

## Description of a Tick *Rhipicephalus glabros-cutatum*, sp. nov., (*Ixodidae*) from the Karroo Areas of the Union of South Africa.

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A FEW or individual specimens of a small species of tick of the genus *Rhipicephalus* have been received at odd times over a period of about three years from various "Karoo" centres of the Union which, though in many respects resembling *Rhipicephalus oculatus*, Neumann, a common species on hares in this country, yet differed from this species so markedly as to suggest its being a distinct species. One has hesitated to give it specific rank due partly to the paucity of material and the already extensive and somewhat confusing synonymy existing within the genus *Rhipicephalus*.

During 1939 it was possible to obtain living specimens,\* breeding was undertaken and a large amount of adult material obtained which left the question of its identity as a distinct species beyond doubt.

*Diagnosis.*—A small species, chestnut brown in colour with hemispherical orbited eyes closely resembling *R. oculatus*, Neu., from which it can be readily distinguished by the shiny appearance of the scutum due to the almost entire absence of punctations. The brown legs further serve to distinguish it from *R. evertsi*, Neu., and the hemispherical eyes from the other South African species of *Rhipicephalus*.

### *Description.*

*Male.* (Fig. 1A).—Length 2.2 to 2.7 mm. Average 2.4 mm. *Colour:* Uniformly chestnut brown including the legs. *Dorsal Surface:* Basis capituli, no marked difference from that of *R. oculatus*. *Scutum:* Covering the entire body, oval in shape, narrower in front than behind, glabrous and shining, a few large punctations scattered over the anterior two-thirds, slightly more numerous towards the humeral angles, fine punctations very rare and scarcely visible. Coxa I visible when viewed dorsally. Cervical

\* I am indebted to Mr. B. N. Hobson of Fairview, district Aberdeen, C.P., whose co-operation in forwarding living specimens of these ticks to Onderstepoort made the life history studies possible.

DESCRIPTION OF "*RHIPICEPHALUS GLABROSCUTATUM*".

grooves deep in front and strongly curved laterally, converging posteriorly and becoming shallower to again diverge further back and disappear at about the junction of the anterior and middle thirds of the scutum. *Eyes*: Hemispherical, orbited. *Lateral Grooves*: Well marked and extending from shortly behind the eyes to the first festoon. *Festoons*: Eleven in number, well marked. *Posterior Grooves*: Three in number, one medial and two lateral, shallow and not very distinct in all specimens. In engorged specimens a short truncated caudal process is apparent. *Ventral Surface* (Fig. 1B): Not characteristic and similar to *R. oculatus* but the adanal plates are triangular and the posterior border considerably more rounded than in *R. oculatus*. The inner border is slightly concave. The accessory adanal plates are only slightly chitinized and appear as minute points lateral to the adanal plates.

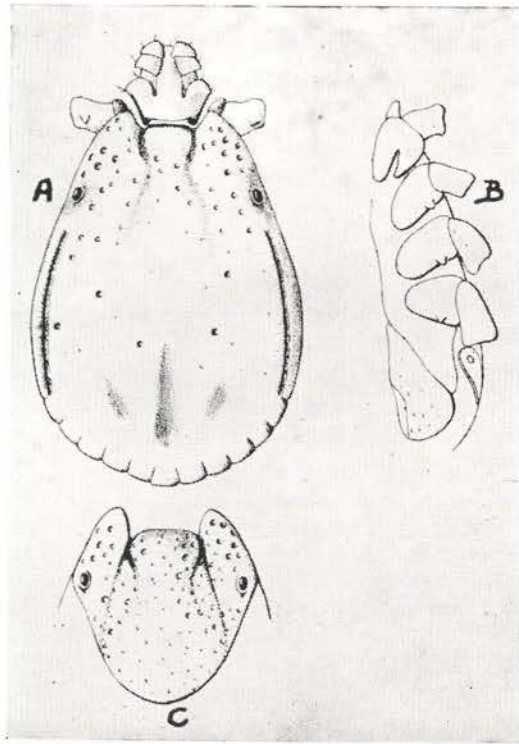


Fig. 1.—*Rhipicephalus glabroscutatum* sp. nov. A.♂, Dorsal surface. B.♂, Coxae and adanal shield, ♂. C.♀, scutum.

*Female*. (Fig. 1c).—Similar in colour to the male, the abdomen of unengorged specimens being slightly darker as a rule. *Dorsal Surface*: Basis capituli, not characteristic. *Scutum*: Slightly longer than wide. Length 1.46 to 1.74 mm., average 1.57 mm. Width 1.3 to 1.4 mm., average 1.34 mm. *Cervical Grooves*: Deep anteriorly where they are strongly curved laterally, converging behind and

again diverging to become very shallow and almost reaching the posterior border. *Lateral Grooves*: More or less straight, shallow and not well defined, reaching the posterior border. *Eyes*: Hemispherical orbited. Punctations more numerous than in the male, scattered over the surface but more numerous towards the humeral angles and anteriorly but not nearly as numerous as in *R. oculatus*. Fine punctations few and scarcely visible. *Ventral Surface*: Similar to *R. oculatus*.

*Nymph.* (Fig. 2A).—Lighter in colour than adults. *Basis capituli* from above: Lateral angles slightly pointed but not salient. *Scutum*: Wider than long. *Cervical Grooves*: Shallow and not well defined. *Eyes*: Showing only slight convexity, not orbited. *Scutum*: Covered with fine reticulations, no punctations.

*Larva.* (Fig. 2B).—Light brownish yellow in colour. *Basis Capituli*: Lateral angles rounded. *Scutum*: About as wide as long. *Cervical Grooves*: Ill-defined. *Eyes*: Hemispherical, not orbited. *Scutum*: Smooth and covered with fine reticulations.

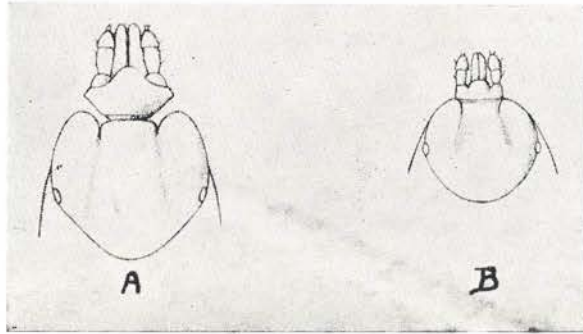


Fig. 2.—A. Nymph, capitulum and scutum from above. B. Larva, capitulum and scutum from above.

#### *Life History.*

Breeding carried out on guinea-pigs and rabbits revealed the fact that the species is typically a two-host tick, moulting from the larval to the nymphal stage occurring *in situ* upon the host in most cases although a few larvae were noted to detach and drop after engorgement. The following periods between stages were recorded:—

1. Larvae applied to guinea-pig: 15th September, 1939.  
Few larvae dropped: 22nd September, 1939.  
Nymphae dropped: 3rd October, 1939.  
Nymphae moulted: 30th October, 1939.
2. Larvae applied to rabbit: 26th September, 1939.  
Larvae moulting: 6th October, 1939.  
Engorged nymphae dropped: 11th October, 1939.  
Nymphae moulted: 30th October, 1939.

An analysis of the above feeding and moulting periods indicates that the larvae feed for a period of from 7 to 10 days. Feeding was conducted at room temperature of about 26° C. The period elapsing from the application of the larvae to the dropping of the engorged nymphae was from 15 to 24 days, averaging approximately three weeks. The moulting of the engorged nymphae occupied a period of from 19 to 27 days, again averaging approximately three weeks. The complete cycle from larvae to adult took place within a period of from 34 to 51 days. The feeding of the adults took from 8 to 15 days with the maximum drop of engorged females on the 9th and 10th days.

#### *Distribution.*

The species has been recorded to date only from the eastern portion of the Cape Province from the following hosts and localities: Angora goats ♂♂ and ♀♀, Glen Connor and South Kloof, District Uitenhage, coll., E. J. Clemow, 3rd and 23rd November, 1937, respectively; Boer goat, ♂ and ♀, The Homestead, District Oudtshoorn, coll., C. Flight, 6th April, 1938; goats, ♂♂ and ♀♀, Table Farm and Grasslands, District Albany, coll., J. A. Thorburn, 6th July and 5th September, 1938, respectively; Merino sheep (off feet), Angora goats and Boer goats, Fairview, district Aberdeen, coll., B. N. Hobson, 3rd and 6th March, and 13th May, 1939, respectively. There are additional records from Albany District but as far as present records go up to the present the species appears to be confined to the south-east central areas of the Cape Province which has an annual rainfall of approximately 15 inches, and the vegetation is principally of the Karroo type consisting of small shrubs for the most part edible for stock.

#### *Summary.*

A new species of tick from domestic stock is described and figured belonging to the genus *Rhipicephalus*. It closely resembles *R. oculatus*, Neumann, a common species on hares in South Africa from which it may be distinguished by the shiny smooth scutum practically devoid of punctations. The life history is given as worked out by feeding on guinea-pigs and rabbits and the species is found included. The name *Rhipicephalus glabroscutum* sp. nov., is proposed.