalis*" after 1999 (Salamone 2006; Mechkarska *et al*. 2011) contain neither stated characteristics differentiating the species (Article 13.1.1, ICZN 1999) nor explicit reference to name-bearing type specimens (Article 16.4, ICZN 1999), and thus do not represent a valid name per the criteria of ICZN (1999).

Nearly two decades later, the same species referred to by Graf & Fischberg (1986) as "*X. species nova VII*" was referred to by Evans *et al*. (2004) as "*S.* new tetraploid 1" with specimens from the same localities of Longyi and Nkoemvone, Cameroon, as well as sites in Malemba, Republic of the Congo, and Makokou and Cap Esterias, Gabon. This informal name is used in a number of subsequent papers (Bewick *et al*. 2010; Chain *et al*. 2008; Evans 2007; Evans *et al*. 2005, 2008, 2011), and there are now nearly thirty nucleotide sequences deposited in GenBank as "*Silurana* new tetraploid 1" (GenBank Taxon ID: 451443; Chain *et al*. 2008; Evans 2007; Evans *et al*. 2004, 2005). This African frog species that has been bred in captivity and thought to be distinct for at least 25 years, for which we now know the

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