

DESCRIPTION OF A TICK, *DERMACENTOR HALLI*, FROM THE TEXAS PECCARY, WITH A KEY TO THE NORTH AMERICAN SPECIES OF *DERMACENTOR*

By ALLEN McINTOSH

Assistant Zoologist, Zoological Division, Bureau of Animal Industry, United States Department of Agriculture

Among a collection of parasites made on September 3, 1931, by Dr. Maurice C. Hall, chief of the zoological division of the United States Bureau of Animal Industry, were several ticks taken from five collared peccaries, also known in Texas as javelinias, which were shot on the King Ranch, Kingsville, Tex. The ticks were turned over to the writer for identification, and were found to represent the following species: *Amblyomma cajennense*, *Dermacentor variabilis*, and a species of *Dermacentor* regarded by the writer as new.¹

DERMACENTOR HALLI McIntosh, 1931

Male: Body oval (fig. 1. *a*), narrowing anteriorly, broadest at coxae IV; 4.38 mm long (capitulum not included); 2.8 mm wide. Scutum (pl. 1, fig. 1) reddish brown, fading to yellowish brown in the mesal region posterior to pseudoscutum, with an extensive pattern of white rust. The white consists of a narrow border along the lateral margins beginning somewhat posterior to the eyes and encircling the festoons; along the mesal border of each lateral groove is a faint trace of white; beginning near the apex of each scapular angle is a *broad white stripe* extending on each side to the first and second festoons.

These two stripes, the most conspicuous of the white markings, run almost parallel to about the center of the scutum, where, after a slight convergence, they diverge in their course to the festoons. Beginning near the inner border of each cervical groove is a narrow stripe of white: these two stripes soon unite and expand as irregular broken patches of white over the postero-central portion of the pseudoscutum: the two stripes are reformed and continue posteriorly in a slightly diverging direction to anastomose as a rule, although in some specimens the union may be broken, with the *broad white stripe*

¹An abstract of this paper was published in the Proceedings of the Seventh Annual Meeting of the American Society of Parasitologists. Journ. Parasit., vol. 18, no. 2, p. 124, Dec., 1931.

of each side at about the middle of the scutum. Posterior to this point and between the *broad white stripes* are 4 narrow white stripes extending to the festoons: the inner 2 of the 4 are usually united anteriorly with each other; posteriorly they are united with each lateral member of the group; each lateral member is connected anteriorly with the *broad white stripe* of each side. The continuity of the white is often broken by minute punctations and small irregular patches of brown. In areas where no rust is present the pigmentation of the ceca is visible as irregular black lines. Pseudoscutum not well defined, brown with irregular patches of white rust as mentioned above; capitular emargination 200μ deep by 650μ wide; cervical grooves short, moderately deep depressions, not extending to level of eyes; marginal grooves narrow and shallow, marked by a row of 10 to 14 medium-sized punctures; also a row of punctures

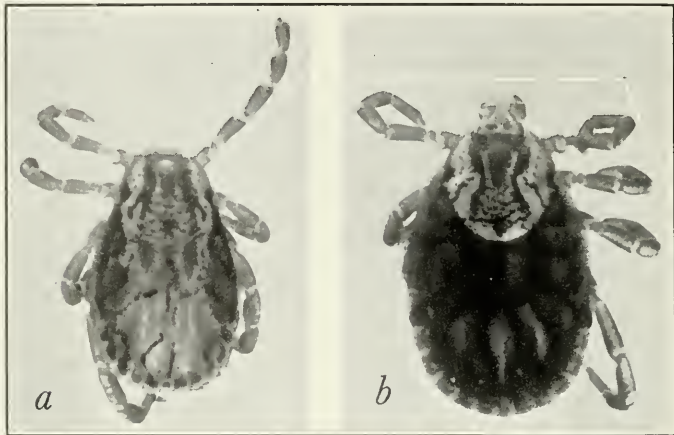


FIGURE 1.—*Dermacentor halli*: a, Male; b, female. (Enlarged $8\frac{1}{2}$ times)

on each lateral margin, and a few scattered ones in the scapular region between the eye and the cervical groove. Over the remainder of the scutum is a conspicuous absence of the deep punctures so characteristic in some species of the genus *Dermacentor*. Eleven well-defined festoons, the outer ones broader than the inner; the posterior margin of each is of a lighter brown, and each is marked dorsally with irregular patches of white and with one to three small punctures. Venter hairy, with numerous small and a few scattered medium-sized punctures; the region posterior to and between the coxae of each side much lighter in color than coxae and festoons. Genital orifice on level with coxae II; genital grooves about parallel to the level of coxae IV, where they converge slightly, then diverge sharply and extend to the posterior margin of the body to unite with the groove between festoons 2 and 3; postanal median groove extends to median festoon. Stigmal plates (pl. 1, fig. 2) elliptical with a

broad posterodorsal prolongation; greatest dimension of plate, measured from anteroventral angle to tip of posterodorsal prolongation, 570μ ; maximum breadth, taken perpendicular to the above measurement, 340μ ; with a well-developed chitinized frame, broadest on each side of posterodorsal prolongation; macula elliptical, broadest at middle, 240μ long; aperture large; goblets numerous, approximately 100, of medium size, larger than in *D. variabilis*, with smaller granules near margin and on prolongation. Legs (pl. 1, figs. 3-5) ornate dorsally, with small punctations and bristles. Coxa I (pl. 1, fig. 6) with two well-developed spurs approximately equal in length, the sharply pointed external spur almost parallel to and well separated from the broad internal spur. Coxae II, III, and IV each with a short well-developed external spur; the internal spur on coxa II marked by a sharp-edged salient ridge; this morphologic feature is less pronounced on coxa III, and there is no indication of an internal spur on coxa IV. Femur IV armed ventrally with five to six teeth, a strong bristle arising at the base of and distal to each tooth; femurs I, II, and III without teeth but with bristles on ventral surface. Tibia and metatarsus of leg IV also provided ventrally with bristles and teethlike elevations; similar bristles are present on the other legs, but the elevations are less conspicuous, decreasing in prominence anteriorly. All tarsi with a ventroterminal tooth, another tooth immediately proximal to the terminal one; on tarsus I these two teeth are smaller and more widely spaced; proximal to the subterminal tooth are two or three elevations that are less prominent than the teeth; bristles present on all tarsi. Capitulum (pl. 1, fig. 7) 750μ long (mediodorsal measurement from tip of hypostome to edge of emargination); its base 570μ wide, with whitish markings dorsally; cornua long and pointed; hypostome dentition consists of three rows on each side with eight to nine teeth in each row; palps 470μ long, hairy, short, and broad, with white markings dorsally, and with articles II and III each about 230μ long; article I with 4 to 5 bristles on internal ventral edge, article II with 5 to 7, and article III with 2 to 3 such bristles.

Female: When flat and unengorged (fig. 1, *b*), 4.52 mm long and 2.85 mm wide; when engorged 9 mm long by 5.5 mm wide by 3 mm thick; newly emerged female 4.19 mm by 2.14 mm. Body hairy, brownish red, with white on shield, capitulum, and legs; marginal grooves and festoons distinct. Scutum (pl. 1, fig. 8) oval, broadly rounded from the eyes to the apex, and 1.79 mm long by 1.95 mm wide; brownish red with conspicuous white markings, the white consisting of a broad stripe beginning on each side near the apex of the scapular angle and continuing to the apex of the scutum where the stripes unite with each other; on the mesal margin of each cervical groove is a narrow white stripe, these stripes well separated at

first but converging near the center of the scutum, after which the white is much broken up by brown spots; the narrow stripes connect posteriorly with the broad stripe of each side; in some specimens the white is broken by a large brown spot near the apex of the scutum, in which cases the two narrow stripes of white are connected by a narrow bridge of white in front of the brown spot. The eyes are light brown, bounded on their mesal border by a dark-brown spot, which continues as a brown stripe along the margin of the shield. Cervical grooves short, forming deep lunules anteriorly; fine punctations as in the male, a few scattered deep punctures bearing a fine bristle in each lateral area. Fovea about 69μ in diameter, 299μ apart, and located 506μ from apex of scutum. Venter with punctations and hairs inconspicuous; genital orifice of unengorged females between coxae II, vulva of engorged females on level with interspace of coxae I and II; genital grooves slightly converging immediately posterior to vulva, then diverging gently until they have passed beyond the level of coxa IV; at the latter point they diverge at a wide angle as they extend to the festoons, uniting with the grooves between festoons 2 and 3. Spiracle (pl. 1, fig. 9) oval with a fairly broad posterodorsal prolongation; 515μ long, 400μ wide; goblets as in male; macula broad, oval, 280μ by 160μ . Legs pubescent, ornate dorsally; coxa I with spines as in male; femur and tibia IV not marked with spinelike teeth as in male; tarsi similar to male. Capitulum (pl. 1, fig. 10) 730μ long, 680μ wide at base, and marked with white; porose areas 160μ by 115μ , oval, diverging anteriorly and spaced about half their width apart; cornua rounded laterally, ending in a bladelike spine. Palps similar to males with from 5 to 6 bristles on internal ventral edge of article I, from 5 to 8 on article II, and 3 such bristles on article III.

Holotype.—Male, U.S.N.M. Helm. Coll. No. 31500.

Allotype.—Female, U.S.N.M. Helm. Coll. No. 31501.

Paratypes.—Three males and one female, U.S.N.M. Helm. Coll. No. 31502, and four males and two females, U.S.N.M. Arachnida Coll. No. 1047.

Type host.—*Pecari angulatus angulatus* (Cope).

Type locality.—Kingsville, Tex.

Remarks.—Of the 12 specimens collected, 8 are males and 4 are females; 2 of the females are engorged and 2 are unengorged. One of the unengorged females is apparently newly emerged. The specimens vary somewhat in size in both sexes, as may be observed from the shield measurements given in Table 1.

The following combination of characters will aid in separating *D. halli* from the other species of *Dermaeentor* described from America: (a) The characteristic color pattern of the shield; (b) the absence of numerous deep large punctations; (c) the equal length

of the well-separated spurs of coxa I; (d) the broad posterodorsal prolongation of the stigmal plate; and (e) the broad, posteriorly rounded shield of the female.

TABLE 1.—Shield measurements of eight male and four female specimens of *Dermacentor halli*

Males				Females	
Length	Width	Length	Width	Length	Width
<i>Mm</i>	<i>Mm</i>	<i>Mm</i>	<i>Mm</i>	<i>Mm</i>	<i>Mm</i>
4.5	2.9	3.8	2.45	² 1.79	² 1.95
4.38	2.8	3.8	2.38	³ 1.77	³ 1.77
4.09	2.61	3.76	2.38	³ 1.7	³ 1.65
3.85	2.8	¹ 3.66	¹ 2.14	⁴ 1.67	⁴ 1.56

¹ Slightly deformed. ² Flat, unengorged. ³ Engorged. ⁴ Newly emerged.

The species of the genus *Dermacentor* reported from North America may be distinguished with the aid of the following key:

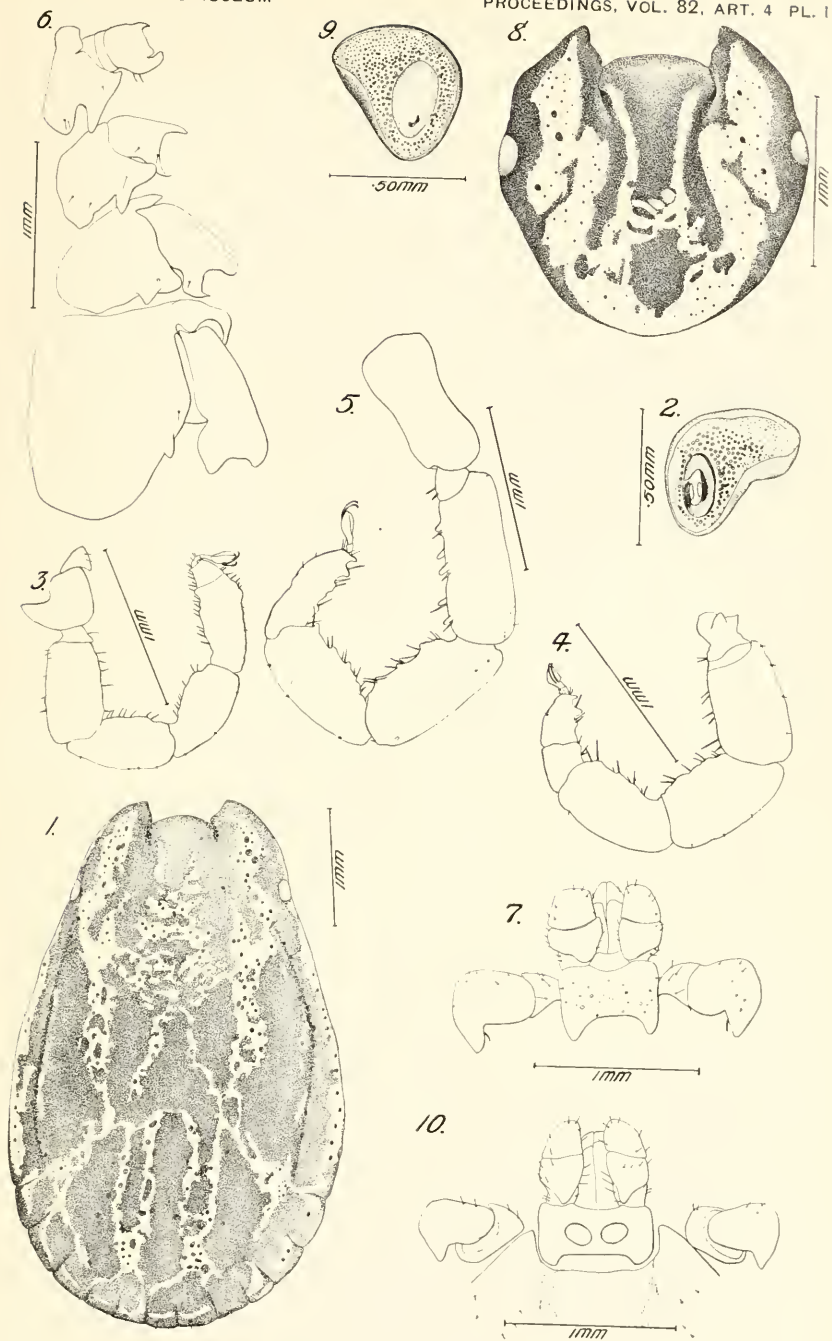
KEY TO THE NORTH AMERICAN SPECIES OF THE GENUS *DERMACENTOR*

1. Stigmal plate without distinct dorsal prolongation----- 2
Stigmal plate with distinct dorsal prolongation----- 4
2. Shield conspicuously marked with white----- *albipictus*²
Shield without white rust, or with very little white----- 3
3. Stigmal plate with only few (usually 4 to 10) large isolated goblets; males with only 8 impressed lines behind; no white on shield; spurs of coxa I widely separated----- *nitens*
Stigmal plate with many, more crowded, medium-sized goblets; males with 12 impressed lines behind; shield usually without white; spurs of coxa I close together----- *nigrolineatus*
4. Spurs of coxa I of equal length----- 5
Spurs of coxa I of unequal length----- 7
5. Spurs of coxa I widely separated; shield with mostly small shallow punctations; stigmal plate with broad dorsal prolongation----- *halli*
Spurs of coxa I close together; shield with many deep large punctations----- 6
6. Cornua of medium length; stigmal plate with minute goblets, and short, broad dorsal prolongation; white on male shield arranged more or less in longitudinal stripes----- *variabilis*
Cornua extra long, especially in male; stigmal plate with medium-sized goblets and well-developed dorsal prolongation; white on male shield uniformly diffused, broken by small brown spots and by numerous deep punctations----- *occidentalis*
7. Internal spur of coxa I slightly longer than external spur; cornua well developed; shield with mostly small punctations; stigmal plate with comparatively few goblets and narrow dorsal prolongation especially long and narrow in male----- *hunteri*

² *D. salmoni* Stiles, 1910, will key out with *D. albipictus*.

- External spur of coxa I usually slightly longer than internal spur; cornua of moderate length; shield with numerous large deep punctations ----- 8
8. Spurs of coxa I parallel and close together; shield well marked with white; pseudoscutum of male outlined with white ----- *andersoni*³
- Spurs of coxa I divergent, and well separated at least near the tips; shield with little or no white ----- 9
9. Shield with no white ----- *parumapertus*
- Shield of female marked with white at apex; male shield with from 1 to 4 small irregular spots of white along each lateral groove ----- *parumapertus* var. *marginatus*
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³ *D. venustus* and *D. modestus* Banks, 1909, will key out with *D. andersoni*.



DERMACENTOR HALLI

1. Scutum of male; 2, right stigmatal plate of male; 3, right leg I of male; 4, left leg III of male; 5, left leg IV of male; 6, left coxae of male; 7, capitulum of male; 8, scutum of female; 9, left stigmatal plate of female; 10, capitulum of female.

