Onderstepoort J. vet. Res. 44 (3), 143–150 (1977)

IXODES (*AFRIXODES*) *NEITZI*, N. SP. (ACARINA: IXODIDAE) FROM THE MOUNTAIN REEDBUCK IN SOUTH AFRICA

C. M. CLIFFORD(1), JANE B. WALKER(2) and J. E. KEIRANS(1)

ABSTRACT

CLIFFORD, C. M., WALKER, JANE B. & KEIRANS, J. E., 1977. *Ixodes* (*Afrixodes*) *neitzi* n. sp. (Acarina: Ixodidae) from the mountain reedbuck in South Africa. *Onderstepoort Journal of Veterinary Research* 44 (3), 143–150 (1977).

Ixodes (*Afrixodes*) *neitzi* n. sp. is described from females and males collected from the mountain reedbuck (*Redunca fulvorufula*) at Loskop Dam Nature Reserve, Transvaal, Republic of South Africa. Information is provided to distinguish this new species from other closely related *Ixodes* species that occur in the Ethiopian region.

Its predilection sites are noted and the area in which it occurs is described briefly.

Résumé

IXODES (AFRIXODES) NEITZI *N. SP.* (*ACARINA: IXODIDAE*), *PARASITE DE L'ANTILOPE DES ROSEAUX EN AFRIQUE DU SUD*

Ixodes (Afrixodes) neitzi *n.sp. est décrite d'après des individus mâles et femelles récoltées sur l'antilope des roseaux* (Redunca fulvorufula) *dans la réserve naturelle du Loskop Dam, Transvaal, République d'Afrique de Sud. Des informations sont données pour distinguer cette nouvelle espèce d'autres* Ixodes *de la faune éthiopienne qui lui sont étroitement apparentés.*

On a noté les points d'attachement de préférence sur l'animal et la région où elle se rencontre est brièvement dicrite.

INTRODUCTION

Among several lots of *Ixodes* collected in South Africa and sent to the Rocky Mountain Laboratory for identification were 9 vials of ticks obtained from the mountain reedbuck (*Redunca fulvorufula*) and representing an undescribed species. The male and female of this species are herein described and compared with 3 other morphologically similar species.

This species is named after Dr W. O. D. M. Neitz in recognition of his outstanding contributions to our knowledge of ticks and tick-borne diseases in Africa.

MATERIAL EXAMINED

Holotype ♀ off mountain reedbuck, *Redunca fulvorufula*, Loskop Dam Nature Reserve (25°24′ S, 29°21′ E), Transvaal, 9.12.1970, L. R. Irby [Collection No. 63: Rocky Mountain Laboratory (RML) No. 64082]. Allotype ♂ data as for holotype.

Paratypes, with host, locality and collector as for the holotype, as follows: 1♀ 24.10.1969 (RML No. 64081); 3♂, 4♀ 12.2.1970 (No. 17: RML No. 64077); 1♀ 10.3.1970 (No. 21: RML No. 64080); 1♀ 23.11.1970 (No. 57: RML No. 64074); 1♀ 9.12.1970 (No. 63: RML No. 64082); 1♂, 1♀ 6.1.1971 (No. 67: RML No. 64076); 1♂, 1♀ 6.1.1971 (No. 68: RML No. 64078); 1♀ 16.1.1971 (No. 70: RML 64073) and 2♂, 4♀ 21.1.1971 (No. 72: RML No. 64075).

Holotype, allotype and some paratypes are deposited in the collection of the Veterinary Research Institute, Onderstepoort. Additional paratypes are in the Rocky Mountain Laboratory and the British Museum (Natural History) collections.

(1) United States Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health, National Institute of Allergy and Infectious Diseases, Rocky Mountain Laboratory, Hamilton, Montana 59840

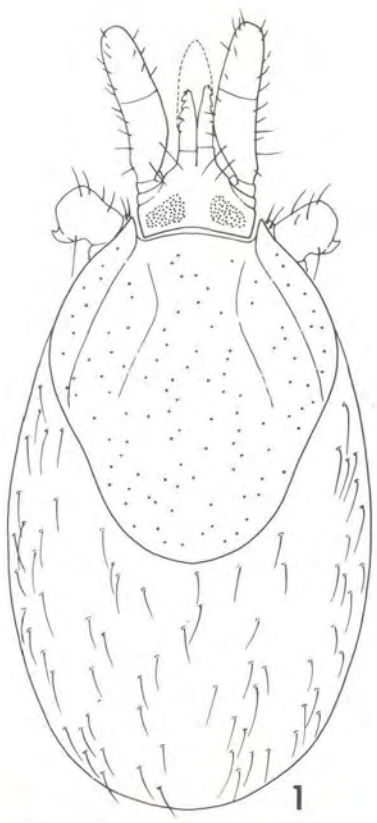
(2) Veterinary Research Institute, Onderstepoort, 0110, South Africa

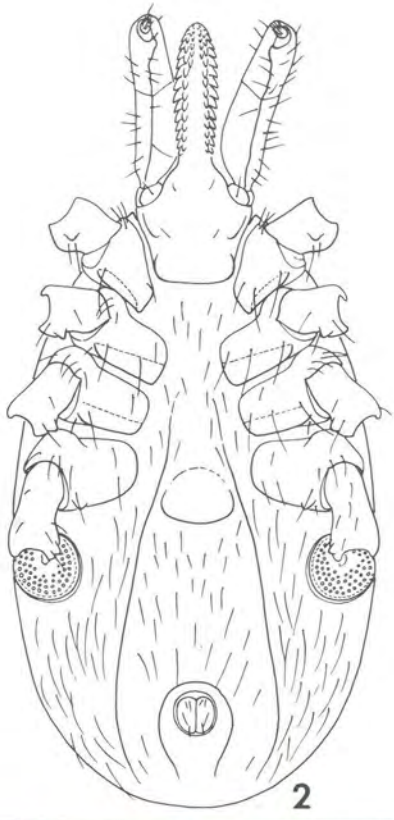
Received 21 March 1977—Editor

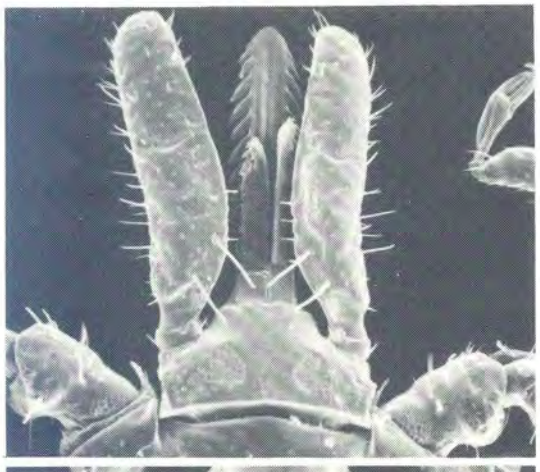
DESCRIPTION

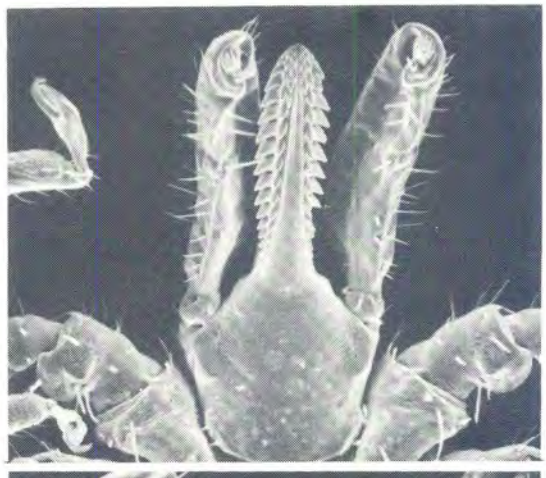
All measurements in the following descriptions are in millimetres.

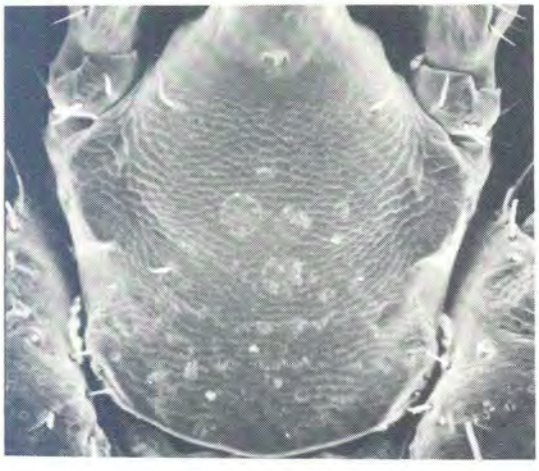
Female (Fig. 1–8). The first measurement given is for the holotype. Those following in parentheses are a range for 5 paratypes. *Body*. 2,60 long (excluding capitulum), 1,65 wide (partly engorged paratypes 3,35–4,80 long, 2,22–3,70 wide). *Body setae* long, white, evenly distributed over idiosoma. *Capitulum*. Length from palpal apices to posterior margin of basis 0,98 (1,00–1,03); greatest width 0,50 (0,48–0,53). *Basis capituli* dorsally (Fig. 3) with lateral margins diverging slightly; porose areas diffuse, separated by a distance of less than the width of 1 area; cornua lacking, posterior margin gently concave. Basis capituli ventrally (Fig. 4) constricted at mid-length; auriculae (Fig. 5) as weakly expressed shelf-like projections; transverse suture absent; posterior margin broadly rounded. Palpi *c.* 4 times longer than wide, 0,85 long (0,80–0,84), 0,19 wide (0,19–0,23), segments 1 and 4 small, 2 longer than 3, their combined length 0,78 (0,75–0,80). *Hypostome* (Fig. 6) pointed, toothed portion 0,65 (hypostome missing on other paratypes measured), dental formula 4/4 and 3/3 at apex, then 2/2 to base, corona indefinite. *Scutum* (Fig. 7) shape as figured, 1,50 long (1,48–1,63), 1,28 wide (1,28–1,38). *Emargination* shallow. *Scapulae* short, pointed. Lateral carinae distinct and extending to posterior margin. *Cervical grooves* distinct, convergent anteriorly, thence divergent and reaching just beyond scutal mid-length. *Puncta* uniformly small and evenly distributed over scutal surface. *Setae* lacking. *Legs* (Fig. 8). Coxae I–III lacking spurs, coxa IV with a small external spur; coxae I–III with prominent syncoxal areas; each coxa with several long white setae. Trochanters I–IV each with a small spur, (reduced on trochanter IV on several specimens). Tarsus I 0,80 long (0,75–0,85), metatarsus I 0,48 (0,48–0,53); tarsus IV 0,65 (0,63–0,75), metatarsus IV 0,53 (0,50–0,58). *Spiracular plate* nearly round, *c.* 0,30. *Genital aperture* situated at level of coxa IV. *Anal groove* horseshoe-shaped.











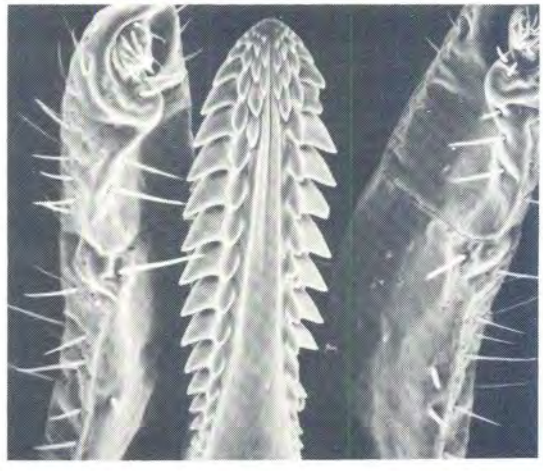
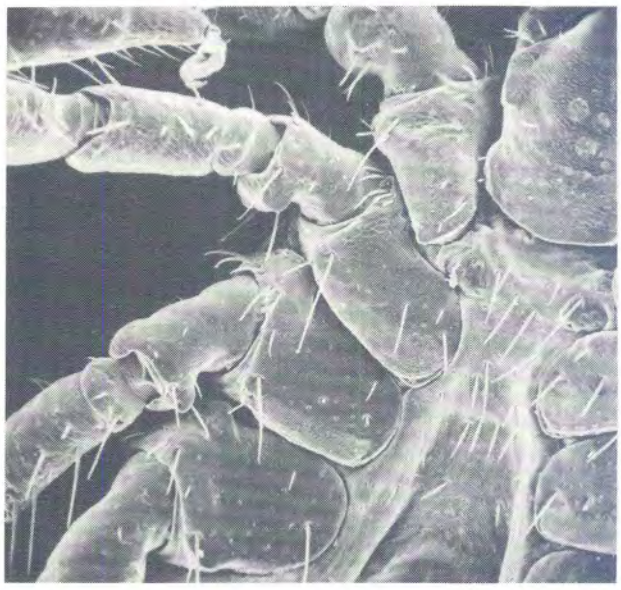


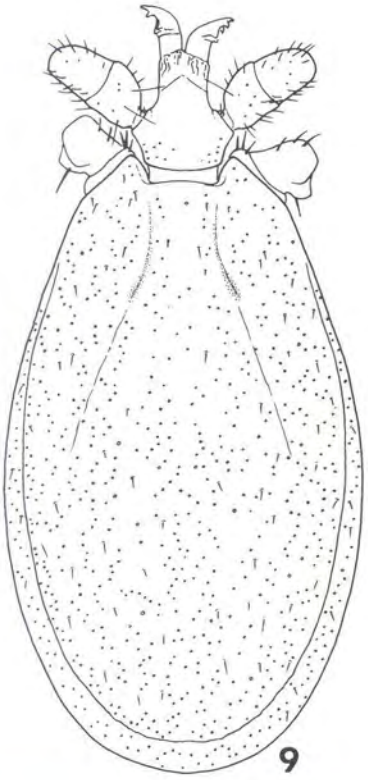
FIG. 1, 2 *Ixodes* (*Afrixodes*) *neitzi* n. sp., female, dorsal and ventral views
FIG. 3–6 *Ixodes* (*Afrixodes*) *neitzi* n. sp., female, (3) capitulum, dorsal view 75×; (4) capitulum, ventral view 75 ×; (5) basis capituli, ventral view 150×; (6) hypostome 150×

7

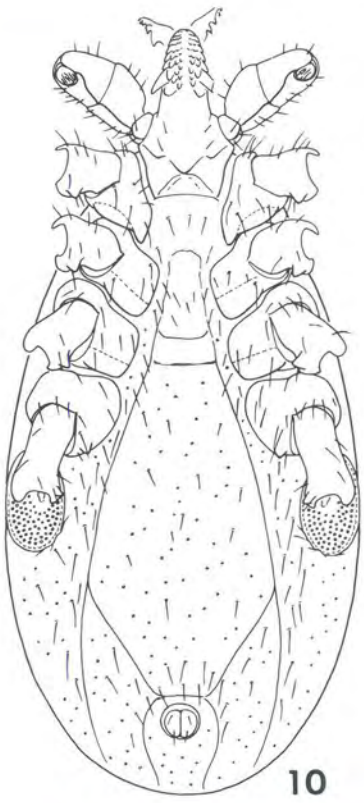


8

FIG. 7, 8 *Ixodes* (*Afrixodes*) *neitzi* n. sp., female, (7) scutum 72×; (8) coxae I–IV 90×

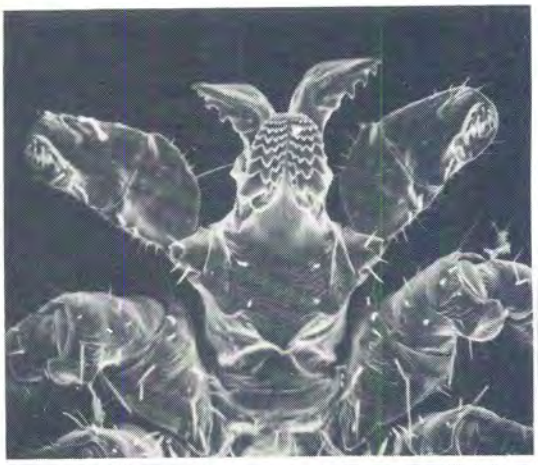


9

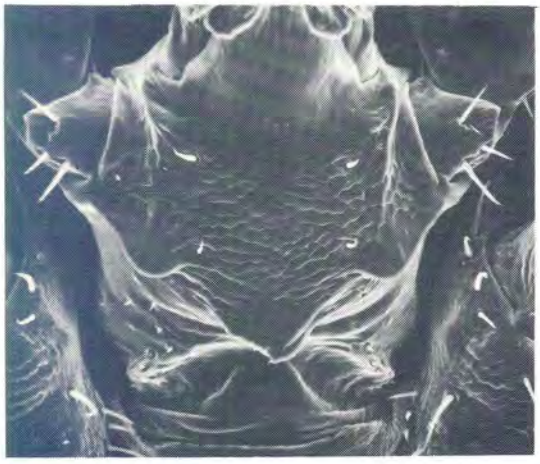


10

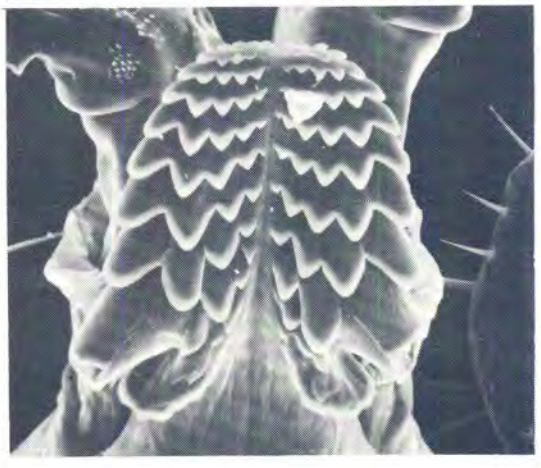
11



12



13



14

FIG. 9, 10 *Ixodes* (*Afrixodes*) *neitzi* n. sp., male, dorsal and ventral views
FIG. 11–14 *Ixodes* (*Afrixodes*) *neitzi* n. sp., male, (11) capitulum, dorsal view 90×; (12) capitulum, ventral view 90×; (13) basis capituli, ventral view 225×; (14) hypostome 375×

15

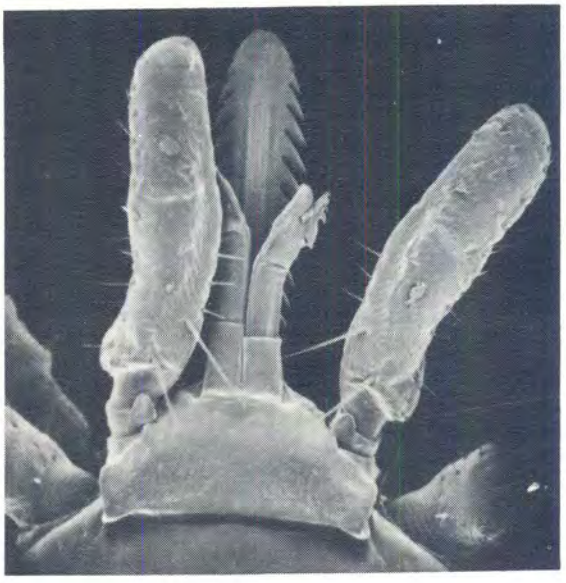
16

FIG. 15, 16 *Ixodes* (*Afrixodes*) *neitzi* n. sp., male, (15) scutum 45×; (16) coxae I–IV 99×

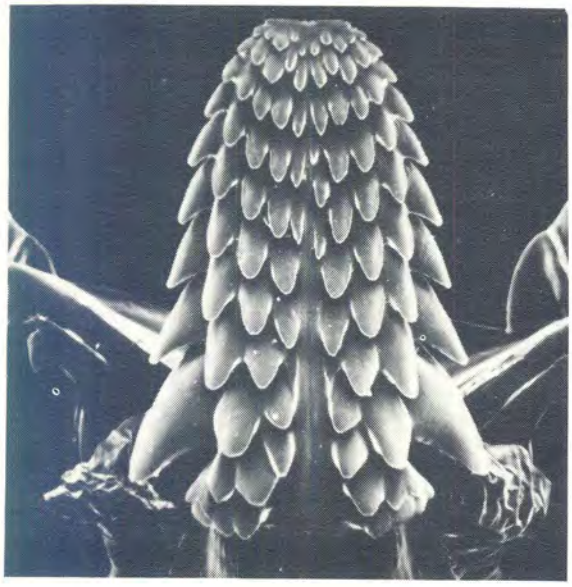
17

18

19



20



21

FIG. 17, 18 *Ixodes* (*Afrixodes*) *ugandanus* Neumann, 1906, female (17) scutum 51×; (18) coxa I 255×
FIG. 19–21 *Ixodes* (*Afrixodes*) *cavipalpus* Nuttall & Warburton, 1907, (19) female, basis capituli, ventral view 146×; (20) female, capitulum, dorsal view 82×; (21) male, hypostome 393×

Male (Fig. 9–16). First measurement given is for the allotype. Those following in parentheses are a range for 5 paratype males. *Body* 2,38 long (excluding capitulum) (2,30–2,60), 1,39 wide (1,33–1,43). *Outline* oval, inner margin of marginal body fold smooth. *Capitulum* (Fig. 11) length from palpal apices to posterior margin 0,63 (0,55–0,67). *Basis capituli* width greatest near palpal insertion, 0,33 (0,33–0,40); lateral margins divergent, posterior margin broadly rounded, cornua absent. Basis capituli ventrally (Fig. 12, 13) with posterior margin nearly straight, lateral margins divergent, transverse ridge with prominent triangular mesial lobe and 2 smaller triangular lateral lobes. Palpi short and broad, shape as figured; 0,45 long (0,40–0,48), 0,19 wide (0,18–0,19); suture between segments 2 and 3 distinct. *Hypostome* (Fig. 14) 0,24 long (toothed portion) (0,25); dentition from apex arranged as 6–7 rows of 5/5–4/4 crenulations followed by 2–3 irregular rows of more distinct teeth; the 2 basal teeth in the outer file are noticeably larger than others in this row. *Scutum* (Fig. 15) oval, 2,25 long (2,15–2,45), 1,23 wide (1,13–1,25). *Pseudoscutum* and *lateral carinae* absent. *Cervical grooves* distinct, parallel anteriorly and then divergent to scutal midlength. *Puncta* small, numerous, randomly distributed. *Setae* short, few in number and scattered. *Venter*. Plate outlines as figured. A few short white setae on all plates except anal. Puncta small, scattered on all plates except pregenital. Length and width of plates: median 1,28×0,75 (1,13–1,33×0,73–0,85), pregenital 0,32×0,25 (0,30–0,35×0,23–0,25), adanal 0,85×0,40 (0,75–0,88×0,23–0,33), anal 0,48×0,33 (0,38–0,45×0,25–0,35). *Legs*. Coxae I–III (Fig. 16) with strong syncoxal areas. Coxa I with moderate internal spur, coxa IV with small external spur. Trochanters I–IV each with a definite spur. Tarsus I 0,70 long (0,63–0,70), metatarsus I 0,37 (0,33–0,38); tarsus IV 0,60 (0,55–0,63), metatarsus IV 0,40 (0,38–0,40). *Spiracular plate* oval, greatest diameter *c.* 0,33 (0,33–0,38). *Anal groove* horseshoe-shaped, open posteriorly.

Discussion

The female of *I. neitzi* resembles *Ixodes ugandanus* Neumann, 1906 and *Ixodes aulacodi* Arthur, 1956* in having reduced auriculae (Arthur, 1965). However, females of *I. neitzi* are easily distinguished from these 2 species by the shape of the scutum, which has longer, more distinct cervical grooves and lateral carinae (compare Fig. 7 and 17), and by the absence of a definite spur on coxa I and more extensive syncoxal areas on coxae I–III (compare Fig. 8 and 18). Males of *I. ugandanus* and *I. aulacodi* are undescribed.

I. neitzi superficially resembles *Ixodes cavipalpus* Nuttall & Warburton, 1907, which may also occur in this area. Females of the new species are mostly easily distinguishable by their less extensive auriculae (compare Fig. 5 and 19) and differences in the shape of the palps (compare Fig. 3 and 20). Males of *I. neitzi* have less elongate bodies than those of *I. cavipalpus*, consequently there are differences between these 2 species in the length-width ratio of several ventral plates. Furthermore, on the hypostome of *I. neitzi* the anterior rows of denticles are in the form of crenulations, whereas they are discrete teeth in *I. cavipalpus* (compare Fig. 14 and 21).

* *I. ugandanus* and *I. aulacodi* are very similar and are currently distinguished only by minor differences in the auriculae. Consequently figures of *I. ugandanus* only are used in the comparison

Predilection sites

The adults of *I. neitzi* were attached almost exclusively on the heads of the mountain reedbuck, especially around the eyes and on the back of the ears, and on their necks. One tick was recorded from the back leg (L. R. Irby, personal communication, 1971).

Ecology

As yet, *I. neitzi* is known only from the Loskop Dam Nature Reserve (25°23′–28′ S, 29°13′–23′ E), 160 km north-east of Pretoria in the Transvaal. The brief description of the area given below is based on accounts by Wells (1960) and by the collector of this species, L. R. Irby (unpublished report, 1975).

The Reserve covers an area of 12 763 hectares (Transvaal Nature Conservation Division, 1972) and ranges in altitude from 1 000 m below the dam to 1 500 m on the escarpment south of the reservoir. The dam lies in the Olifants River Valley and is surrounded by rugged hills where most of the mountain reedbuck live.

The Loskop area is in the rain shadow of the Lebombo Mountains and has a mean annual rainfall of approximately 625–750 mm. In the Olifants River Valley itself the mean is somewhat lower and in general the rainfall in the area is unreliable. Nearly 77% falls in thunderstorms during the summer, during which hot days are followed by cooler nights. The winters are extremely dry, with cool sunny days and fairly cold nights. Very occasionally there are slight frosts.

The vegetation in the Reserve, classified as Mixed Bushveld by Acocks (1975), is strongly influenced by the geological structure of the area. The northern slopes of the hills, where the deeply creviced strike faces of the underlying fault planes are exposed, tend to be covered with relatively low growing scrub, succulents and wiry grasses. The southern slopes are more open and grassy with more sparsely distributed, rather stunted trees.

The available information indicates that in this area *I. neitzi* adults are active from the end of spring (late October) all through the summer until the beginning of autumn (early March).

The immature stages of this species are still unknown.

Acknowledgements

We are most grateful to Mr L. R. Irby for collecting these ticks and for supplying information about the Loskop Dam Nature Reserve.

References

ACOCKS, J. P. H., 1975. Veld types of South Africa. *Memoirs of the Botanical Survey of South Africa*, No. 40, iv+128 pp.+map.

ARTHUR, D. R., 1965. Ticks of the genus *Ixodes* in Africa. London: The Athlone Press.

TRANSVAAL NATURE CONSERVATION DIVISION, 1972. Sixth Annual Report, 1970–1971. 40 pp.

WELLS, M. J., 1960. The climate and vegetation of the Loskop Dam Nature Reserve. *Flora and Fauna, Transvaal*, 11, 75–82+map.

Addendum

Since the above paper was written another collection of 7 ♂, 11 ♀ *Ixodes neitzi* (RML 105008) has been received from Dr R. A. I. Norval (Veterinary Research Laboratory, Salisbury, Rhodesia). These ticks were found questing near scent marks made by klipspringer (*Oreotragus oreotragus*) at Maleme Dam (20° 33′S., 28° 30′E), Matopos National Park, Bulawayo District, Rhodesia on 15 February 1977.

We are grateful to Dr Norval for his permission to include this record here.