

RANGE EXTENSIONS FOR THE GRAY-BACKED TACHURI (*POLYSTICTUS SUPERCILIARIS*) AND THE PALE-THROATED SERRA-FINCH (*EMBERNAGRA LONGICAUDA*) WITH A REVISION ON THEIR GEOGRAPHIC DISTRIBUTION

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Resumo. – Extensões geográficas do Papa-moscas-de-costas-cinzentas (*Polystictus superciliaris*) e do Tibirru-rupestre (*Embernagra longicauda*) com uma revisão sobre suas distribuições geográficas. – Nós apresentamos novas localidades de ocorrência para o Papa-moscas-de-costas-cinzentas (*Polystictus superciliaris*) e para o Tibirru-rupestre (*Embernagra longicauda*), duas espécies de aves anteriormente consideradas como endêmicas da Cadeia do Espinhaço, leste do Brasil, e do bioma do cerrado. Nós também mostramos uma revisão da distribuição geográfica destas duas espécies baseada em nossos estudos de campo, consultas em museus e bibliografia. Nossos registros estendem a distribuição destas espécies para outros sistemas orográficos, especialmente nos campos de altitude dos topos de montanha da região da Mata Atlântica. A ocorrência destas espécies fora da Cadeia do Espinhaço pode ser explicada por variações climático-vegetacionais no passado (especialmente no caso do Papa-moscas-de-costas-cinzentas).

Abstract. – We present range extensions for the Gray-backed Tachuri (*Polystictus superciliaris*) and the Pale-throated Serra-finch (*Embernagra longicauda*), two bird species previously considered endemic to the Espinhaço Range, eastern Brazil, as well as endemic to the cerrado region. We also provide a revision on the geographic distribution for these species based on our own fieldwork, search for specimens deposited in museums, and bibliographic review. Our records extend the current known distribution of these species to new mountain ranges, especially in the “campos de altitude” of the mountain tops located in the Atlantic forest region. The occurrence of these species outside the Espinhaço Range is suggested to be related to past climatic-vegetational changes (especially for the Gray-backed Tachuri). *Accepted 18 March 2003.*

Key words: *Polystictus superciliaris*, *Embernagra longicauda*, geographic distribution, Espinhaço Range, Brazil.

INTRODUCTION

Until recently, the Gray-backed Tachuri (*Polys-*

tictus superciliaris) and the Pale-throated Serra-finch (*Embernagra longicauda*) were considered restricted to the “campos rupestres” vegetation of the Espinhaço Range (Silva 1995a). The Espinhaço Range is a mountain complex located in the southeastern Brazilian states of Minas Gerais and Bahia (see map in Giulietti

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FIG. 1. Known localities for Gray-backed Tachuri within (circles) and outside (triangles) Espinhaço Range. Areas above 1000 m a.s.l. are shaded. Localities and sources are provided in Appendix 1.

et al. 1997).

Before Silva's analysis, the Gray-backed Tachuri was previously known to occur in the Serra do Mar, another mountain complex in

southeast Brazil, close to the Atlantic Ocean. This species was recorded in this range based on a specimen collected at Serra da Bocaina, São Paulo state (between 22°40' and 23°20'S,

44°24' and 44°54'W), in 1961 by J. L. Lima and deposited in the Museu de Zoologia da Universidade de São Paulo, Brazil (MZUSP 43421) (Sick 1997, Vasconcelos 2001). After this, the species was also recorded in Serra da Canastra (20°15'S, 46°37'W) (Silveira 1998, Vasconcelos 1999a) and at Pico do Papagaio (22°04'S, 44°37'W) (Vasconcelos 1999b), both localities outside Espinhaço Range.

The geographic distribution of the Pale-throated Serra-finch was firstly studied by Carnevalli (1982) and Mattos & Sick (1985). These authors found this species not only along the Espinhaço Range mountains, but also outside it, precisely in the Itaobim and Divisópolis (Serra da Mombuca) municipalities. Notwithstanding these two records, it was considered restricted to the Espinhaço complex by subsequent researchers (Silva 1995a, Stattersfield *et al.* 1998). Moreover, the species has been recently recorded in deforested areas on the Rio Doce valley, outside the Espinhaço Range, and in mountains close to the Serra da Mantiqueira complex, in southern Minas Gerais (Machado *et al.* 1998, Vasconcelos 2000). Records for this species in the Rio Doce valley have been suggested to be related to geographic expansion due to the destruction of the Atlantic forest, providing it with new non-natural grassland habitats (Machado *et al.* 1998, Vasconcelos 2000).

Since the knowledge on the avifauna from the southeastern Brazilian mountains is still limited (Vasconcelos 2001), the aim of this paper is to provide new localities of these two endemic species.

METHODS

We made new records and provide a revision on the geographic distribution for these two species based on our own fieldwork, bibliographic review, and search for specimens deposited in the following museums: American Museum of Natural History (AMNH),

Departamento de Zoologia da Universidade Federal de Minas Gerais (DZUFMG), Museu de História Natural de Taubaté (MHNT), Museu Nacional do Rio de Janeiro (MNRJ), Museu de Zoologia da Universidade de São Paulo (MZUSP), and Universidade Federal de Pernambuco (UFPE). We also collected specimens and tape-recorded these two species in several localities. Specimens were deposited in DZUFMG and UFPE. Tape-records were archived in the Arquivo Sonoro Elias Pacheco Coelho (ASEC) at Universidade Federal do Rio de Janeiro, Brazil.

RESULTS AND DISCUSSION

Range extensions

Gray-backed Tachuri. This species was recorded on 3 May 1996 in a natural area of “campo de altitude” (high-altitude grassland) in the Parque Estadual do Ibitipoca (21°42'S, 43°53'W), Lima Duarte municipality, located in the Serra da Mantiqueira complex, southern Minas Gerais state. Two birds were seen foraging among shrubs on the trail to Janela do Céu waterfalls, c. 1500 m a.s.l. Two other individuals were found 100 m away from this pair, in the same kind of habitat. This pair was tape-recorded. The species was recorded again in this park on 12 May 2001, when a pair was observed singing close to a cloud forest at 1750 m elevation, near Pico da Lombada. On 19 May 2001, two individuals were observed in the same area gleaning for insects along shrubs and low trees of the “campo de altitude,” and along the edge of a cloud forest. Other species that were observed together with the Gray-backed Tachuri were the Chicli Spinetail (*Synallaxis spixi*), the Highland Elaenia (*Elaenia obscura*), the Velvety Black-tyrant (*Knipolegus nigerrimus*), the Diademed Tanager (*Stephanophorus diadematus*), and the Wedge-tailed Grass-finch (*Emberizoides herbicola*). Additionally, two other individuals of the Gray-backed Tachuri were heard and



FIG. 2. Known localities for Pale-throated Serra-finch within (circles) and outside (triangles) Espinhaço Range. Areas above 1000 m a.s.l. are shaded. Localities and sources are provided in Appendix 1.

observed approximately 50 m away from these previous two. On both occasions, the species was tape-recorded. Andrade (1997), who previously had made a bird checklist of

this region, did not find the species in Parque Estadual do Ibitipoca.

The Gray-backed Tachuri was also recorded in the Parque Nacional do Itatiaia

(between 22°15' and 22°25'S, 44°35' and 44°45'W), Itatiaia municipality, Rio de Janeiro state, on 18 June 1996. One single bird was observed and tape-recorded in a “campo de altitude” area close to the park entrance, c. 2300 m elevation. This bird was moving among shrubs together with a Velvety Black-tyrant and an Itatiaia Spinetail (*Oreophylax moreirae*). This is the first record of the Gray-backed Tachuri for Rio de Janeiro state, and it represents the third known locality for the species in the Serra da Mantiqueira complex, the first one being in the Pico do Papagaio, southern Minas Gerais (Vasconcelos 1999b), and the second at Parque Estadual do Ibitipoca (present study).

Pale-throated Serra-finch. This species was found on 15 March 2001 in a “campo de altitude” of Parque Nacional do Caparaó, in the Serra do Caparaó (between 20°19' and 20°37'S, 41°43' and 41°53'W), Dolores do Rio Preto municipality, Espírito Santo state. The bird was observed foraging on the ground among rocky outcrops in the right margin of José Pedro stream, 2400 m elevation. This bird was photographed and tape-recorded. On the next day, the species was observed and recorded in the same place (possibly the same individual). These are the first records of the Pale-throated Serra-finch for Serra do Caparaó (Peixoto Velho 1923, Ruschi 1978, Sick 1997) and for Espírito Santo (Bauer 1999).

Geographic distribution

Our revision showed that Gray-backed Tachuris occur along the Espinhaço Range and at some localities in the Serra da Canastra region (including the record for Chapadãozinho), Serra da Mantiqueira and Serra do Mar Ranges (Fig. 1, see Appendix 1). Pale-throated Serra-finches showed a different pattern, occurring in more localities along the Espinhaço Range and in some isolated moun-

tains, such as the Serra da Mombuca, Divisópolis municipality, Minas Gerais (Carnevali 1982, Mattos & Sick 1985). This locality represents the easternmost record for this species in its geographic range. Additionally, this species was recorded in some mountains that could be considered transitional between the Espinhaço Range and the Serra da Mantiqueira region, such as the Serra de São José, São João del Rei municipality, Minas Gerais. The record in Serra do Caparaó is also outside of the Espinhaço Range (Fig. 2, see Appendix 1).

In this study, geographical records for both the Gray-backed Tachuri and the Pale-throated Serra-finch were included in two categories (Appendix 1). The first category is represented by physical evidence (specimen, voice recording or photograph), the second has records based on visual observation or unknown evidence (not specified by authors of papers consulted). Considering the localities in which were made the first two kinds of records for Gray-backed Tachuris, 65.2% (n = 15) of them were properly documented, whereas 34.8% (n = 8) are based only on visual clues or unspecified records. The converse could be observed for Pale-throated Serra-finches for which, in a total of 47 documented and observational records, only 34% (n = 16) were adequately supported (first category). The remaining 66% (n = 31) were documented through the second method. Furthermore, the majority of documented records for Gray-backed Tachuris and Pale-throated Serra-finches were made in the southern portion of their geographic range, with only two localities in the northern region (Pico das Almas and Morro do Chapéu, Bahia) with specimens deposited in museums (two specimens of Gray-backed Tachuris and five specimens of Pale-throated Serra-finches, see Appendix 1). Thus, it is extremely important to collect additional specimens in the central and northern portions of the Espi-

nhaço Range, which will provide support for taxonomic and biogeographical analyses considering these species. If we consider that there is a physical isolation among several mountains in southeastern Brazil (see Figs 1 and 2), it is possible that geographic variation among populations of Gray-backed Tachuris and Pale-throated Serra-finches will be found in further studies using collected specimens.

Although a full biogeographic discussion regarding the distributional patterns of these two species is beyond the scope of this study, we highlight here some relevant points. Without phylogeographic studies based on molecular data (i.e., Nested Clade Analysis, Templeton *et al.* 1995), it is impossible to know if these two species are autochthonous to these mountains outside Espinhaço Range or if their geographic distribution was expanded due to deforestation (see Machado *et al.* 1998, Vasconcelos 2000). Even though it is possible that Pale-throated Serra-finches could have reached the mountain tops of Caparaó region after Atlantic forest deforestation, since there are wide clearings between the Espinhaço Range and the Serra do Caparaó and since they have been recorded below 1000 m in some areas (M. F. V. pers. observ.), the records for Itaobim and Serra da Mombuca cannot be inferred from the available information (but see next). However, based on the distributional pattern of Gray-backed Tachuris, it is more parsimonious to consider the isolated populations in Mantiqueira, Serra do Mar, central Brazil and Espinhaço mountains as relicts of a past glacial connection among these areas (e.g., the lowering of highland vegetation zones) rather than a recent range extension as a consequence of deforestation. Two circumstantial pieces of evidence support this idea. First, the lack of records for this species in areas below 1000 m after an extensive fieldwork along its geographic range, and second, the existence of physical barriers to a present range exten-

sion among these mountain tops (e.g., forested valleys down of Itatiaia and Serra do Papagaio highlands and the Paraíba do Sul River valley, between Mantiqueira and Serra do Mar). Past glacial connections among highland areas in South America, and specifically between central and southeastern Brazil, have been suggested based on bird and plant distributions (Vuilleumier 1971, Sick 1985, Vasconcelos 2001). In fact, there are many vegetal taxa that occur in the “campos rupestres” of the Espinhaço Range and in the mountains of central Brazil (Giulietti & Pirani 1988, Harley 1995, Menezes & Giulietti 2000), which could present some congruence in geographic distributional patterns with these species. One bird species that presents a pattern of distribution similar to that of the Gray-backed Tachuri (but restrict to higher elevations), occurring also in disjunct mountain tops at Espinhaço, Mantiqueira and Serra do Mar Ranges, is the Itatiaia Spinetail (see Melo-Júnior *et al.* 1998).

Based on distributional patterns, (especially for the Gray-backed Tachuri), we suggest that surveys in other mountainous localities of central Brazil (see Figs 1 and 2), such as the “campos rupestres” in Goiás (e.g., Serra dos Pirineus, Morro Cabeludo, and Chapada dos Veadeiros) and “campos de altitude” in other mountains of eastern Brazil (e.g., in the Serra da Mantiqueira, Serra do Caparaó, Serra dos Órgãos, and Serra do Mar Ranges), would make possible the finding of other populations of Gray-backed Tachuris and Pale-throated Serra-finches. Considering the historical and recent records for both species outside the Espinhaço Range, we conclude that they must be considered as non-endemic to this mountain complex. The classification of these species as endemic to “campos rupestres” of the Espinhaço Range, as well as to the cerrado region (Silva 1995a 1995b, 1997; Silva & Bates 2002), could be due to the absence of detailed studies in other

mountains of southeastern and central Brazil (see Vasconcelos 2001 for an extensive revision).

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APPENDIX 1. Localities of records of Gray-backed Tachuris and Pale-throated Serra-finches. Localities are listed by species from north to south, and are shown on the maps (Figs 1 and 2). The types of records are indicated by superscript letters: s = sight record, p = photograph, sp = specimen, t = tape recording. Abbreviations are: AMNH (American Museum of Natural History), DZUFMG (Departamento de Zoologia da Universidade Federal de Minas Gerais), MHNT (Museu de História Natural de Taubaté), MNRJ (Museu Nacional do Rio de Janeiro), MZUSP (Museu de Zoologia da Universidade de São Paulo), UFPE (Universidade Federal de Pernambuco), BA (Bahia), ES (Espírito Santo), MG (Minas Gerais), RJ (Rio de Janeiro), and SP (São Paulo).

Localities	Nature of evidence (references or specimens)
GRAY-BACKED TACHURI	
Morro do Chapéu, BA ^{sp}	AMNH 243792, AMNH 243793, Ridgely & Tudor (1994), Sick (1997)
Parque Nacional da Chapada Diamantina, between Palmeiras and Lençóis, BA ^s	Parrini <i>et al.</i> (1999)
Sumidouro and Paulista, between Mucugê and Ibicoara, BA ^s	Parrini <i>et al.</i> (1999)
Chapada do Catuni, Francisco Sá and Grão Mogol, MG ^{sp,p}	DZUFMG 3037, D'Angelo-Neto & Queiroz (2001)
Serra do Gavião, Capivari, Serro, MG ^s	Cordeiro <i>et al.</i> (1998), Vasconcelos (1999a, 2001)
Três Barras, Serro, MG ^s	M. F. Vasconcelos (pers. observ.)
Serra do Cipó, Jaboticatubas and Santana do Riacho, MG ^{sp}	DZUFMG 3035, Mattos & Sick (1985), Willis & Oniki (1991), Ridgely & Tudor (1994), Sick (1997), Cordeiro <i>et al.</i> (1998) Vasconcelos (1999a, 2001), Melo-Júnior <i>et al.</i> (2001)
Serra da Piedade, Caeté, MG ^{sp}	DZUFMG 2830, DZUFMG 2831, DZUFMG 2832, Sick (1997), Vasconcelos (1999a, 2001), Vasconcelos <i>et al.</i> (1999)
Serra do Curral, Belo Horizonte, MG ^p	Vasconcelos & Lombardi (1996), Vasconcelos (1999a, 2001), Vasconcelos <i>et al.</i> (1999)
Área de Proteção Especial do Barreiro, Belo Horizonte, MG ^{sp}	DZUFMG 2797, Vasconcelos <i>et al.</i> (1999)
Área de Proteção Especial da Mutuca, Nova Lima, MG ^s	Vasconcelos <i>et al.</i> (1999)
Retiro das Pedras, Nova Lima, MG ^s	Vasconcelos <i>et al.</i> (1999)
Serra da Gandarela, Rio Acima, MG ^s	Sick (1997)
Serra do Caraça, Catas Altas and Santa Bárbara, MG ^{sp,t}	AMNH 825216, AMNH 825217, DZUFMG 1674, DZUFMG 3034, DZUFMG 3036, DZUFMG 3043, MZUSP 61631, MZUSP 61632, Carnevalli (1980), Sick (1997), Vasconcelos (1999a, 2001), Vasconcelos & Melo-Júnior (2001)
Pico do Monge, Serra do Capanema, Itabirito, MG ^{sp,t}	DZUFMG 3414, DZUFMG 3415
Serra do Batatal, Mariana and Ouro Preto, MG ^{sp,p}	MNRJ 13220, DZUFMG 3042, Sick (1997), Vasconcelos (2001)

APPENDIX 1. Continuation.

Localities	Nature of evidence (references or specimens)
Chapadãozinho, São José do Barreiro, MG ^{SP}	MHNT 2119
Parque Nacional da Serra da Canastra, São Roque de Minas, MG ^P	Silveira (1998), Vasconcelos (1999a)
Parque Estadual do Itacolomi, Ouro Preto, MG ^S	Andrade (1998)
Parque Estadual do Ibitipoca, Lima Duarte, MG ^T	Present study
Pico do Papagaio, Aiuruoca, MG ^P	Vasconcelos (1999b, 2001)
Parque Nacional do Itatiaia, Itatiaia, RJ ^T	Present study
Fazenda da Posse, Rio Mambucaba, Serra da Bocaina, São José do Barreiro, SP ^{SP, T}	MZUSP 43421, Ridgely & Tudor (1994), Sick (1997), Vasconcelos (2001), D. R. C. Buzzetti (pers. observ.)
PALE-THROATED SERRA-FINCH	
Morro do Chapéu, BA ^{SP}	AMNH 245061, AMNH 245062, AMNH 245063, Carnevalli (1982), Mattos & Sick (1985), Ridgely & Tudor (1989), Sick (1997)
Parque Nacional da Chapada Diamantina, between Palmeiras and Lençóis, BA ^T	Parrini <i>et al.</i> (1999)
Mucugê, BA ^S	Parrini <i>et al.</i> (1999)
Pico das Almas, Rio de Contas, BA ^{SP}	MNRJ 39005, MNRJ 39006, Parrini <i>et al.</i> (1999)
Serra do Pau D'Arco, Santo Antônio do Retiro and Espinosa, MG ^{SP}	DZUFMG 3073
Serra da Mombuca, Divisópolis, MG ^S	Carnevalli (1982), Mattos & Sick (1985)
Chapada de Taiobeiras, Taiobeiras, MG ^S	Mattos & Sick (1985)
Chapada de Salinas, Salinas, MG ^S	Mattos & Sick (1985)
Itaobim, MG ^S	Carnevalli (1982)
Chapada de Grão Mogol, Grão Mogol, MG ^S	Mattos & Sick (1985)
Campina do Bananal, Botumirim, MG ^{SP}	DZUFMG 3038, DZUFMG 3326, Vasconcelos (2001)
Chapada do Catuni, Francisco Sá and Grão Mogol, MG ^{SP}	DZUFMG 3039, DZUFMG 3040, D'Angelo-Neto & Queiroz (2001)
Coronel Murta, MG ^S	Carnevalli (1982)
Berilo, MG ^S	Carnevalli (1982)
Chapada de São Domingos, Berilo, Virgem da Lapa, and Coronel Murta, MG ^S	Mattos & Sick (1985)
Itacambira, MG ^S	Carnevalli (1982)
Minas Novas, MG ^S	Carnevalli (1982)

APPENDIX 1. Continuation.

Localities	Nature of evidence (references or specimens)
Couto de Magalhães, MG ^s	Carnevali (1982), Mattos & Sick (1985)
Diamantina, MG ^s	Carnevali (1982), Mattos & Sick (1985)
Datas, MG ^s	Carnevali (1982)
Serra do Gavião, Serro, MG ^{sp}	DZUFMG 3041, Vasconcelos (2001)
Chapadas de Serro, Milho Verde, Pedro Lessa, Trinta-Réis, MG ^{sp}	DZUFMG 2453, DZUFMG 2454, Mattos & Sick (1985)
Serra do Intendente, Conceição do Mato Dentro, MG ^s	Cordeiro <i>et al.</i> (1998)
Serra do Cipó, Jaboticatubas and Santana do Riacho, MG ^{sp,t}	DZUFMG 2455, DZUFMG 2456, Carnevali (1982), Mattos & Sick (1985), Ridgely & Tudor (1989), Willis & Oniki (1991), Cordeiro <i>et al.</i> (1998), Machado <i>et al.</i> (1998), Melo-Júnior <i>et al.</i> (2001), Vasconcelos (2001)
Serra da Piedade, Caeté, MG ^s	Sick (1997), Vasconcelos <i>et al.</i> (1999), Vasconcelos (2001)
Parque das Mangabeiras, Belo Horizonte, MG ^s	Machado <i>et al.</i> (1998)
Serra do Curral, Belo Horizonte, MG ^s	Vasconcelos & Lombardi (1996), Vasconcelos (1999a), Vasconcelos <i>et al.</i> (1999), Vasconcelos (2001)
Área de Proteção Especial do Barreiro, Belo Horizonte, MG ^s	Vasconcelos <i>et al.</i> (1999)
Serra Santa, Belo Horizonte, MG ^{sp}	MZUSP 61718
Área de Proteção Especial da Mutuca, Nova Lima, MG ^s	Vasconcelos <i>et al.</i> (1999)
Retiro das Pedras, Nova Lima, MG ^s	Vasconcelos <i>et al.</i> (1999)
Antônio Dias, MG ^s	Machado & Lamas (1996), Machado <i>et al.</i> (1998)
Nova Era, MG ^s	Machado <i>et al.</i> (1998)
Bela Vista de Minas, MG ^s	Machado <i>et al.</i> (1998)
Estação de Pesquisa e Desenvolvimento Ambiental de Peti, Santa Bárbara, MG ^{sp}	DZUFMG 2457, Machado <i>et al.</i> (1998)
Fazenda Bocaina, Santa Bárbara, MG ^{sp,t}	DZUFMG 3225, UFPE 1192, Vasconcelos (2000)
Serra da Gandarela, Rio Acima, MG ^s	Mattos & Sick (1985), Sick (1997)
Serra do Caraça, Catas Altas and Santa Bárbara, MG ^{sp,t}	DZUFMG 2449, DZUFMG 2450, DZUFMG 2451, DZUFMG 2452, DZUFMG 2953, DZUFMG 3047, DZUFMG 3048, DZUFMG 3049, DZUFMG 3050, MHNT 4360, MHNT 4361, Carnevali (1980, 1982), Mattos & Sick (1985), Sick (1997), Machado <i>et al.</i> (1998), Melo-Júnior <i>et al.</i> (1998), Vasconcelos (2001), Vasconcelos & Melo-Júnior (2001)

APPENDIX 1. Continuation.

Localities	Nature of evidence (references or specimens)
Pico do Monge, Serra do Capanema, Itabirito, MG ^{SP}	DZUFMG 3419, DZUFMG 3420
Serra do Batatal, Mariana and Ouro Preto, MG ^S	Mattos & Sick (1985), Vasconcelos (2001)
Parque Estadual do Itacolomi, Ouro Preto, MG ^S	Mattos & Sick (1985), Andrade (1998), Vasconcelos <i>et al.</i> (1999)
Serra da Moeda, Moeda, MG ^S	Mattos & Sick (1985), Sick (1997), Vasconcelos <i>et al.</i> (1999)
Fazenda Taveira, Mariana, MG ^{SP}	MNRJ no number, Mattos & Sick (1985), Sick (1997)
Parque Nacional do Caparaó, Dores do Rio Preto, ES ^{PB} †	Present study
Serra de Ouro Branco, Ouro Branco, MG ^S	Mattos & Sick (1985)
Serra de São José, Tiradentes, Santa Cruz de Minas, Prados, Coronel Xavier, and São João del Rei, MG ^S	Rigueira (1994), Machado <i>et al.</i> (1998)
Serra do Lenheiro, São João del Rei, MG ^S	Machado <i>et al.</i> (1998)

