A collection of snakes from eastern Sudan, with the description of a new species of *Telescopus* Wagler, 1830 (Reptilia: Ophidia)

Donald G. BROADLEY

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A small collection of snakes (20 specimens of 11 species) from the Blue Nile Province of the Sudan is reviewed. The eight specimens belonging to the *Atractaspis microlepidota* group apparently represent two species, in one of which (*A. phillipsii*) there is inverse sexual dimorphism in ventral counts. A new species of *Telescopus* is described and a key to the African species of the genus is presented.

Une collection des serpents du Soudan oriental et description d'une nouvelle espèce de Telescopus *Wagler, 1830 (Reptilia: Ophidia).* - Une petite collection de serpents (20 spécimens représentant 11 espèces) de la Province du Nil Bleu au Soudan a été étudiée. Les huit spécimens appartenant au groupe *Atractaspis microlepidota* appartiennent apparemment à deux espèces, chez l'une (*A. phillipsii*) il y a un dimorphisme sexuel dans le nombre des ventrales. Une espèce nouvelle de *Telescopus* est décrite et une clef des espèces africaines de ce genre est présentée.

Key words: Reptilia, Ophidia, Sudan, *Atractaspis*, *Telescopus*, new species, key.

D. G. Broadley, Department of Herpetology, Natural History Museum of Zimbabwe, P.O. Box 240, Bulawayo, Zimbabwe.

INTRODUCTION

While working in the Department of Herpetology at the Nairobi Museum in September 1992, I came across a small uncatalogued collection of snakes made in the Sudan in September-November 1966 by G. R. Cunningham Van Someren, while Senior Entomologist, Blue Nile Private Pump Schemes (irrigated cotton). As the collection included eight specimens belonging to the poorly understood *Atractaspis microlepidota* complex, I decided to study the material and publish the results. Unfortunately some specimens (mostly *Psammophis*) had dried out and lost their labels, these could not be identified.

Most of the specimens were collected from irrigated cotton schemes along the Blue Nile from about 30 km north of Sennar upstream to Singa. A few were collected along the White Nile near Kosti, Geiger, and Renk (Fig. 1). The vegetation is classed as Sahel *Acacia* wooded grassland and deciduous bushland (White, 1981), but the flat cultivated area of "black cotton soil" is virtually treeless except along the Nile fringes, being covered with *Sorghum* grassland, except where under cotton.

The material is catalogued in the National Museum of Kenya (NMK), except for two specimens lacking field labels deposited in the Natural History Museum of Zimbabwe (NMZB)

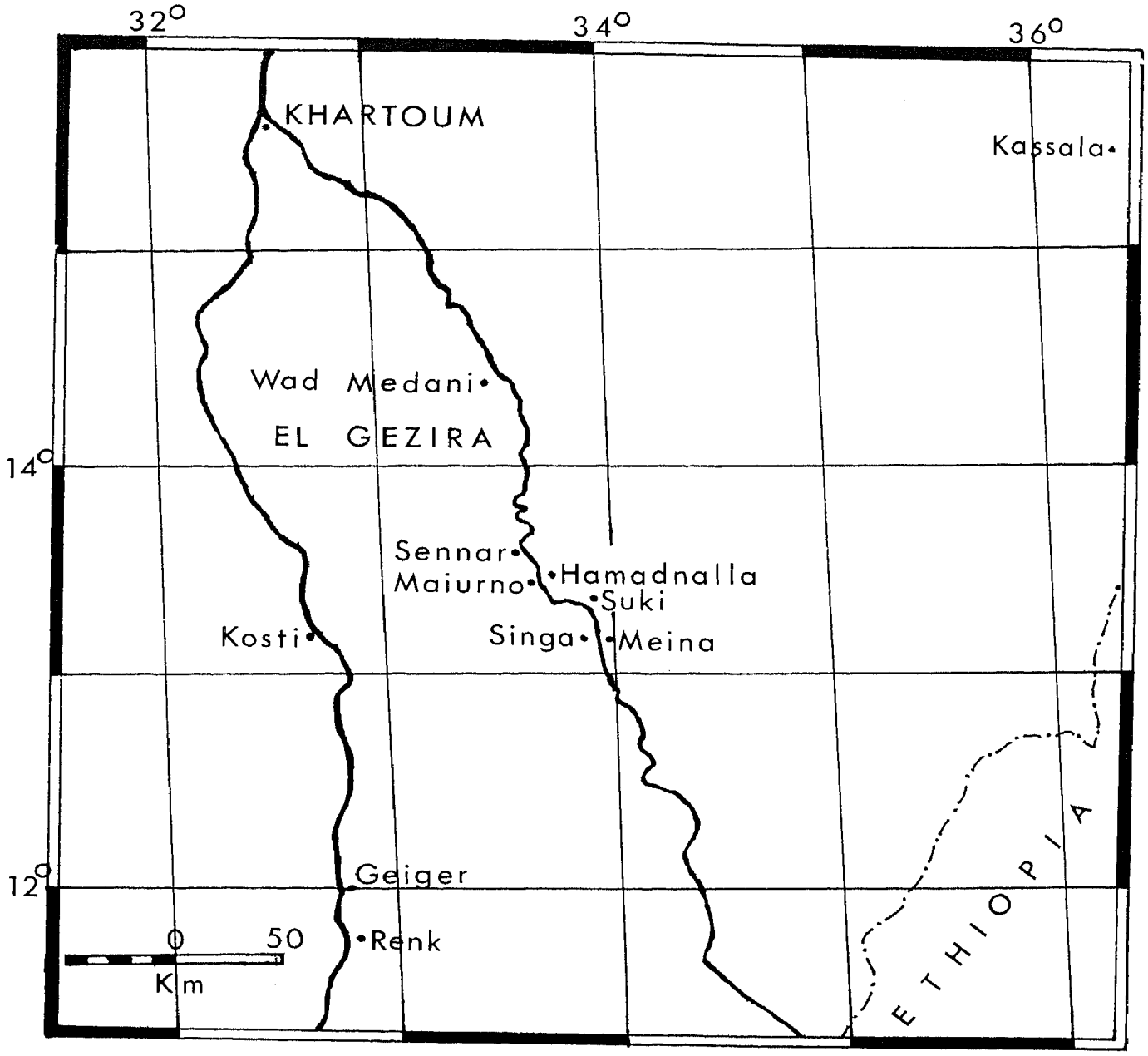

Fig. 1. - Map of El Gezira region, eastern Sudan. El Gezira ("The Island") refers to the land between the Blue and White Niles, but the Gezira irrigation scheme also covers the east bank of the Blue Nile from about 30 km north of Sennar almost to Khartoum. Until they were nationalised in 1967, the Blue Nile private pump schemes extended from about 30 km north of Sennar to about 45 km south of Singa, while the White Nile private pump schemes extended from Kosti south to Geiger.

SYSTEMATIC ACCOUNTS

Family BOIDAE

Subfamily Erycinae

Eryx colubrinus *(Linnaeus, 1758)*

NMK 0/3226 Blue Nile near Sennar

Midbody scale rows 52; ventrals 183; subcaudals 22; supralabials 12; infralabials 16.

Family VIPERIDAE

Subfamily Causinae

Causus resimus *(Peters, 1862)*

NMK. 0/3229 Mona, near Kosti, west bank of White Nile 24 xi 66

A female with midbody scale rows 20; ventrals 149; tail tip missing. Length 590 + 35 mm.

Subfamily Viperinae

Echis pyramidum pyramidum *(Geoffroy, 1827)*

NMK. 0/3227 Suki Scheme, Blue Nile 29.x.66
NMK. 0/3228 White Nile near Kosti xi.66

Two males with midbody scale rows 27-29; ventrals 169-180; subcaudals 34-35; supralabials 11.

Local name "Washasha"

Bitis arietans arietans *(Merrem, 1820)*

NMK. 0/3230 Renk, White Nile xi.66

A male with midbody scale rows 25; ventrals 134; subcaudals 30; supralabials 12-13; infralabials 13-14, interoculars 7; circumoculars 12-13.

Family ATRACTASPIDIDAE

Atractaspis ? microlepidota *Günther, 1866*
(Fig. 2)

NMK 0/3220 Goda Scheme, Geiger, 25 km north of Renk, east bank of White Nile xi.66

A male with midbody scale rows 31; ventrals 218; anal entire; subcaudals 27 (single); supralabials 6, the fourth entering the orbit; infralabials 8-9, the first 3 in contact with the sublinguals, which are bordered posteriorly by 5 scales; preocular 1; postoculars 3; temporals 3+4. Length 535 + 31mm.

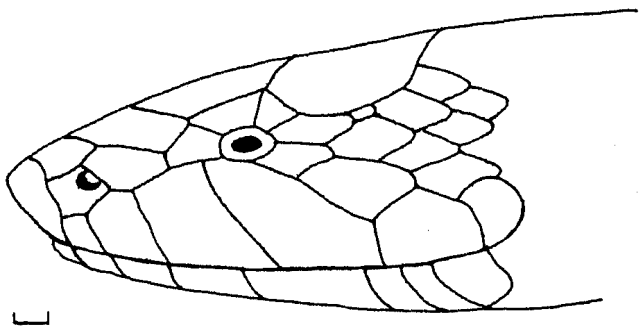

Fig. 2. - *Atractaspis ? microlepidota*, NMK 0/3220 from Goda Scheme, Geiger, White Nile. Lateral view of head. The line indicates 1 mm to scale.

In body scale counts this snake agrees with the series from Torit in southern Sudan assigned to typical *A. microlepidota* by Loveridge (1955) with midbody scale rows 31-33; ventrals 216-239 in males, 232-242 in females; subcaudals 25-29 in males, 21-24 in females, and a male from Malek on the White Nile just north of Latitude 6°N (Laurent, 1950). However, it differs from all previously recorded specimens in having three postoculars symmetrically on both sides (Fig. 2).

Atractaspis phillipsi *Barbour, 1913*

NMK 0/3213 Shasheina, near Suki, east bank of Blue Nile 30.x.66
NMK 0/3214, 3216 Maiurno, west bank of Blue Nile south of Sennar xi.66
NMK 0/3217 Suki, east bank of Blue Nile 11.x.66
NMK 03218 Wad Hashim, west bank of Blue Nile, south of Sennar 4.x.66
NMK 0/3219 Hamadnalla, east bank of Blue Nile x.66
NMZB 11806 Blue Nile near Sennar xi.66

Several other *Atractaspis* specimens were not preserved.

Five males, one female (NMZB 11806), with midbody scale rows 29-31; ventrals 246-252 in males, 222 in female; anal entire; subcaudals 29-33 in males, 24 in female; supralabials 6, the third and fourth entering the orbit; infralabials 7-9, the first 3 or 4 in contact with the sublinguals, which are bordered posteriorly by 4-6 scales; preocular 1; postocular 1; temporals 2+3, 2+4, 2+5 or 3+3. NMK 0/3219 is an unsexed mangled specimen for which ventral and subcaudal counts were impossible. The largest male (NMK 0/3216) measures approx. 825 + 62 mm. The female (NMZB 11806) measures 340 + 28 mm, the smallest of this series.

The male snakes agree with the series of five from Wad Medani assigned to *A. microlepidota* subsp. by Laurent (1950), having ventral (250-258) and subcaudal (29-34) counts higher than those recorded from *A. microlepidota* from southern Sudan (Loveridge, 1955).

Four females from the lower Blue Nile have much lower ventral counts (222-234) than males (246-258). These include the type of *A. phillipsi* (Barbour, 1913; Loveridge, 1955), another Singa specimen in the British Museum (Laurent, 1950) and a specimen from Sennar (NMW 28679:2, Werner 1919). In other populations belonging to the *A. microlepidota* complex there is little sexual dimorphism, or else females have higher ventral counts (Laurent, 1950; Loveridge, 1955).

I have previously (Broadley, 1971) demonstrated similar inverse sexual dimorphism in ventral counts in another fossorial snake, *Elapsoidea sundevallii* (A. Smith), in which the males attain a much larger size than females. Saint Girons (1978) has noted that an increase in size is correlated with an increase in ventral counts in European species of *Vipera*. This is in turn correlated with the reversed sexual dimorphism found in *Elapsoidea sundevallii* and perhaps also in *Atractaspis phillipsii*. I have measurements for eight specimens and the six males are all larger than the two females.

In the circumstances it seems expedient to revive *A. phillipsi* as a distinct species on the basis of inverse sexual dimorphism in ventrals. Hughes (1983) has previously elevated *A. micropholis* Günther and *A. fallax* Peters to specific rank, but his revision of the genus is still in preparation.

The commonest local name was "abu ashara daqiqa" (father of ten minutes), others were "abu lakaz" (father of jabbing") and "abu dafaan" (father of burrowing).

On the evening of 16 October, G.R.C. Van Someren was relaxing in the Hamadnalla rest house when a pilot was bitten on the bare foot by a 25 cm *Atractaspis*. He caught the snake, took it by the neck and was trying to drop it into any empty beer bottle, when it jabbed the tip of his first finger. The two victims were rushed to Sennar hospital, where they were both injected with anti-venene and Vitamin K. The pilot was in hospital for three days, but was flying again two days later. Van Someren's finger went septic and he lost the nail and finger tip; 26 years later he still cannot use that finger for typing.

Corkhill & Kirk (1954) illustrated specimens of *A. phillipsii* from Wad Medani, but most of their cases of *Atractaspis* bite were from Kordofan and Equatoria Provinces and therefore probably caused by *A. microlepidota*. Case 1, a fatal bite on a man at Kassala, would have been inflicted by a specimen of *A. magrettii* Scortecci (Laurent, 1950). The toxicity of venom may vary between species.

Family ELAPIDAE

Subfamily Bungarinae

Naja haje haje *(Linnaeus, 1758)*

NMK 0/3231 Wad el Hadad, north of Sennar, Blue Nile
NMK 0/3232 Awlad Nasir, 25 km north of Sennar, east bank of Blue Nile 18 x 66

Two males with midbody scale rows 21; ventrals 212-215; anal entire; subcaudals 53-55; supralabials 7, excluded from orbit, infralabials 8-9, the first four in contact with the anterior sublinguals, followed by a single cuneate; temporals 1+2, nuchals 7.

Yellow-brown above, yellow below with one or two broad brown bands on the throat.

The Awlad Nasir cobra contained recently swallowed *Varanus exanthematicus* about 50 cm long.

Local name "Abu Darak"

Family COLUBRIDAE

Subfamily Psammophiinae

Psammophis sibilans sibilans *(Linnaeus, 1758)*

NMK 0/3233 Meina, east bank of Blue Nile 14 x 66

A dessicated specimen with supralabials 8, the fourth and fifth entering the orbit; infralabials 10, the first 5 in contact with the anterior sublinguals; preocular 1; postoculars 2; temporals 2+3.

Dorsum with pale dorsolateral stripes.

Psammophis phillipsii *(Hallowell, 1844)*

NMK 0/3234/1 Kassab, east bank of Blue Nile opposite Sennar 11 x 66
NMK 0/3234/2 Dabkara/Manshiya, west bank of Blue Nile, north of Singa 25.xi.66

Two males with midbody scale rows 17; ventrals 180-182; anal divided; subcaudals 97; supralabials 8, the fourth and fifth entering the orbit; infralabials 10-11, the first 5 in contact with the anterior sublinguals; preocular 1; postoculars 2; temporals 2+3.

Dorsum uniform olive brown, ventrum yellow.

The Kassab snake measures 1320+460 mm, but the other specimen measures 1380 mm from snout to vent (tail truncated).

I have examined the specimens assigned to *P. sibilans* by Barbour (1913), those from Fazogli (MCZ 8783) and Magagani (MCZ 8724) are in fact *P. phillipsii*.

Subfamily Colubrinae

Coluber florulentus florulentus *Geoffroy, 1827*

NMK 0/3235 Assar Scheme, east bank of Blue Nile, 30 km N of Sennar 18.x.66

A male with midbody scale rows 21; ventrals 192; anal divided; subcaudals 91+; supralabials 9, the fifth and sixth entering the orbit; infralabials 10, the first 4 in contact with the anterior sublinguals; preocular 1; anterior subocular 1; postoculars 2; temporals 2+3. Similar unusual colouration has previously been recorded in SMF 56223 from Wad Medani (Schätti, 1988).

Telescopus gezirae *sp. nov.*
(Fig. 3)

Holotype. - NMZB 11807, a male from the Blue Nile, 30 km North of Sennar, Sudan. Collected by G.R.C. Van Someren in late 1966.

Diagnosis. - A species of *Telescopus* with the loreal separated from the eye. In its relatively narrow snout and elongate dark body blotches it resembles *T.*

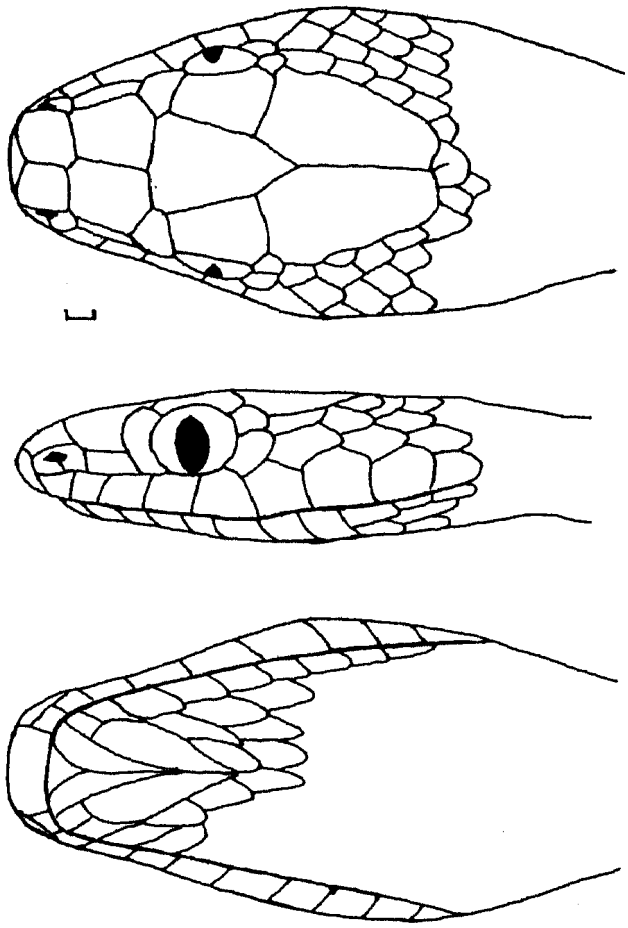

Fig. 3. - *Telescopus gezirae* sp. nov., NMZB 11807, holotype. Dorsal, lateral and ventral views of head. The line indicates 1 mm to scale.

obtusus (Reuss), the only species recorded from Sudan, but it differs from that form in having only two labials entering the eye, in its lower ventral and subcaudal counts, fewer dorsal blotches and in the presence of dark ventral blotches. Specimens of *T. obtusus* from Egypt and Sudan also differ from *T. gezirae* in having the dorsal markings ill defined or absent, they also normally have 23 scale rows at midbody (Anderson, 1898; Loveridge, 1955). In its low ventral and subcaudal counts it resembles *T. beetzii* (Barbour) of southern Namibia and western Cape Province (Broadley, 1983), but is distinguished therefrom by the proportions of the head shields, having only two supralabials entering the eye, the frontal in good contact with the preoculars and divided anal. The dorsal blotches are more elongate and slightly less numerous. From *T. variegatus* (Reinhardt) of West Africa, the new form is distinguished by its lower ventral and subcaudal counts and different colour pattern. From *T. pulcher* (Scortecci) and *T. semiannulatus* A. Smith it differs in higher midbody scale count, also differing from the former species in its higher ventral and lower subcaudal scale counts. The subtriangular frontal shield of *T. gezirae* appears to be unique in the genus.

Description. - Head broad in temporal region; eye large, horizontal diameter almost three-quarters of its distance from the end of the snout, vertical diameter twice its distance from the lip; body slender, tail short. Rostral twice as wide as high, just visible from above; internasal suture half length of prefrontal suture, frontal subtriangular, anterior width three-quarters of its length, a little longer than its distance from end of snout, a little shorter than parietals. Nostril horizontal, pierced in an elongate divided nasal; loreal twice as long as deep; preocular 1, in good contact with the frontal; postoculars 2; temporals 2+2 (left) and 2+3 (right); supralabials 9, fourth and fifth entering orbit; infralabials 11, first three in contact with sublinguals, which are seprated anteriorly by elongate first infralabials, there are no discrete posterior sublinguals.

The head has been crushed, the skin torn at the angle of the jaw on the right side and the skin is rucked up at the back of the head, so the drawings of the head (Fig. 3) are semidiagrammatic. The maxilla and mandible from this side were removed to facilitate examination of the teeth.

Dorsal scales smooth, with single apical pits, in 19-21-15 oblique rows; ventrals 197; anal divided; subcaudals 52 (paired).

Maxillary teeth 9 + 11, dentary teeth 12: slightly fewer than the counts recorded for *T. obtusus* and *T. semiannulatus* (Rasmussen, 1979, and own data).

Specimen partially bleached especially ventrally, probably pale brown above in life, with large dark brown subrectangular dorsal blotches, usually longer than wide, 28 on the body and about 6 to 8 on the tail (tip bleached); irregular small dark lateral blotches extend onto the ventrals, which may in life have had extensive dark blotches like *T. variegatus*.

Length 420 + 80 mm.

The African species of *Telescopus* differ from the Eurasian species in having the loreal well separated from the eye by the preocular (Boulenger, 1896). The last published key to the African species (as Tarbophis: Bogert, 1940) included eight nominal species. Of these, two forms proved to be synonyms of Neotropical snakes, *T. splendidus* Ahl, 1924 = *Pseudoboa petola* (Linnaeus, 1758) (Mertens, 1970a) and *T. dipsadomorphoides* Ahl, 1925 = *Leptodeira*

annulata ashmeadi Hallowell, 1845) (Mertens, 1970b). Loveridge (1953) placed *T. barnumbrowni* Bogert, 1940 in the synonymy of *Crotaphopeltis hotamboeia* (Laurenti, 1768). Parker (1949) indicated that *T. guentheri* (Anderson, 1895) is a synonym of *T. dhara* (Forskal, 1775), described from Yemen: he recognised *obtusus* (Reuss, 1834) and *somalicus* Parker, 1949 as subspecies, but suggested that *T. guidimakaensis* Chabanaud, 1916 represented a full species, ranging from Mauritania to northern Nigeria. Wake & Kluge (1961) recorded a juvenile male *T. obtusus* from Oum el Adam, Tchad, which had 265 ventrals, 65 subcaudals and 79 quadrangular dark dorsal blotches. Kramer & Schnurrenberger (1963) concluded that *T. guidimakaensis* and *Pseudotarbophis gabesi* Domergue, 1955 were synonyms of *T. tripolitanus* (Werner, 1909). Arnold (1980) and Lanza (1983) treated *T. dhara* as a monotypic species. Gasperetti (1988) continued to recognise *T. dhara obtusus* as an African subspecies, while Böhme *et al.* (1989) treated *T. obtusus* as a full species, with *guidimakaensis* and *gabesi* as synonyms and the status and locality of *tripolitanus* doubtful (type missing).Their interpretation is followed here.

A key to the African species of *Telescopus* Wagler, 1830

1a. – Midbody scale rows 17-18; ventrals 174-180 ...*pulcher* (Scortecci, 1935)
1b. – Midbody scale rows 19 or more (very rarely 17); ventrals 190 or more 2

2a. – Subcaudals 44-52 3
2b. – Subcaudals 53-88 4

3a. – Usually three labials enter orbit; frontal well separated from preoculars; anal entire; 29-39 dark subcircular dorsal blotches on body ..... *beetzii* (Barbour, 1922)
3b. – Two labials enter orbit; frontal in contact with preoculars; anal divided; 28 dark subrectangular (longer than wide) dorsal blotches on body ..... *gezirae* sp. nov.

4a. – Dorsal pattern of irregular narrow brown crossbars and a row of pale vertebral spots; ventrum heavily blotched with brown .... *variegatus* (Reinhardt, 1843)
4b. – Dorsal pattern of black or brown vertebral blotches or unpatterned; ventrum immaculate 5

5a. – Midbody scale rows 19 (very rarely 17); dorsal blotches wider than long ..... *semiannulatus* A. Smith, 1849
5b. – Midbody scale rows 21-25 (very rarely 19); dorsal blotches (if present) longer than wide .... *obtusus* (Reuss, 1834)

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