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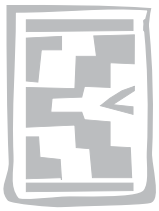

The genus *Hyalomma* Koch, 1844. I. Reinstatement of *Hyalomma (Euhyalomma) glabrum* Delpy, 1949 (Acari, Ixodidae) as a valid species with a redescription of the adults, the first description of its immature stages and notes on its biology

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ABSTRACT

APANASKEVICH, D.A. & HORAK, I.G. 2006. The genus *Hyalomma* Koch, 1844. I. Reinstatement of *Hyalomma (Euhyalomma) glabrum* Delpy, 1949 (Acari, Ixodidae) as a valid species with a redescription of the adults, the first description of its immature stages and notes on its biology. *Onderstepoort Journal of Veterinary Research*, 73:1–12

For nearly 50 years the ixodid tick *Hyalomma marginatum turanicum*, reputedly introduced into South Africa on imported Persian sheep, has been considered identical to the Asian *Hyalomma (Euhyalomma) marginatum turanicum* Pomerantzev, 1946. Comparisons of this tick with the Asian *H. (E.) m. turanicum* and other subspecies of *Hyalomma (Euhyalomma) marginatum*, however, reveal that it is an old taxon, namely *Hyalomma rufipes glabrum* Delpy, 1949. It is hereby reinstated as *Hyalomma (Euhyalomma) glabrum*, and its adults are redescribed and its immature stages described for the first time. The preferred hosts of its adults are large herbivores such as zebras, gemsbok and eland, on which it occurs during summer. The preferred hosts of its immature stages are scrub hares and ground-frequenting birds, on which it is present during autumn and winter. Data on its distribution and possible disease relationships are also provided.

Keywords: Description, distribution, hosts, *Hyalomma (Euhyalomma) glabrum*, immature stages, seasonality

INTRODUCTION

It was originally assumed that only two species of the genus *Hyalomma* Koch, 1844, namely *Hyalomma* (*Euhyalomma*) *truncatum* Koch 1844 and *Hyalomma* (*Euhyalomma*) *rufipes* Koch 1844, occurred in South Africa. In 1949 Delpy described a new subspecies of *H.* (*E.*) *rufipes*, naming it *Hyalomma rufipes glabrum* Delpy, 1949. This name persisted until Theiler (1956) raised it to species level as *Hyalomma glabrum*, but in the same year Hoogstraal (1956) synonymized it with *Hyalomma marginatum turanicum* Pomerantzev, 1946. He based this decision on a study of reared specimens of adult *H. r. glabrum* that were sent to him by Gertrud Theiler, and on some adults of *H.* (*E.*) *m. turanicum* originating from Iran. No immature stages were studied. Furthermore, Hoogstraal (1956) assumed that *H.* (*E.*) *m. turanicum* had been introduced into South Africa on Persian sheep apparently imported from the Mediterranean region. Since then the name *H.* (*E.*) *m. turanicum* has been used for this tick in all publications devoted to the *Hyalomma* ticks of South Africa. Four years later, the subspecific status of *H.* (*E.*) *rufipes* was demonstrated by Hoogstraal & Kaiser (1960), and it

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became *H.* (*E.*) *marginatum rufipes*. There are thus currently two species and two subspecies of *Hyalomma* recognized in South Africa, namely *H.* (*E.*) *truncatum*, *H.* (*E.*) *m. rufipes* and *H.* (*E.*) *m. turanicum*.

The systematics of species within the *H.* (*E.*) *marginatum* group is one of the most complex in the subgenus *Euhyalomma* Filippova, 1984, and within the genus *Hyalomma* as a whole. This group of ticks consists of one extremely polymorphic species, namely *Hyalomma* (*Euhyalomma*) *marginatum*, which contains the four subspecies, *Hyalomma* (*Euhyalomma*) *marginatum marginatum* Koch, 1844, *H.* (*E.*) *m. rufipes*, *Hyalomma* (*Euhyalomma*) *marginatum isaaci* Sharif, 1928 and *H.* (*E.*) *m. turanicum*. Apanaskevich (2003, 2004) has published a preliminary differentiation of these subspecies based on all their life stages. However, after large numbers of South African *H.* (*E.*) *m. turanicum* had been examined and compared with Asian *H.* (*E.*) *m. turanicum* it was obvious that these taxa are entirely different. As a consequence we have now compared the morphological characters of males, females, nymphs and larvae of South African *H.* (*E.*) *m. turanicum* with those of *H.* (*E.*) *m. marginatum*, *H.* (*E.*) *m. rufipes* and *H.* (*E.*) *m. isaaci*, and those of *H.* (*E.*) *m. turanicum* from Asia.

The presence of a number of distinctive diagnostic characters on all developmental stages of South African *H.* (*E.*) *m. turanicum* has persuaded us to designate this taxon as a separate species within the *H.* (*E.*) *marginatum* group, namely *Hyalomma* (*Euhyalomma*) *glabrum*.

Hyalomma (*Euhyalomma*) *glabrum* Delpy, 1949

TYPE SPECIMENS: the original, extremely brief description in the form of an identification key was based on adult specimens from the Karoo, South Africa ("Karro", Delpy 1949). The deposition of the type specimens is unknown. Gertrud Theiler's laboratory-reared specimens, from amongst which Delpy described *H. r. glabrum*, are deposited in the Tick Museum at the Onderstepoort Veterinary Institute (OVI), South Africa, and could be considered as paratypes or syntypes. The male and female are illustrated under the name *Hyalomma turanicum* in Hoogstraal (1956).

SYNONYM: *Hyalomma rufipes glabrum* Delpy, 1949.

MATERIAL EXAMINED: 876 males, 111 females, 100 nymphs and 100 larvae from four localities in South Africa (Mountain Zebra National Park (32°15' S, 25°27' E), Eastern Cape Province; Karoo National Park (32°16' S, 22°32' E), Western Cape Province; and the farms "Outuin" (30°10' S, 18°02' E), Northern Cape Province; and "Klipfontein" (33°20' S, 23°19' E), south-western Eastern Cape Province). In addition to the abovementioned field collected specimens, we have also examined the laboratory-reared specimens in the Gertrud Theiler collection (De Aar, 23.XI.1942; No.: 2850, 2851, 2852, 2853, 2854, 2855; 46 males, 88 females, nymphs and exuviae of nymphs, larvae and exuviae of larvae) deposited in the Tick Museum at the OVI.

DESCRIPTION

The measurements are given as follows: minimum – maximum (average ± standard error, *n* = number of specimens examined). All measurements of adults are given in millimetres and those of immature stages in micrometres.

MALE (Fig. 1, 2A–I)

Conscutum (Fig. 1): length 4.03–5.48 (4.72 ± 0.02, *n* = 100), width 2.77–3.63 (3.27 ± 0.02, *n* = 100),

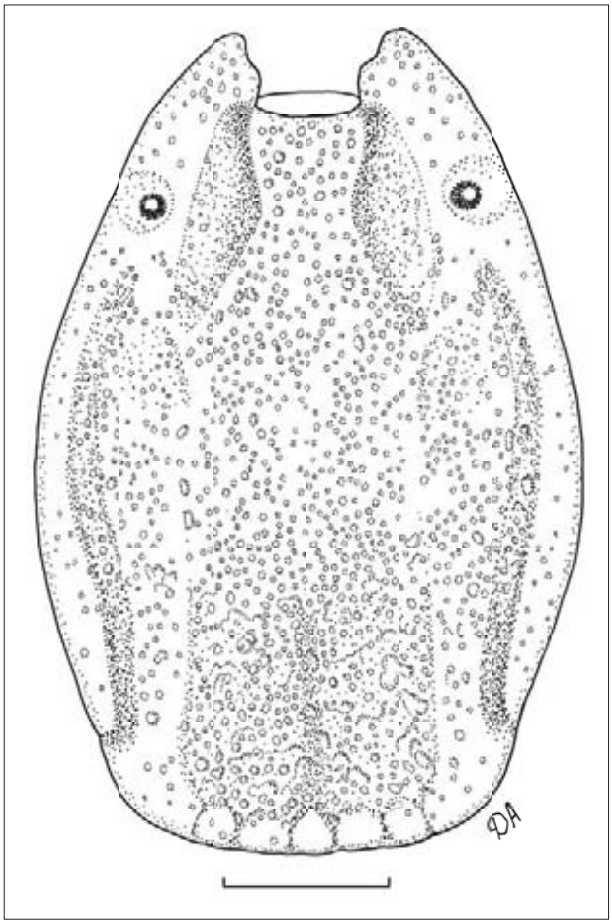

FIG. 1 *Hyalomma glabrum*, male, conscutum. Bar = 1 mm

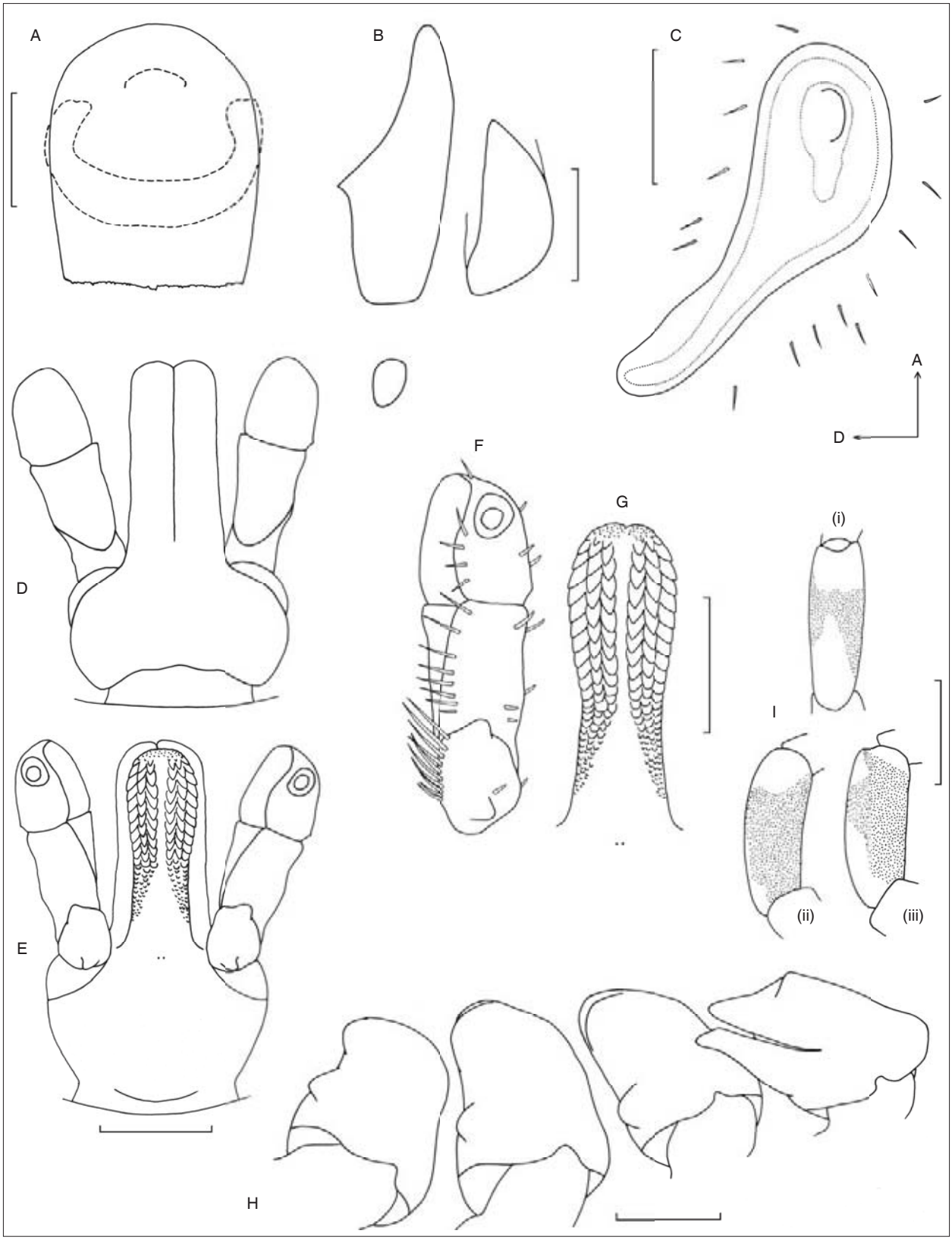

FIG. 2 *Hyalomma glabrum*, male, A, genital structures: apron, postgenital sclerite, pregenital arch. Bar = 200 µm; B, anal plates. Bar = 500 µm; C, spiracular plate and circumspiracular setae (A—anterior; D—dorsal). Bar = 400 µm; D, gnathosoma dorsally. Bar = 500 µm; E, gnathosoma ventrally. Bar = 500 µm; F, palp ventrally. Bar = 400 µm; G, hypostome. Bar = 400 µm; H, coxae. Bar = 500 µm; I, genu IV: (i), dorsal view, (ii), medial view, (iii), lateral view. Bar = 1 mm