

# ZOOLOGISCHE MEDEDELINGEN

UITGEGEVEN DOOR HET

RIJKSMUSEUM VAN NATUURLIJKE HISTORIE TE LEIDEN  
(MINISTERIE VAN WELZIJN, VOLKSGEZONDHEID EN CULTUUR)

Deel 59 no. 20

31 december 1985

ISSN 024-0672

---

**COLEODACTYLUS SEPTENTRIONALIS VANZOLINI, A LIZARD  
NEW FOR THE SURINAMESE FAUNA (SAURIA: GEKKONIDAE). —  
NOTES ON THE HERPETOFAUNA OF SURINAME X\***

by

**MARINUS S. HOOGMOED**

Hoogmoed, M.S.: *Coleodactylus septentrionalis* Vanzolini, a lizard new for the Surinamese fauna (Sauria: Gekkonidae). — Notes on the herpetofauna of Suriname X.

Zool. Med. Leiden 59(20), 31-xii-1985: 229-238, figs. 1-5. — ISSN 0024-0672.

Key words: *Coleodactylus septentrionalis*; Gekkonidae; zoogeography; Suriname.

During fieldwork in western Suriname, the recently described diminutive, ground-dwelling sphaerodactyline gekko *Coleodactylus septentrionalis* was found. A diagnosis and some details on its ecology are presented. A key to the species of *Coleodactylus* occurring in Suriname is provided.

M.S. Hoogmoed, Rijksmuseum van Natuurlijke Historie, Postbus 9517, 2300 RA Leiden, The Netherlands.

Northern South America harbours several small genera of diminutive gekkos belonging to the subfamily Sphaerodactylinae. One of these genera is *Coleodactylus*, consisting, until recently, of four nominal species: *C. amazonicus* (Andersson), *C. brachystoma* (Amaral), *C. guimaraesi* Vanzolini and *C. meridionalis* (Boulenger) (Vanzolini, 1957, 1963, 1968a, b; Wermuth, 1965; Peters & Donoso-Barros, 1970; Hoogmoed, 1973). Vanzolini (1957: 10, 15) proposed several possible groupings of the four species known at that moment, but personally preferred to group them into two groups based on similarity in the shape of the unguis sheath-complex and on general morphology: one containing *C. meridionalis* + *C. amazonicus*, the other *C. guimaraesi* + *C.*

---

\* Notes on the herpetofauna of Surinam VIII appeared in *Amphibia-Reptilia* 1(3/4): 277-285, no. IX in *Zool. Med. Leiden* 59(8): 79-88. Starting with the present note Surinam has been altered into Suriname, because the Surinam authorities consider this the official name of the country.

*brachystoma*. In the original description of *C. guimaraesi* the dorsal scales are described as smooth (Vanzolini, 1957: 8). However, Vanzolini (1968a: 33, 37, 38) corrected this by stating that the dorsal scales actually are keeled and that both *C. amazonicus* and *C. guimaraesi* have keeled dorsals as opposed to the smooth dorsals in *C. meridionalis* and *C. brachystoma*. Consequently Vanzolini (1968b: 93) considered *C. amazonicus* and *C. guimaraesi* as "more advanced" and says that "in fact, the relationship between the latter two is not very clear, it being possible that they are subspecies or even synonyms." Hoogmoed (1973: 71), without having examined the type-specimen of *C. guimaraesi*, supported this opinion and stated that they "may eventually prove to be identical". I based this on the fact that according to scale counts *C. guimaraesi* completely falls within the range of variation of *C. amazonicus*. Thus, after Vanzolini's (1968a: 33, 37, 38) correction about the sculpture of the dorsals there remain hardly any differences between the two taxa. Vanzolini's (1968a) correction about the sculpture of the dorsals was not incorporated in Peters & Donoso-Barros' (1970: 96) key, which consequently gives a wrong idea about similarities.

Among the species of *Coleodactylus*, *C. meridionalis* exhibited a rather strange distribution (Vanzolini, 1957: 2, 1963: 315, 1968a: 38, 1968b: 93, 1972: 88, 1974: 70; Wermuth, 1965: 18; Peters & Donoso-Barros, 1970: 96; Hoogmoed, 1973: 71, 1979: 260, 277; Vanzolini et al., 1980: 75), occurring in two widely separated areas in NE Brazil and in SE Venezuela, Guyana, and adjacent Brazil. Vanzolini (1980) realised that the enormous disjunction in the distribution of *C. meridionalis* was real and not due to undercollecting in the intervening area, which only yielded *C. amazonicus*. He evaluated the morphology of the populations north and south of the Amazon forest and came to the conclusion that there were constant differences in pholidosis and colour pattern. This, coupled with the geographical separation, convinced him that the specimens from north of the Amazon forest belonged to a taxon different from the one in NE Brazil (*C. meridionalis*), and he described them as *C. septentrionalis*. The two taxa differ in number of ventrals between arm and thigh (29-32 in *C. septentrionalis*, 34-46 in *C. meridionalis*) and in colour pattern (*C. septentrionalis* showing three (transverse) light spots on each side of the back, whereas in *C. meridionalis* the back is uniformly coloured). Vanzolini (1968b: 94) hypothesized that *C. meridionalis* originally lived in a continuously forested range, but was "pushed out of the hylaea by competing, and more successful, *amazonicus*, and is now restricted to marginal habitats". Hoogmoed (1973: 71) tried to explain the apparent absence of *C. amazonicus* in northern Guyana by supposing that in that area it was probably excluded (ecological exclusion was implicated) by *C. meridionalis* (= *C. septen-*

*trionalis*) being present there. Some more data on the habitat of *C. meridionalis* and *C. septentrionalis* have become available since (Vanzolini, 1972: 88, 1974: 66, 1980: 5; Vanzolini et al., 1980: 76) and it turned out that in NE Brazil *C. meridionalis* inhabits leaf litter in forests at the northern end of the Atlantic forest zone, or in forest remains in the caatinga area, which can either be rather moist or dry. The habitat of *C. septentrionalis* is described as "on the floor of good forest, either primary or second growth (it is not always easy to tell)" (Vanzolini, 1980: 3).

From these data it has become clear that *C. meridionalis* and *C. septentrionalis* inhabit niches comparable to that of *C. amazonicus*. The attractively simple explanation that *C. amazonicus* would outcompete the other two on grounds of limited food supply etc. was shattered by Vanzolini's (1980: 4) reasoning. He offers an alternative by stating that *C. meridionalis* and the newly described *C. septentrionalis* may show physiological adaptations to a more arid climate and that they "can stand a marked degree of deterioration of the primary habitat." This might prove to be true, but needs further confirmation.

During recent field work in W Suriname (Kabalebo Expedition 1981-II: October 19 – December 1, 1981) J. Huijbregts collected dung beetles by using pitfalls. The pitfalls, consisting of 0.5 l plastic cups, baited with human dung, and filled with 100 ml ethanol 70%, were sunk into the ground till they were level with it. These pitfalls proved very effective in attracting dung beetles, but also several small vertebrates (frogs and lizards) fell into the traps and were preserved. Collecting station km 92 along the road from Avanavero to Amotopo (situated in a small area of shrub savanna (Hoogmoed & Huijbregts, in prep.)) yielded a small gekko, which, upon identification turned out to belong to *C. septentrionalis*. The specimen was compared with two specimens (formerly MZUSP 56983-84, now RMNH 22147-48) from near the type locality and it agrees rather well, though not completely, with these.

In order to be able to discern this species, it seems useful to provide a short diagnosis, and a key to the species of *Coleodactylus* present in Suriname. This should be considered as an addition to Hoogmoed (1973), who did not provide such a key because at that time only one species of *Coleodactylus* was known to occur in Suriname.

### **Coleodactylus Parker**

#### KEY TO THE SPECIES OF *COLEODACTYLUS* IN SURINAME

1. Dorsal scales smooth; head relatively narrow; first infralabial very long;

- one or two large postmentals; mental without median cleft; back of thighs with two white spots, (partially) bordered by black . . . . . *septentrionalis*  
 – Dorsal scales keeled; head rather thick; first infralabial not extremely long; 4-7 small postmentals; mental with deep, distinct median cleft; back of thighs with white stripe . . . . . *amazonicus*

***Coleodactylus septentrionalis* Vanzolini**  
(figs. 1-5)

*Coleodactylus meridionalis*: Parker, 1935: 515; Vanzolini, 1957: 2 (partly), 1963: 315 (partly); Wermuth, 1965: 18 (partly); Vanzolini, 1968a: 38 (partly), 1968b: 93 (partly), Peters & Donoso-Barros, 1970: 96 (partly); Hoogmoed, 1973: 71 (partly); Hoogmoed, 1979: 260, 277 (partly).

*Coleodactylus septentrionalis* Vanzolini, 1980: 2.

Material\*. — Suriname, distr. Nickerie, km 92 road Avanavero-Amotopo: 1 ex., RMNH 22146, 13/17-xi-1981, field no. HH 209, leg. J. Huijbregts.

Brazil, Terr. Roraima, Boa Vista (Fazenda Bom Intento): 2 ex., RMNH 22147-48, vi-1970, leg. Nascimento.

Guyana, Pakaraima foothills: 1 ex., BM 1933.6.19.50, leg. D.V. Fitzgerald.

**Diagnosis.** — A very small ground-dwelling gekko with a cylindrical body, short legs and a short, pointed tail. Dorsal scales rhomboidal to cycloid, smooth, imbricate. Anterior margin of the upper eyelid forming a projecting flap which bears three enlarged scales on its anterior part. Claws obliquely retractile into an asymmetric sheath-complex composed of five scales. Head relatively narrow. A large postmental (sometimes divided into two), mental without median cleft, first infralabial very long (fig. 1). Pale greyish brown with brown vertebral and dorsolateral stripes. Light dorsolateral stripes from the sacrum onto the tail. Back of thigh with two white spots surrounded by black.

**Description.** — See Vanzolini (1980) for a more extensive description of this taxon. RMNH 22146 agrees rather well with this description. Its meristic data are as follows: snout-vent length 20.5 mm, tail length 18.6 mm (original tail), head length 4.6 mm, head width 3.3 mm, head depth 2.3 mm, scales around midbody  $\pm$  43, longitudinal rows of dorsals between anterior edge of forelimb and anterior edge of hindlimb 40, transverse rows of ventrals be-

---

\* RMNH = Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands  
 MZUSP = Museu de Zoologia da Universidade de Sao Paulo, Sao Paulo, Brazil  
 UMMZ = University of Michigan Museum of Zoology, Ann Arbor, U.S.A.  
 BM = British Museum (Natural History), London, U.K.

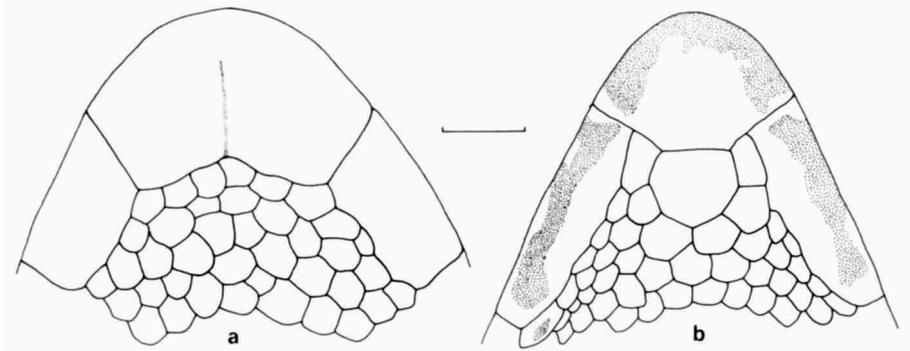


Fig. 1. Detail of chin. a. *Coleodactylus amazonicus* (RMNH 22142), b. *C. septentrionalis* (RMNH 22146). The line represents 0.5 mm.

tween anterior edge of forelimb and anterior edge of hindlimb 32, supralabials 4-4, infralabials 3-3 (first one very long), mental without median cleft posteriorly, one large postmental (fig. 1), lamellae under fourth finger 8-7, lamellae under fourth toe 9-9, supraciliaries outer margin 3-3, supraciliaries inner margin 4-4, postrostrals 3, postnasals 2-2. The unguis sheath-complex consists of five scales: a large, asymmetric outer inferolateral, a smaller inner inferolateral, an inner superolateral, a terminal, and, not actually forming part of the sheath, a median dorsal (fig. 2). The dorsals are slightly larger than the laterals, and slightly smaller than the ventrals.

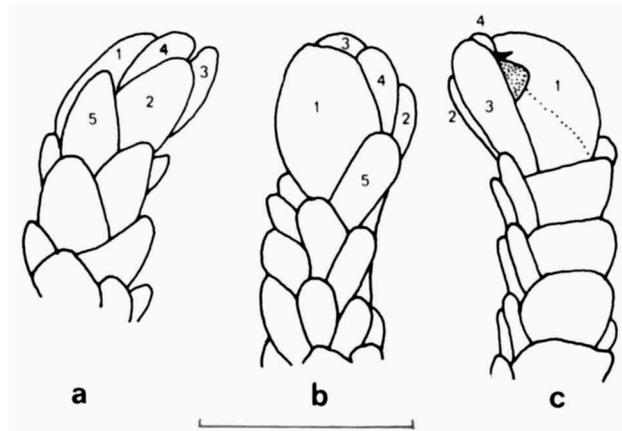


Fig. 2. Distal part of fourth toe of left foot of *Coleodactylus septentrionalis* (RMNH 22146), showing the arrangement of scales in the asymmetrical unguis sheath-complex. a. dorsal view, b. oblique lateral view, c. ventral view. 1 = outer inferolateral, 2 = inner inferolateral, 3 = inner superolateral, 4 = terminal, 5 = median dorsal. The line represents 0.5 mm.

Colour in preservative. — The following description was made four months after preservation (figs. 3, 4). Back pale greyish brown with brown vertebral band with lighter spots in it (fig. 3a). Snout brownish, top of head like back, but with irregularly shaped lighter (whitish) spots. A faint light canthal stripe. Back of head with a double crescent-shaped marking, starting at ears, light anteriorly, posteriorly dark brown; not well marked (fig. 3b). A dark brown line from corner of mouth to base of forelimb, bordered dorsally by an indistinct row of white spots. Lower lip anteriorly with horizontal dark brown stripe, two vertical dark brown stripes under the eye. Upper lip checkered dark brown and white. Throat and chin immaculately white. Anterior part of the chest and the posterior part of the throat with three indistinct dark lines: one median, two lateral. The laterals enclosing a white band together with the dark brown stripe from mouth to forelimb. A faint greyish band, bordered by even fainter (and narrower) darker stripes, at border of flank and belly. Belly anteriorly immaculately white, posteriorly ventrals with speckling of small spots near the posterior tips. Two distinct, white dorsolateral stripes on posterior part of back, passing onto the tail. Tail anteriorly with a white transverse bar, posteriorly similar but less distinct bars. Black stripes laterally of vent. Posterior part of thighs with two white spots, partially bordered by black. Underside of tail with two irregular, longitudinal black stripes and some transverse connections. A white spot near the tip. Underside of limbs with dark and white reticulation. An indistinct, longitudinal white spot over the insertion of each forelimb.

Remarks. — In pholidosis the Surinam specimen agrees rather well with Vanzolini's (1980: 2) description and with the Brazilian specimens used for comparison. In colour pattern it differs considerably from the original description and from the Brazilian specimens studied. It agrees more with the colour description given by Stimson to Vanzolini (1980: 4) of the specimen in the British Museum (Natural History) from the Pakaraima foothills in

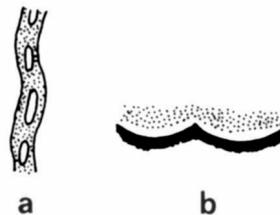


Fig. 3. *Coleodactylus septentrionalis* (RMNH 22146). Sketches of details of the pattern. a. part of the vertebral stripe, b. figure on posterior part of head. Anteriorly is towards the top of the page.

Guyana. This specimen also lacks the pattern of three light spots on each side of the back, but does have the rather distinct light dorsolateral stripes in the sacral region and on the tail. Apparently a certain amount of (geographic?) variation in colour pattern is present.

The unguis sheath-complex (fig. 2) consists of five scales, of which the outer inferolateral is largest, strongly asymmetrically enlarged, in contrast to the situation in *C. meridionalis*, where it is less asymmetrically enlarged. Parker (1926) and Vanzolini (1957) considered the median dorsal part of the sheath-complex, but in my opinion it is not actually involved in the sheath itself, which is formed by the other four scales forming part of the sheath-complex. For comparison of the unguis sheath with that of other species in the genus consult the drawings in Parker (1926: 293 fig. 4) and Vanzolini (1957: 3 figs. 1-4).

Habitat. — In W Suriname the single specimen collected inhabited a dry area of shrub savanna, which consisted of a low shrubby vegetation with dry leaf litter underneath, on white sand (Hoogmoed & Huijbregts, in prep.). This vegetation is rather unusual and only was encountered in this spot. It is sur-

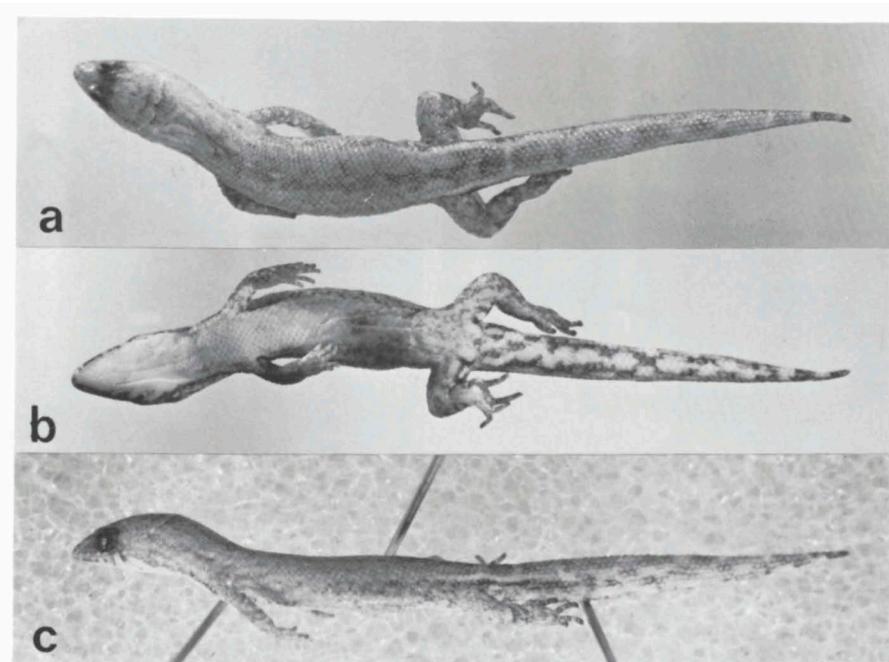


Fig. 4. *Coleodactylus septentrionalis* (RMNH 22146). a. dorsal view, b. lateral view, c. ventral view (photographs E. L. M. van Esch)

rounded by rather dry dakama forest on sandy soil, and rainforest. In this forested area *C. amazonicus* is present (e.g. km 88, km 94). This shrub savanna habitat seems to be rather different from that described for N Brazil (Vanzolini, 1980: 3), though it does agree in the aspect of tending to be more arid (due to edaphic factors no doubt) than the surrounding area. This rather aber-

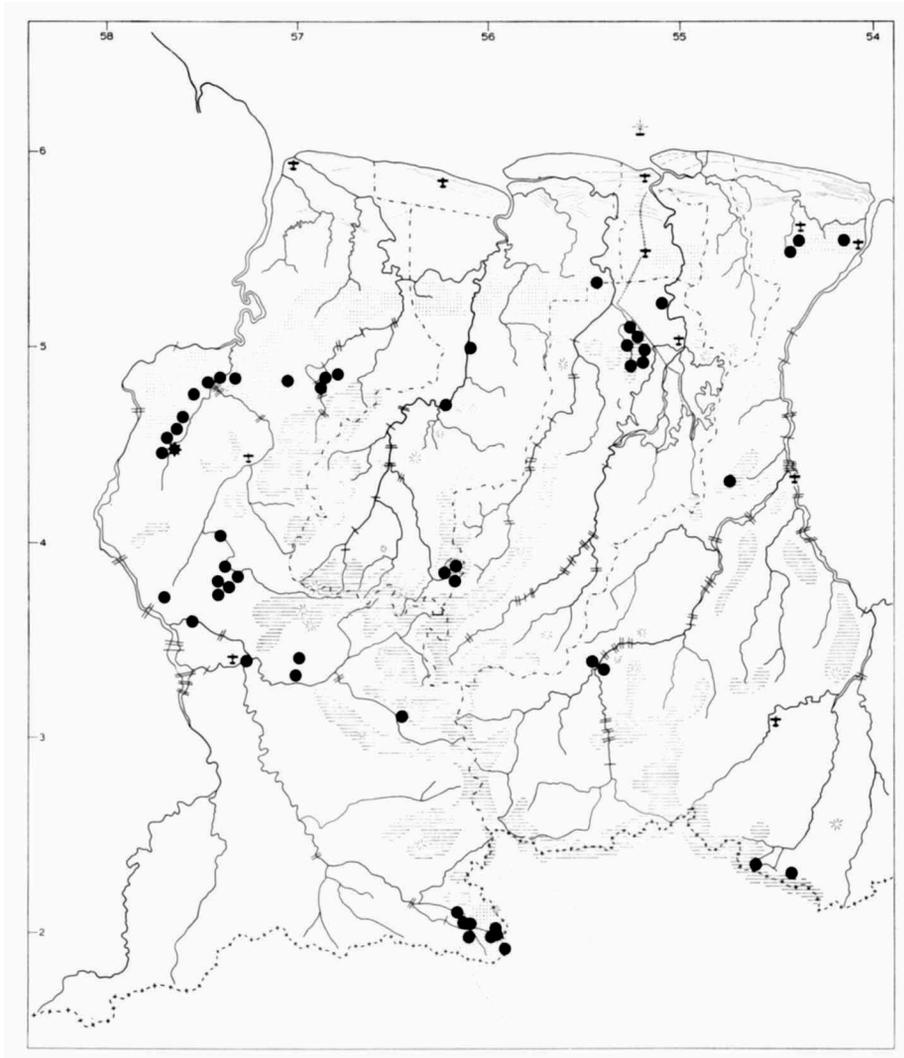


Fig. 5. Map of Suriname showing localities where *Coleodactylus* have been found. Based on Hoogmoed (1973), with additions from Gasc (1976) and new field data (all material in RMNH). Dotted areas represent savannas, hatched areas mountain ranges over 250 m, dotted lines near the coast ridges. Dots: *C. amazonicus*. Asterisk: *C. septentrionalis*.

rant shrub savanna also yielded a dung beetle fauna very different from that of the surrounding area (J. Huijbregts, pers. comm.).

Distribution. — Known from the Boa Vista area in N Brazil, from the Pakaraima foothills in Guyana and from a single locality in W Suriname (fig. 5). Apparently this is another species endemic to the Guiana shield.

### CONCLUSIONS

The discovery of this small gekko brings the number of species of lizards (Sauria) known for Suriname to 45 (cf. Hoogmoed, 1981: 281). The zoogeographic implications of the distribution of the species of the genus *Coleodactylus* have been ably discussed by Vanzolini (1957, 1963, 1968 b, 1980).

Material of *Coleodactylus meridionalis* examined. — Brazil, Pernambuco, Iguarasse: 3 ex., BM 1946.8.30.84-85, 85A, leg. G.A. Ramage (syntypes). Bahia, Barreiras (probably 12° 08' S 45° 00' W): 2 ex., UMMZ 103051, 11-iii-1942, leg. J.R. Bailey & A.L. de Carvalho.

### ACKNOWLEDGEMENTS

Field work in W Suriname (Kabalebo Expeditions 1980, 1981-I and 1981-II) was financed through grant W 84-191 of WOTRO (Netherlands Foundation for the Advancement of Tropical Research). Miss A.G.C. Grandison (BM), A.G. Kluge (UMMZ) and P.E. Vanzolini (MZUSP) were very helpful in providing working space in their respective institutions while I visited there. Vanzolini donated two specimens of *C. septentrionalis* to the RMNH.

### REFERENCES

- Gasc, J.P., 1976. Contribution à la connaissance des Squamates (Reptilia) de la Guyane française. Nouvelles localités pour les Sauriens. — C.R. Soc. Biogéogr. Séance 454, 1975: 17-36, figs. 1-7.
- Hoogmoed, M.S., 1973. Notes on the herpetofauna of Surinam IV. The lizards and amphisbaenians of Surinam. — Biogeographica IV: I-V, 1-419, figs. 1-81, pls. 1-42, tables 1-30. The Hague.
- Hoogmoed, M.S., 1979. The herpetofauna of the Guianan region. In: W.E. Duellman (ed.): The South American herpetofauna: Its origin, evolution, and dispersal. — Univ. Kansas Mus. Nat. Hist. Monogr. 7: 241-279, figs. 10.1-10.13, tables 10.1-10.8, app. 10.1.
- Hoogmoed, M.S., 1981. Introduced species of reptiles in Surinam. Notes on the herpetofauna of Surinam VIII. — Amphibia-Reptilia 1(3/4): 277-285, fig. 1.
- Hoogmoed, M.S. & J. Huijbregts (in prep.). Itinerary and list of zoological collecting stations of the Kabalebo (West Suriname) expeditions 1980-1981.
- Parker, H.W., 1926. The neotropical lizards of the genera *Lepidoblepharis*, *Pseudogonatodes*, *Lathrogecko*, and *Sphaerodactylus*, with the description of a new genus. — Ann. Mag. nat.

- Hist. London (9) 17: 291-301, figs. 1-9.
- Parker, H.W., 1935. The frogs, lizards, and snakes of British Guiana. — Proc. Zool. Soc. London 1935(3): 505-530.
- Peters, J.A. & R. Donoso-Barros, 1970. Catalogue of the neotropical Squamata. Part II. Lizards and amphisbaenians. — U.S. Nat. Mus. Bull. 297: I-VIII, 1-293, 104 figs.
- Vanzolini, P.E., 1957. O genero *Coleodactylus* (Sauria, Gekkonidae). — Pap. Av. Zool. 13(1): 1-17, figs. 1-4, 1 map, graphs 1-3, tables 1-4.
- Vanzolini, P.E., 1963. Problemas faunísticos do Cerrado. In: Simpósio sobre o Cerrado: 307-321, 1 map. Sao Paulo.
- Vanzolini, P.E., 1968a. Lagartos brasileiros da familia Gekkonidae (Sauria). — Arq. Zool. 17(1): 1-84, figs. 1-9, pls. 1-8.
- Vanzolini, P.E., 1968b. Geography of the South American Gekkonidae (Sauria). — Arq. Zool. 17(2): 85-112, maps 1-9.
- Vanzolini, P.E., 1972. Miscellaneous notes on the ecology of some Brazilian lizards (Sauria). — Pap. Av. Zool. 26(8): 83-115.
- Vanzolini, P.E., 1974. Ecological and geographical distribution of lizards in Pernambuco, north-eastern Brasil (Sauria). — Pap. Av. Zool. 28(4): 61-90, maps 1-7, tables 1-3, 1 pl.
- Vanzolini, P.E., 1980. *Coleodactylus septentrionalis*, sp. n., with notes on the distribution of the genus (Sauria, Gekkonidae). — Pap. Av. Zool. 34(1): 1-9, 3 figs.
- Vanzolini, P.E., A.M.M. Ramos & L.J. Vitt, 1980. Repteis das Caatingas: 4 pp., 1-161, figs. 1-102, pls. I-XL. Rio de Janeiro.
- Wermuth, H., 1965. Liste der rezenten Amphibien und Reptilien. Gekkonidae, Pygopodidae, Xanthusiidae. — Das Tierreich 80: I-XXII, 1-246.