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REDESCRIPTION OF *ATRACTUS ALBUQUERQUEI* (SERPENTES: COLUBRIDAE: DIPSADINAE), WITH COMMENTS ON GEOGRAPHICAL DISTRIBUTION AND INTRASPECIFIC VARIATION

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ABSTRACT

Atractus albuquerquei *Cunha and Nascimento, 1983 was previously known from a holotype from eastern Pará, and 15 specimens from Rondônia and Acre, all in Brazil. We report on 23 additional specimens from the Brazilian states of Rondônia, Goiás, Mato Grosso, and Mato Grosso do Sul. These specimens extend the known range of* A. albuquerquei *substantially, and beyond the southern limits of the Amazon basin. The holotype of* A. albuquerquei *is redescribed and intraspecific variation in external morphology, hemipenes, and colour is documented. Sexual dimorphism exists in total length, and number of ventral (significantly greater in females) and subcaudal scales (greater in males). There is a significant correlation between number of subcaudal scales and longitude (decreasing from East to West) for both males and females.*

KEYWORDS: Serpentes, Dipsadinae, *Atractus albuquerquei,* variation, distribution.

INTRODUCTION

Species of the neotropical colubrid snake genus *Atractus* are known to be poorly represented in museum collections (Myers, 2003), although there are exceptions (e.g. *Atractus reticulatus*). As a result, knowledge of the natural history, morphological variation, and geographical distribution of most species of *Atractus* is far from satisfactory. *Atractus albuquerquei* is one of the many species of this genus that has been recorded only sporadically after its formal description by Cunha and Nascimento (1983). These authors based their

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description on a single specimen from Vila Nova, a locality near the river Timboteua, in the vicinity of Paragominas, in the eastern part of the state of Pará, Brazil.

Since its original description, *A. albuquerquei* has been mentioned only three times in the literature (Vanzolini, 1986; Nascimento *et al.*, 1988; Jorge da Silva, 1993). Vanzolini (1986:25) reported the occurrence of the species in the Brazilian state of Rondônia, based on eight specimens collected in the localities of Nova Brasília, Santa Bárbara, Jaru, and Nova Colina (only seven specimens are deposited in the Museu de Zoologia da USP). Nascimento *et al.* (1988) also reported on a herpetological collection from the state of Rondônia, where two other specimens of *A. albuquerquei* were collected in the vicinities of Ji-Paraná and Ouro Preto d'Oeste. Additionally, these authors mentioned the existence of another specimen collected near Rio Branco, state of Acre, and deposited in the collection of the Universidade Federal do Ceará (Nascimento *et al.*, 1988:44). Jorge da Silva (1993) reported four specimens from the area of the Samuel hydroelectric power plant, near the city of Porto Velho, state of Rondônia. Except for the holotype, which is from the easternmost part of the state of Pará, in the Amazonian basin, all 15 specimens mentioned above are from the states of Rondônia and Acre, on the western border of Brazil. This results in a disjunct distribution along the southern border of the Amazonian basin, with a wide gap between Rondônia and eastern Pará.

Here we report 23 additional specimens of *Atractus albuquerquei* from the states of Rondônia (eight specimens), Goiás (nine), Mato Grosso (five) and Mato Grosso do Sul (one) (see list of specimens examined for details). These new records extend significantly the distribution of the species beyond the southernmost limits of the Amazon basin. We also redescribe the holotype of the species, and discuss patterns of intraspecific variation.

MATERIALS AND METHODS

We examined a total of 34 specimens of *Atractus albuquerquei,* including the holotype. We also examined and compared our sample with other species of *Atractus* with 15 dorsal scale rows for which we had access to specimens.

Methods for hemipenial preparation and terminology follow Zaher (1999) and Zaher and Prudente (2003). Head, snout, and head plate lengths of the holotype were measured to the nearest 0.01 mm with a digital caliper. Total length and tail length were measured to the nearest 1.00 mm by stretching carefully the specimens along a ruler. Images of specimens were taken with a digital camera and mounted in plates with the aid of Adobe Photoshop. Ventral scales were counted using Dowling's method (Dowling, 1951).

Specimens are deposited in the following institutions (acronyms used in the text are given in parenthesis): Centro de Estudos e Pesquisas Biológicas da Universidade Católica de Goiás, Goiânia (CEPB), Instituto Butantan, São Paulo (IB), Museu Paraense Emílio Goeldi, Pará (MPEG), Museu de Zoologia da Universidade de São Paulo (MZUSP), Natural History Museum, London (BMNH), Coleção Herpetológica da Universidade de Brasília (CHUNB), Coleção Biológica da Universidade Federal do Ceará (UFC), Coleção Biológica da Universidade Federal do Mato Grosso (UFMT).

Additional Data on the Holotype

***Atractus albuquerquei* Cunha e Nascimento, 1983**

Figures 1 and 2

Atractus albuquerquei Cunha e Nascimento, 1983:6 (holotype: MPEG 12946, collected in forested area south of the river Guamá, near the river Timboteua, in the locality called Vila Nova, on the road PA-256, between Tomé-Açu and Paragominas, Pará, Brazil).

The specimen is an adult male of 418 mm total length, 58 mm tail length (13.8% of total length); head length 13.8 mm (3.3% of total length); head width 7 mm at broadest point. Head is not distinct from neck. Dorsal scales smooth, in 15-15-15 rows, without apical pits. There are 172 ventrals, an undivided anal plate, and 38 paired subcaudals. Six maxillary teeth.

Rostral plate 1.5 times wider than high, and visible from above. Paired internasals 1.6 times wider than long. Paired prefrontals 1.4 times wider than long, in contact with each other and with frontal, internasal, posterior nasal, loreal, supraocular, and the orbit. Frontal pentagonal, 1.2 times wider than long. Supraocular as long as wide. Parietals 1.9 times longer than wide.

Nasal plate in contact with supralabials 1-2, and divided above and below the naris. Loreal plate 2.3 times longer than wide. Preocular absent. Two small postoculars of same size (fused on the right side of

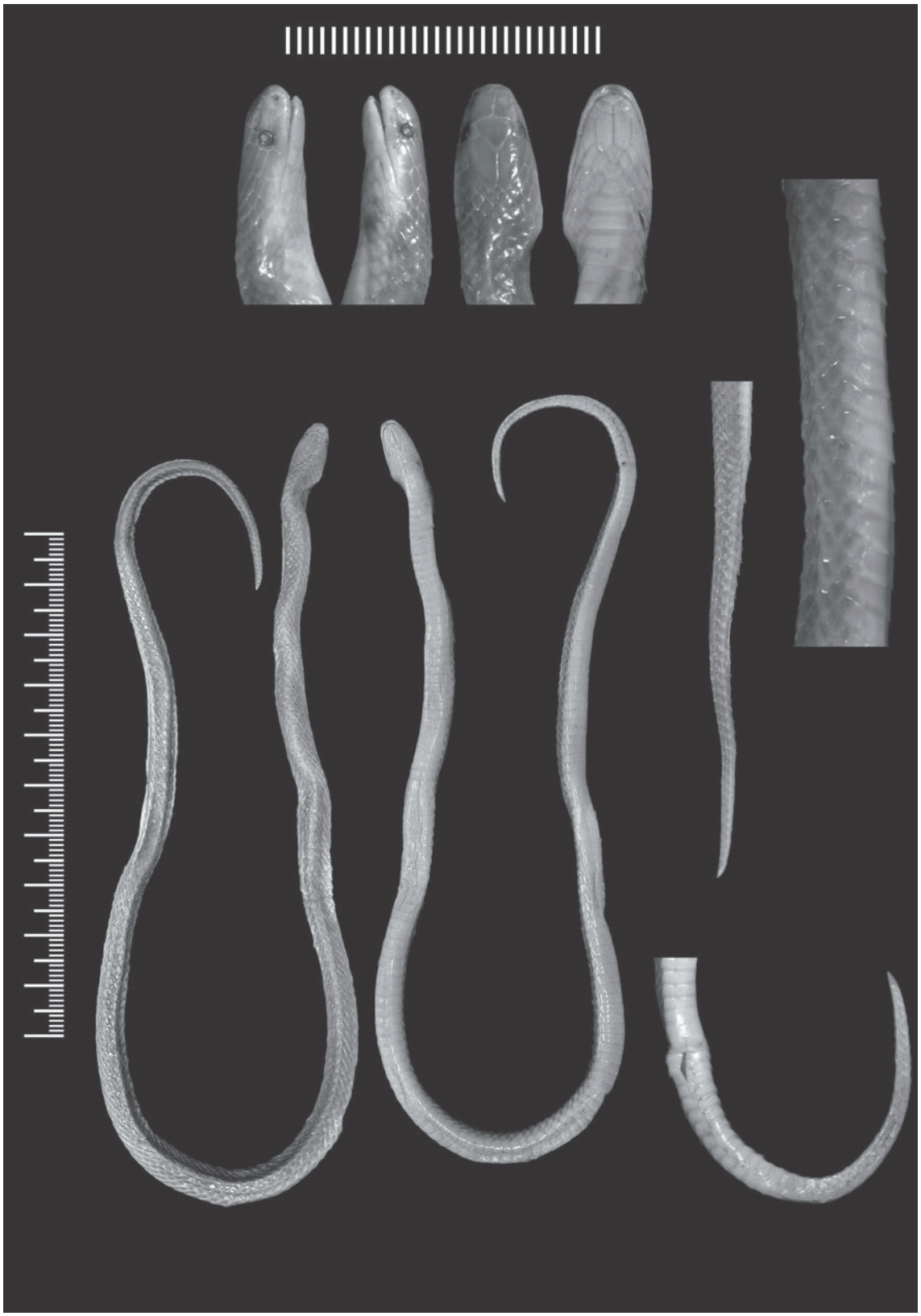

FIGURE 1. Holotype of *Atractus albuquerquei* (MPEG 12946).

FIGURE 2. Live specimen of *Atractus albuquerquei* from Parque Nacional das Emas, state of Goiás.

the head). One anterior temporal and two posterior temporals. On the right side of the head, the anterior temporal and the upper posterior temporal are of equal size whereas the lower posterior temporal is 1.3 times shorter than the former two. On the left side of the head, the anterior and lower posterior temporals are about 1.3 times shorter than the upper posterior temporal. Six supralabials, 2-3 contact the loreal and 3-4 border the orbit. Mental 2.7 times wider than long, separated from genials by the first pair of infralabials. Six infralabials, 1-3 are in contact with the anterior genials. Anterior genials 2.3 times longer than wide. Posterior genials absent.

Hemipenis: According to Cunha and Nascimento (1983), the hemipenis of the holotype is bilobed, with a bifurcated sulcus spermaticus, and has the undifferentiated type B pattern described by Savage (1960). However, our preparation of the left hemipenis of the holotype revealed a different pattern. Our preparation rendered a fully everted and almost maximally expanded hemipenis (sensu Myers and Cadle, 2003; see also Zaher and Prudente, 2003). The hemipenis is bilobed, semicapitate and semicaliculate (Figure 3). The capitular groove is well marked on the asulcate side, whereas on the sulcate and lateral sides it is only slightly developed. The lobes are restricted to the distal half of the capitulum, which is marked by the capitular groove, the latter being positioned just above the sulcus bifurcation, well below the lobular crotch. The lobes are covered by large and shallow papillate calyces. The left lobe is slightly longer than the right. The papillae are progressively replaced by spinules toward the base of the capitulum, where the calyces tend to lose their vertical walls and form poorly defined spinulate flounces. The distal two thirds of the hemipenial body is covered by medium-sized, hooked spines which tend to be slightly longer on the lateral surface and proximal region of the organ. The base of the organ is mostly nude, except for some dispersed spinules on the sulcate side. The sulcus spermaticus is bordered by spinules from the base of the organ to its bifurcation at the distal region of the hemipenial body, where both branches diverge to a centrifugal position ending at the tip of the lobes. A small naked pocket extends from the base of the organ

FIGURE 3. Fully everted and almost maximally expanded left hemipenis of the holotype of *Atractus albuquerquei* in sulcate (left) and asulcate (right) views.

to the proximal half of the hemipenial body on the left lateral surface.

Coloration: The coloration of the holotype is poorly preserved and faded, precluding a detailed description. The dorsal surface of the head and body is light brown from the rostral scale to the end of the tail. The infralabials, mental region, and ventral surface of the body are uniformly light cream, except for the dark brown lower edges of the first, second, and third infralabials. The ventral surface of the tail retains tiny light brown spots on the sagital axis, between the two rows of scales, giving rise to a light cream longitudinal stripe. Supralabials 1-2 are light cream, 4 and 6 are light brown, and 3 and 5 are light brown dorsally, light cream ventrally.

Morphological Variation in *Atractus Albuquerquei*

Proportions and scutellation: For the purpose of the following description, we used data from 33 specimens (17 males and 16 females; CHUNB 30245 discarded). The largest specimen is a female with 772 mm of total length, 72 mm of tail length; largest male is 492 mm total, 63 mm tail. Total length of specimens varied in males from 163 mm to 492 mm ($\overline{X}$ = 385.71 ± 80.34) and in females from 198 mm to 772 mm ($\overline{X}$ = 444.37 ± 194.48). Tail length varied in males from 20 mm to 64 mm ($\overline{X}$ = 49.12 ± 11.73; 10.49-14.36% of total length) and in females from 19 mm to 75 mm ($\overline{X}$ = 43.94 ± 18.90; 9.04-11.29% of total length). More ventrals in females [182-200; $\overline{X}$ = 191.5 ± 5.98] than in males [170-184; $\overline{X}$ = 177.35 ± 3.99]. Subcaudals always divided throughout the tail, more in males [30-44; $\overline{X}$ = 37.23 ± 3.86] than in females [27-43; $\overline{X}$ = 33.81 ± 3.78]. Dorsal scales in 15-15-15 rows, smooth and without apical pits; 6 supralabials (2-3 contacting loreals and 3-4 contacting the orbit); 6 infralabials (1-3 contacting genials). Rostral, internasals and prefrontals are about 1.5 times wider than long. Nasal plate is in contact with supralabials 1-2, and is divided above and below the naris. Prefrontals are in contact with each other and with the posterior half of the nasal plate, the internasal, frontal, supraocular, loreal, and the orbit. Loreals are about 2 times longer than high. In MZUSP 8678, the loreals are only about 1.5 times longer than high. Supraocular is as long as wide and single (except in CEPB 1676 which has a divided left supraocular). Two postoculars (except in MPEG 17170 which has only one postocular on both sides of the head). Preocular absent. One anterior temporal and two posterior temporals. In 21 specimens, the anterior and lower posterior temporals are of same size and the upper posterior is about 1.3 times longer than the former two. In two specimens, the anterior temporal is about 1.5 times longer than the two posterior temporals. In two specimens all temporals are of same size. In six specimens, temporals are significantly distinct in size on both sides of the head. Parietals are about 2 times longer than wide. The mental plate and genials are about 2.5 times longer than wide. In CEPB 1674, genials are only 1.8 times longer than wide. Six to eight maxillary teeth (eleven specimens examined for this feature).

Color pattern in preservative: The dorsal surface of the head and body is nearly uniform light to dark brown. The dark brown head cap generally extends to the dorsal surface of the supralabial scales, and more extensively on the third and fourth (below the eye) which tend to be almost completely brown. The first and second supralabials are generally almost light cream, giving the impression of a light cream spot on the lateral surface of the snout. The light cream coloration of the supralabial scales extends slightly dorsally, above the last two supralabials and lateral surface of the neck. More extensively pigmented individuals (such as MZUSP 13368 and 13369) have completely dark brown supralabials, but retain a light cream spot on the first and second supralabials. In these more melanic specimens, the dark brown coloration extends to the lower edge of the infralabial scales and distal tips of the genials which are mostly light cream, as with the rest of the gular region. Some less melanic specimens have only a dark brown spot on the genials. All other specimens retain a uniformly light cream gular region. In adult specimens the dorsum is generally uniform brown or, in some cases, the vertebral region is of a darker brown than the rest of the dorsum, giving the impression that it retains a slightly darker longitudinal stripe. A striped condition with the presence of slightly darker longitudinal bands was found in some of the youngest specimens, and can be divided into three distinct dorsal patterns: 1) CEPB 1676 and MZUSP 4586 retain a darker vertebral stripe, one scale width, running from the neck to the tip of the tail; 2) MPEG 16870 and 17170 also have a vertebral stripe as well a thin paravertebral stripe on each side of the body; 3) MZUSP 8734 has one large vertebral stripe and two paravertebral stripes running on each side of the body, from the neck to the tip of the tail. Specimens from Cana Brava are darker than the remaining

specimens, which tend to a uniform brown pattern. In all specimens, the flanks are conspicuously lighter than the dorsum due to the appearance of light cream spots on the last two rows of dorsal scales. In all specimens, the last dorsal row (in contact with the ventrals) has bicolored scales with their lower half to two-thirds being light cream (as the ventral scales) whereas the upper half or one-third of the scale remains brown. The light cream coloration is variably immaculate or diffuse with dark brown marks dispersed on the light cream area of the scales. In six specimens (all from Cana Brava), the penultimate scale row also retains a bicolored pattern, with mostly brown scales with light cream spots on their distal tips or halves. In three specimens, the last dorsal scale row retains scales bordered by a brown edge with a light cream center forming a spot or tending to a longitudinal bar, and ventrals with brown lateral edges, resulting in a thin light cream stripe along the flanks. MZUSP 13366 has only inconspicuous light cream tips on both dorsal scale rows, with a dark brown pattern invading the lateral edge of the ventral scales.

The ventral surface of the body is an immaculate light cream in most specimens. Only three specimens (MZUSP 8679, 8733, CEPB 1674) have a few dispersed brown spots on the venter. In one specimen (MZUSP 8733) the spots are mostly condensed along the midline. Eleven specimens have a totally immaculate light cream ventral surface of the tail. Eighteen specimens have a dark brown spotted ventral surface of the tail, in which the spots tend to condense along the midline, between the two rows of subcaudals, forming a conspicuous brown stripe. A few specimens, including the holotype, have only a few dispersed spots on an almost light cream surface, whereas the majority of the sample has a distinctly spotted ventral surface of the tail.

Color pattern in live specimens: The following description is based exclusively on the color pattern observed in specimens collected from Cana Brava and Parque Nacional das Emas, state of Goiás (Figure 2). Basically, specimens are uniform dark brown or black dorsally, and light yellowish ventrally. The dorsal surface of the head and body are a nearly uniform dark brown. The two juveniles (291 mm and 307 mm) are darker than the four adult specimens (387 mm, 420 mm, 508 mm, 664 mm) which tend to a uniform dark brown pattern. The last dorsal scale row (touching the ventrals) has scales with their lower half to two-thirds light yellow and the upper half or one-third dark brown. The penultimate dorsal scale row may be either completely dark brown or with light yellowish spots. Ventral scales are a uniform light yellow. Subcaudal scales are also light yellow, but often with dispersed dark spots.

Hemipenial variation in Atractus albuquerquei: We prepared 12 hemipenes of which eight are fully everted and maximally expanded, and four are fully everted but only partially expanded (sensu Myers and Cadle, 2003; see also Zaher and Prudente, 2003). The pattern present in all examined organs is similar to that described for the holotype. The organs are bilobed, semicapitate and semicaliculate. One lobe is always slightly longer than the other (except in MZUSP 13367 and MZUSP 13024). The longer lobe and basal naked pocket are always on the same side of the organ. In CEPB 1675, MZUSP 13367, and CHUNB 30344 the lobes are wider than in the other specimens. In all specimens the lobes are restricted to the distal half of the capitulum, which is clearly marked by a capitular groove disposed transversely, just above or at the level of the sulcus bifurcation. The capitular groove is always present, being only slightly pronounced in MZUSP 13367 (well developed in the other organs examined). In all organs, the capitulum is ornamented by distal papillate calyces that tend to calcify and change to spinules proximally. In two specimens (MZUSP 13367, 11242), the calyces tend to lose their walls and form spinulate flounces on the proximal region of the capitulum. The hemipenial body is always covered with medium-sized and hooked spines, which tend to be slightly more developed on the proximal region of the hemipenial body. In MZUSP 11157, the basalmost spines are clearly longer than the ones covering the rest of the hemipenial body. The sulcus spermaticus is bordered by spinules from the base of the organ to its bifurcation at the level of the distal region of the hemipenial body (except for MZUSP 8778 and CEPB 1675, in which the border of the sulcus is nude). The sulcus spermaticus always bifurcates centrifugally, ending at the tip of the lobes. The base of the organ is always nude and bears a naked pocket that extends vertically on its lateral surface.

Sexual dimorphism: considering only adult specimens (14 males and 9 females), there are significant differences in snout-vent length (males: $\overline{X} = 360.21 \pm 40.43$; females: $\overline{X} = 534.55 \pm 102.7$, $t = 5.78$, d.f. = 21, $p < 0.001$) but not in caudal length (males: $\overline{X} = 49.11 \pm 11.73$; females: $\overline{X} = 43.93 \pm 18.9$, $t = 0.95$, d.f. = 21, p = n.s.). The number of ventral scales is significantly different between sexes, being greater for females (males: n = 17, min = 170, max = 184; females: n = 16, min = 182, max = 200;

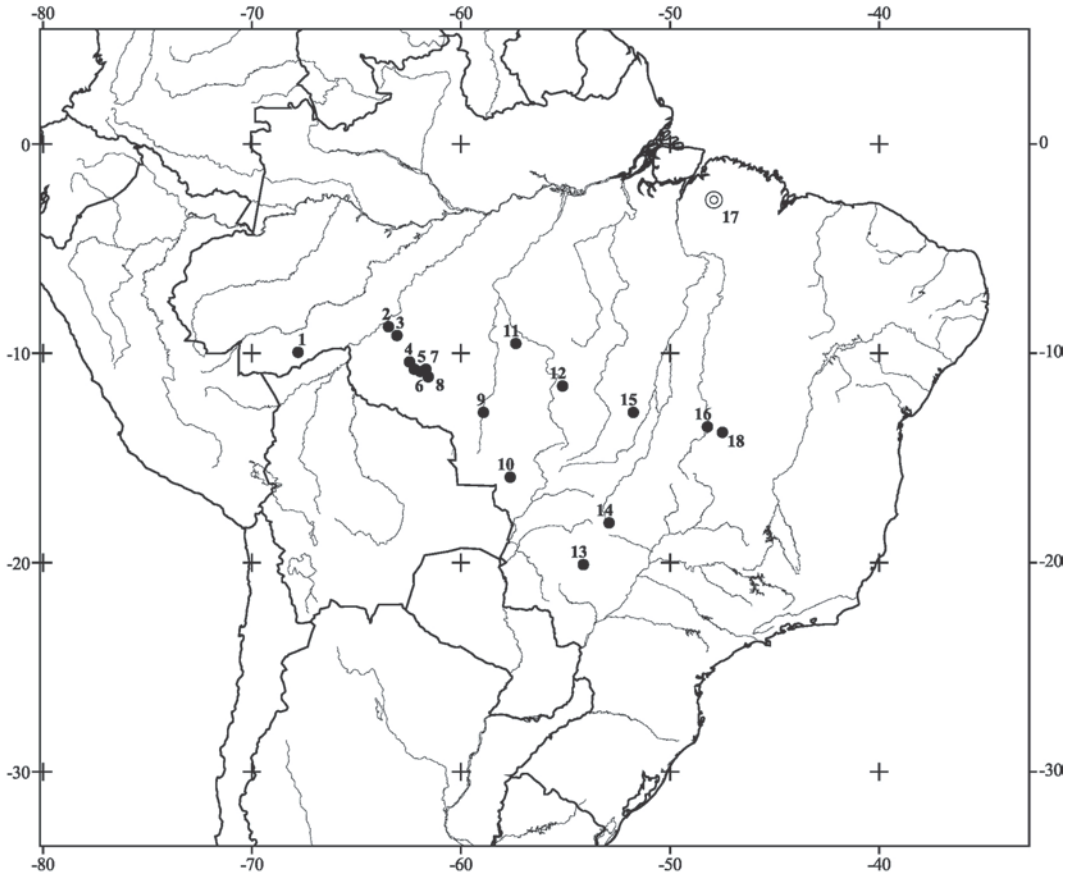

FIGURE 4. Locality records for *Atractus albuquerquei*. 1 – Fazenda Tucumã, 14 km de Rio Branco, Acre (09°58'S; 67°48'W); 2 – Samuel Hydroelectric Power Plant, Rondônia (08°45'S; 63°28'W); 3 – Santa Bárbara, Rondônia (09°10'S; 63°04'W); 4 – Jarú, Rondônia (10°26'S; 62°28'W); 5 – Ouro Preto do Oeste, Rondônia (10°47'S; 62°14'W); 6 – Ji-Paraná, Rondônia (10°53'S; 61°57'W);7 – Nova Colina, Rondônia (10°47'S; 61°41'W); 8 – Nova Brasília, Rondônia (11°09'S; 61°34'W); 9 – Fazenda São Nicolau, Juruena, Mato Grosso (12°51'S; 58°56'W); 10 – Rio Sepotuba, Mato Grosso (15°55'S; 57°39'W); 11 – Apiacás, Mato Grosso (09°33'S; 57°23'W); 12 – Cláudia, Faz. Iracema, Mato Grosso (11°35'S; 55°09'W); 13 – Fazenda Canaã, Mato Grosso do Sul (20°06'S; 54°09'W); 4 – Parque Nacional das Emas, Goiás (18°06'S; 52°55'W); 15 – Base Camp of the Royal Society Expedition to Mato Grosso, Ribeirão Cascalheira, Mato Grosso (12°51'S; 51°46'W); 16 – Minaçu, Cana Brava Hydroelectric Power Plant, Goiás (13°32'S; 48°13'W); 17 – Vila Nova, Tomé-Açú, Pará (02°41'S; 47°55'W); 18 – Cavalcante, Cana Brava Hydroelectric Power Plant, Goiás (13°48'S; 47°30'W).

Mann-Whitney U, $p < 0.001$). However, subcaudal scales are more numerous in males than in females (males: n = 17, min = 30, max = 44; females: n = 16, min = 27, max = 43; Mann-Whitney U, $p = 0.01$).

Geographic variation: None of the counts or measurements presents any variation significantly correlated with latitude. However, there is a significant decrease in the number of subcaudal scales from East to West, both for males and females (Figure 5), d. f. = 1,15, $F = 8.08$, $p = 0.01$ for males; d. f. = 1,14, $F = 17.71$, $p < 0.001$ for females). Variation in numbers of ventral scales, total body length, snout-vent length, and caudal length did not correlate significantly with longitude.

Distribution and Habitat

Until recently, known only from forested areas in the Brazilian states of Pará (eastern part), Rondonia, and Acre (Cunha and Nascimento, 1983; Vanzolini, 1986; Nascimento *et al.*, 1988; Jorge da Silva, 1993). The additional specimens reported here extend considerably the known range of the species to the South, in the states of Goiás, Mato Grosso, and Mato

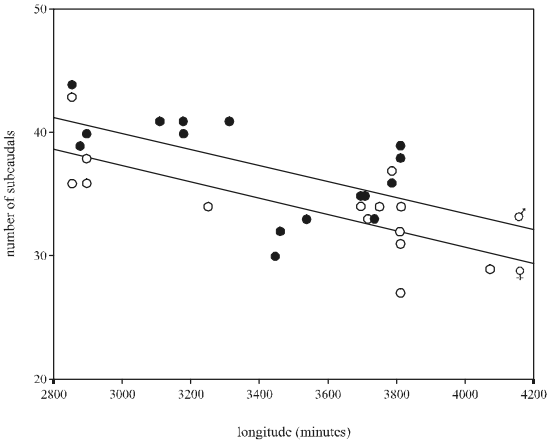

FIGURE 5. Regression of number of subcaudal scales against longitude in minutes, for males (closed circles) and females (open circles) of *Atractus albuquerquei.* Correlation is significant for both sexes (see text).

Grosso do Sul, reaching the latitude of 20° South (Figure 4). Three specimens from the Parque Nacional das Emas, and one from Minaçu, state of Goiás, were collected in pitfall traps in typical Cerrado formation habitats, showing that the species is not only restricted to the forested areas of the Amazon basin and Cerrado gallery forests.

DISCUSSION

Cunha and Nascimento (1983:8) suggested that the affinities of *A. albuquerquei* lie with Savage's group of *Atractus* with 15 dorsal scale rows and six supralabials, a group comprising *A. boettgeri, A. taeniatus, A. roulei,* and *A. carrioni* (Savage, 1960:68). Following Savage's (1960) suggestion that *A. emmeli* might be closely related to *A. boettgeri,* Cunha and Nascimento also added this species to their comparative analysis. However, although *A. emmeli* does retain 15 dorsal scale rows, it differs from *A. albuquerquei* in having seven supralabial scales instead of six, and fewer ventrals (167-170) and subcaudals (28-30), and in being spotted whereas the latter (along with the posteriormost ventrals) are black. *Atractus albuquerquei* differs from *A. carrioni, A. roulei,* and *A. taeniatus* in having more ventrals (no less than 170 in the former and no more than 159 in the latter three). Furthermore, their color patterns differ significantly from *A. albuquerquei* (see Pérez-Santos and Moreno, 1991; Williams and Gudynas, 1991; Jorge da Silva, 1993; Giraudo, 2001).

According to Cunha and Nascimento (1983:9), *A. albuquerquei* might be a junior synonym of *A. boettgeri.* However, this species differs from *A. albuquerquei* in its fewer subcaudals (21-22 instead of 27-44), a smaller mentum, a larger number of infralabials (7 or 8 instead of 6), infralabials contacting the genials (4 or 5 instead of 3), presence of a light brown band on the head that is reduced to the two posterior thirds of the parietal scales on the top of the head, and by its ventral color pattern with dark blotches in the venter and an entirely dark ventral surface of the tail. The holotype of *A. boettgeri* is shown in Figure 6.

Two other species of *Atractus* with 15 dorsal scales and six supralabials, not mentioned by Cunha and Nascimento (1983), are *A. poeppigi* and *A. elaps.* They differ markedly from *A. albuquerquei* in their coloration, having a banded pattern along the body (*A. elaps*) or only on the venter (*A. poeppigi*) instead of a uniformly brownish dorsum and immaculate light yellowish venter. These two species also differ from *A. albuquerquei* in their short loreals, fewer ventrals (135-161 in *A. elaps,* 139-148 in *A. poeppigi*) and subcaudals (16-37 in *A. elaps,* 25-29 in *A. poeppigi*) and, in the case of *A. poeppigi,* in having four infralabials in contact with the genial scales (see Table 1), and in the absence of the anterior temporal. There are several other species of *Atractus* with 15 dorsal scale rows that differ from *A. albuquerquei* in several aspects of their scutelation. These species and their distinctive features are listed in Table 1.

In his revision of the Ecuadorian species of *Atractus,* Savage (1960) describes a strong sexual dimorphism in the segmental scale counts, which is also present in the species studied here. We found in *Atractus albuquerquei* the same pattern of variation described by Savage (1960:21): the number of ventral scales is higher for females than for males, while the counts for subcaudal scales are higher for males. Similarly, total length and snout-vent length are significantly greater in females. Savage (1960:21) reported relatively longer tails in male *Atractus,* and explained this as a result of their possession of hemipenes. However, a simple interpretation of greater relative tail length in male *A. albuquerquei* is confounded by females having significantly greater snout-vent lengths. Additionally, absolute tail length is not significantly different between males and females, although male tails have significantly more subcaudal scales.

Geographically, the intraspecific variation in both male and female subcaudal scales (though not in tail length) in *A. albuquerquei* is correlated with longitude. There are no obvious adaptive or morphological constraint explanations for this, but it may be associated with some developmental process common to both

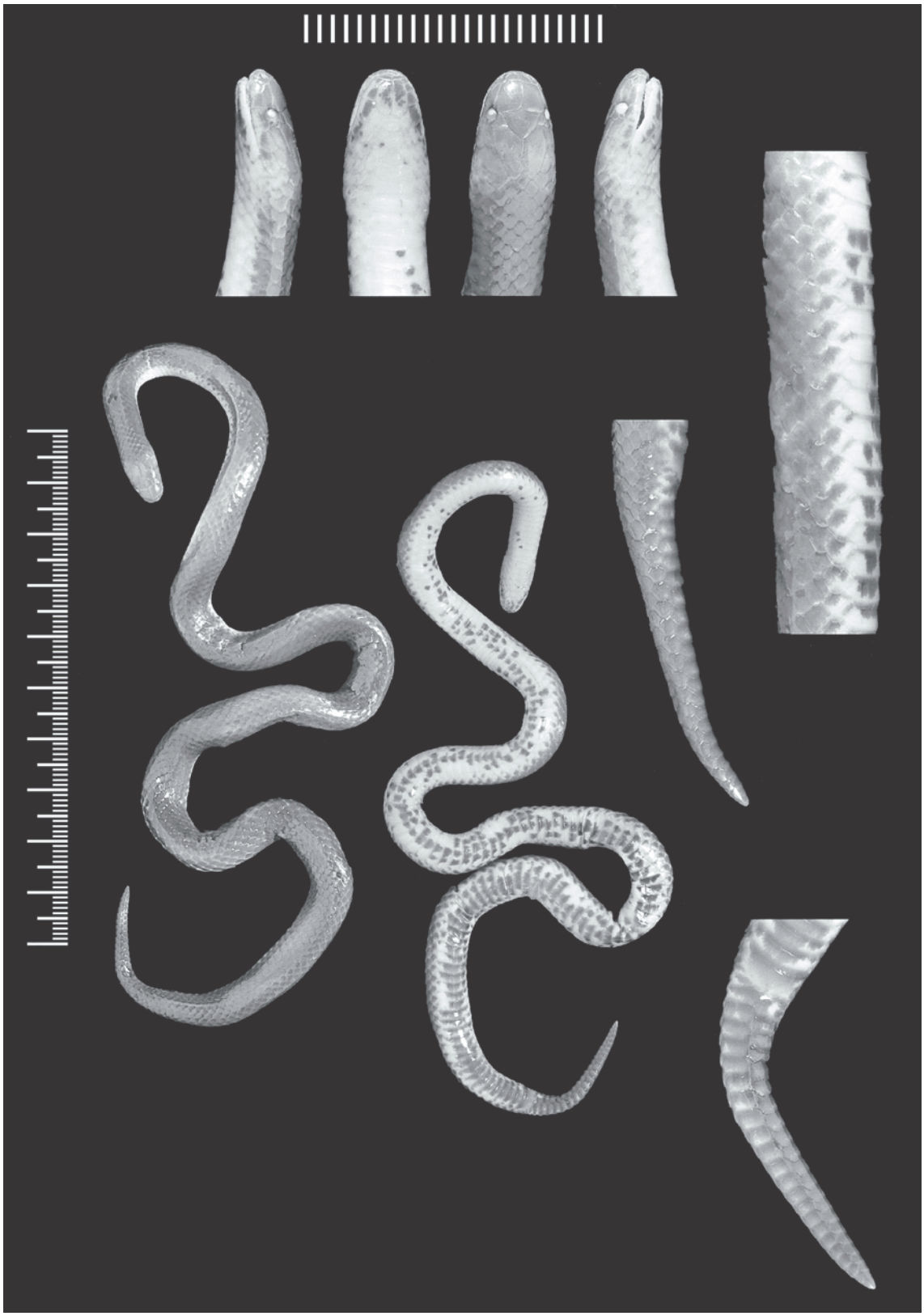

FIGURE 6. Holotype of *Atractus boettgeri* (BMNH 1946.1.6.29).

TABLE 1. List of species of *Atractus* with 15 dorsal scale rows showing relevant scale counts and bibliographic references. Numbers in parentheses represent supralabials and infralabials in contact with orbit and with genials, respectively.

Species	Ranges of comparative scale counts				References
	Ventrals	Subcaudals	Labials		
			upper	lower	
A. albuquerquei Cunha and Nascimento, 1983	170-200	27-44	6 (3+4)	6 (1-3)	Present study
A. biseriatus Prado, 1940	148	18	7 (3+4)	7 (1-4)	Prado, 1940a; Pérez-Santos and Moreno, 1988
A. boettgeri Boulenger, 1896	175-177	21-22	6 (3+4)	7/8 (1-4)	Boulenger, 1896; Cunha and Nascimento, 1983
A. carrioni Parker, 1930	145-159	21-34	6 (3+4)	4/5 (1-3)	Pérez-Santos and Moreno, 1991
A. elaps (Günther, 1858)	135-161	16-37	6 (4+5)	5/6/7 (1-4/5)	Savage, 1960; Dixon *et al.* 1976; Hogmooed, 1980; Lancini, 1986
A. emmeli Boettger, 1888	158-185	16-30	7 (3+4)	7 (1-4)	Boettger, 1888; Boulenger, 1894, 1896
A. erythromelas Boulenger, 1903	159-181	23-24	7 (3+4)	7 (1-3)	Peters and Orejas-Miranda, 1970; Lancini, 1986
A. insipidus Roze, 1961	154-164	18-24	7 (3+4)	7 (1-4)	Roze, 1961; Jorge da Silva, 1993
A. manizalesensis Prado, 1939	152-154	18-20	7 (3+4)	7 (1-4)	Prado, 1940b; Peters and Orejas-Miranda, 1970
A. nicefori Amaral, 1930	146-155	20-22	7 (3+4)	7 (1-3)	Peters and Orejas-Miranda, 1970; Pérez-Santos and Moreno, 1988
A. occipitoalbus (Jan, 1862)	137-171	22-32	7/8 (4+5)	6 (1-4)	Jan and Sordeli, 1865; Boulenger, 1894; Duellman, 1978
A. oculotemporalis Amaral, 1932	142-152	23-31	7 (3+4)	7 (1-3/4)	Peters and Orejas-Miranda, 1970; Pérez-Santos and Moreno, 1988
A. paraguayensis (Werner, 1924)	157-166	22-30	7 (3+4)	7 (1-4)	Giraudo and Scrocchi, 2000; Giraudo, 2001
A. paravertebralis Henle and Ehrl, 1991	146	26	7 (3+4)	6 (1-3)	Henle and Ehrl, 1991
A. poeppigi (Jan, 1862)	139-148	25-29	6 (3+4)	7 (1-4)	Jan and Sordelli, 1865; Dixon *et al.* 1976; Martins and Oliveira, 1993
A. potschi Fernandes, 1995	141-155	23-32	7 (3+4)	7 (1-4)	Fernandes, 1995a
A. punctiventris Amaral, 1932	157-158	28-33	7 (3+4)	7 (1-4)	Peters and Orejas-Miranda, 1970; Pérez-Santos and Moreno, 1988
A. reticulatus (Boulenger, 1885)	130-163	19-34	6/7/8 (3+4)	6/7 (1-4)	Boulenger, 1894; Fernandes, 1995b; Giraudo and Scrocchi, 2000; Giraudo, 2001
A. roulei Despax, 1910	140-159	14-26	6 (3+4)	5 (1-3)	Despax, 1910; Peters and Orejas-Miranda, 1970
A. taeniatus Griffin, 1916	146-161	23-30	7 (3+4)	7 (1-4)	Williams and Gudynas 1991; Jorge da Silva, 1993
A. taphorni Schargel and García-Pérez, 2002	154-160	19-29	7/8 (3+4/4+5)	7/8 (1-4)	Schargel and Gárcia-Pérez, 2002
A. trilineatus Wagler, 1828	125-150	11-19	7/8 (3+4)	7 (1-4)	Boulenger, 1894; Peters and Orejas-Miranda, 1970; Lancini, 1986
A. ventrimaculatus Boulenger, 1905	149-162	13-26	7 (3+4)	7/8 (1-4)	Peters and Orejas-Miranda, 1970; Lancini, 1986
A. vittatus Boulenger, 1894	145-152	18-24	8 (4+5)	8 (1-4)	Boulenger, 1894; Lancini, 1986

sexes. The absence of any similar pattern of correlation with latitude suggests that variation in subcaudal scales is not associated with variation in environmental temperature. It might be that the probably largely fossorial *A. albuquerquei* is subject to a less variable subterranean temperature regime than above-ground snakes, but this requires much more study.

RESUMO

Atractus albuquerquei *Cunha & Nascimento, 1983 era conhecida apenas do holótipo procedente do leste do estado do Pará e de 15 espécimes dos estados de Rondônia e Acre, no Brasil. Registramos aqui 23 espécimes adicionais provenientes dos estados de Rondônia, Goiás, Mato Grosso e Mato Grosso do Sul. Estes exemplares ampliam a área de distribuição conhecida de* A. albuquerquei, *para além do limite sul da bacia amazônica. O holótipo de* A. albuquerquei *é redescrito e a variação intraespecífica da morfologia externa, dos hemipenis e da coloração dos exemplares estudados é analizada. Foi detectado dimorfismo sexual no comprimento total do corpo bem como no número de ventrais (maior nas fêmeas) e de subcaudais (maior nos machos). Foi notada uma correlação significativa entre o número de escamas subcaudais e a longitude (que diminuem de leste para oeste) em ambos os sexos.*

PALAVRAS-CHAVE: Serpentes, Dipsaedinae, *Atractus albuquerquei*, variação, distribuição.

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APPENDIX

Specimens Examined

Atractus albuquerquei – Brazil: State of Pará: Paragominas, PA 256 road, Vila Nova next to river Timboteua (MPEG 12946; Holotype); State of Acre: Fazenda Tucumã, 14 km of Rio Branco (UFC 1482); State of Rondônia: Jaru (MZUSP 8679); Ji-Paraná (MPEG 16870); Nova Brasília (MZUSP 8733, 8734); Nova Colina (MZUSP 8509); Ouro Preto d'Oeste (MPEG 17170); Santa Bárbara (MZUSP 8678, 8777, 8778); Porto Velho, Samuel Hydroelectric Power Plant (CEPB 1024, 1025, 1673, 1674, 1675, 1676, UFC 1483, 1484); State of Mato Grosso: Apiacás (MZUSP 11157); Fazenda Iracema (MZUSP 11242); Ribeirão Cascalheira (MZUSP 5393); State of Goiás: Minaçu, Cana Brava Hydroelectric Power Plant (MZUSP 13024, 13368, 13369); Cavalcante, Cana Brava Hydroelectric Power Plant (MZUSP 13365, 13366, 13367); Parque Nacional das Emas (CHUNB 30340, 30344, 30345); State of Mato Grosso do Sul: Fazenda Canaã (MZUSP 4586).

Atractus potschi – Brazil: State of Sergipe: Salgado (MZUSP 7275, 7276, 7277, 7278, 7279, 7280, 7281; Paratypes).

Atractus reticulatus – Brazil: State of Rio Grande do Sul: Saint Lorenzo Colony (BMNH 1946.1.2.7; Holotype).

Atractus trilineatus – Brazil: State of Roraima: Rio Catrimani (MZUSP 6396, 6397, 6401, 6964, 7304, 7305); Rio Jundiá (MZUSP 6403); Boa Vista (MZUSP 9112); Ilha de Maracá (MZUSP 9270); Santa Maria do Boiaçu (MZUSP 10328); Mucajaí (MZUSP 10473).

Atractus elaps – Brazil: State of Rondônia: Porto Velho (MZUSP 3156).

Atractus poeppigi – Brazil: State of Amazonas: Rio Japurá (MZUSP 6601).

Atractus boettgeri – Bolívia: Yungas (BMNH 1946.1.6.29; Holotype).

Atractus cf. *univittatum* – Colombia: Meta, region of Villavicencio-Acacías-Puerto Lopez (MZUSP 6012, 6062-6087).

Atractus oculotemporalis – Colombia: Jericó (IB 10226; 10228).

Hemipenes Examined

Atractus albuquerquei (MPEG 12946, MZUSP 13367, 13024, 11157, 8778, 8509, 11242, CEPB 1675, CHUNB 30340, 30344, UFMT 325, 326)