
**New state record and updated
geographic distribution for the little
known *Psilophthalmus paeminus*
(Squamata, Gymnophthalmidae)**

Psilophthalmus is a monotypic gymnophthalmid genus represented by *P. paeminus* Rodrigues, 1991. It is a small psammophilous lizard (SVL: 34.1mm to 38.1mm), usually found buried in sandy soils or under leaf litter, fallen trunks, cacti, bromeliads and other hideouts (Rodrigues 1991, Delfim et al. 2006). Up to now it is reported only from four municipalities inserted in the Caatinga

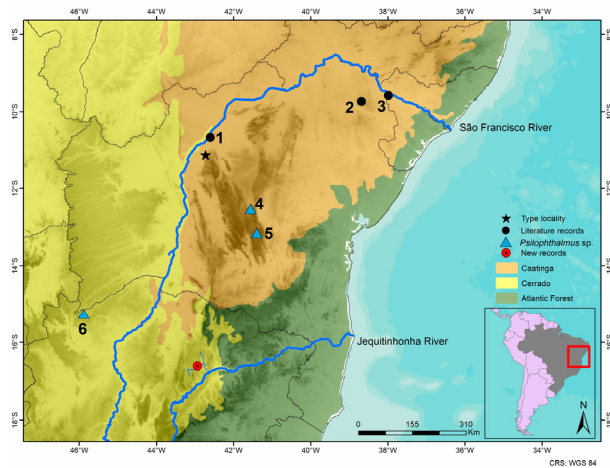


Figure 2. Distribution map of *Psilophthalmus paeminosus*, depicting biomes and main river watersheds. Black circles denote literature records: 1. Vacaria [Rodrigues (1996)]; 2. Paulo Afonso [Garda et al. (2013)] in Bahia state (BA); 3. Canindé do São Francisco [Delfim et al. (2006); in Sergipe state (SE)]; 4. Palmeiras [Freitas & Silva (2007)]; 5. Mucugê [Freitas et al. (2012)], in Bahia state); 6. Parque Nacional Grande Sertão Veredas [Recoder & Nogueira, (2007)]. Black star represents the type locality in Santo Inácio [Rodrigues (1996)]; and the red circle denote the records from this study in Minas Gerais state (MG).

biome (IBGE, 2004): Santo Inácio (type locality) and Vacaria, in the dune fields of the middle São Francisco river, Bahia state (Rodrigues 1991); Paulo Afonso, Bahia state (Garda et al. 2013) and Canindé do São Francisco, Sergipe state (Delfim et al. 2006), both in the lower São Francisco valley. *Psilophthalmus paeminosus* is classified as near threatened in the Brazilian list of threatened species (MMA 2014) and as Vulnerable according to the IUCN Red List of Threatened Species, because of its habitat-specialism and presumably narrow endemism (Nogueira 2013). In the present paper we extend the geographic distribution of *P. paeminosus* (Fig. 1) through its first record for the state of Minas Gerais, south-eastern Brazil (Fig. 2).



Figure 1. A female (SVL 37.5 mm) *Psilophthalmus paeminosus* (UFMG-2221) found at Parque Estadual de Grão Mogol (-16.591117°, -42.961696°), State of Minas Gerais, Brazil.

We collected four adult specimens of *P. paeminosus* during a herpetofaunal survey between 16 and 22 of January 2014, in the protected reserve Parque Estadual de Grão Mogol (PEGM) and its surroundings, municipality of Grão Mogol, northern state of Minas Gerais. All individu-

als were outside the limits of the PEGM, but in its buffer area. The studied area lies between elevations ranging from 650 m a.s.l. in the lowlands of the Itacambiraçu river, to 1299 m a.s.l. in mountaintops of the Espinhaço range. Climate is markedly seasonal, with a rainy season from October to April. The vegetation of Grão Mogol is a mosaic of arboreal savannah (Fig. 3), semi-deciduous forest, "carrascos" (closed, tall-shrubby, xerophilous vegetation on quartz sand soils), and predominantly "campos rupestres" (rupestrian grasslands, Pirani et al. 2003). For more information on evolution and ecology of "campos rupestres" see Silveira et al. 2015. We installed 13 lines of pitfall traps with drift fences; each grid comprised 10 30 L buckets, and eight meters of plastic fence between each bucket (total length = 80 m each). We kept open all buckets during eleven days (total sampling = 264 hours). We captured three specimens by traps (UFMG 2188, 2221, 2226) and one by active search hidden under the leaf litter (UFMG 2189). All specimens inhabited areas with sandy soil, sparse vegetation, available leaf litter and close to *campo rupestre*, see figure 3 for detailed information. We collected all specimens near the Itacambiraçu River, the main watercourse of the region and a tributary of Jequitinhonha River basin (Fig. 2). We deposited the voucher specimens at Coleção Herpetológica da Universidade Federal de Minas Gerais (UFMG), Belo Horizonte municipality, Minas Gerais state, Brazil. Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio, license number #42369-1) and Instituto Estadual de Florestas (IEF, license number 004/2014) provided collecting permits. We described the morphological variation of collected specimens in Table 1.

We found all individuals at 730 m a.s.l. occurring on its previously known type of habitat (i.e., sandy soils, Rodrigues 1991, Delfim et al. 2006). Up to now, all specimens of *P. paeminosus* have been recorded close to the right bank of the São Francisco River at a maximum distance of 70 km from the



Figure 3. Environments where specimens of *Psilophthalmus paeminosus* were found at Parque Estadual de Grão Mogol, State of Minas Gerais, southeastern Brazil. Clockwise from upper left: A - closed, tall-shrubby, xerophilous vegetation on quartz sand soil; B - arboreal savannah, typical of the Brazilian Cerrado; C - open vegetation on sandy soil, with emphasis on the cactus *Pilosocereus fulvilanatus*; D - leaf-litter in arboreal savannah, with emphasis on the “palm cactus” *Tacinga inamoena*.

Table 1. Pholidosis and measurements (mm) of *Psilophthalmus paeminosus*, collected in county of Grão Mogol, state of Minas Gerais, southeastern Brazil, in accordance with its description by Rodrigues (1991). VS = number of ventral scales; DS = number of dorsal scales; SAM = Scales around midbody; SC = number of supraciliary scales; SO = number of supraocular scales; SL = number of supralabial scales; IL = number of infralabial scales; P = number of pores on each thigh; LI = number of infradigital lamellae; SVL = snout vent length. Coordinates given for Rodrigues (1991) are approximated, based on *P. paeminosus* type locality.

UFMG	VS	DS	SAM	SC	SO	SL	IL	P	LI	SVL	Sex	Coordinates
UFMG 2221	25	37	20	3	2	7	5	0	17	37.5	F	-16.591117° -42.961696°
UFMG 2226	27	38	19	3	2	7	7	0	17	34.1	F	-16.603000° -42.925933°
UFMG 2189	25	37	17	3	2	7	7	5	16	38.1	M	-16.591117° -42.961696°
UFMG 2188	27	39	20	3	2	7	7	0	17	35.1	F	-16.604000° -42.937950°
Rodrigues (1991)	24, 25	36, 37	20, 21	3	2	7	7	4, 6	15, 17	35.1		-11.110696° -42.718339°

river. Our new record lies 600 km southward from the species' closest record in Santo Inácio, Bahia, and at the right side of the São Francisco River, in the Jequitinhonha River basin (Fig. 2).

Rodrigues (1984a, b, 1991a,b,c) described several lizard species and genera for the Paleogene dune fields of the middle São Francisco River, many of them considered endemic to the Caatinga biome, including *P. paeminosus*. The faunal composition of these dune fields is markedly diverse with endemic fossorial and psammophilous species distinct from adjacent areas (Rodri-

gues 1996). However, in the past few years species described from these dune fields and considered restricted to the region have been recorded elsewhere. For instance, *Procellosaurinus erythrocerus* (Rodrigues 1991), another gymnophthalmid regarded as a middle São Francisco River dune endemic, was found further north in the state of Piauí (Delfim et al. 2011). Similar to *P. erythrocerus*, the gymnophthalmid genus *Calyptommatius* (Rodrigues 1991a) was endemic to the São Francisco dune fields until Rodrigues et al. (2001) described *Calyptommatius confusionibus*, from the Parque Na-

cional Serra das Confusões, in the state of Piauí. Not a lizard, but also a psammophilous species, the fossorial snake, *Typhlops amoipira* was considered endemic to the São Francisco dune field until it was found southwards at the State of Minas Gerais (Fernandes et al. 2010), and later eastwards in the states of Rio Grande do Norte and Alagoas (Brito & Freire 2012).

Although the region of Grão Mogol is located inside the limits of the Cerrado biome (according to IBGE 2004), it actually lies in a transition zone between the Caatinga, Cerrado and Atlantic Forest biomes, evidenced by the complex and high diverse vegetation mosaic that characterizes the region (Pirani et al. 2003). Indeed, some patches of vegetation in Grão Mogol resemble that of the Caatinga, by the presence of several cacti and deciduous shrub species (Pirani et al. 2003; Fig. 3). It is important to note that there seem to be two candidate new species for the genus *Psilophthalmus*. The first recorded inside the Cerrado biome limits, at the left side of the São Francisco River in the Parque Nacional Grande Sertão Veredas (Fig. 2), northwestern Minas Gerais (Recoder & Nogueira 2007). The other, inside the Caatinga biome limits, recorded for the Chapada Diamantina (northern segment of the Serra do Espinhaço mountain range) at municipality of Mucugê and Palmeiras, Bahia state (Freitas & Silva 2007 and Freitas et al. 2012). Freitas & Silva 2007 comment about specimens found on the Planalto de Conquista, Bahia state and northeastern region of Minas Gerais, however, without detailing specific municipalities or locations. The area where these specimens were found also consists of sandy soils, the same habitat of *P. paeminus* in Grão Mogol. However, taxonomic studies are not available to ascertain if the specimens registered by Recoder & Nogueira (2007) and Freitas & Silva (2007) are *P. paeminus* or a different species.

Our record adds important information for future reassessment of the conservation status of *P. paeminus*. As the species occurs in the buffer area of the protected reserve Parque Estadual de Grão Mogol, some populations may also occur inside the limits of the protected area, a positive factor for the permanence of *P. paeminus* in the region. Furthermore, the distribution pattern of the genus *Psilophthalmus* inside the Caatinga, and its transitional area, together with recent species distribution extensions (e.g., *Psychosaura agmostica*, Magalhães et al. 2014; and *Tupinambis teguixin*, Passos et

al. 2013) shows how little we know about the Caatinga faunal diversity. Therefore, new surveys are important to complement knowledge of this important biome, endemic to Brazil.

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