

## Morphology and systematics of *Platyceps rogersi* (ANDERSON, 1893) – a review of the situation (Squamata: Colubridae)

Morphologie und Systematik von *Platyceps rogersi* (ANDERSON, 1893) –  
ein Lagebericht  
(Squamata: Colubridae)

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### KURZFASSUNG

Verschiedene Merkmale der Beschuppung und die Dorsalzeichnung des Saharo-Arabischen Taxons *Platyceps rogersi* (ANDERSON, 1893) weisen beträchtliche Variation auf. Exemplare aus dem Gebiet der östlichen Verbreitungsgrenze (West Irak) ähneln stark Populationen von östlich des Euphrat, die normalerweise zu *P. ventromaculatus* (GRAY, 1834) gestellt werden. Abgesehen von geringen Unterschieden in der Rückenzeichnung können diese Taxa nicht unterschieden werden. *Platyceps rogersi* und Populationen von Grays Zornnatter aus dem Mittleren Osten sind möglicherweise konspezifisch. Exemplare aus Kurdistan (Türkei, Irak) unterscheiden sich von Rogers' Zornnatter und südlicheren Populationen von *P. cf. ventromaculatus* durch niedrigere Ventralwerte.

### ABSTRACT

Various scale features and the dorsal colour pattern of the Saharo-Arabian taxon *Platyceps rogersi* (ANDERSON, 1893) show considerable variation. Specimens from the eastern limit of distribution (western Iraq) strongly resemble racer populations from east of the Euphrates commonly referred to *P. ventromaculatus* (GRAY, 1834). Except for minor differences in dorsal colouration, these taxa cannot be distinguished. *Platyceps rogersi* and Middle East populations of Gray's Racer may be conspecific. Specimens from Kurdistan (Turkey, Iraq) differ from Rogers' Racer and more southern populations of *P. cf. ventromaculatus* in lower ventral counts.

### KEY WORDS

Reptilia: Squamata: Colubridae: Colubrinae: *Platyceps rogersi*, *P. cf. ventromaculatus*, morphology, distribution, Jordan, Iraq, systematics

### INTRODUCTION

ANDERSON (1893) described *Zamenis rogersi* on the basis of five specimens collected in northern Egypt. For the next four decades, Rogers' Racer was only known from a handful of specimens and thought to be restricted to the Cyrenaica (Libya) and Lower Egypt (BOULENGER 1920; CALABRESI 1923; VINCIGUERRA 1928; ZAVATTARI 1930).

FLOWER (1933) reported the taxon (as *Coluber* auct.) from Sinai and Palestine (Gaza Strip). Five specimens collected by Henry Field, E. S. Fraser, and Richard A. Martin considerably extended the range of *Platyceps rogersi* to central Syria and western Iraq

(SCHMIDT 1939). Little by little, records from the Negev and Jordan bridged the distribution gap between Sinai and Syria (e.g., HAAS 1951; WERNER 1971; DISI et al. 1988).

DISI et al. (1999) emphasised that *Platyceps rogersi* (ANDERSON, 1893) cannot be properly distinguished from *P. ventromaculatus* (GRAY, 1834) on the basis of scale counts and dorsal colour pattern. DISI et al. (2001) stated that "the taxonomic status and relationships" of these taxa "is unclear and needs a deep revision", and they referred specimens from Jordan formerly published as *P. ventromaculatus* (e.g., DISI

1993) to *P. rogersi* (as *Coluber* auct.). The present paper addresses this issue and inves-

tigates the morphological variation of Rogers' Racer.

## MATERIALS AND METHODS

Sixty-five specimens from virtually all parts of the distribution range were examined for this study. Additionally, a comparative sample of thirty-one Iraqi racers referable to *P. ventromaculatus* was analysed (see Appendix). The material was loaned by the following institutions: The Natural History Museum (British Museum [Natural History]), London (BMNH); California Academy of Sciences, San Francisco (CAS); Field Museum of Natural History, Chicago (FMNH); Zoological Museum, Hebrew University, Jerusalem (HUJ); Museum of Comparative Zoology, Harvard University, Cambridge (MCZ); Muséum d'histoire naturelle, Genève (MHNG); Muséum National d'Histoire Naturelle, Paris (MNHN); Museo Civico di Storia Naturale, Genova (MSNG); Museo Zoologico dell'Università ["La Specola"], Firenze (MZUF); Museo ed Istituto di Zoologia Sistemática della Università, Torino (MZUT); Naturhistorisches Museum, Basel (NHMB); Naturhistorisches Museum, Wien (NMW); Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt am Main (SMF); Zoological Museum, University of Tel-Aviv (TAU); Zoological Institute, Russian Academy of Sciences, St. Petersburg (ZISP); Zoologisches Museum der Universität Hamburg (ZMH); Zoologische Staatssammlung, München (ZSM).

Further acronyms used in the text are JUM (Jordan University Museum, Dept. of Biological Sciences, Amman), MUM (Mutah University Museum of Natural History, Jordan), and SK (collection of Eugen Kramer, now in the MHNG).

Morphological terms and head measurements are explained in SCHÄTTI (1988) and SCHÄTTI & MCCARTHY (2004). Numbers in parentheses indicate intraspecific variation. Cephalic measurements from 42 specimens were ascertained with a calliper as follows. Head length: in a straight line from the anterior tip of the rostral to the posterior end of the median suture of the

parietals; head width: distance between the supraoculars at the middle of the eye. Frontal length: along the midline from the anterior tip to the posterior border; frontal width: maximum distance between the lateral projections. Distance from the nostril to the eye: shortest span from the posterior border of the external nose opening to the orbit. The internasal, prefrontal, and parietal lengths were measured along the respective median suture. Head measurements show no sexual dimorphism and, therefore, data for males and females are not separated in the text.

The scale formulae give the number of longitudinal dorsal scale rows (dsr) at the 10th ventral, midbody, and five ventrals prior to the vent. The reduction pattern is expressed in terms of ventrals and as a percentage of their total number (%ven), based on the average of the right and left side counts. In order to minimise dissection time and damage, maxillary teeth were usually examined on the right hand side only. The length of the hemipenis *in situ* and the insertion of the *Musculus retractor penis magnus* are expressed in absolute numbers of subcaudals and as a percentage thereof (%sub).

Scientific names of the discussed taxa are usually given in full only at their first appearance in the text. The synonyms include systematic papers, new combinations of names, articles with new locality records, and publications containing faunistic information or good illustrations.

Coordinates are mentioned in the appropriate section (Synonymy, Specimens examined, or Discussion). They were taken from the Gazetteers of the U.S. Board on Geographic Names and the GEONET database (<http://earth-info.nima.mil>), the pertinent literature (KRAMER & SCHNURRENBERGER 1963; MARTENS 1993; DISI & AMR 1998: "Al'al, Safawi", Ash-Shawmari), or from file entries of scientific collections (TAU: Bir Rekhme).

## RESULTS

### *Platyceps rogersi* (ANDERSON, 1893) – Rogers' Racer

?*Zamenis ventrimaculatus* [sic] (GRAY, 1834). - HART 1891: 21 ("Wady Zelegah (Zolakah)") [Wadi Zalaqah, 29°00'N 34°18'E]; GÜNTHER 1891: 209 (same specimen, see Discussion and fig. 2).

*Zamenis Rogersi* [sic] ANDERSON, 1893: 439. - "[...] in the desert to the east of Helouan, near Cairo", "Beltim", and "Shaloof, near Suez" (BMNH 1946.1.11. 41, 1946.1.11.43, and 1946.1.14.71, see Type Material).

*Zamenis rogersii* [sic]. - ANDERSON 1896: 107 (syntype from Marsa Matruh, see Type Material).

*Zamenis rogersi*. - BOULENGER 1896: 623 ("Types"); ANDERSON 1898: 254 [270], table [unnumbered], pl. 36 ["Beltim", ♂] (type series); BOULENGER 1920: 302 ("N. Egypt"); CALABRESI 1923: 21 ("Zauia Mechili") [Zawiya Al-Mukhayla]; MZUT 644; FLOWER 1925: 967 (duration of life).

*Zamenis Rogersi* [sic]. - VINCIGUERRA 1928: 341 ("Garet es Scheheibat": MSNG 29532).

*Zamenis rogersii* [sic] [partim]. - WERNER 1929: [64] 70 (see Distribution).

*Zamenis rogersi*. - ZAVATTARI 1930: 278 ("El Mechili, Garet es Scheheibat a sud di Giarabub").

*Coluber rogersi*. - FLOWER 1933: 810 ("desert hills east of Cairo" including "Wadi Hof" [Wadi Hawf, see Type Material], Cairo - Suez road [about 21 miles east of Cairo"]; Wadi "el Gedeirat (near Kossaima)" [Sinai, vic. Ayn Al-Gudeirat, ca. 30°39'N 34°26'E], "Maghara Hills" [Jabal Magharah, 30°42'N 33°23'E], "Sudr el Haitan" [30°03'N 33°14'E], "near Ras el Jafit" [Sinai]; "Birein" [Negev: "about 50 miles due south of Gaza" (31°30'N 34°28'E)]; see Distribution).

*Coluber ventromaculatus*. - FLOWER 1933: 810 ("southern Palestine, between the Egyptian frontier and Gaza": BMNH 1927.8.12.60, syn. HAAS 1951).

*Coluber rogersi*. - SCORTECCI 1934: 825 ("Mechili") ["FESTA, 1922", CALABRESI 1923], "Giarabub [Al-Jaghbab oases]: Garet es-Scheheibat", VINCIGUERRA 1928).

*Coluber ventrimaculatus* [sic]. - ANGEL 1936: 116 ("Palmyre" [Tadmur]: MNHN 1935.370-72, syn. HAAS 1951).

*Coluber Rogersi* [sic]. - ZAVATTARI 1937: 532 ("Barca" [Barqah, region centering around 31°00'N 22°30'E], "Giarabub" [VINCIGUERRA 1928]).

*Coluber rogersi*. - SCHMIDT 1939: 73 ("Between Homs and Palmyra" [Syria] and "Rutba" [Ar-Rutbah, Iraq]: FMNH 11361 [see WERNER 1971], 19508, 19588, 19592 [ZISP 17017], 21914); CLARK & INGER 1942: 167 (dorsal scale reduction).

*Platyceps rogersi*. - INGER & CLARK 1943: 144 (comb. nov.).

*Coluber rogersi*. - HAAS 1951: 84-85, 87 (Wadi "Dhaba'i (Transjordan)" [Wadi Dabab, Jordan: HUJ 3183.1], and "from different parts of the Negev"); SCHMIDT & MARX 1956: [22] 29 (Wadi "Lethleli" [Al-Uthayli]: FMNH 58488); KHALAF 1959: [54] 76 (checklist [Iraq]); KRAMER & SCHNURRENBERGER 1963: 503 (Bir Duema: SK 2720 [MHNG 1359.4]); CORKILL & COCHRANE 1966: 484 (data from BOULENGER 1896 and SCHMIDT & MARX 1956); MARX 1968: 32, map 23 ("St. Catherine's Monastery area" [ca. 28°31'N 33°57'E]; Cairo - Suez road, kms 17 and 32, "Abassia" [Al-Abbasiyah: 30°04'N 31°17'E], "Burg el Arab" [Burj Al-Arab, 30°55'N 29°32'E], "Mersa Matruh"); WERNER 1971: 244, pl. 6C-D ("Aseikhim" [Ayn As-Sikkim], Azraq [A. Ash-Shishan], "65 km SSE Amman" [Dabab], "N of Zerka" [Az-Zarqa], "Iraq" [Ar-Rutbah, HUJ 3540 (for-

merly FMNH 11361, not examined); see table 1 and Discussion]; BMNH 1965.698, 1965.806, HUJ 3183.1-2, 3185).

*Coluber rogersi*. - GORMAN 1973: 397 [table 13] (karyotype); WERNER 1973: 25, 41 [map: Wadi Al-Uthayli, from SCHMIDT & MARX 1956].

*Coluber ventromaculatus* [partim]. - GASPERETTI 1974: 18 (from HART 1891, see Discussion).

*Coluber rogersi*. - WERNER 1982: 155 [158], Tbs. 1-2 (Sinai, ecology).

*Haemorrhhis* [sic] *rogersi*. - WELCH 1982: 155 ("Eastern Libya and Egypt"; see SCHÄTTI & UTIGER 2001); WELCH 1983a: 69 ("Libya) north to Israel and Iraq").

*Eremiophis rogersi*. - WELCH 1983b: 108 ("Libya east to Iraq"; see SCHÄTTI & UTIGER 2001).

*Coluber rogersi*. - DISI 1985: 40 (checklist [Jordan]); DISI 1987: 300, figs. 1-3, table 3 (environmental factors, Sahara-Sindian species); SCHÄTTI 1987: [402] 412, table 1 [morphological data], fig. 2 [vertebra ratios] (referred to *rhodorachis* group); DISI et al. 1988: [43] 45 (Alal [32°38'N 35°54'E], Al-Jafr [30°18'N 36°13'E], "Al-Shuomary" [Ash-Shawmari, 30°37'N 36°28'E], Ar-Ramtha [32°34'N 36°00'E], Dayr Abu Asif [32°30'N 35°41'E], Jawa [31°51'N 35°56'E], "Khaldeyeh" [Al-Khalidiya, ca. 32°21'N 36°12'E], "Maeen" [Ma'in, 31°41'N 35°44'E], and "Zarka" [Az-Zarqa]: JUM collection, see DISI 1993 and DISI et al. 1999); WERNER 1988: table 3 ("Mainly southern deserts" [of Israel]); GRUBER 1989: 88, photograph [p. 89, unnumbered] (see Colour pattern); LEVITON et al. 1992: [89] 92 ("Israel, Jordan, Egypt, western Iraq"); MARTENS 1993: [50] 52 ("29 km S of Al-Busayri, Homs Prov.", 33°58'N 37°49'E).

*Coluber ventromaculatus* [partim]. - DISI 1993: 111 (Wadi Musa area [ca. 30°22'N 35°25'E], "Shaumari" [Ash-Shawmari], Ma'an area [ca. 30°12'N 35°44'E], "Ramtha area" [Ar-Ramtha], "Al-Khalidiya [Al-Khalidiya], Mafrqa", "10 km from Aunizah [Unayzah] triangle along Shawbak high-way" [ca. 30°33'N 35°42'E], Qasr "Al-Halabat" [Al-Hallabat, ca. 32°04'N 36°22'E] [JUM 373, 546, 699, 887, 922, 1324, 1327, 1649, 1736, 1988], see DISI et al. 1988).

*Coluber rogersi*. - AMR et al. 1994: 45 (Mutah [31°06'N 35°42'E], MUM 200); EL-ORAN et al. 1994: 365 [367] ("western Egypt to [...] western Iraq"); DISI & BÖHME 1996: 63, table 2 ("Palearctic" taxon, see MARTENS 1993); DISI 1996: table 1 ("Mediterranean" ecozone).

*Coluber ventromaculatus*. - DISI 1996: table 1 ("Badyiah" ecozone ["Arabian" species]).

*Coluber rogersi*. - SALEH 1997: [140] 144, map, pl. 82 (Lower Egypt and Sinai, see fig. 2).

*Coluber ventromaculatus*. - DISI et al. 1999: 142 (incl. Jawa [JUM 931], "Shubeika" [Wadi Shubaykah, 29°52'N 35°21'E, JUM 2261], and "in Qasr Burqu on the road to Azraq" [ca. 32°36'N 37°59'E, sight record], see DISI 1993 and DISI et al. 1988).

*Coluber rogersi*. - DISI et al. 2001: 267, map figs 190 ["Syria"] and 191 [vic. Azraq] (Safawi [Qa'as Safawi, 32°10'N 37°07'E], "Zarqa Ma'in" [Ayn Az-Zarqa, 31°39'N 35°42'E]).

*Platyceps rogersi*. - SCHÄTTI & UTIGER 2001: 935, figs. 8-9 [phylograms] (mtDNA sequence data).

*Coluber rogersi*. - DISI, 2002: [42, 146] 153, map, photographs ["Egypt", "Syria", "Badia" (Badiyah)] (synopsis).

*Platyceps rogersi*. - NAGY et al. 2003: Fig. 1 (16S rRNA, cyt b, and c-mos gene).

Material examined. An asterisk denotes specimens with a limited data set, i.e., only dsr counts, and solely head scales in FMNH 58488 (see table 1) as well as HUJ 3183.2 (including subcaudals) and 3185 (both specimens in two parts).

Egypt: BMNH 1946.1.11.41 [formerly 97.10.28.548] ("Shaloof, near Suez", paralectotype, ♀), 1946.1.11.43 [97.10.28.547] (Baltim, 31°33'N 31°05'E, paralectotype, ♂), 1946.1.14.71 [97.10.28.546] (Hulwan, Wadi Hawf area, ca. 29°52'N 31°19'E, lectotype [design. FLOWER 1933], juv. ♀), 1965.814 ("near Cairo", ♀); FMNH \*58488 (Wadi Al-Uthayli ["Lethleli, 10 miles northwest Bir Hasaneh"], Sinai, ca. 30°45'N 33°44'E, ♂), 171895 (Bahig, Marsa Matruh Province: 30°56'N 29°35'E, ♂); SMF 39082 (Wadi "Sara" [Suez Canal], ♀); ZISP 17016 [formerly FMNH 67249] ("Egypt, Western Desert, Mariut Burg el Arab" hgr. ♂); ZSM 14.1925 („Boltim“ [Baltim], ♀ [“Kauf Prof. Werner”]), 11.1963.1-2 (60 km SW Marsa Matruh, ca. 31°N 27°E, ♂ ♂), 12.1963 (125 km SW Marsa Matruh, ca. 30°30'N 26°45'E, ♂).

Iraq: FMNH 19508 (hgr. ♂) and 21914 (Ar-Rutbah, 33°02'N 40°17'E, ♂).

Israel (Negev): \*BMNH 1951.1.2.60 ("nr. Wadi Hethiro" [Nahal Hatira, ca. 30°56'N 35°00'E], juv.); FMNH 74410 (Sde [Sede] Boqer, 30°52'N 34°47'E, ♀), 74411 [formerly HUJ 3817] (Wadi Raman [Nahal Ramon], 30°36'N 34°55'E, ♂); MCZ 52261, 56481 (Sde Boqer, ♂ ♀); MHNG 1359.5 [SK 4034] (♀) and 2443.21 (Revivim, 31°02'N 34°43'E, ♀), 2443.22 (Sde Boqer, ♀), 2443.23 (Holot Mashash, 31°04'N 34°51'E, ♂), 2443.24 (Mashabbe Sade, 31°00'N 34°47'E, ♀), 2555.21-22 (between Borot [Bor] Loz [30°31'N 34°36'E] and Revivim, ♀ ♀), 2555.23 (Yeroham, 30°59'N 34°56'E, ♀), \*2574.89 (vicinity of Mizpe Ramon, ca. 30°36'N 34°48'E, unsexed [only ventral count]), 2574.91 (Mizpe Ramon, ♂); MZUF 19932 (Dimona, 31°04'N 35°02'E, juv. ♂), 19979 (Holot Mashash, ♂); NHMB 16443 (Bir Asluj, 31°01'N 34°46'E, ♂); NMW 25468 ("30 km SW Beer Sheva" [vicinity of Bir Asluj], ♂); SMF 47114, 47692 (El Mikwen [near Tell Rakhma], ♀ ♂); TAU 1450 (Bir Rekhme [Tell Rakhma], 29°43'N 34°55'E, ♂), 2270 (Dimona, ♂), 3027 (Revivim, ♂), 3826 (Arer Beerot, 31°09'N 34°59'E, ♂), 3931 ([Horvot] Haluza, 31°06'N 34°39'E, ♂), 14326 (Bir Rekhme, ♂); ZMH 2510 (Sde Boqer, ♀).

Jordan: BMNH 1965.698 (Ayn As-Sikkin, 31°16'N 35°32'E, ♂), \*1965.806 (Azraq [Azraq Ash-Shishan], 31°50'N 36°49'E, juv. ♂); CAS 147590 (Azraq, ♂); HUJ 3183.1 (Dabah, 31°33'N 36°03'E, ♀), \*3183.2 (same origin, ♂), \*3185 (Az-Zarqa, 32°05'N 36°06'E, ♂).

Libya: MHNG 1359.4 [SK 2720] (Bir Duema [Bengasi area], approx. 32°07'N 20°04'E], ♀); MSNG 29532 ("Garet es Sceheibat", ca. 29°37'N 24°37'E, ♂); MZUT 644 [formerly 4005] ("Zaia Mechil" [Zawiyat Al-Mukhayla], 32°10'N 22°17'E, ♂); SMF 52888 (Bengasi [Benghazi], 32°07'N 20°04'E, ♂).

Palestine (Gaza [Ghazzah]): BMNH 1927.8.12.60 ("nr. Gaza [31°30'N 34°28'E], Palestine, Zool. Museum Giza" [file entry], ♀ [coll. Major M. Portal, FLOWER 1933]).

Syria: FMNH 19588 ("between Homs and Palmyra", ca. 34°38'N 37°30'E, ♂), 74614 (Abu Kamal, 34°27'N 40°55'E, ♂ [?intergrade], see Discussion, fig. 2, and table 1); HUJ 8303 ("Salzsee" [Buhayrat Al-Utaybah (Ataibé)], 33°31'N 36°37'E,

♀); MNHN 1935.370-72 ("Palmyre" [Tudmur], 34°33'N 38°17'E, ♂ ♂, ♀), 1986.538 ("Palmyre", ♂); NHMB 16444-46 ("Tibni" [Tibnah], 32°59'N 36°13'E, ♂ ♂, ♀); ZISP 17017 [formerly FMNH 19592] ("between Homs and Palmyra", hgr. ♂).

## Type Material

ANDERSON (1893) described the species on the basis of five specimens, i.e., "a young one [...] observed by Mrs. Anderson", "two adults from Beltim" sent by "Dr. Rogers Pasha", and two specimens collected by "an Arab in charge of the salt concession at Shaloof, near Suez". This taxon is named in honour of Colonel Sir John Godfrey ROGERS (1850-1922) of the Royal Army Medical Corps (FLOWER 1933) for his "most invaluable assistance in my researches in Egypt" (ANDERSON 1893).

BOULENGER (1896) listed three "types" from the "Desert east of Helouan, near Cairo" (juv.), "Beltim, Delta" (♂), and "Suez" [Shaluf] (♀) in the collection of the former British Museum (Natural History). According to ANDERSON (1898), BMNH 1946.1.14.71 (juv.) was collected "Above Wadi Hoaf, near Heluan", and BMNH 1946.1.11.43 (♂) is from the "sea-face of the delta" at Baltim (31°33'N 31°05'E).

FLOWER (1933) considered the juvenile specimen "from desert to the east of Helwan" to be "the type" (see KRAMER & SCHNURRENBERGER 1963), thus designating BMNH 1946.1.14.71 as lectotype of *Platyceps rogersi*. Accordingly, the type locality is Wadi Hawf near Hulwan at approximately 29°52'N 31°19'E. The fate of two paralectotypes including a female from Marsa Matruh (31°21'N 27°14'E), and not from "Beltim" (see ANDERSON 1896, 1898), remains unclear.

## Morphology

Head scales. Rostral 1.61-2.26 times broader than high (see Materials and Methods). Internasals equal or slightly shorter than prefrontals, fused posteriorly in TAU 3826 and, according to CALABRESI (1923), in MZUT 644. Prefrontals often coalesced (ANDERSON 1893: "united into one shield"; e.g., FMNH 74410, 171895, MCZ 52261, MHNG 2443.22, SMF 52888, TAU 3826, 14326, ZSM 11.1963.1-2 and 12.1963) or

incompletely divided (ZMH 2510); MCZ 52261 with a minuscule scale where the internasal suture meets the prefrontal. Frontal 1.31-1.56 times longer than broad, 1.31-1.71 times longer than internasals and prefrontals, 0.83-1.13 times as long as parietals. Posterior border of the latter usually straight, sometimes very slightly convex, or forming an obtuse (concave) angle (indented at the midline in MHNG 1359.5, 2555.23, SMF 39082, TAU 3826, and ZMH 2510). Head 2.02-2.38 times longer than broad.

Distance from the nostril to the eye equals 0.81-1.0 times the length of the internasals and prefrontals. Loreal usually longer than, or as long as, high, somewhat larger than subocular, and situated on the posterior portion of the second and the third supralabial. ZISP 17016 with a small scale at the anterior lower edge of the loreal (right side, between second and third supralabial) and another small scale at the posterior lower edge (left, on anterior portion of third supralabial). Preocular always single (sometimes with an incomplete suture, for instance on left side of lectotype); usually in (broad) contact with frontal (not so in ZSM 11.1963.2, and on one side in HUI 3185, MSNG 29532, SMF 52888, ZSM 14.1925). Anterior subocular present (one, sometimes two) except on right side of MHNG 2443.24 and TAU 3027 (fused with fifth supralabial); second subocular often preventing fourth (in the case of eight supralabials) or fifth (nine) supralabial from contact with the eye. Fifth supralabial horizontally divided and upper part corresponding to a second subocular in, for instance, FMNH 58488 (right side), HUI 3183.2, NHMB 16443, SMF 47692 (left), and ZSM 12.1963 (right). Interestingly, all specimens with a single supralabial bordering the eye (incl. BMNH 1946.1.11.43, MCZ 52261, MZUF 19932, NMW 25468 and on one side in TAU 3826 and 14326, and ZISP 17016) are males. TAU 1450 with a small presubocular on fourth supralabial. An additional small scale between third and fourth supralabial below the anterior tip of the long subocular in FMNH 171895.

Normally nine (eight) supralabials, fifth and sixth or sixth (fourth and fifth, fifth) entering eye (see above), seventh or seventh and eighth largest; ten supralabials

on right side of CAS 147590. Two postoculars of about the same size. Posterior subocular absent. Except in SMF 47692 (one, right side), there are two anterior temporals and two or three scales in the second row; lower anterior scale in most cases larger (most pronounced in FMNH 171895, MHNG 1359.5, SMF 47692, and TAU specimens); upper anterior temporal encompassed by lower in TAU 3027. Anterior temporals sometimes distinctly narrow and elongate (e.g., MHNG 2555.21-23 and 2574.91). CAS 147590 (left) and FMNH 74411 (right) with an additional small scale between the lower anterior temporal, the lower postocular, and the supralabials. A large elongate scale along the lateral border of the parietal in TAU 1450.

Usually ten (rarely nine, eleven) sublabials, the four (rarely three) anterior in contact with first inframaxillary, sixth (fifth) largest. Anterior pair of chin shields shorter and broader than posterior; the latter anteriorly separated by two (rarely three) rows of scales (their size being variable) and usually four to five (three) scales posteriorly. Small granular scales between anterior chin shields of TAU 14326. Gulars in four (three to five) oblique rows between the posterior chin shields and the first ventral.

Body scales. Ventrals in specimens examined 184-208 (♂♂ 184-206, ♀♀ 190-208); anal scute divided; 89-117 (91-117, 89-111) paired subcaudals (first and second scale single in TAU 3931, second to fourth in NHMB 16444 and ZSM 14.1925, and first to fifth in MHNG 1359.4). TAU 2270, 3826, 3931, and 14326, MZUF 19979, and ZISP 17016 with an additional half-scale in front of the vent. Sum of ventrals and subcaudals 285-317 (285-312 and 287-317, respectively: table 1). DİSİ et al. (2001) reported up to 211 ventrals and 119 subcaudals (see Discussion) and as much as 123 subcaudals are given by DİSİ (2002).

The maximum for subcaudals (150) in DİSİ et al. (1988) is wrong as is evident from their key (106). The minimum for subcaudals (82) in DİSİ et al. (2001) is most probably based on a specimen with incomplete tail, and this also applies to the number of subcaudals (84) reported by AMR et al. (1994). The latter authors noted 217 ventrals, which is likely to be erroneous. SCHLEICH's (1987: fig. 9) data including 227 ventrals for a "*Coluber rogersi*" (ZSM 1983.151) from Libya (Kouf National Park, ca. 29°42'N 21°34'E) are based on *Hemorrhois algirus* (JAN, 1863).

Table 1: Geographic variation of *Platycephalus rogersi* (ANDERSON, 1893) based on the examined specimens except FMNH 74614 (♂) from Abu Kemal, Syria (see remarks in the Material section and Discussion). Range, mean, and sample size (in parenthesis) of ventrals, subcaudals, sum of ventrals and subcaudals, as well as position of first and second (dsr I+II) and third (dsr III) dorsal scale row reduction in percent of the total number of ventrals (see Materials and Methods). Egypt and Iraqi males include subcaudal data (104) of FMNH 58488 (tip of tail in this heavily damaged specimen now missing) as well as ventral (206) and subcaudal (88) counts of HUJ 3540 (formerly FMNH 11361), respectively, from SCHMIDT (1939), SCHMIDT & MARX (1956), and WERNER (1971).

Tab. 1: Geographische Variation der untersuchten Exemplare von *Platycephalus rogersi* (ANDERSON, 1893) mit Ausnahme von FMNH 74614 (♂) aus Abu Kemal, Syrien (vgl. Bemerkungen unter Material und Diskussion). Spanne, Mittelwert und Stichprobenumfang (in Klammer) für Ventralia, Subcaudalia, Summe der Ventralia und Subcaudalia, und Lage der ersten und zweiten (dsr I+II) sowie dritten (dsr III) Reduktion der Dorsalreihen in Prozent der Gesamtzahl der Ventralia (vgl. Materials and Methods). Daten für Männchen aus Ägypten und dem Irak einschließlich Subcaudalia (104) von FMNH 58488 (Schwanzspitze dieses schwer beschädigten Exemplares heutzutage fehlend) sowie Ventral- (206) und Subcaudalwerte (88) von HUJ 3540 (ehemals FMNH 11361) aus SCHMIDT (1939), SCHMIDT & MARX (1956) und WERNER (1971).

| Region | Ventralia             |                       | Subcaudalia           |                      | Sum / Summe           |                       | dsr I+II           |                    | dsr III            |                    |
|--------|-----------------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|--------------------|--------------------|--------------------|--------------------|
|        | ♂ ♂                   | ♀ ♀                   | ♂ ♂                   | ♀ ♀                  | ♂ ♂                   | ♀ ♀                   | ♂ ♂                | ♀ ♀                | ♂ ♂                | ♀ ♀                |
| Libya  | 195-198<br>196.6 (3)  | 204<br>(1)            | 98-103<br>100.3 (3)   | 99<br>(1)            | 295-301<br>297 (3)    | 303<br>(1)            | 60-63<br>61.5 (2)  | 62<br>(1)          | 77-79<br>78 (2)    | 80<br>(1)          |
| Egypt  | 188-196<br>193.2 (6)  | 198-202<br>199.6 (5)  | 99-104<br>102.2 (6)   | 98-102<br>99.3 (4)   | 291-297<br>294.8 (5)  | 297-301<br>299.0 (4)  | 59-64<br>62.1 (6)  | 59-62<br>60.3 (3)  | 75-85<br>78.7 (6)  | 70-75<br>72.7 (3)  |
| Gaza   | --                    | 206<br>(1)            | --                    | 111<br>(1)           | --                    | 317<br>(1)            | --                 | 62-63<br>62.5 (1)  | --                 | 82<br>(1)          |
| Negev  | 184-195<br>190.5 (15) | 190-199<br>195.0 (11) | 102-117<br>106.8 (13) | 93-111<br>101.7 (10) | 289-312<br>297.3 (13) | 287-309<br>296.9 (10) | 58-69<br>61.8 (12) | 55-65<br>60.1 (11) | 69-84<br>75.8 (12) | 68-81<br>74.4 (11) |
| Jordan | 194-203<br>199.3 (3)  | 199<br>(1)            | 99-102<br>100.5 (2)   | 101<br>(1)           | 302<br>(1)            | 300<br>(1)            | 58-66<br>61.8 (2)  | 59-64<br>61.5 (1)  | 71-77<br>74 (2)    | 79<br>(1)          |
| Syria  | 194-206<br>199.3 (7)  | 201-208<br>204.3 (3)  | 91-103<br>94.4 (7)    | 89-90<br>89.3 (3)    | 285-303<br>293.7 (7)  | 290-297<br>293.6 (3)  | 58-63<br>61 (4)    | 57-62<br>60.0 (2)  | 75-91<br>81.5 (4)  | 81-83<br>82 (2)    |
| Iraq   | 201-206<br>203.7 (3)  | --                    | 88-102<br>96 (3)      | --                   | 294-303<br>299.7 (3)  | --                    | 61-64<br>62.5 (2)  | --                 | 82-83<br>82.5 (2)  | --                 |



High ventral counts occur in Jordan, Syria, and Iraq. Populations from Egypt and the Negev have few ventrals, most pronounced in females from the latter region. The maxima for subcaudals are based on material from the Negev and Gaza (only one female); most specimens from Syria have few subcaudals (table 1).

Dorsals with paired apical pits, in 19-19-13 rows except NHMB 16443 which has 21 longitudinal dsr (19-21-19 etc.) on a portion of the anterior trunk. SMF 39082 and 47114 have 13 dsr on the posterior part of the body but 15 immediately before the vent. In males, the first and second posterior reduction occur between ventrals 110 and 125 (58-63%ven) and 114-132 (60-69%ven), respectively; the third (last) reduction is usually situated from ventrals 132 to 167 (69-86%ven), and at 181 (91%ven) in NHMB 16444. In females, the values are 106.5-127 (55-63%ven) for the first reduction, 115-128.5 (58-65%ven), and 133.5-169 (68-83%ven)

for the third. The sequence of the anterior two reductions is variable in both sexes, i.e., lateral (rows 3+4, sometimes 2+3, rarely 4+5) or high (paravertebral or vertebral); however, in the majority of specimens paravertebral rows (7-9 in males, 8-9 in most females) are involved in the first reduction. The third (last) fusion is always high.

Dimensions. Longest specimens ca. 770 + 310 mm (♂, TAU 3931) and ca. 650 + 256 mm (♀, BMNH 1927.8.12.60). Without further evidence, DİSİ et al. (2001) reported “a maximum total length of 150 cm”. Tail / body length ratio in the examined material 0.34-0.40 for ♂♂ (0.31-0.33 in two juveniles and two subadults) and 0.32-0.40 for ♀♀.

Colour pattern. Head and body light or dusky grey, olive-brown or dark (sometimes anthracite). “Color variations include bright salmon red individuals” according to SALEH (1997); however, this remark may refer to *Platyceps rhodorachis* auct.



Fig. 1: *Platyceps rogersi* (ANDERSON, 1893) MHNG 2443.22 (♂) from the Negev (Sde Boquer), Israel.

Abb. 1: *Platyceps rogersi* (ANDERSON, 1893) MHNG 2443.22 (♂) aus dem Negev (Sde Boquer), Israel.

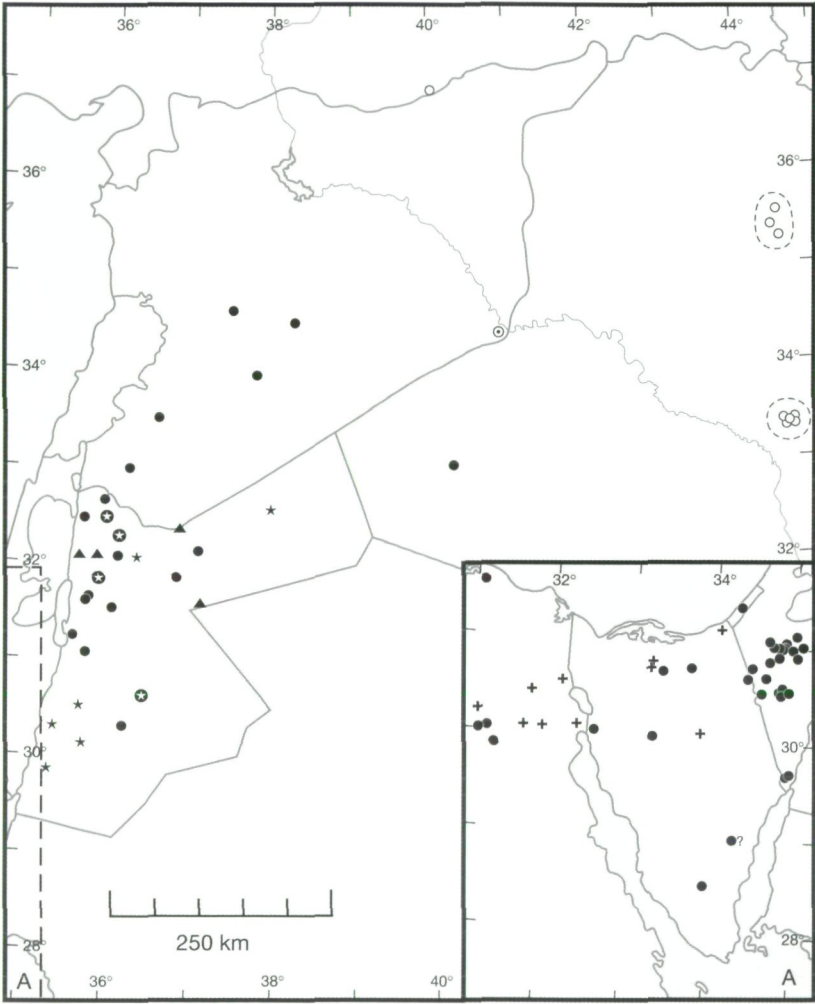


Fig. 2: Distribution of *Platyceps rogersi* from eastern Egypt to Iraq (●) based on literature records (see synonymy) and the examined material except Wadi "Sara" (SMF 39082, unlocated).

Ten unspecified collecting sites (+, approximate location) in eastern Lower Egypt and Sinai are from SALEH (1997: map). A question mark denotes HART's (1891) specimen from Wadi Zalaqah, Sinai (29°00'N 34°18'E) and ⊗ represents FMNH 74614 from Abu Kamal Syria (see Discussion). Open symbols (○) mark *P. cf. ventromaculatus* (see Appendix) except the An-Nasiriyah population (extralimital); the broken line encircles approximate collecting sites in the Baghdad area and Kirkuk Province. Jordan specimens assigned to *P. ventromaculatus* auct. (★) and sympatric occurrence with Rogers' Racer (⊙) after DISI (1993) and DISI et al. (1999). Four unspecified records mapped in DISI et al. (2001: 267) are marked with a triangle (▲).

Abb. 2: Verbreitung von *Platyceps rogersi* vom östlichen Ägypten bis Irak (●) auf der Grundlage von Literaturangaben (vgl. Synonymie) und dem untersuchten Material mit Ausnahme von Wadi "Sara" (SMF 39082, nicht lokalisiert). Zehn nicht näher erklärte Fundorte (+, ungefähre Lage) aus dem östlichen Unterägypten und dem Sinai stammen aus SALEH (1997: Karte). Ein Fragezeichen steht für HART's (1891) Exemplar aus dem Wadi Zalaqah, Sinai (29°00'N 34°18'E) und ⊗ bezeichnet FMNH 74614 aus Abu Kamal in Syrien (vgl. Diskussion). Offene Symbole (○) für *P. cf. ventromaculatus* (see Appendix) außer der Population um An-Nasiriyah (außerhalb der Darstellung); die unterbrochene Linie umgibt die Fundorte in der Umgebung von Bagdad und der Provinz Kirkuk. Zu *P. ventromaculatus* auct. (★) gestellte jordanische Exemplare und sympatrische Vorkommen mit Rogers' Zornnatter (⊙) nach DISI (1993) und DISI et al. (1999). Vier bei DISI et al. (2001: 267) verzeichnete unklare Angaben sind mit einem Dreieck (▲) angegeben.



Rostral region and sides of head and neck yellowish or suffused with orange (ANDERSON 1893). An obscure transverse band behind the nostrils or a dark loreal fleck (including upper portion of second and third supralabial) sometimes present. A dark bar below the eyes that may extend across the supraoculars and frontal (particularly in juveniles). Pre- and postoculars light (white or yellowish). Eye orange to golden. An oblique dark band from the angle of the mouth to the temples. Often with a nuchal streak along the midline behind the occiput. Dark blotches on the dorsum separated by narrower white or yellowish interspaces, and a series of alternating lateral markings (see smallprint below). Flanks usually slightly darker than mid-dorsal region. Some specimens with an additional paraventral row of smaller obscure spots. Dorsal colour pattern in adults gradually becoming indistinct on second half of trunk; there, the light interspaces may be somewhat wider than on anterior portion. Posterior part of body including tail usually without distinct pattern. Tip of tail sometimes conspicuously light, yellow in MZUT 644 (CALABRESI 1923). Chin and venter uniformly light (white or yellowish); as a rule, lateral edges of some ventrals distinctly spotted (absent, e.g., in MHNG 2555.22).

Plate 38 in ANDERSON (1898), illustrating the paralectotype from Baltim (BMNH 1946.1.11.43) alive, does not show well the typical dorsal colour pattern. The blotches are usually much more distinct and rectangular in shape, and the light interspaces definitely narrower. Also, the habitus of Rogers' Racer is generally stouter than in the figured specimen. The upper photograph in GRUBER (1989: 89) shows a species of the *Platyceps rhodorachis* complex, possibly *P. saharicus* SCHÄTTI & MCCARTHY, 2004.

Dentition and hemipenis. Maxillary usually with 14-15 (16 in BMNH 1965.698, NHMB 16443, ZISP 17016) teeth, anterior series subsodont, diastema usually distinct (especially in FMNH 171895), posterior two teeth enlarged, last offset laterad. Palatine teeth 9 (FMNH 19588, MNHN 1935.370-72, TAU 3931), pterygoid 16-18, and dentary 14-17 (FMNH 19588, MHNG 1359.4).

Hemipenis subcylindrical and spinose, with a simple *sulcus spermaticus*. Distinct spines to subcaudals 7-9 (7-8%sub), apex *in situ* at subcaudals 7-13 (7-13%sub). Insertion of retractor muscle at subcaudals 29-36 (28-38%sub), *M. retractor penis parvus* inserting at subcaudals 3-4 (3-4%sub).

## Distribution and Ecology

*Platyceps rogersi* is reported from eastern Libya (Cyrenaica), Lower Egypt, the Sinai Peninsula and Negev, Jordan, Syria, and western Iraq (fig. 2).

FLOWER's (1933) indication that this species occurs in "Arabia" relies on STEINDACHNER (1900) who reported a "*Zamenis rogersii* Anders." from Kamaran Island ("Kamerun") off the Yemen coast (see WERNER 1929: as "1906"). This specimen belongs to the *Platyceps rhodorachis* complex (in prep.).

*Platyceps rogersi* lives in "stony or rocky hill-country, where there is a certain amount of scrub-vegetation" (FLOWER 1933), "semidesert conditions and a consolidated substrate with gravel, widely used as grazing grounds (altitude ca. 800 m a.s.l.)" (MARTENS 1993), and is a "more euryoecious species" also found in "sands" (WERNER 1982). DISI et al. (2001) noted that Rogers' Racer "does not avoid even extensive lava fields in the eastern desert [of Jordan], inhabiting rocky wadis and groups of stones, both of natural and artificial origin". In the Badhiyah it "seems to inhabit humid areas in agricultural projects near water canals or water pipes" (DISI 1993, as *Coluber ventromaculatus*; see Discussion).

The altitudinal distribution of Rogers' Racer is from sea level to approximately 1,500 m in central Sinai (St. Catherine's Monastery area, MARX 1968). This snake is active during daytime, "only in the hottest months it tends to be crepuscular or it hides to aestivate". Small specimens prey on "mostly juvenile gekkonids and lacertids" (DISI et al. 2001). The maximum duration of life reported in captivity is more than 5 years and 8 months (FLOWER 1925).

In north-eastern Egypt, Sinai, the Negev, and parts of Jordan, *Platyceps rogersi* is sympatric with two species of the *P. rhodorachis* complex, i.e., *Platyceps sp. incertae sedis* (SCHÄTTI & MCCARTHY 2004) and *P. saharicus*. Rogers' Racer also occurs, for instance, alongside *P. elegantissimus* (GÜNTHER, 1879) in Wadi Arabah to at least as far north as the vicinity of Lotan (29°59'N 35°03'E) and in south-western Jordan.

## DISCUSSION

WERNER (1971) indicated that the ventral "scale count appears to be higher in Transjordan [Jordan] than in Cisjordan", i.e., 195-204 (BMNH 1965.698, 1965.806, HJ 3183.1-2, 3185) versus 188-200 (13 specimens). Reliable published ventral counts for Jordan *Platyceps rogersi* range from 194 to 211 (HAAS 1951; DISI et al. 1988, 2001; see Body scales).

Almost identical data, 198-210, have been recorded for Jordan racers referred to *Platyceps ventromaculatus* (GRAY, 1834) by DISI (1993). DISI et al. (1999) noted that "*Coluber ventromaculatus* is hardly to be distinguished from *C. rogersi* [...] based on scale counts and colouration alone. From their external features, Egyptian specimen considered as typical *C. rogersi* are actually nearly identical to those reported as *C. ventromaculatus* from Jordan. The systematic status of these two nominal taxa deserves investigation". DISI et al. (2001) stated that "The taxonomic status and relationships of *C. rogersi* with closely related *Coluber ventromaculatus* GRAY, 1834 (terra typica not stated) is unclear and needs a deep revision. In contrast to previous reports that treated both forms separately (but always without clear distinguishing features) we included all snakes belonging to these forms into one monograph and referred them as *Coluber rogersi*".

HAAS (1951: 85) averred that a "*Coluber ventromaculatus*" (BMNH 64.8.23.108) from the "Dead Sea" (GÜNTHER 1865; TRISTRAM 1884) is "in fact a *Zamenis rhodorhachis*" [sic], i.e., *Platyceps* sp. *incertae sedis* (SCHÄTTI & MCCARTHY 2004). WERNER (1988: 372) thought that "the record of *Coluber ventromaculatus* from Sinai, quoted by GASPERETTI (1974) could conceivably have been based on a *C. rhodorhachis* with ventrolateral black dots [...]". The citation alludes to HART's (1891) specimen from Wadi Zalaqah determined by GÜNTHER (1891) and probably refers to *P. rogersi* (SCHÄTTI & MCCARTHY 2004). This individual, "safely lodged in [the] spirit cylinder" after being shot, could not be located in any institutional collection. Certainly, specimens from southern Palestine (BMNH 1927.8.12.60) and Tudmur ("Palmyre") in Syria (MNHN 1935.370-372) assigned to *P. ["Coluber"] ventromaculatus* auct. by FLOWER (1933) and ANGEL (1936), respectively, belong to Rogers' Racer as understood in this paper. Based on these records, SMITH (1943) and MINTON (1966) reported *P. ventromaculatus* from "North-western India [...] west to Palestine" and "Israel", respectively (see also LEVITON & ANDERSON 1970). Referring to MINTON (1966), HAAS & WERNER

(1969) emphasised "that we are aware of no snake specimens from Cisjordan referable to this species".

Although not immediately related to the subject, it may be appropriate to notify at this place that MARTENS' (1997: 103) identification of "*Periops algira*" (JAN, 1863) from Latakiah, Syria ("sur les bords du Nahr el Kebir", LORTET 1883: 186; TRISTRAM 1884: 144) as *Platyceps florulentus* (GEOFFROY SAINT-HILAIRE, 1827) is erroneous ("MARTENS, in MS"). The latter is an African species accidentally transported into Al-Arish, northern Sinai (IBRAHIM 2001) and possibly found on Shadwan Island (Jazirat Shakir, 27°30'N 33°59'E) in the north-western Red Sea (SCHÄTTI 2001). LORTET's (1883) material is likely to belong to *Hemorrhhois nummifer* (REUSS, 1834).

LEVITON et al. (1992) separated Rogers' Racer from *Platyceps ventromaculatus* by the absence of a longitudinal nuchal stripe (present in *ventromaculatus*). This is not a distinctive character as exemplified by photographed specimens in, for instance, WERNER (1971: pl. 6.C-D), DISI et al. (2001: fig. 190), and DISI (2000).

SCHMIDT (1939) and WERNER (1971) reported *Platyceps rogersi* from Syria (FMNH 19588, ZISP 17017) and western Iraq (FMNH 19508, 21914, HJ 3540) but neither author specified the characters applied to distinguish *P. rogersi* from *P. cf. ventromaculatus* (see below). SCHMIDT (1939) gave 200-207 ventrals for five male *P. rogersi* from Syria and Iraq as compared to 196 or more ventrals for *P. cf. ventromaculatus* from Iraq; the maximum of 217 may originate from a Saudi Arabian or western Iranian specimen.

A sample of 31 *Platyceps* cf. *ventromaculatus* from Iraq (see Appendix) results in the following ventral and subcaudal data (♂♂, ♀♀): Baghdad area 204-216 and 94-107, 208-220 and 88-93; vicinity of An-Nasiriyah 201-214 and 88-100, 208-218 and 92-99; Kirkuk Province (Kurdistan) 191-195 and 89-95, 199 and 89 (n = 1). The means for ventrals are 207.1 (♂♂) and 211.4 (♀♀) for specimens from Baghdad and An-Nasiriyah (combined) and 192.0 for five males from Kirkuk Province. In the former populations, the maxillary bears 14-15 (16) teeth, and 13-15 in Kurdistan. The extant female syntype of *Coluber chesneii* MARTIN, 1838 (BMNH 1946.1.12.95) from the "Euphrates" has 209 ventrals and 100 subcaudals; the posterior dsr reductions

occur at 60-61%ven (first and second) and 83%ven (third).

The position of the first and second dsr reduction (combined) for specimens from the Baghdad and An-Nasiriyah area is 58-67%ven ( $\sigma\sigma$ , mean 61.6) and 57-65%ven ( $\rho\rho$ , 61.2), respectively, and 59-68%ven (63.7) for Kirkuk Province ( $\sigma\sigma$ ). The corresponding values for the third reduction are 76-91%ven (81.2), 74-91%ven (84.7), and 83-92%ven (86.8), respectively.

A comparison of the number of ventrals and subcaudals, dsr reduction pattern, and maxillary tooth counts of the Baghdad and An-Nasiriyah sample with the corresponding data for *P. rogersi* (see Body scales) reveals no difference between *Platyceps* cf. *ventromaculatus* and Rogers' Racer, suggesting that these taxa are probably conspecific.

All examined specimens of *Platyceps rogersi* auct. from west of the Jordan valley have bold dorsal blotches considerably wider than the light interspaces. The majority of specimens from western Jordan conforms with this colour pattern (see below). FMNH 19508 and 19588 from Ar-Rutbah (Iraq) and the Homs area (Syria), respectively, completely agree with typical *P. rogersi* auct. In FMNH 21914 and ZISP 17017 (same origin), the light interspaces on the posterior third of the trunk are wider than, or at least as wide as, the dorsal blotches. Without exception, specimens from Syria examined within the scope of this study show the characteristic pattern of Rogers' Racer on the anterior portion of the body (see ANGEL 1936: MNHN 1935.370-72); NHMB 16445 has interspaces narrower than the dorsal blotches throughout, but the light areas are wider on the posterior trunk in HUIJ 8303, NHMB 16444, and 16446. Populations from east of the Euphrates (*P.* cf. *ventromaculatus*) tend to have transverse dorsal blotches of generally more rounded shape separated by light interspaces wider than these markings along the entire trunk. As

understood from literature (DISI 1993; DISI et al. 1999), some specimens from Jordan resemble Iraqi populations in their dorsal colour pattern.

The "*Coluber ventromaculatus*" reported by DISI (1993) had been determined on the basis of "transverse dark bars narrower than the interspaces among them, along most of the dorsal side of the body". This contradicts DISI et al. (2001) who described the dorsal colour pattern of Rogers' (!) Racer as a "series of dark irregular spots, narrower than the interspaces".

To presume from the "Pertinent references", it seems that DISI et al. (2001) adhere to KHAN's (1997) opinion regarding the systematics of Sindian and Middle East *Platyceps* spp. and the geographic distribution of Gray's Racer<sup>1)</sup>. The latter author is "inclined to believe that all *C. ventromaculatus* reported from west of the Indus [...] are actually color morphs of *C. rhodorachis*, and *C. ventromaculatus* does not extend westward beyond the Indus". Although the systematic concept of *P. ventromaculatus* (GRAY, 1834) undeniably requires re-evaluation (in prep.), I do not concur with KHAN's (1997) conclusion concerning the specific allocation of Near and Middle East racer populations commonly assigned to Gray's Racer. There is no doubt that, for instance, Iraqi racer populations discussed in this paper are specifically different from *P. rhodorachis* (JAN, 1863).

With respect to dorsal colour pattern, FMNH 74614, a male from Abu Kamal on the Euphrates in the Syrian border region with Iraq, perfectly matches typical *Platyceps rogersi* auct. However, this specimen has but 190 ventrals and, thus, differs from other Syrian populations discussed in this paper and, strikingly, three males of Rogers' Racer (including HUIJ 3540, WERNER 1971; see table 1) from Ar-Rutbah, western Iraq, with 201-206 ventrals. FMNH 74614 has 98 subcaudals, a very distinct diastema on the maxillary, and the third dsr reduction is situated at 86%ven.

BARAN (1982: fig. 1) figured a racer from Celanpınar (36°51'N 40°03'E) in extreme south-eastern Turkey (Urfa Province) assigned to *Platyceps ventromaculatus* auct. This female with 199 ventrals is outstanding for its exceedingly low subcaudal count (80) and tail / body ratio (0.29). It shows a well-marked nuchal streak as well as distinct and more or less oval blotches on the anterior

<sup>1)</sup> Unfortunately, the senior author of the 'Amphibians and Reptiles of the Hashemite Kingdom of Jordan' did not reply to various letters and e-mails requesting information on this issue. However, Lina RIFAÏ, one of the co-authors, replied (in German) "es sind alle Tiere in Jordanien *rhodorachis*. Wir beziehen uns dabei auf KHAN (1997) [...]. Er erwähnte auch, dass *ventromaculatus* und *rhodorachis* manchmal nicht unterscheidbar sind und auch dass die Tiere westlich des Indus Farbvariationen von *rhodorachis* sind und *ventromaculatus* nicht vorkommt".

portion of the trunk followed by transverse bars extending to the tail, i.e., the characteristic dorsal colour pattern of Middle East populations commonly referred to Gray's Racer.

Data for Iraqi racers listed in the Appendix and the single female from south-eastern Turkey (BARAN 1982) suggest fewer ventral counts and lower means for subcaudals (i.e., 91.8 versus 97.8 in ♂♂) in Kurdistan vis-à-vis *Platycephalus* cf. *ventromaculatus* from the Baghdad area and An-Nasiriyah

(fig. 2), and the Ar-Rutbah population of *P. rogersi* auct. Regarding ventrals (190), FMNH 74614 from Abu Kamal (Syria) agrees with more northern populations.

Subspecific distinction within racer populations discussed in this paper, and justification thereof, depends on the applied character(s). This and other issues, in particular clarification of the potential validity and status of *Coluber chesneii* MARTIN, 1838 and *Zamenis persicus* JAN, 1863, will be addressed in a forthcoming study.

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#### REFERENCES

- AMR, Z. S. & AL-ORAN, R. & DISI, A. M. (1994): Reptiles of southern Jordan.- The Snake, Nitta-Gun; 26: 41-49.
- ANDERSON, J. (1893): On a new species of *Zamenis* and a new species of *Bufo* from Egypt.- Ann. Mag. Nat. Hist., London; (6) 12 (72): 439-440.
- ANDERSON, J. (1896): A contribution to the herpetology of Arabia. With a preliminary list of the reptiles and batrachians of Egypt; London (R. H. Porter), 122 pp.
- ANDERSON, J. (1898): Zoology of Egypt; Vol. 1, Reptilia and batrachia; London (Quaritch), LXV + 371 pp.
- ANGEL, F. (1936): Reptiles et batraciens de Syrie et de Mésopotamie récoltés par M. P. PALLARY.- Bull. Inst. Égypte, Cairo; 18: 109-116.
- BARAN, I. (1982): Zur Taxonomie der Schlangen in Südost- und Ost-Anatolien.- Spixiana, München; 5 (1): 51-59.
- BOULENGER, G. A. (1896): Addenda and Corrigenda, pp. 584-649; In: BOULENGER, G. A.: Catalogue of the snakes in the British Museum (Natural History); Vol. III; London (Trustees British Mus., Nat. Hist.).
- BOULENGER, G. A. (1920): A list of snakes from Mesopotamia.- J. Bombay Nat. Hist. Soc., Bombay; 27 (2): 347-350.
- CALABRESI, E. (1923): Missione zoologica del Dr. E. FESTA in Cirenaica. Anfibi e rettili.- Boll. Mus. Zool. Anat. comp. R. Univ. Torino; 38 (N. S. 7): 1-28.
- CLARK, P. J. & INGER, R. F. (1942): Scale reductions in snakes.- Copeia, Lawrence; 1942 (3): 163-170.
- DISI, A. M. (1985): A contribution to the herpetofauna of Jordan. 2. New records and a systematic list of snakes from Jordan.- The Snake, Nitta-Gun; 17: 31-42.
- DISI, A. M. (1987): Environmental factors affecting snake distribution in Jordan, pp. 296-310; In: KRUPP, F. & SCHNEIDER, W. & KINZELBACH, R. (eds): Proceedings of the Symposium on the Fauna and Zoogeography of the Middle East, Mainz, 1985. Beihefte zum Tübinger Atlas des Vorderen Orients (A) 28; Wiesbaden (L. Reichert).
- DISI, A. M. (1993): A contribution to the herpetofauna of Jordan: V. New records of three colubrid snakes from Jordan.- The Snake, Nitta-Gun; 25: 109-113.
- DISI, A. M. (1996): A contribution to the knowledge of the herpetofauna of Jordan. VI. The Jordanian herpetofauna as a zoogeographic indicator.- Herpetozoa, Wien; 9 (1/2): 71-81.
- DISI, A. M. (2002): Jordan country study on biological diversity. The herpetofauna of Jordan; Amman (published by the author), 288 pp.
- DISI, A. M. & AMR, Z. S. (1998): Distribution and ecology of lizards in Jordan (Reptilia: Sauria), pp. 43-66; In: FRITZ, U. & OBST, F. J. & ANDREAS, B. (eds): Contributions to a "Herpetologia arabica" (Nr. 6).- Faunist. Abh. Staatl. Mus. Tierkde., Dresden; 21 (Supplement), 182 pp.
- DISI, A. M. & AMR, Z. S. & DEFOSSE, D. (1988): Contribution to the herpetofauna of Jordan. III. Snakes of Jordan.- The Snake, Nitta-Gun; 20: 40-51.

- DISI, A. M. & BÖHME, W. (1996): Zoogeography of the amphibians and reptiles of Syria, with additional new records.- *Herpetozoa*, Wien; 9 (1/2): 63-70.
- DISI, A. M. & MODRY, D. & BUNIAN, F. & AL-ORAN, R. M. & AMR, Z. S. (1999): Amphibians and reptiles of the Badia region of Jordan.- *Herpetozoa*, Wien; 12 (3/4): 135-146.
- DISI, A. M. & MODRY, D. & NEČAS, P. & RIFAI, L. (2001): Amphibians and reptiles of the Hashemite Kingdom of Jordan. An atlas and field guide; Frankfurt am Main (Chimaira), 408 pp.
- EL-ORAN, R. M. & AL-MELHEM, W. N. & AMR, Z. S. (1994): Snakes of southern Jordan.- *Boll. Zool.*, Modena; 61: 359-367.
- FLOWER, S. S. (1925): Contributions to our knowledge of the duration of life in vertebrate animals. III. Reptiles.- *Proc. Zool. Soc. London*; 1925 (3): 911-981.
- FLOWER, S. S. (1933): Notes on the recent reptiles and amphibians of Egypt, with a list of the species recorded from that kingdom.- *Proc. Zool. Soc. London*; 1933 (3): 735-851.
- GASPERETTI, J. (1974): A preliminary sketch of the snakes of the Arabian peninsula.- *J. S. Arab. Nat. Hist. Soc.*, Jeddah; 12: IV + 1-44 [+ 28 pp.].
- GEOFFROY SAINT-HILAIRE, I. (1827): Description des reptiles qui se trouvent en Egypte, pp. 121-160; In: SAVIGNY, J. C.: Description de l'Egypte ou recueil des observations et des recherches qui ont été faites en Egypte pendant l'expédition de l'armée française (1798-1801). I. Histoire naturelle, Part 1; Paris (Imprimerie Impériale).
- GORMAN, G. C. (1973): The chromosomes of the Reptilia, a cytotaxonomic interpretation, pp. 349-424; In: CHIARELLI, A. B. & CAPANNA, E. (eds): Cytotaxonomy and vertebrate evolution; London & New York (Academic Press), XV + 783 pp.
- GRAY, J. E. (1834): Illustrations of Indian Zoology: chiefly selected from the collection of Major-General HARDWICKE; Vol. II; London (A. Richter & Co. and Parbury, Allen & Co.).
- GRUBER, U. (1989): Die Schlangen Europas und rund ums Mittelmeer. Kosmos-Naturführer; Stuttgart (Franckh'sche Verlagsbuchh.), 248 pp.
- GÜNTHER, A. (1865): Report on a collection of reptiles and fishes from Palestine.- *Proc. Zool. Soc. London*; [1864] (III): 488-493.
- GÜNTHER, A. (1879): On reptiles from Midian collected by Major BURTON.- *Proc. Zool. Soc. London*; [1878] (IV): 977-978.
- GÜNTHER, A. (1891): Reptilia, pp. 209-211; In: HART, H. C.: Some account of the Fauna and Flora of Sinai, Petra, and Wady 'Arabah; London (A. P. Watt), X + 225 pp.
- HAAS, G. (1951): On the present state of our knowledge of the herpetofauna of Palestine.- *Bull. Res. Counc. Israel, Jerusalem*; 1 (3): 67-95.
- HAAS, G. & WERNER, Y. L. (1969): Lizards and snakes from southwestern Asia, collected by Henry FIELD.- *Bull. Mus. Comp. Zool.*, Cambridge (Mass.); 138 (6): 327-405.
- HART, H. C. (1891): Some account of the fauna and flora of Sinai, Petra, and Wady 'Arabah; London (A. P. Watt), X + 225 pp.
- IBRAHIM, A. A. (2001): Geographic distribution. *Coluber florulentus florulentus* (Flowered Racer).- *Herpetol. Rev.*, Lawrence; 32 (1): 59.
- INGER, R. F. & CLARK, P. J. (1943): Partition of the genus *Coluber*.- *Copeia*, Lawrence; 1943 (3): 141-145.
- JAN, G. (1863): Elenco sistematico degli ofidi descritti e disegnati per l'Iconografia generale; Milano (A. Lombardi), VII + 143 pp.
- KHALAF, K. T. (1959): Reptiles of Iraq with some notes on the amphibians; Baghdad (Ar-Rabitta Press), VII + 96 pp.
- KHAN, M. S. (1997): Taxonomic notes on Pakistani snakes of the *Coluber karelini-rhodorachis-ventromaculatus* species complex: a new approach to the problem.- *Asiatic Herpetol. Res.*, St. Petersburg; 7: 51-60.
- KRAMER, E. & SCHNURRENBERGER, H. (1963): Systematik, Verbreitung und Ökologie der Libyschen Schlangen.- *Rev. suisse Zool.*, Genève; 70: 453-568.
- LEVITON, A. E. & ANDERSON, S. C. (1970): The amphibians and reptiles of Afghanistan, a checklist and key to the herpetofauna.- *Proc. California Acad. Sci.*, San Francisco; [4] 38 (10): 163-206.
- LEVITON, A. E. & ANDERSON, S. C. & ADLER, K. & MINTON, S. A. (1992): Handbook to Middle East amphibians and reptiles. Oxford, Ohio (Soc. Study Amph. Rept.), VII + 252 pp.
- LORTET, M. L. (1883): Études zoologiques sur la faune du Lac de Tibériade suivies d'un aperçu sur la faune des Lacs d'Antioche et de Homs. Poissons et reptiles du Lac de Tibériade et [sic] de quelques autres parties de la Syrie.- *Arch. Mus. Hist. nat. Lyon*; 3: 99-189.
- MARTENS, H. (1993): Three species of snake new for Syria.- *Zool. Middle East, Heidelberg*; 9: 49-58.
- MARTENS, H. (1997): A review of "Zoogeography of amphibians and reptiles of Syria, with additional new records" (*Herpetozoa* 9 (1/2), 1996).- *Herpetozoa*, Wien; 10 (3/4): 99-106.
- MARTIN, W. C. L. (1838): [A collection of snakes procured by the Euphrates expedition].- *Proc. Zool. Soc. London*; 6 [67]: 81-84.
- MARX, H. (1968): Checklist of the reptiles and amphibians of Egypt.- *Spec. Publ. U.S. Nav. Med. Res. Unit, Cairo*; 3: III + 1-91.
- MINTON, S. A., Jr. (1966): A contribution to the herpetology of West Pakistan.- *Bull. American Mus. Nat. Hist.*, New York; 134 (2): 29-184.
- NAGY, Z. T. & JOGER, U. & WINK, M. & GLAW, F. & VENCES, M. (2003): Multiple colonization of Madagascar and Socotra by colubrid snakes: evidence from nuclear and mitochondrial gene phylogenies.- *Proc. R. Soc., B (Biol. Sci.)*, London; 270: 2613-2621.
- REUSS, A. (1834): Zoologische Miscellen. Reptilien. Ophidier.- *Mus. Senckenbergianum, Frankfurt/Main*; 1 (6): 127-162.
- SALEH, M. A. (1997): Amphibians and reptiles of Egypt.- *Publ. Natl. Biodiv. Unit No. 6.*, Cairo (Egyptian Environmental Affairs Agency), 236 (+ 11) pp.
- SCHÄTTI, B. (1987): The phylogenetic significance of morphological characters in the Holarctic racers of the genus *Coluber* LINNAEUS, 1758 (Reptilia, Serpentes).- *Amphibia-Reptilia*, Leiden; 8 (4): 401-415.
- SCHÄTTI, B. (1988): Systematics and phylogenetic relationships of *Coluber florulentus* (Reptilia, Serpentes).- *Trop. Zool.*, Firenze; 1 (1): 95-116.
- SCHÄTTI, B. (2001): A new species of *Coluber* (sensu lato) (Reptilia, Squamata, Colubridae) from the Dahlak islands, Eritrea, with a review of the herpetofauna of the archipelago.- *Russian J. Herpetol.*, St. Petersburg; 8 (2): 139-148.
- SCHÄTTI, B. & MCCARTHY, C. (2004): Saharo-Arabian racers of the *Platyceps rhodorachis* complex –

description of a new species (Reptilia: Squamata: Colubrinae).- Rev. suisse Zool., Genève; 111 (4): 691-705.

SCHÄTTI, B. & UTIGER, U. (2001): *Hemerophis*, a new genus for *Zamenis socotrae* GÜNTHER, and a contribution to the phylogeny of Old World racers, whip snakes, and related genera (Reptilia: Squamata: Colubrinae).- Rev. suisse Zool., Genève; 108 (4): 919-948.

SCHLEICH, H. H. (1987): Contributions to the herpetology of Kouf National Park (NE-Libya) and adjacent areas.- Spixiana, München; 10 (1): 37-80.

SCHMIDT, K. P. (1939): Reptiles and amphibians from southwestern Asia.- Field Mus. Nat. Hist. Zool. Ser., Chicago; 24 (7): 49-92.

SCHMIDT, K. P. & MARX, H. (1956): The herpetology of Sinai.- Fieldiana Zool., Chicago; 39 (4): 21-40.

SCORTECCI, G. (1934): Batrachia and reptilia, pp. 809-829; In: ZAVATTARI, E.: Prodrómo della fauna della Libia; Pavia (Ministero delle Colonie), VIII + 1234 pp.

SMITH, M. A. (1943): The Fauna of British India, Ceylon and Burma, including the whole of the Indo-Chinese sub-region. Reptilia and Amphibia; Vol. III, Serpentes; London (Taylor & Francis), XII + 583 pp.

STEINDACHNER, F. (1900): Berichte der Commission für oceanographische Forschungen. Expedition S. M. Schiff 'Pola' in das Rothe Meer. Nördliche und Südliche Hälfte. 1895/96 und 1897/98. Zoologische Ergebnisse. 17. Bericht über die herpetologischen Aufsammlungen.- Denkschriften kais. Akad. Wiss. math.-naturw. Kl., Wien; 69: 325-336.

TRISTRAM, H. B. (1884): The survey of Western Palestine. The fauna and flora of Palestine; London (Comm. Palest. Expl. Fund), XXII + 455 pp.

VINCIGUERRA, D. (1928): Risultati zoologici della missione inviata dalla R. Società Geografica Italiana per l'esplorazione dell'Oasi di Giarabub (1926-1927). Rettili, batraci e pesci.- Ann. Mus. Civ. Stor. Nat., Genoa; 52: 324-345.

WELCH, K. R. G. (1982): Herpetology of Africa. A checklist and bibliography of the orders Amphibia, Sauria and Serpentes; Malabar (Krieger), X + 293 pp.

WELCH, K. R. G. (1983a): Herpetology of Europe and Southwest Asia; Malabar (Krieger), 135 pp.

WELCH, K. R. G. (1983b): A comment on the generic allocation of the Old World species of the genus *Coluber*.- Litteratura Serpentina, Astén; [Engl. ed.] 3 (4): 104-110.

WERNER, F. (1929): Übersicht der Gattungen und Arten der Schlangen aus der Familie Colubridae. III. Teil (Colubrinae). Mit einem Nachtrag zu den übrigen Familien.- Zool. Jahrb., Abt. Syst., Ökol. Geogr. Tiere, Jena; 57 (1/2): 1-196.

WERNER, Y. L. (1971): Lizards and snakes from Transjordan, recently acquired by the British Museum (Natural History).- Bull. British Mus. (Nat. Hist.), Zool., London; 21 (6): 213-256.

WERNER, Y. L. (1973): The reptiles of the Sinai peninsula; Jerusalem (Hebrew University, Dept. Zool.), IV + 47 pp. [in Hebrew with English summary].

WERNER, Y. L. (1982): Herpetofaunal survey of the Sinai Peninsula (1967-77), with emphasis on the Saharan sand community, pp. 153-161; In: SCOTT, N. (ed.): Herpetological Communities: A Symposium of the Society for the Study of Amphibians and Reptiles and the Herpetologists' League, August 1977. Wildlife Research Report 13; Washington D.C. (U.S. Fish Wildlife Service).

WERNER, Y. L. (1988): Herpetofaunal survey of Israel (1950-85), with comments on Sinai and Jordan and on zoogeographical heterogeneity, pp. 355-388; In: YOM-TOV, Y. & TCHERNOV, E. (eds): The zoogeography of Israel; Dordrecht (W. Junk Publ.), VIII (+2) + 600 pp.

ZAVATTARI, E. (1930): Erpetologia della Cirenaica.- Arch. zool. italiano, Torino; 14: 253-289.

ZAVATTARI, E. (1937): I vertebrati della Libia; pp. 526-560. In: Festschrift zum 60. Geburtstage von Prof. Embrik STRAND; Vol. II; Riga (Spiestuve "Latvija").

## APPENDIX

Comparative sample of *Platyceps cf. ventromaculatus* (GRAY, 1834) from Iraq. "Euphrates": BMNH 1946.I.12.95 (♀ syntype of *Coluber chesneii* MARTIN, 1838). Baghdad: FMNH 19501 (♂), 19505 (♂), 22695 (♀), 25975 (♂), 26358 (♂), 26375 (♂), 26378 (♀), 26381 (♀), 28316 (♀), 28317 (♂), 28318 (♀). Kirkuk

[Liwa] Province: FMNH 74633-36.1-2 (♂ ♂, ♀), 74637 (♂). An-Nasiriyah (31°03'N 46°16'E): FMNH 22696 (♀), 22698 (♀), 22700 (♀), 22701-03 (♂ ♂), 22705 (♂), 22706-07 (♀ ♀), 22711 (♀), 22713-14 (♂ ♂), 22717 (♀).



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