A NEW SPECIES OF TICK FOUND ON SHREWS*

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Ixodes soricis n. sp.

**FEMALE.** Dimensions of unengorged holotype—1.2 mm. (to tip of scapula) x .78 mm. Colour—pale, dirty white, engorged specimens pale and yellowish.

**Capitulum.** Length 340 microns (tip of hypostome to dorsal ridge); width (at cornua) 300 microns. Surface of basis capituli smooth and impunctate. Cornua heavily chitinized but not prominent. Porose areas oval, about 100 x 50; interval 40 microns. General colour of capitulum a pale brown, with exception of dark brown, heavily chitinized anterior shoulders which form an angle of about 70° with the longitudinal axis. Auriculae present as chitinized ridges. Hypostome, 200 microns long (tip to lateral junctions of basis capituli) and sharply pointed. Teeth, 3/3.

**Palpi.** Extend 15 microns beyond tip of hypostome. Articles 2 and 3 about equal in length; their total length 280 microns. Width, 100 microns.

**Scutum.** .75 mm. x .55 mm.; broadest about 2/3 its distance back from the anterior margin. Surface slightly rugose and pale in colour. Scapulae short and not heavily chitinized, their inner margins extending backwards about 70 microns. Cervical and lateral grooves not very prominent. Postscutal area covered sparsely with hairs. Distance from scutum to posterior border in un-engorged tick, 400 microns.

**Legs.** Moderate in length and decidedly pale in colour. Tarsus I not noticeably humped. Tarsus I, 270 microns; metatarsus 140 microns.

**Coxae.** Coxa I bidentate; internal spur blunt and about as broad as long, external spur about same size and slightly broader than long. Suggestion of internal spur on coxa II, coxae 111 and IV with none. External spurs on coxae II, III, IV, about same size as that on coxa I.


**NYMPH.**

**Capitulum.** Length, 150 microns (tip of hypostome to dorsal ridge); width (at cornua) 170 microns. Postero-laterally projecting cornua. Combined length of palpal articles 2 and 3, 100 microns; width 50 microns. Ventrally, stout processes project postero-laterally and anteriorly from palpal article 1. Hypostome length 90 microns, files 2/2.

**Scutum.** Length 400 microns; width 357 microns; broadest slightly posterior to centre. Apex broadly rounded. Scapulae blunt. Surface slightly rugose.

**Coxae.** Spines as in female.

**Spiracle.** Ellipsoidal; 100 microns x 90 microns.

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IXODES SORICIS n. sp.

Fig. 1. Scutum of *Ixodes soricis* n. sp.
Fig. 2. Coxae, auricula, and spiracle of *I. soricis*, ventral view.
Fig. 3. Capitulum of *I. soricis*, dorsal view.
Fig. 4. Capitulum of *I. angustus* Neumann, dorsal view, showing angle of anterior shoulders.
Fig. 5. Engorged *I. soricis*.
Fig. 6. Capitulum and coxae of *I. soricis* nymph, ventral view.
Fig. 7. Scutum of *I. soricis* nymph.
Fig. 8. Scutum of *I. soricis* larvae.
Fig. 9. Capitulum of *I. soricis* larvae, ventral view. Graph, illustrating relative scutal sizes of *I. angustus* and *I. soricis* females and nymphs.
LARVA.

Capitulum. Length, 120 microns; width 120 microns. Palpi, 80 microns x 35 microns, palpal article 1 with processes similar to those of nymph, though to a lesser degree. Hypostome 60 microns.

Scutum. Length 257 microns, width 280 microns.

Coxae. Small obtuse internal spur on coxa 1. Other spurs insignificant.

General chitinization of nymph and larva, pale and thin.

Holotype female, two nymphs and two larvae have been deposited in the Canadian National Collection at Ottawa under Type No. 5291. One female, two nymphs and two larvae have been forwarded to the U. S. National Museum, Washington, D. C.

Specimens of I. soricis examined were all from shrews (Sorex spp.) and were from the following localities: Comox, V. I., B. C., one female, 14-XII-39; Powell River, B. C., two females, 19-VIII-29; Alta Lake, B. C., one female, 9-VIII-32, two females, 30-VIII-41; West Vancouver, B. C., one female and two nymphs, 9-VII-36, two nymphs, 26-VII-34, two nymphs and two larvae, 8-VIII-34, three nymphs, 8-VII-36, two larvae, 9-VII-36; Point Grey, B. C., one female, 12-XI-38; Aldergrove, B. C., one female, 24-VIII-30; Harrison Bay, B. C., three females and one nymph, 5-IX-40; Silver Creek, Hope, B. C., two females and two nymphs, 15-IX-41, eight larvae, 22-IV-40, twenty-four nymphs and six larvae, 31-V-41.

Until a sufficiently large series of I. soricis had been accumulated, this tick was placed tentatively as an extremely small variety of I. angustus Neumann, 1899. Apart from its size, it resembles this species extraordinarily closely in all stages, with the exception that in the female of I. soricis the anterior shoulders of the capitulum appear to be less sloping than those of I. angustus. It is the marked host specificity and the uniform smallness of size that has led the author to finally separate the tick from the latter species. Of a series of over fifty I. angustus females examined, no specimen exhibited smaller scutal measurements than .95 mm. x .68 mm. The average dimensions of all these angustus ticks were about 1.1 mm. x .82 mm., and the maximum size was 1.4 mm. x .9 mm. The scutum of the female mentioned in Nuttall and Warburton's redescription of I. angustus is even larger, being 1.5 mm. x 1.1 mm. Fifteen specimens of female ticks from shrews, all soricis, with the exception of one large female that was taken at Sugar Lake, B. C., and which is believed to be I. angustus, exhibited consistent scuta, varying only between .8 and .68 mm. x .6 and .5 mm. in size. Since the scutum does not change in size as the tick feeds, it cannot be said that the smallness of these ticks was due to undernourishment, the shrew being perhaps an unfavourable host. If the ticks were angustus and owed their small size to the fact that the nymphal stage had been starved, then small adults should also be found on neighboring squirrels. It would appear that all stages of I. soricis are specific to shrews, and that these animals are rarely parasitized by adult angustus ticks but are occasionally hosts to the nymphs and seeds of this tick. This is suggested by the presence of a few markedly larger and more heavily chitinized nymphs (undoubtedly those of I. angustus) mixed with the 40 nymphal ticks examined from shrews. In the case of the larval stages, there is a still more even proportion of the two species of ticks.

The 170 adult, nymphal and larval I. angustus examined were from squirrels, rabbits, moles, rats, mice, chipmunks, dogs and shrews. These specimens were taken at Malahat, Mt. Arrowsmith, Powell River, Vancouver, Cultus Lake, Harrison Bay, Hope, Birken, Tetana Lake, and Vavenby, B. C.