

The advertisement call sounded like a brief (98.7–100.2 ms) burst of a trumpet with increasing frequency modulation (Fig. 1d). It was strongly amplitude-modulated (with a modulation period of 5–8 ms). The increase in frequency modulation is because the dominant frequency is shifted to higher and higher harmonics towards the end of the call. The description of the calls agrees with that of Amiet & Schiøtz (1973) for individuals recorded in Pout Njouma (Cameroon).

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Additional material of the enigmatic golden mole *Cryptochloris zyli*, with notes on the genus *Cryptochloris* (Mammalia: Chrysochloridae)

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Van Zyl's golden mole (*Cryptochloris zyli*) is a distinctive but little-known species from the northwestern Cape Province of South Africa. Many authors have mentioned that it is known only by the holotype. Two other specimens are now known to exist; one was discovered in the Museum of Comparative Zoology at Harvard University, and the other, which has been mentioned in publication but overlooked, is in the Natural History Museum in London. Differentiation of

C. zyli from sympatric chrysochlorids, and from its congener *C. wintoni*, are discussed.

Key words: Chrysochloridae, systematics, South Africa.

In 1938 G.C. Shortridge and T.D. Carter named a new genus and species of golden mole, *Cryptochloris zyli*, based on a single specimen collected by Gideon van Zyl. This specimen, an adult male with original number 3477, was collected on

13 January 1937 at Compagnies Drift, '10 miles [16.1 km] inland from Lamberts Bay', in the north-western Cape Province (Shortridge & Carter 1938: 284). The holotype is number 837 in the collections of the Amathole Museum (AM), King William's Town, South Africa. Most recent authors recognize *C. zyli* as a valid species (Hutterer 1993; Meester 1974; Meester *et al.* 1986; Nowak 1999; Skinner & Smithers 1990), noting that it is known only by a single specimen. The genus *Cryptochloris* also contains the species *C. wintoni* (Broom, 1907), known from only a few specimens.

A second specimen of *C. zyli*, represented by skin and skull, exists in the Museum of Comparative Zoology (MCZ) at Harvard University. The unsexed specimen, MCZ 39628, was collected by Van Zyl in January 1938 at the type locality and bears the original number 3650; it was originally identified by G.C. Shortridge. The original label designates this specimen as a paratype, although the type description mentions that only one specimen was collected. No field measurements are available for MCZ 39628; Van Zyl noted on the tag that it was collected at an approximate altitude of 100 feet (= 30.5 m).

Unfortunately, the cranium of MCZ 39628 is fragmented posterior to the frontals; the palate and maxillary dentition are, however, fully intact. Of the cranial measurements included in the original description of *C. zyli*, only the length of the maxillary tooth row from incisor to posterior molar (9.4 mm), and the posterior width of the palate (6.0 mm), can be made for this specimen.

In addition, Simonetta (1968) referred to and provided a detailed illustration of the skull of another specimen of *C. zyli*, number 49-240 in the Natural History Museum, London (formerly AM 842). This specimen, also designated as a paratype, was collected 28 March 1938 at the type locality, also by Gideon van Zyl. Like the MCZ 'paratype,' the specimen was collected at an approximate altitude of 100 ft (= 30.5 m). Measurements for the London specimen are as follows: greatest length of skull, 21.7 mm, palatal breadth (across posterior molars), 7.8 mm, maxillary tooth row (excluding incisors), 8.0 mm.

In addition to *C. zyli*, two other species of golden mole are known from Compagnies Drift, Cape Province – Grant's golden mole (*Eremitalpa granti*), and the Cape golden mole (*Chrysochloris asiatica*). The former species is easily distinguishable from *Cryptochloris* by its lack of iridescent pelage and absence of temporal bullae (Nowak 1999).

Distinguishing *Chrysochloris* and *Cryptochloris* is more difficult, but relative to *Chrysochloris*, *Cryptochloris* has a better developed first digit of the manus, lighter pelage with a more silvery ventrum, greater frontal expansion of the cranium and smaller temporal bullae. In addition, the second upper incisor in *Chrysochloris* is markedly larger than the third incisor and canine, while the difference in the comparative size of all three teeth is much less noticeable in *Cryptochloris*. Most of these differences are illustrated well in Simonetta (1968), and are also evident when comparing the MCZ specimen with the series of *Chrysochloris asiatica* in that museum, also collected at Compagnies Drift by Van Zyl in 1938.

Some confusion has existed since the description of *C. zyli* regarding the proper classification of *wintoni* and *zyli*, the two named forms of *Cryptochloris*. Early revisions after Shortridge & Carter (1938) included both as subspecies of the single species *C. wintoni* (Ellerman *et al.* 1953; Simonetta 1968), but, as mentioned above, recent systematic accounts have accorded specific status to both forms. This latter arrangement is based on several supposed morphological differences between the two. Ellerman *et al.* (1953: 39) suggested that *zyli* has a slightly larger and narrower skull than *wintoni*'. We have not observed enough specimens to comment on the validity of this claim. Meester (1974) noted that the malleus, an important character in chrysochlorid systematics (Cooper 1928; Simonetta 1957), is more elongate in *zyli* and more bulbous in *wintoni*. This observation is presumably based on an examination of the Amathole specimen of *C. zyli*, but cannot be supported by the MCZ specimen, due to the fragmentation of the cranium. Simonetta (1968: 40) noted that the specimen of *zyli* in London has 'a malleus smaller, but as club-shaped as *C[hysochloris] asiatica*,' but as he had observed no specimens he could refer to *wintoni*, he was unable to comment on the purported differentiation of the malleus between the two forms.

The most noticeable difference between *zyli* and *wintoni* is their contrasting external colouration and iridescence. *C. zyli* is darker and more brown than *C. wintoni*, and has a purplish iridescence whereas in *wintoni* the iridescence is more silvery, as recorded by Skinner & Smithers (1990). Although the observations of those authors were apparently again based solely on the Amathole specimen of *zyli*, the additional specimens uphold this distinction. In both additional specimens of

zyli, at Harvard and London, the pelage is brown with a notable purplish iridescence on the dorsum, with a paler ventrum and buffy white markings on the face, exactly as originally described by Shortridge and Carter. It is noticeably darker than the specimen of *C. wintoni* (United States National Museum, number 468319) that we have examined.

These additional specimens described here, which appear to have been wholly or largely overlooked by researchers, greatly increase the amount of available material that can be referred to *Cryptochloris zyli*, and may serve to provide valuable insight into the systematics of this little-known genus and species. A more elaborate investigation, bringing together these three specimens with all known material referable to *C. wintoni*, would probably conclusively establish the proper relationship of these two forms with each other. In addition, such an investigation would probably clarify the relationship of *Cryptochloris* to other chrysochlorid genera, especially *Chrysochloris*, of which it is occasionally considered a subgenus. In light of these additional specimens, and through comparison with other chrysochlorids of the southern African region, we feel it is best to continue to recognize *Cryptochloris* as a distinctive genus, consisting of two species, each known at present from extremely narrow geographical ranges in the coastal sand dunes of southwestern Africa.

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