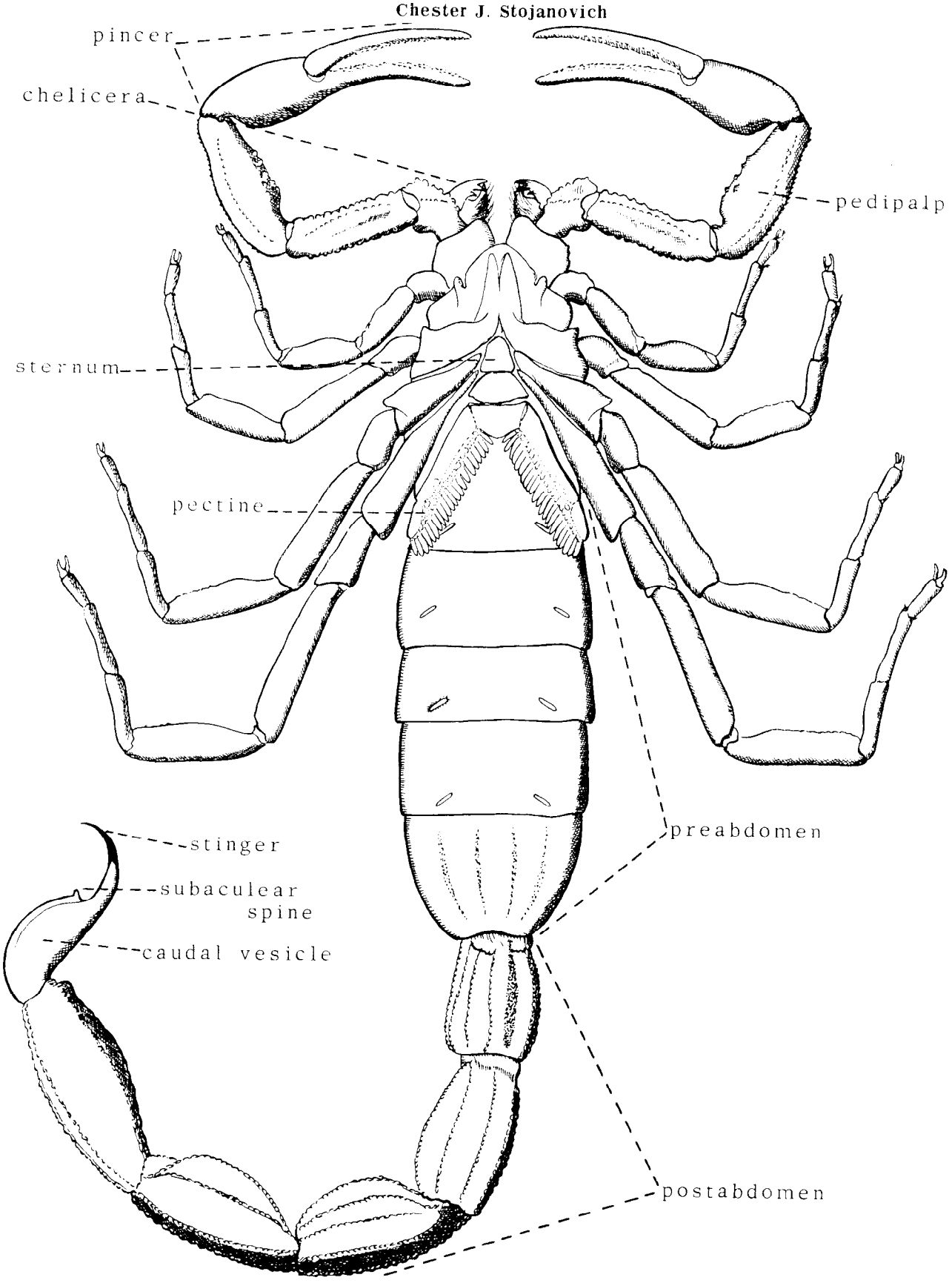
SCORPION DIAGRAM: VENTRAL VIEW OF CENTRUROIDES VITTATUS

Chester J. Stojanovich

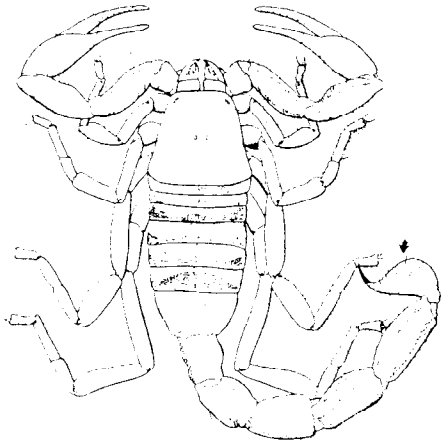


U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE, Communicable Disease Center, Training Branch, Atlanta, Georgia – 1963

SCORPIONS: PICTORIAL KEY TO SOME COMMON UNITED STATES SPECIES

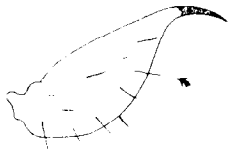
Chester J. Stojanovich and Harold George Scott

stinger with many setae

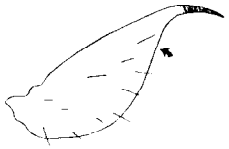


Hadrurus arizonensis
OLIVE HAIRY SCORPION

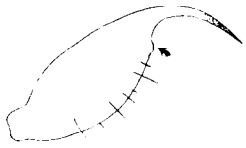
stinger with few setae



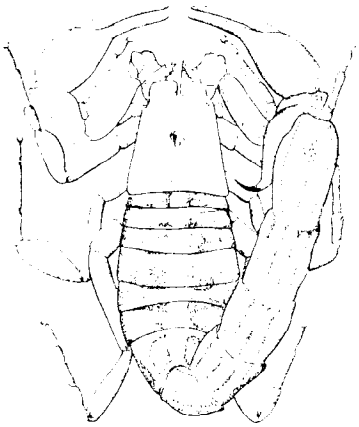
stinger without subaculear tooth



stinger with subaculear tooth

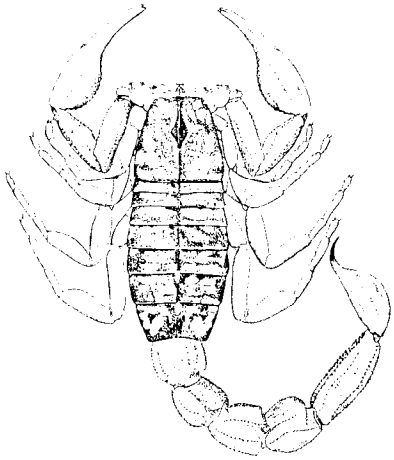


body striped dorsally



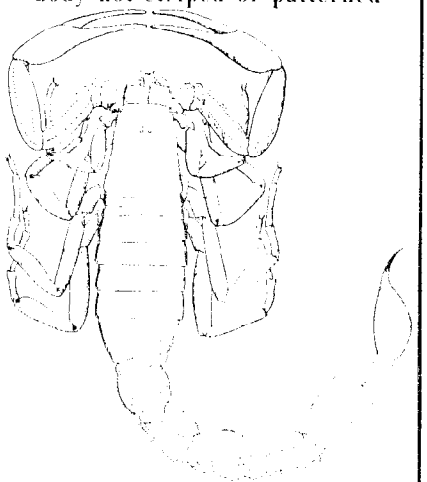
Vejovis spinigerus
STRIPE-TAIL DEVIL SCORPION

body patterned dorsally



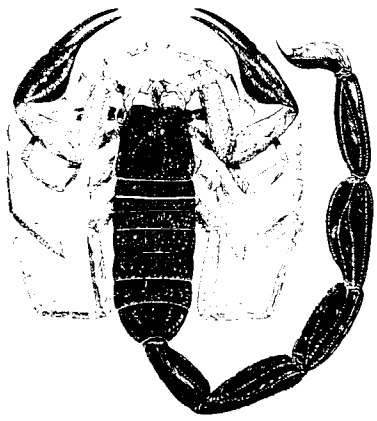
Vejovis carolinianus
SOUTHERN DEVIL SCORPION

body not striped or patterned



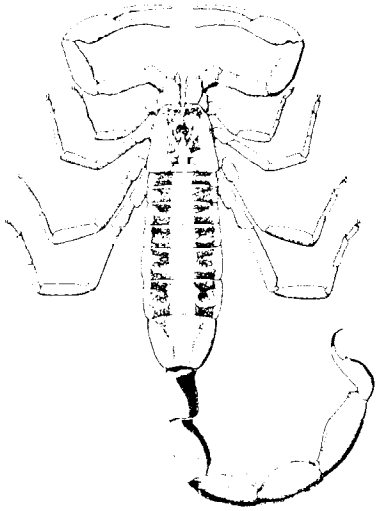
Vejovis flavus
SLENDER DEVIL SCORPION

body black dorsally



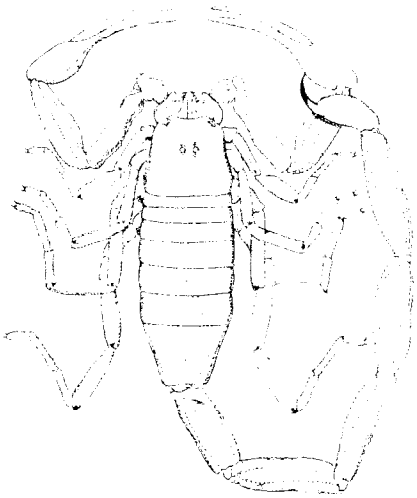
Centruroides gracilis
MARGARITE SCORPION

body striped dorsally



Centruroides vittatus
STRIPE-BACK SCORPION

body yellow dorsally



Centruroides sculpturatus
DEADLY SCULPTURED SCORPION

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE, Communicable Disease Center, Training Branch, Atlanta, Georgia – 1953

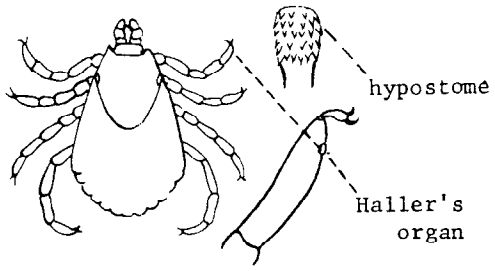
ACARINA: ILLUSTRATED KEY TO SOME COMMON ADULT FEMALE MITES AND ADULT TICKS

Harry D. Pratt and Chester J. Stojanovich

1. Last segment of first leg with a depression known as Haller's organ; most species with a toothed hypostome on capitulum; size usually over 4 mm. (Fig. 1 A). Ticks 21

   Last segment of first leg without such a depression known as Haller's organ; hypostome not toothed; most species less than 4 mm. long (Fig. 1 B). Mites.....2

Fig. 1 A



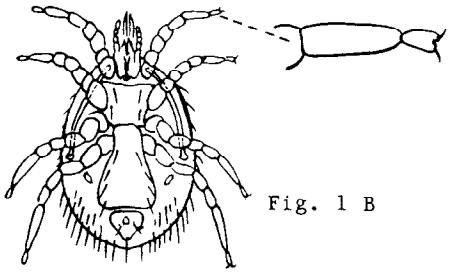
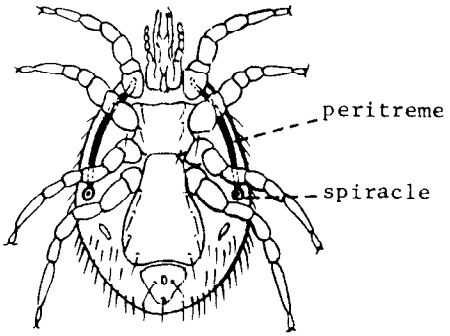


Fig. 1 B

2. Respiratory system with a spiracle on each side opening lateral to the bases of the 3rd or 4th pair of legs, frequently spiracles leading into slender tubes that extend forward laterally to the bases of the 1st or 2nd pairs of legs Fig. 2 A). Mesostigmatid Mites. 3

   Respiratory system without spiracles, or with spiracles opening near bases of the chelicerae (Fig. 2 B).....13

Fig. 2 A



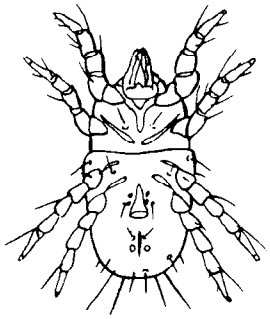
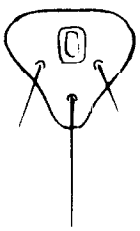


Fig. 2 B

3. Anus surrounded by a plate bearing only 3 setae, one on each side and one behind the anal opening; first tarsus bearing caruncle and claws at tip (Fig. 3 A).....4

   Anus surrounded by a plate bearing more than 3 setae; first tarsus without caruncle and claws (Fig. 3 B)..... Many species of Macrocheles

Fig. 3 A



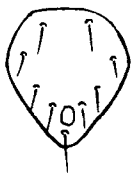


Fig. 3 B

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE, Communicable Disease Center, Training Branch, Atlanta, Georgia
– Revised 1966 by Harold George Scott

4. Anal opening more than its length behind anterior margin of anal plate; chelicerae strongly narrowed apically, needle-like, movable chela absent or extremely small (Fig. 4 A). Genus Dermanyssus 5

Anal opening less than its length or about its length, behind anterior margin of anal plate; chelicerae not narrowed apically and needle-like, shear-like, bearing conspicuous shear-like chelae at tip which may or may not bear teeth (Fig. 4 B)..... 7

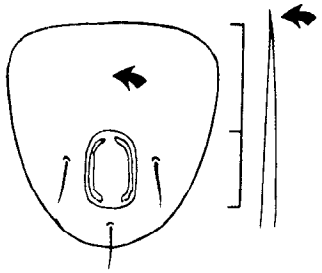


Fig. 4 A

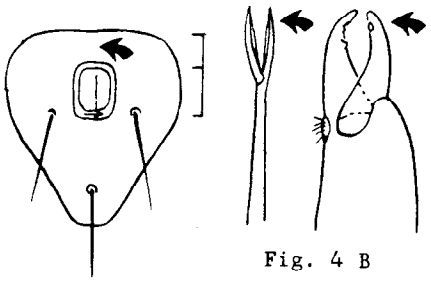


Fig. 4 B

5. Dorsal surface of body with a single plate (Fig. 5 A)..... 6

Dorsal surface of body with two plates, a large anterior plate and a small posterior plate (Fig. 5 B). Dermanyssus sanguineus..... HOUSE MOUSE MITE

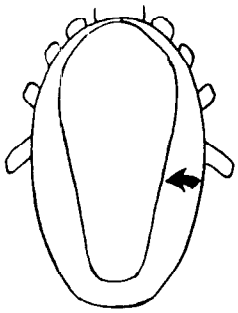


Fig. 5 A

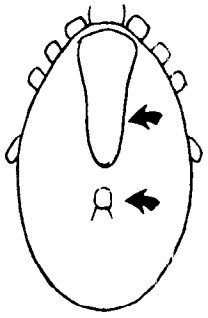


Fig. 5 B

6. Peritreme tube somewhat sinuous and extending anteriorly to a point opposite coxa 2 (Fig. 6 A). Dermanyssus gallinae..... CHICKEN MITE

Peritreme tube short, extending forward for a distance less than half the diameter of coxa 3 (Fig. 6 B). Dermanyssus americanus..... AMERICAN BIRD MITE

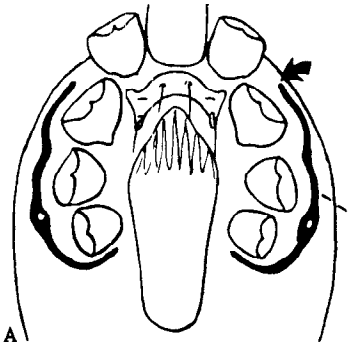


Fig. 6 A

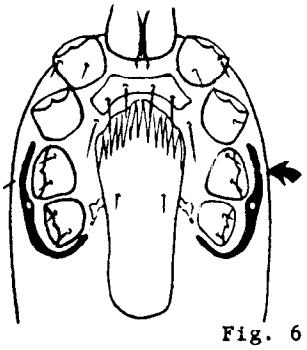


Fig. 6 B

7. Dorsal plate not covering entire dorsal surface of mite; genito-ventral plate typically narrowed posteriorly behind 4th coxae; chelae on chelicerae without teeth or setae (Fig. 7 A). Genus Ornithonyssus 8

   Dorsal plate almost covering entire dorsal surface of mite; genito-ventral plate typically expanded posterior to 4th coxae; one or both chelae of chelicerae with teeth and a seta (Fig. 7 B). Family Laelaptidae 10

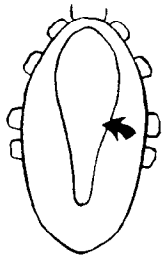
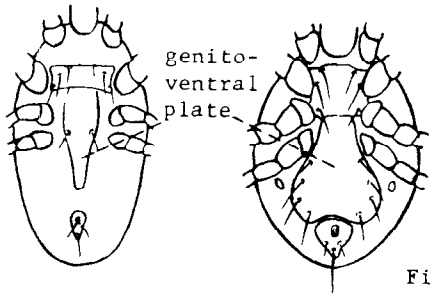


Fig. 7 A



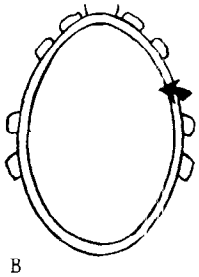


Fig. 7 B

8. Sternal plate with anterior and middle pairs of sternal setae on the plate, posterior pair usually just off the plate (Fig. 8 A). On Birds... Ornithonyssus sylviarum ..... NORTHERN FOWL MITE

   Sternal plate with the usual three pairs of setae on the plate (Fig. 8 B) 9

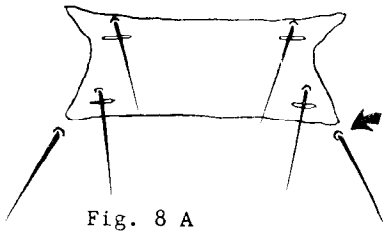


Fig. 8 A

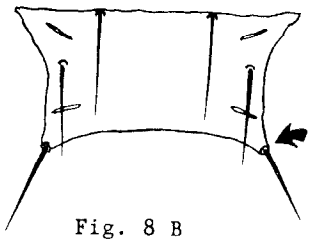


Fig. 8 B

9. Dorsal plate narrowed posteriorly; setae in middle dorsal row of plate longer than the distance between their bases (Fig. 9 A). Normally on mammals or man ..... Ornithonyssus bacoti ..... TROPICAL RAT MITE

   Dorsal plate broader posteriorly; setae in middle dorsal row of plate much shorter than the distance between their bases (Fig. 9 B). Normally on birds ..... Ornithonyssus bursa ..... TROPICAL BIRD MITE

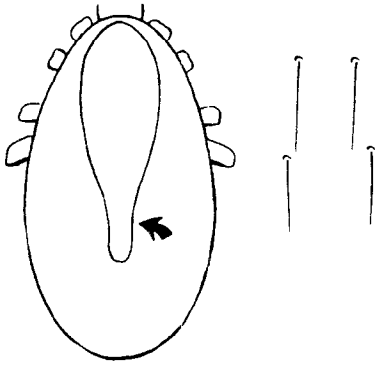


Fig. 9 A

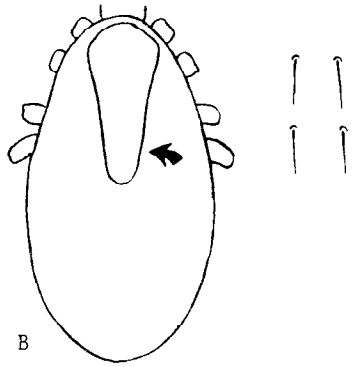


Fig. 9 B

10. Genito-ventral plate with many fine setae; anal plate transverse, wider than long (Fig. 10 A). On domestic rats and a wide variety of wild mammals..... Eulaelaps stabularis

Genito-ventral plate with one to four pairs of setae; anal plate longer than wide (Fig. 10 B).....11

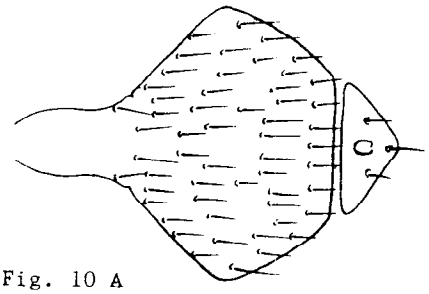


Fig. 10 A

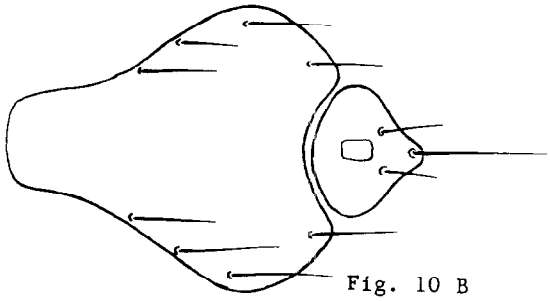


Fig. 10 B

11. Genito-ventral plate with only a single pair of setae (Fig. 11 A). On domestic rats and mice and a wide variety of mammals and birds.....
Haemolaelaps glasgowi.....COMMON RODENT MITE

Genito-ventral plate with four pairs of setae (Fig. 11 B). Normally on domestic rats..12

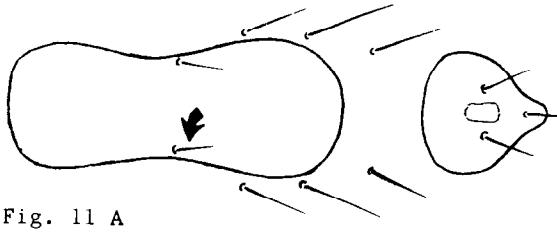


Fig. 11 A

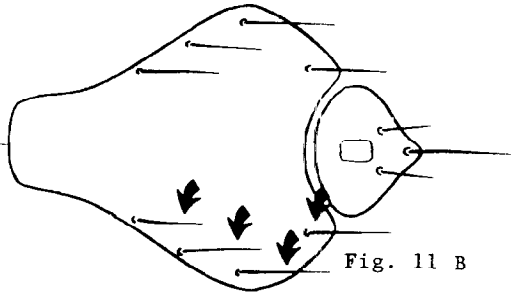


Fig. 11 B

12. Anal plate contiguous with the genito-ventral plate, anterior margin rounded and fitting into a strong concavity in genito-vental plate; larger species averaging 1-2 mm. long. (Fig. 12 A). Echinolaelaps echidninus.....SPINY RAT MITE

Anal plate somewhat separated from genito-ventral plat, anterior margin almost straight with definite anterior-lateral corners; small species averaging 0.5-1 mm long (Fig. 12 B). Laelaps nuttalli.....DOMESTIC RAT MITE

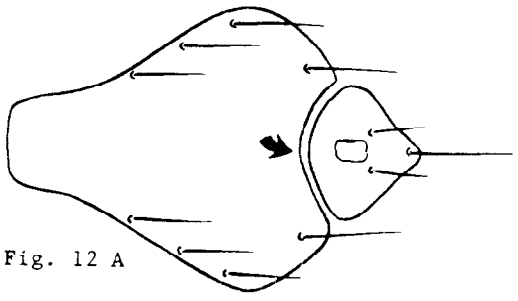


Fig. 12 A

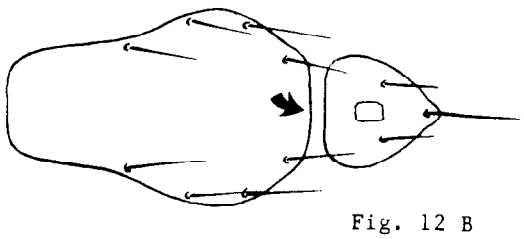


Fig. 12 B

13. First pair of legs very long, much longer than other three pairs; anterior margin of body with four distinct flattened scales and somewhat flattened scales on other dorsal surfaces of body (Fig. 13 A). Plant feeders which invade buildings but do not bite man. Bryobia praetiosa ..... CLOVER MITE

First pair of legs not markedly longer than the other three pairs of legs; no flattened scales on body (Fig. 13 B) 14

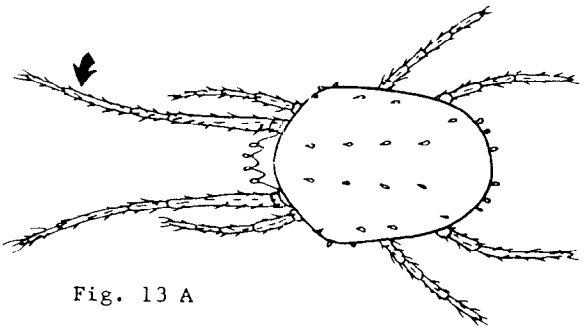


Fig. 13 A

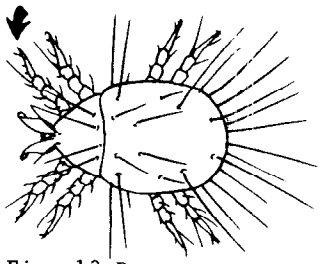


Fig. 13 B

14. Surface of body without fine parallel lines or folds; tarsi without stalked suckers (Fig. 14 A). Adults never true parasites (Cheese or Flour mites) 15

Surface of body with fine parallel lines or folds; tarsi often provided with stalked suckers (Fig. 14 B). Scabies or mange mites parasitic in all stages, chiefly on vertebrates 16

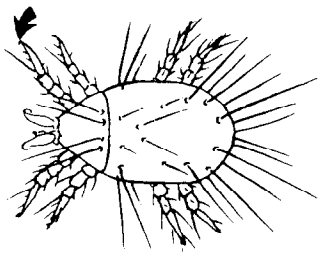


Fig. 14 A

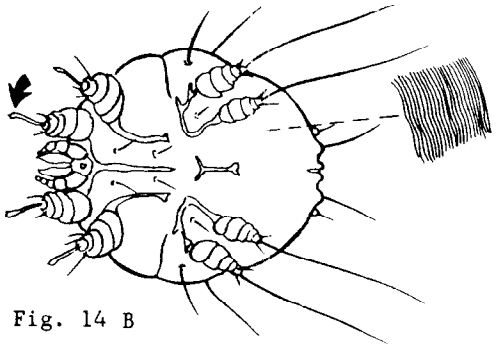


Fig. 14 B

15. Tarsi tapering markedly to tip (Fig. 15 A) ..... Glycyphagus prunorum

Tarsi not tapering markedly to tip (Fig. 15 B). Many cheese and flour mites which are difficult to separate except with very specialized literature and a reference collection. ..... Genus Tyrophagus, Genus Caloglyphus, Etc.

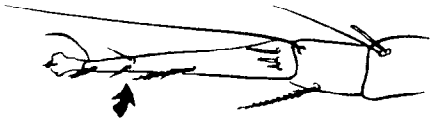


Fig. 15 A

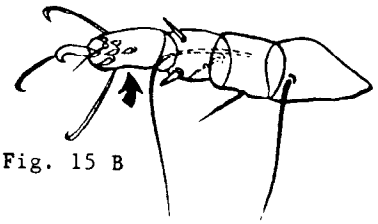


Fig. 15 B

16. Body elongate, somewhat cigar-shaped and prolonged behind; the abdomen somewhat ringed; legs very short, apparently three-segmented; tiny species less than 1 mm. (Fig. 16 A). In hair follicles or sebaceous glands of mammals..... Demodex folliculorum.....PORE OR FOLLICLE MITE

Body not prolonged behind and cigar-shaped (Fig. 16 B). Occasionally female grain itch somewhat balloon-shaped; larger species not found in hair follicle or sebaceous glands of mammals..... 17

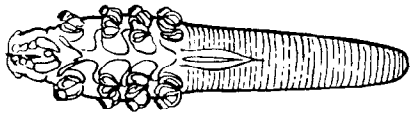


Fig. 16 A

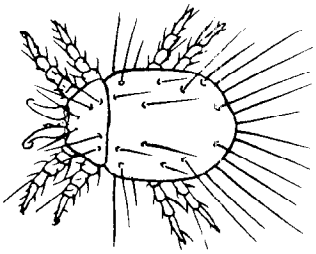


Fig. 16 B

17. A club-shaped or clavate hair between bases of first and second pairs of legs, body divided into cephalothorax and abdomen, the latter often enormously enlarged (Fig. 17 A) Pyemotes ventricosus formerly Pediculoides ventricosus.....STRAW ITCH MITE

Setae on cephalothorax normal, no club-shaped or clavate hair between bases of first and second pairs of legs; no distinct division into cephalothorax and abdomen (Fig. 17 B) 18

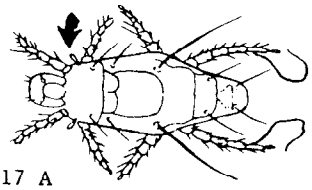


Fig. 17 A

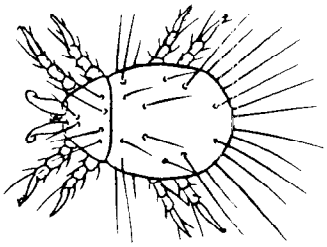


Fig. 17 B

18. Legs short and stubby (Fig. 18 A).....20

Legs longer and more slender (Fig. 18 B).....19

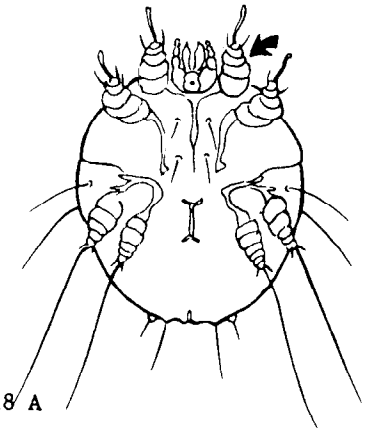


Fig. 18 A

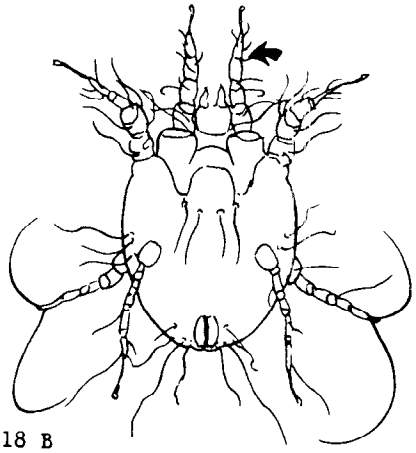


Fig. 18 B

19. Suckers of tarsi with segmented pedicels (Fig. 19 A). Non-burrowing itch mites on mammals in the genus Psoroptes, a common species causing scabs and crusts in the ears of rabbits is the Psoroptes cuniculi..... RABBIT EAR MITE

Suckers of tarsi without segmented pedicels (Fig. 19 B)..... ..... Dermatophagoides scheremetewskyi

Fig. 19 A

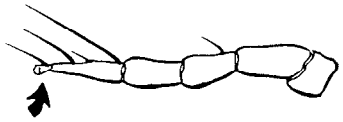


Fig. 19 B

20. Anal opening on the dorsal surface of the body; dorsal surface of the body with only short, sharp setae (Fig. 20 A).....Notoedres

Anal opening at tip of body or slightly on ventral side; dorsal surface of body with pointed scales and blunt stout spines (Fig. 20 B). Sarcoptes scabiei..... ..... SCABIES OR MANGE MITE

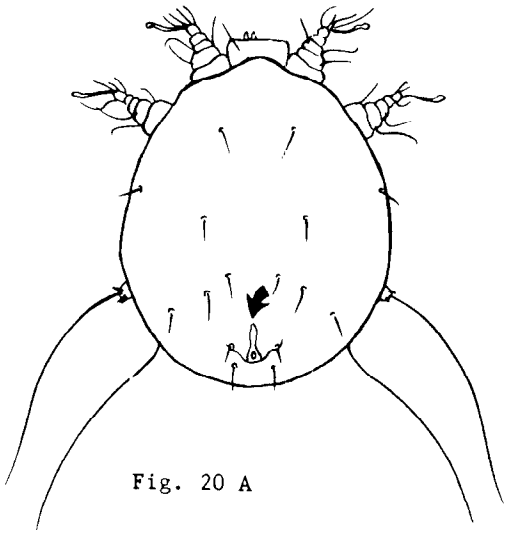


Fig. 20 A

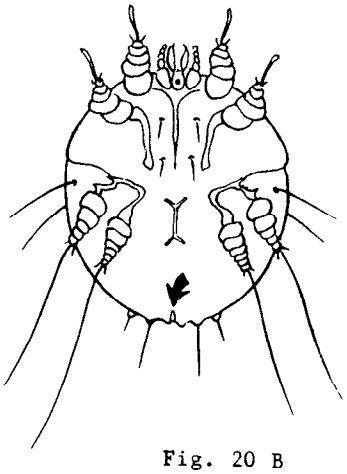


Fig. 20 B

21. Capitulum at anterior end of body, visible from above and below; scutum or dorsal shield present, short in female, long in male (Fig. 21 A & B). Family Ixodidae..HARD TICKS...22

Capitulum on under side of body, hidden by body when seen from above though palpi may project anteriorly; scutum absent (Fig. 21 C & D). Family Argasidae.....SOFT TICKS....31

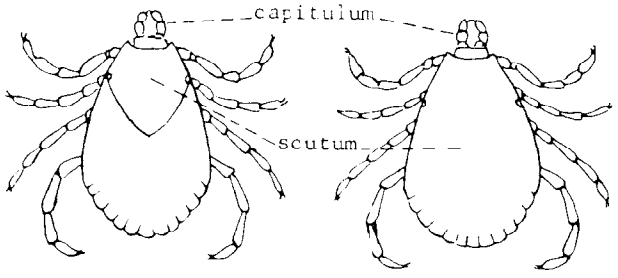


Fig. 21 A

Fig. 21 B

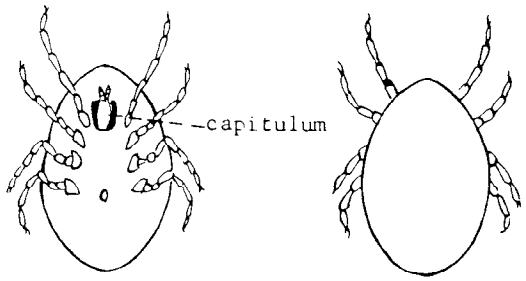


Fig. 21 C

Fig. 21 D

FAMILY IXODIDAE - HARD TICKS

22. Ornate ticks, with some white markings on dorsal shield (Fig. 22 A).....23

Inornate ticks, without white markings on dorsal shield (Fig. 22 B).....28

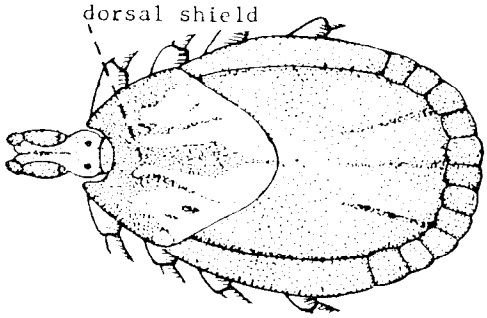


Fig. 2 A

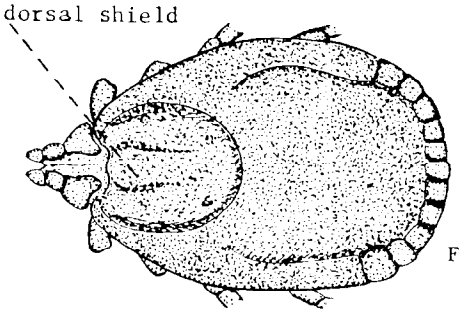


Fig. 2 B

23. Palpi long, much longer than basis capituli; second segment of palpus about twice as long as wide (Fig. 23A). Genus Amblyomma.....24

Palpi short, about as long as basis capituli; second segment of palpus about as long as wide (Fig. 23 B). Genus Dermacentor.....25

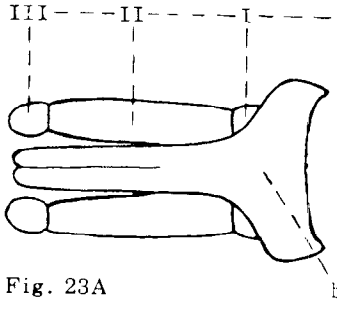


Fig. 23A

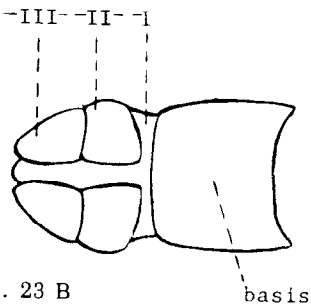


Fig. 23 B

24. Next to last segment of second, third, and fourth pairs of legs without paired terminal spurs; female with a distinct pale marking near posterior end of dorsal shield (Fig. 24 A). Amblyomma americanum.....LONE STAR TICK

Next to last segment of second, third, and fourth pairs of legs with long, paired terminal spurs; female with more diffuse markings on dorsal shield (Fig. 24 B)..... Amblyomma maculatum.....GULF COAST TICK

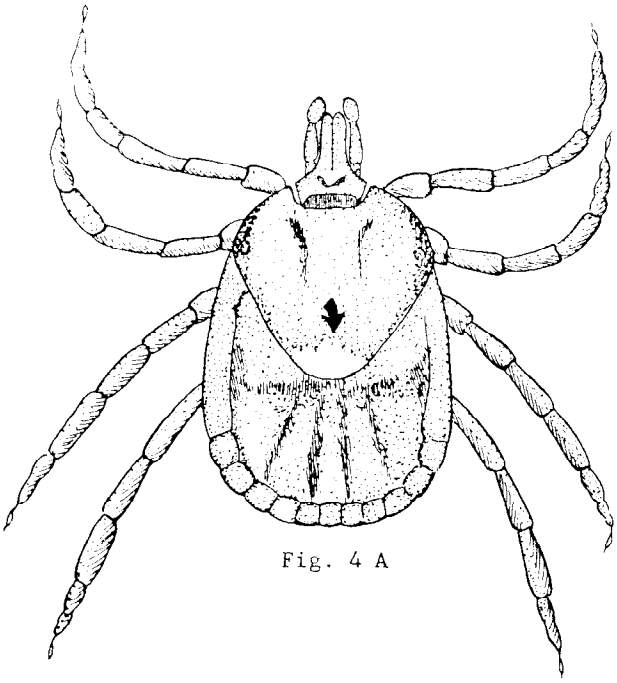


Fig. 4 A

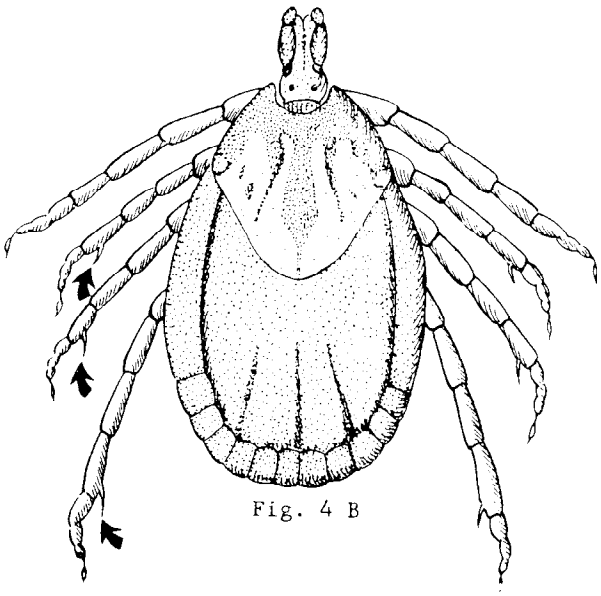


Fig. 4 B

25. Spiracular plate without dorsal prolongation (Fig. 25 A). Dermacentor albipictus..... .....WINTER TICK

Spiracular plate with dorsal prolongation (Fig. 25 B).....26

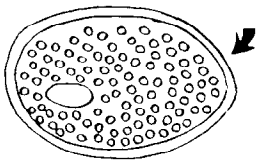


Fig. 25 A

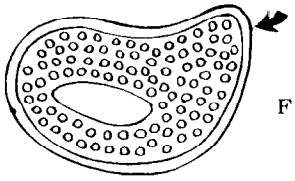


Fig. 25 B

26. Basis capituli with long cornua (Fig. 26 A). Dermacentor occidentalis.PACIFIC COAST TICK

Basis capituli with short cornua (Fig. 26 B)..... 27

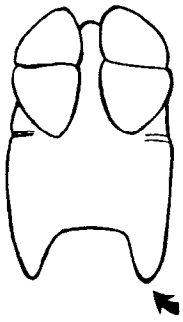


Fig. 26 A

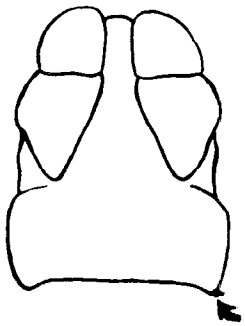


Fig. 26 B

— Goblets of spiracular plate large and less numerous; Rocky Mountain species. (Fig.27 A) Dermacentor andersoni.....ROCKY MOUNTAIN WOOD TICK

Goblets of spiracular plate very small and numerous; east of the Rocky Mountains and on the Pacific coast. (Fig. 27 B). Dermacentor variabilis.....AMERICAN DOG TICK

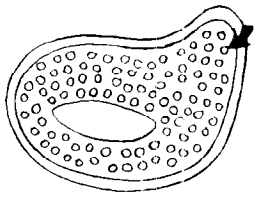


Fig.27 A

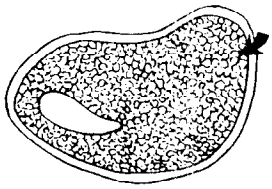


Fig.27 B

28. Sides of basis capituli laterally produced; distinctly angulate; eyes present on sides of scutum (Fig.28 A & B).....29

Sides of basis capituli not laterally produced; more or less parallel (Fig.28 C); eyes absent.....30

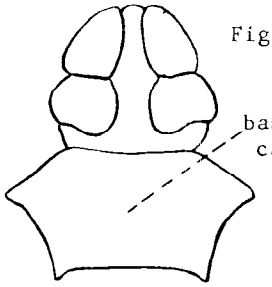


Fig. 28 A

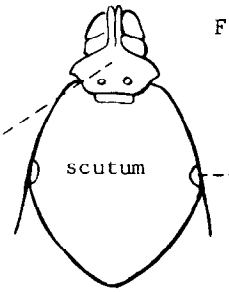


Fig. 28 B

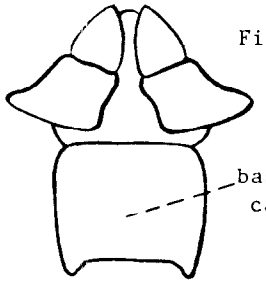


Fig. 28 C

29. Fore coxa deeply cleft; festoons present; easily seen in unengorged specimens; anal groove distinct in unengorged specimens (Fig.29 A). (principally on dogs or in houses) Rhipicephalus sanguineus.....BROWN DOG TICK

Fore coxa not deeply cleft; festoons absent; anal groove indistinct (Fig. 29 B). (On cattle and deer). Boophilus annulatus.....CATTLE TICK

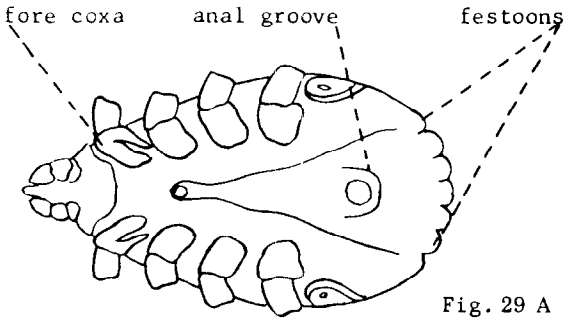


Fig. 29 A

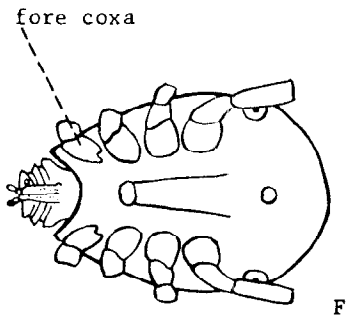


Fig. 29 B

30. Second segment of palpus laterally produced; anal groove behind anus, not attaining posterior margins of body (Fig. 30 A & B). Haemaphysalis leporispalustris.....RABBIT TICK

Second segment of palpus not laterally produced; anal groove extending as an inverted U from in front of anus to posterior margins of body (Fig. 30 C).....Genus Ixodes

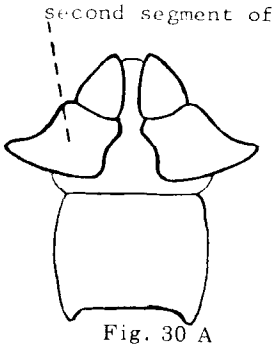


Fig. 30 A

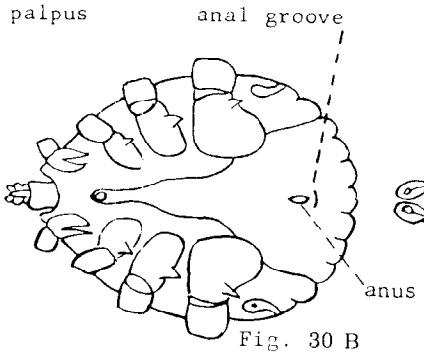


Fig. 30 B

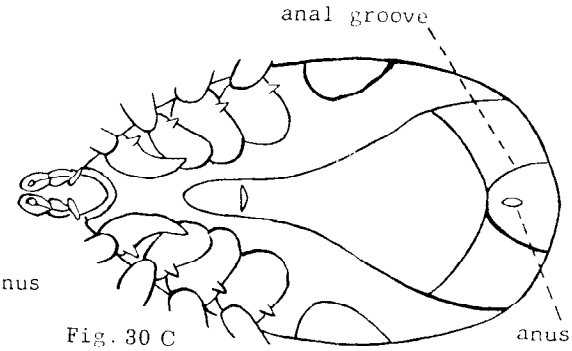


Fig. 30 C

FAMILY ARGASIDAE - SOFT TICKS

31. Margin of body with a definite sutural line separating dorsal and ventral surfaces; dorsal surface with conspicuous "discs" arranged somewhat in radiating lines (Fig. 31 A) Argas persicus.....FOWL TICK

Margin of body lacking definite sutural line, thick and rounded (Fig. 31 B).....32

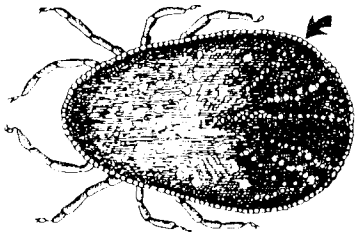


Fig. 31 A

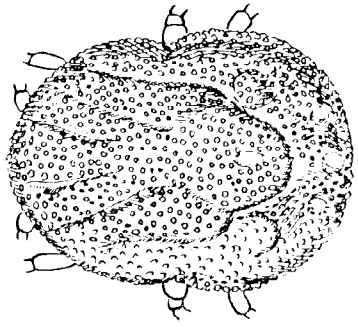


Fig 31 B

32. Hypostome with well-developed teeth (Fig. 32 A); integument not spinose..... Genus Ornithodoros.....33

Hypostome of adult vestigial or without effective teeth; integument of nymph (stage usually seen) spinose (Fig. 32 B). Usually on cattle and horses..... Otobius megnini.....SPINOSE EAR TICK

Fig. 32 A

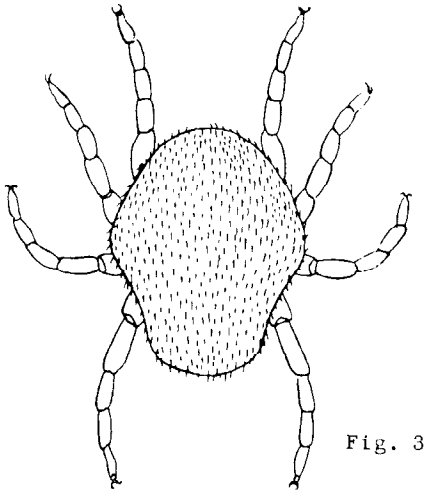


Fig. 32 B

33. Strong dorsal humps absent on all tarsi (Fig. 33 A).....34

Strong dorsal humps present on tarsi of first, second and third legs (Fig. 33 B).....35

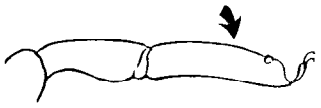


Fig. 33

Fig. 33 B

34. Cheeks absent (Fig. 34 A). Ornithodoros hermsi.....HERMS' RELAPSING FEVER TICK

Cheeks present (Fig. 34 B).....Ornithodoros talaje

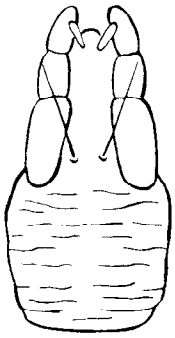


Fig. 34 A

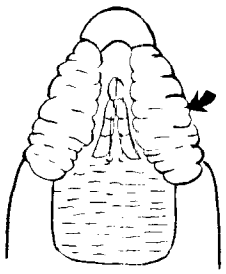


Fig. 34 B

35. Eyes present on sides of body above second and third coxae (Fig. 35 A); tarsus of fourth leg with a prominent, pointed subterminal spur (Fig. 35 B).....
Ornithodoros coriaceus.....PAJAROELLO TICK

Eyes absent; tarsus of fourth leg without such subterminal spur (Fig. 35 C).....15

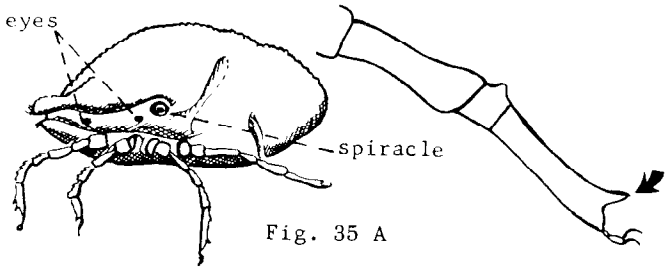


Fig. 35 A

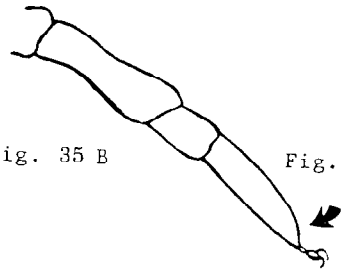


Fig. 35 B

Fig. 35 C

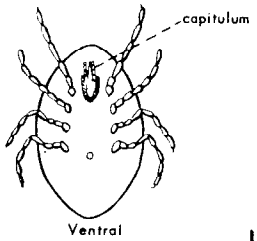
36. Mammillae large, relatively few and not crowded; in mid-dorsal region about 10 per linear mm.; hypostome over 1/2 mm. long. Southeastern United States and Mexico north to Kansas and Florida. Ornithodoros turicata.....RELAPSING FEVER TICK

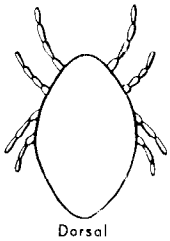
Mammillae small, crowded, and numerous; in mid-dorsal region about 18 per linear mm.; hypostome less than 1/2 mm. long. Pacific coast and Rocky Mountain states.....
Ornithodoros parkeri.....PARKER'S RELAPSING FEVER TICK

TICKS: KEY TO GENERA IN UNITED STATES

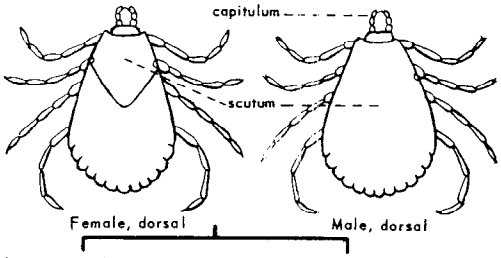
Harry D. Pratt

Capitulum inferior; scutum absent
FAMILY ARGASIDAE – SOFT TICKS



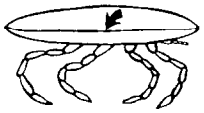


Capitulum anterior; scutum present
FAMILY IXODIDAE – HARD TICKS

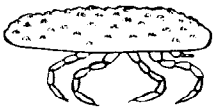


Margin of body with definite sutural line.

Margin of body thick, rounded, without definite sutural line.

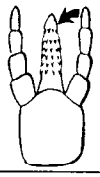


ARGAS



Hypostome with well developed teeth, integument mamillated.

Hypostome vestigial or without effective teeth. Integument tuberculated or granulated.



ORNITHODOROS

Integument of adult granular, of nymph (stage usually seen) very spinose. Hypostome of adult vestigial. Usually on cattle, horses, or rabbits.

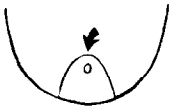
OTOBIUS

Integument of adult and nymph tuberculated. Hypostome of adult scoop-like. Associated with bats.

ANTRICOLA

Anal groove either behind anus, indistinct, or absent.

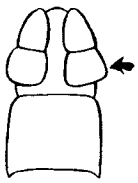
Anal groove in front of anus.

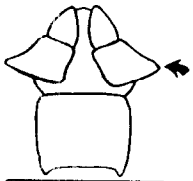


IXODES

Second segment of palpi not laterally produced.

Second segment of palpi laterally produced.

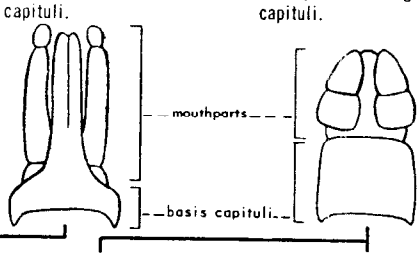




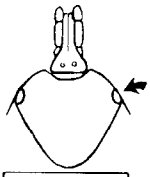
HAEMAPHYSALIS

Mouthparts much longer than basis capituli.

Mouthparts as long as basis capituli.

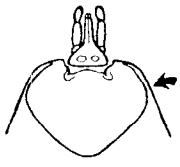


Scutum with eyes



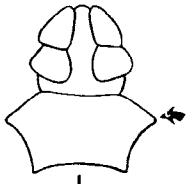
AMBLYOMMA

Scutum without eyes

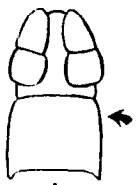


APONOMMA

Basis capituli laterally produced.



Basis capituli not laterally produced.



Palpi ridged dorsally and laterally.

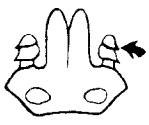
Festoons absent.

Palpi not ridged.

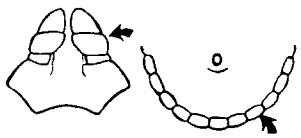
Festoons present.

Festoons eleven

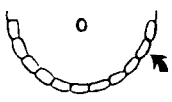
Festoons seven



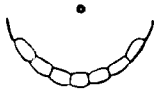
BOOPHILUS



RHIPICEPHALUS



DERMACENTOR



ANOCENTOR (OTOCENTOR)

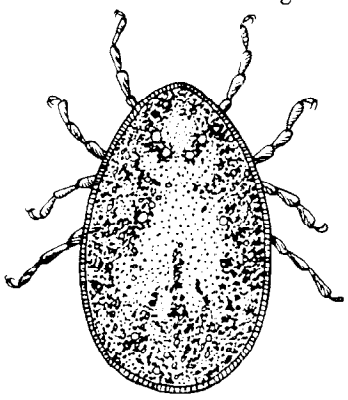
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE, Communicable Disease Center, Training Branch, Atlanta, Georgia – 1961

TICKS AND MITES: KEY TO SPECIES COMMONLY INFESTING PIGEONS

Harold George Scott & Chester J. Stojanovich

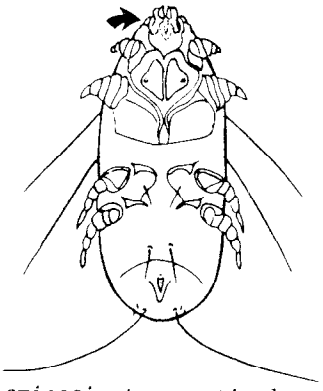
mouthparts ventral

adult 6-9 mm. long



Argas reflexus
PIGEON TICK

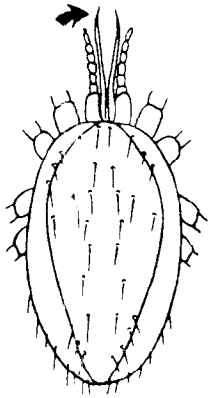
adult 0.25 mm. long



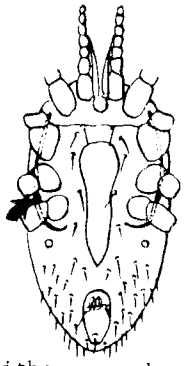
Laminosioptes cysticola
FOWL CYST MITE

mouthparts anterior

under 0.6 mm. long



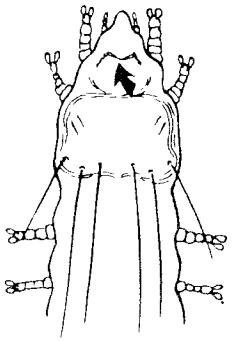
with lateral spiracles



Ornithonyssus bursa
TROPICAL FOWL MITE or
Dermanyssus gallinae
CHICKEN MITE

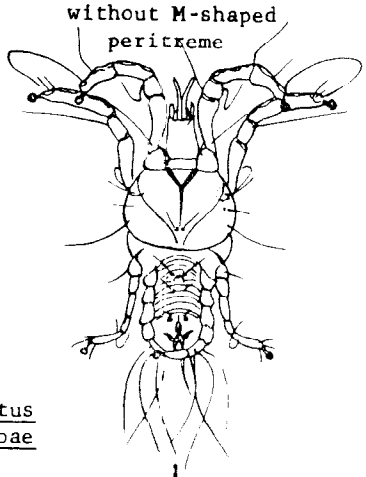
without lateral spiracles

with M-shaped peritreme

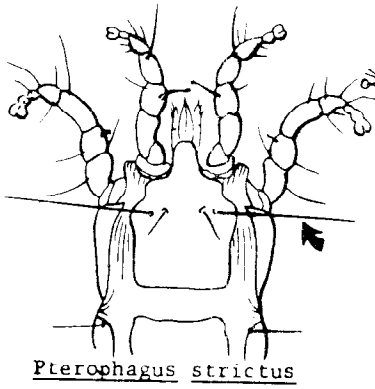


Syringophilus bipectinatus
or Syringophilus columbae
PIGEON QUILL MITES

without M-shaped peritreme



with horizontal setae

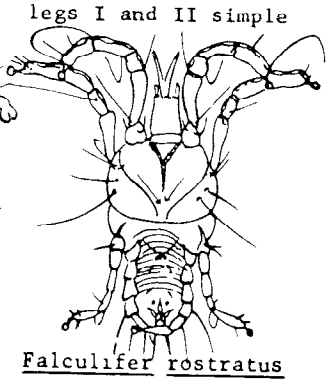


Pterophagus strictus

BODY-FEATHER MITE

without horizontal setae

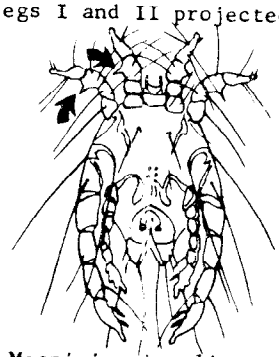
legs I and II simple



Falculifer rostratus

WING-FEATHER MITE

legs I and II projected



Megninia gingylimerra
or Megninia cubitalis
CONTOUR-FEATHER MITES

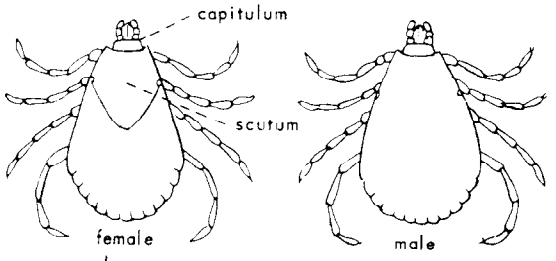
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE, Communicable Disease Center, Training Branch, Atlanta, Georgia – 1963

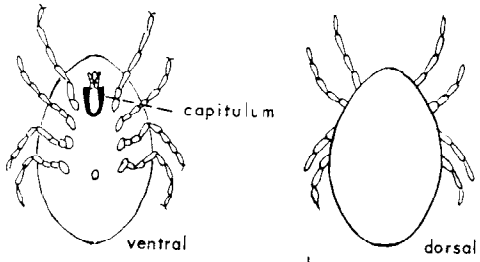
TICKS: PICTORIAL KEY TO SOME COMMON SPECIES

Harry D. Pratt

capitulum visible from above, scutum present, family Ixodidae, HARD TICKS

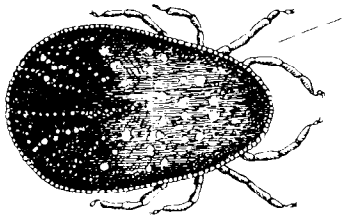
capitulum not visible from above, scutum absent, family Argasidae. SOFT TICKS

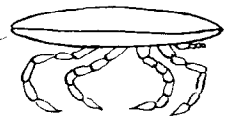




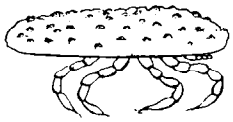
sutural line present

sutural line absent





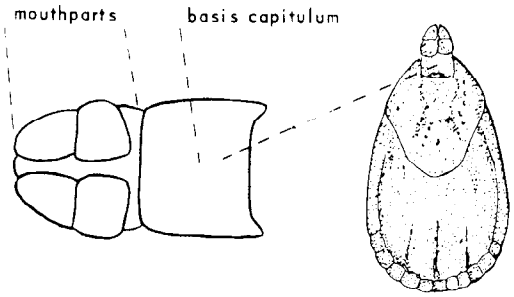
Argas persicus
FOWL TICK

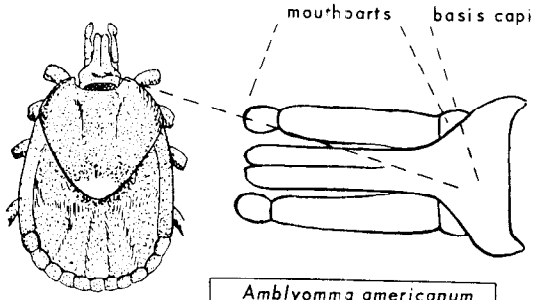


Ornithodoros
RELAPSING FEVER TICK

mouthparts short, about as long as basis capituli

mouthparts much longer than basis capituli
white spot on tip of scutum of female

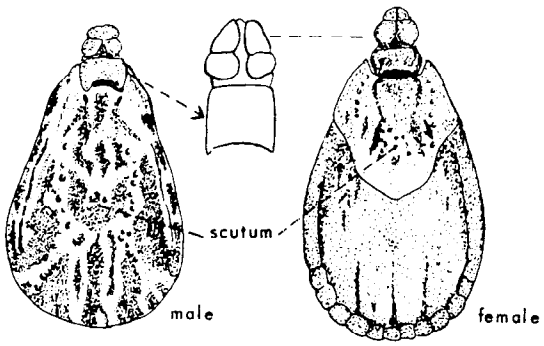




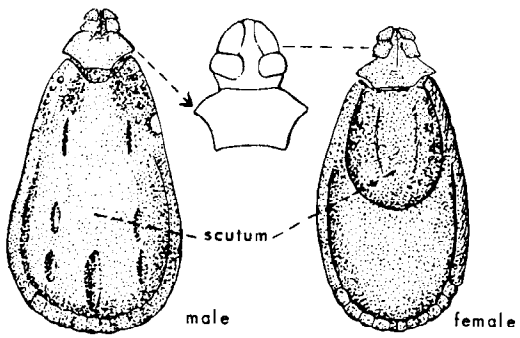
Amblyomma americanum
LONE STAR TICK

scutum with white markings; basis capituli with parallel sides

scutum without white markings; basis capituli produced laterally to form an angle



Dermacentor variabilis and *D. andersoni*
AMERICAN DOG TICK AND WOOD TICK

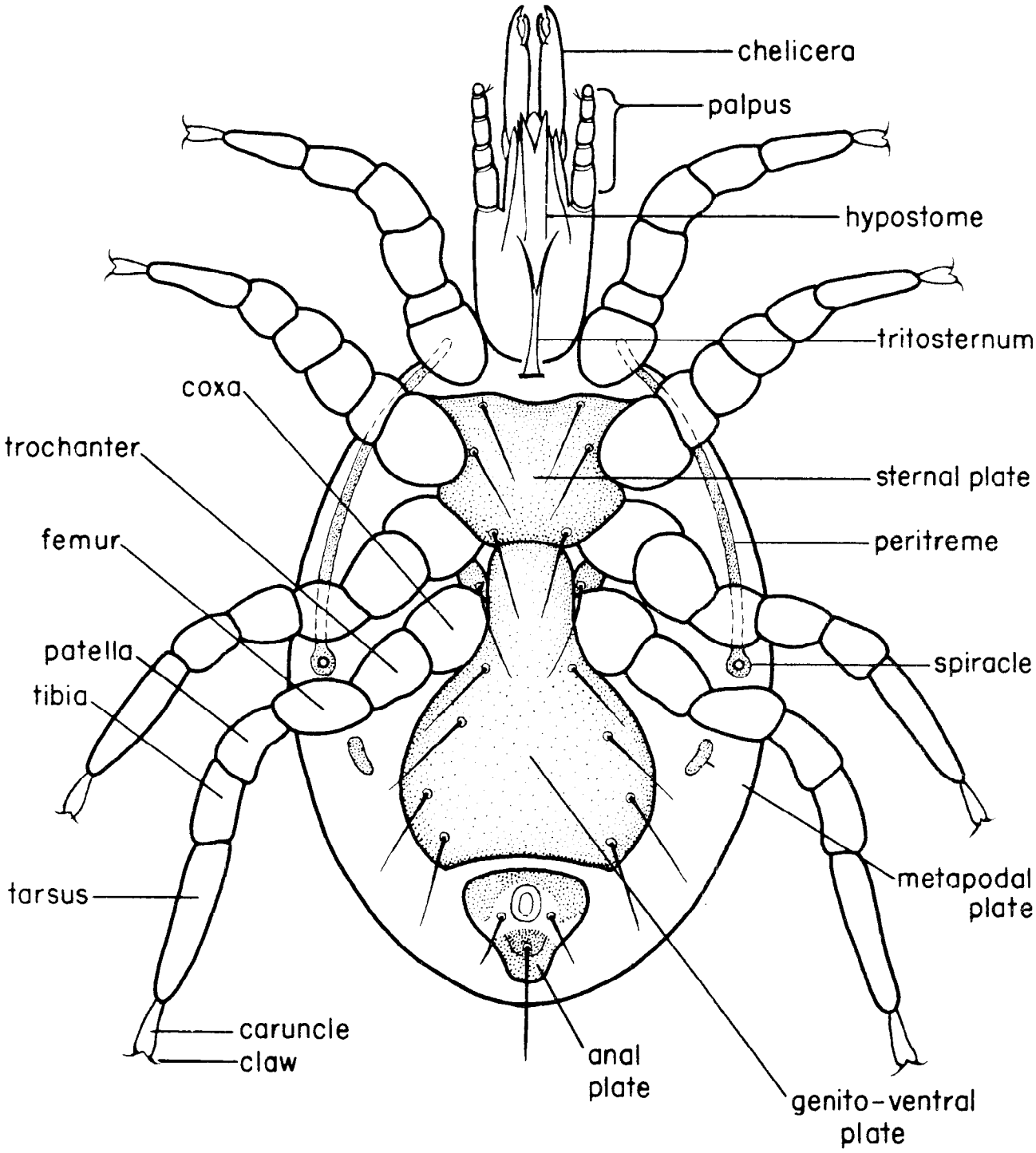


Rhipicephalus sanguineus
BROWN DOG TICK

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE, Communicable Disease Center, Training Branch, Atlanta, Georgia – 1961

MITE DIAGRAM WITH STRUCTURES LABELED

Harry D. Pratt



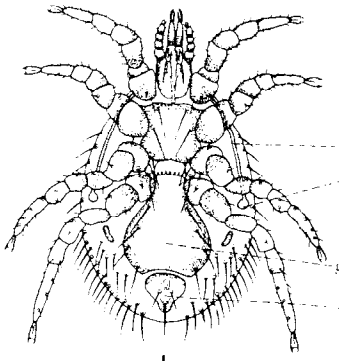
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE, Communicable Disease Center, Training Branch, Atlanta, Georgia

MITES: PICTORIAL KEY TO SOME COMMON SPECIES OF PUBLIC HEALTH IMPORTANCE

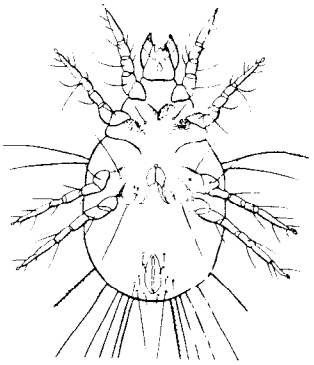
Harold George Scott and Chester J. Stojanovich

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE, Communicable Disease Center
Atlanta, Georgia
1963

with lateral spiracles and peritreme



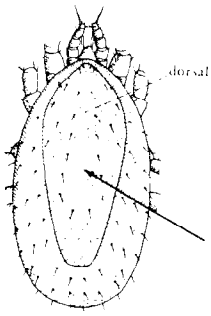
without lateral spiracles or peritreme



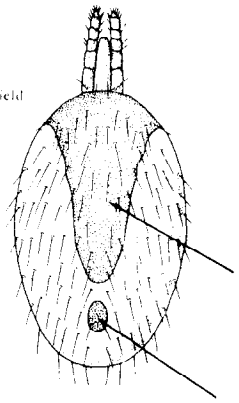
anal opening at rear of anal plate

dorsal shield undivided

dorsal shield divided

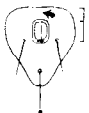


CHICKEN MITE
Dermanyssus gallinae

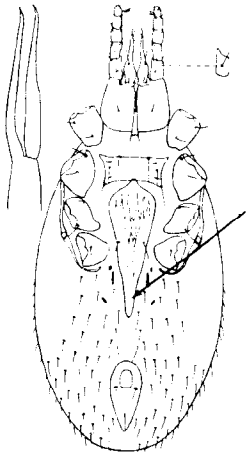


HOUSE MOUSE MITE
Dermanyssus sanguineus

anal opening at front of anal plate

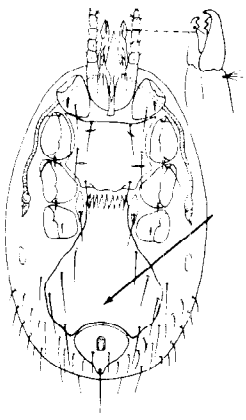


genito-ventral plate narrowed posteriorly



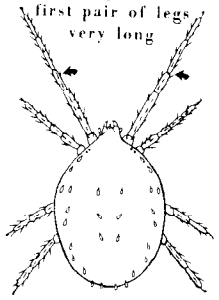
TROPICAL RAT MITE
Ornithonyssus bacoti

genito-ventral plate expanded posteriorly



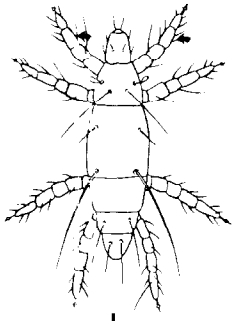
SPINY RAT MITE
Echinolaelaps echidninus

first pair of legs very long

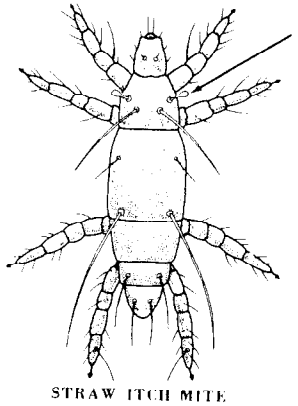


CLOVER MITE
Bryobia praetiosa

first pair of legs short

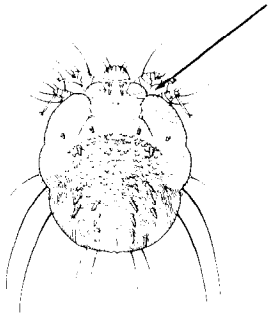


with club between legs I & II

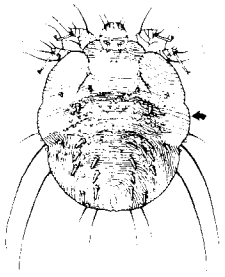


STRAW ITCH MITE
Pyemotes ventricosus

without club between legs I & II



body oval with fine lines

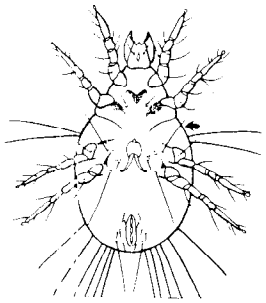


ITCH MITE
Sarcoptes scabiei

body strongly elongate abdomen with fine lines

FOLLICLE MITE
Demodex folliculorum

body somewhat elongate abdomen without lines



A CHEESE MITE
Tyrophagus lintneri

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE, Communicable Disease Center, Training Branch, Atlanta, Georgia – 1963

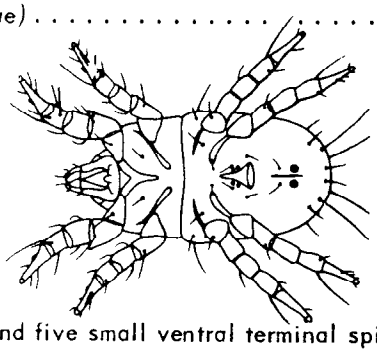
KEY TO SOME SPECIES COMMONLY INFESTING HOUSEHOLDS AND STORED FOOD

Harold George Scott

1. With club-like hair between bases of legs I and II 5
   Without club-like hair between bases of legs I and II 2

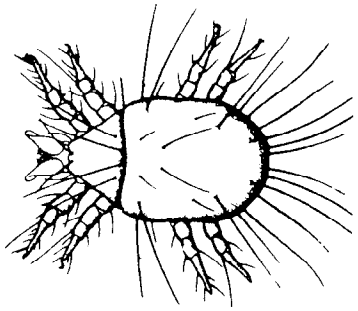
2. Claws, if present, not on stalks (*Glycyphagus domesticus*, formerly *Glyciphagus prunorum*) . . . . . SUGAR MITE
   Claws on stalks 3

3. Internal apical hair (on joint between femur I and tibia I) less than three times as long as external apical hair 4
   Internal apical hair (on joint between femur I and tibia I) more than three times as long as external apical hair (*Acarus farinae*, formerly *Tyroglyphus farinae*) . . . . . HAM MITE



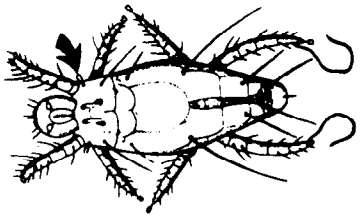
Acarus farinae

4. Tarsus with one stout dorsal and five small ventral terminal spines (*Acarus siro*, formerly *Tyroglyphus siro*) . . . . . GRAIN MITE
   Tarsus with only three small ventral spines (*Tyrophagus castellani*, formerly *Tyroglyphus longior*) . . . . . CHEESE MITE



Tyrophagus castellani

5. Tarsus IV of female ending in claws and a fleshy protuberance; leg IV of male smoothly curved inwards (*Pyemotes ventricosus*, formerly *Pediculoides ventricosus*) . . . . . STRAW ITCH MITE
   Tarsus IV of female ending in two long hairs of unequal length; leg IV of male sharply bent (*Tarsonemus floricolus*) . . . . . FLORICOLUS GRAIN MITE



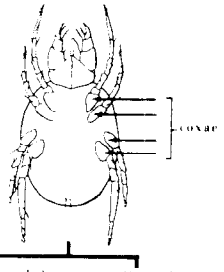
Pyemotes ventricosus

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE, Communicable Disease Center, Training Branch, Atlanta, Georgia – 1963

MITES: PICTORIAL KEY TO ADULT FEMALES COMMONLY FOUND ON DOMESTIC RATS IN SOUTHERN UNITED STATES

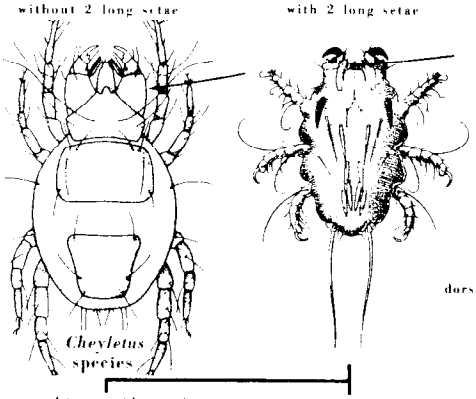
Harry D. Pratt and Chester J. Stojanovich

first and second coxae widely separated from third and fourth coxae



palpi large, with 2 pectinate setae, tip of abdomen without 2 long setae

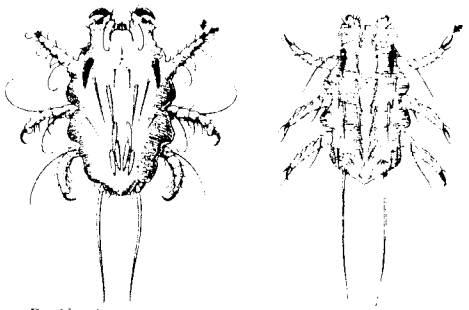
palpi very small, without pectinate setae, tip of abdomen with 2 long setae



Cheyletus species

second tarsus with two claws

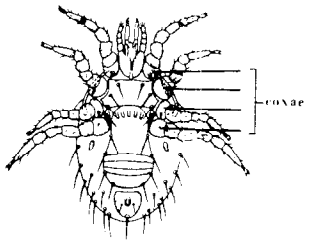
second tarsus with one claw



Radfordia ensifera

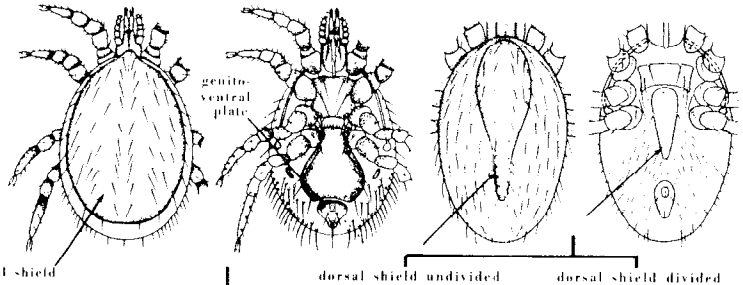
Myobia species

all four coxae set close together



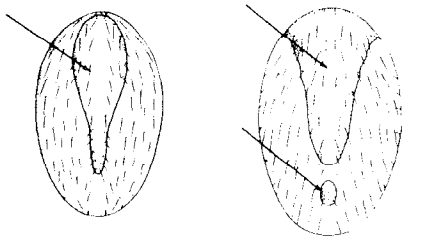
dorsal shield large, genito-ventral plate usually expanded posteriorly

dorsal shield small, genito-ventral plate narrow posteriorly



dorsal shield undivided

dorsal shield divided

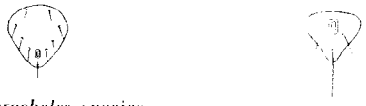


Ornithonyssis bacoti

Dermanyssus sanguineus

anal plate with 7 or more setae

anal plate with 3 setae

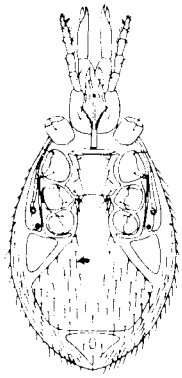


Macrocheles species

genito-ventral plate with many fine setae

genito-ventral plate with one pair of setae

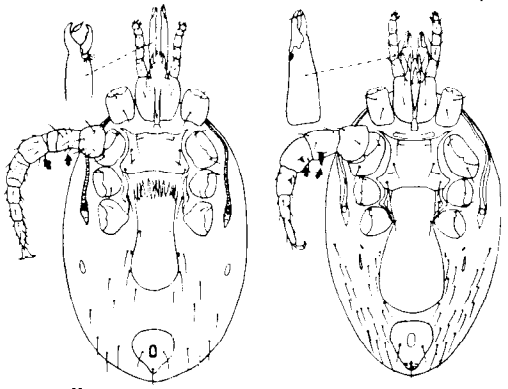
genito-ventral plate with four pairs of setae



Eulaelaps stabularis

femur and tibia of second leg without stout spines

femur and tibia of second leg each with a stout spine

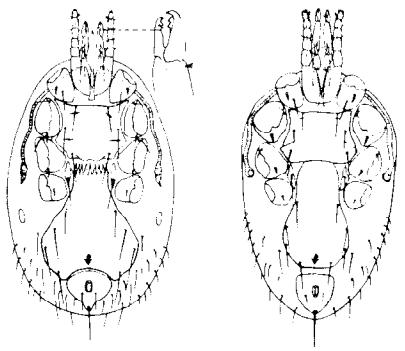


Haemolaelaps glasgowi

Androlaelaps setosus

genito-ventral plate concave posteriorly

genito-ventral plate convex posteriorly



Echinolaelaps echidninus

Laelaps nuttalli

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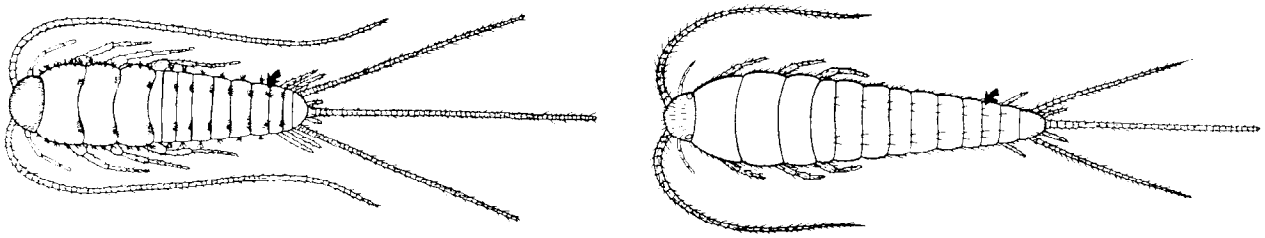
SILVERFISH. PICTORIAL KEY TO DOMESTIC SPECIES

Chester J. Stojanovich and Harold George Scott

setae in tufts
color brown

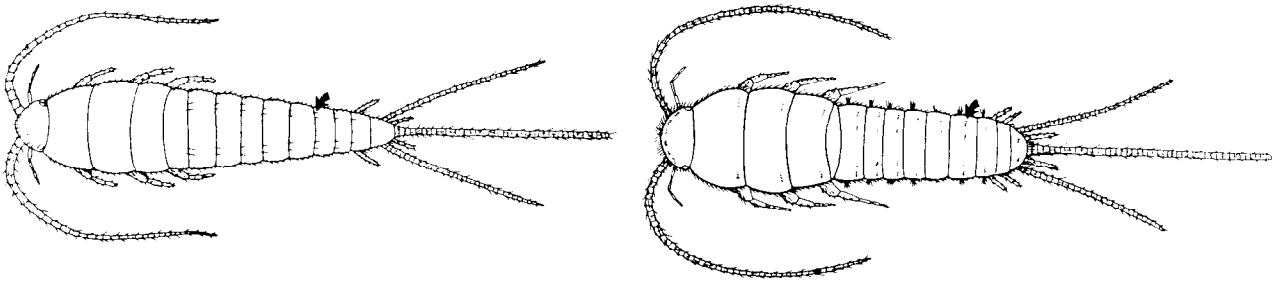
setae single



Thermobia domestica
FIREBRAT

without setal combs
color silver

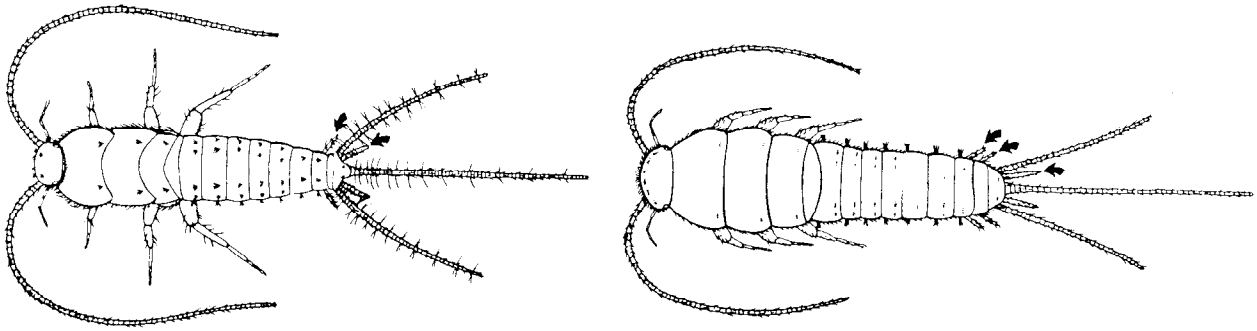
with setal combs



Lepisma saccharina
COMMON SILVERFISH

2 pairs of styli
color gray

3 pairs of styli
color brown



Ctenolepisma urbana
GIANT SILVERFISH
Ctenolepisma longicauda of some authors

Ctenolepisma quadriseriata
FOUR-LINED SILVERFISH

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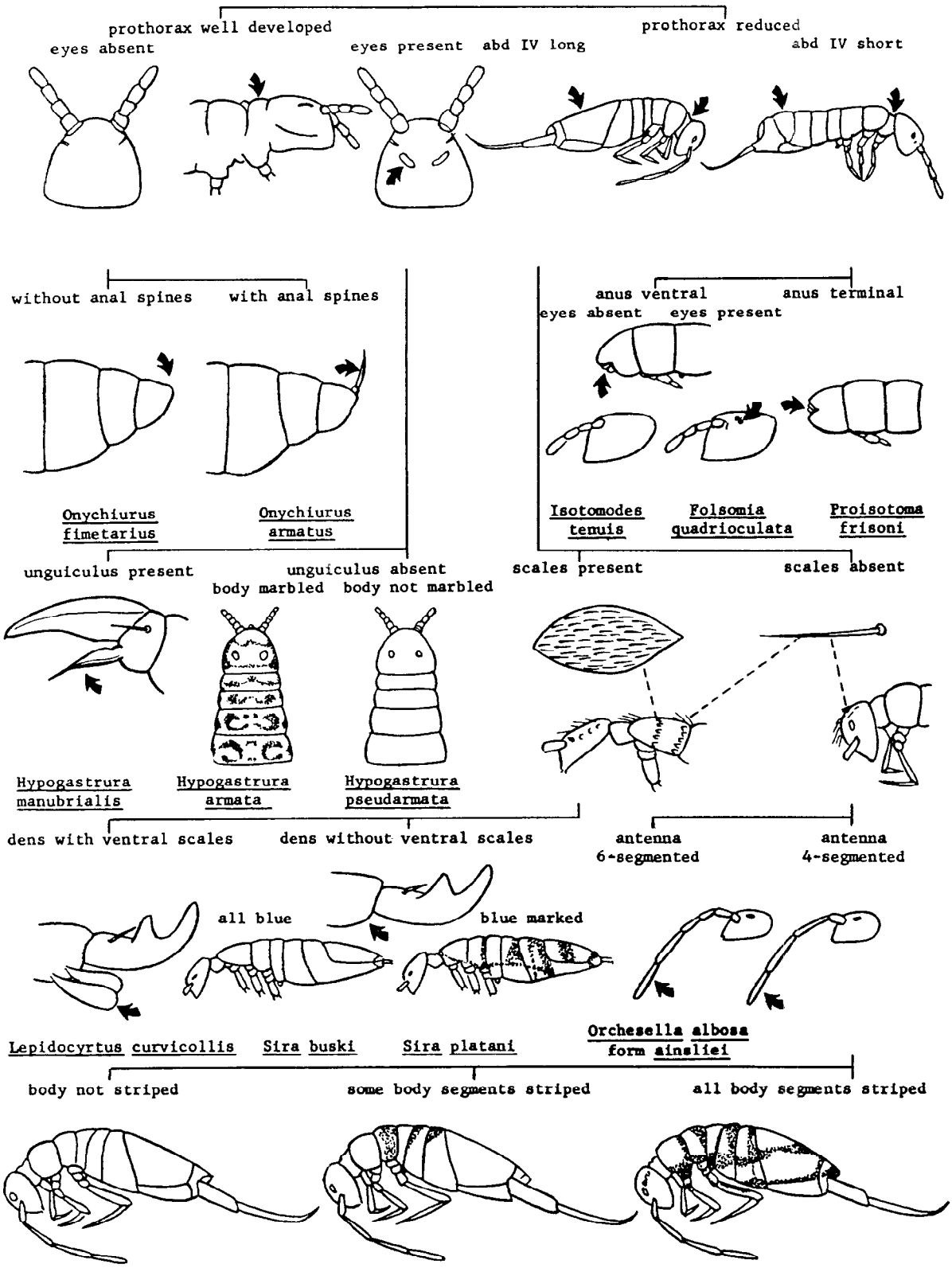
COLLEMBOLA: PICTORIAL KEY TO COMMON DOMESTIC SPECIES

Harold George Scott, and Chester J. Stojanovich



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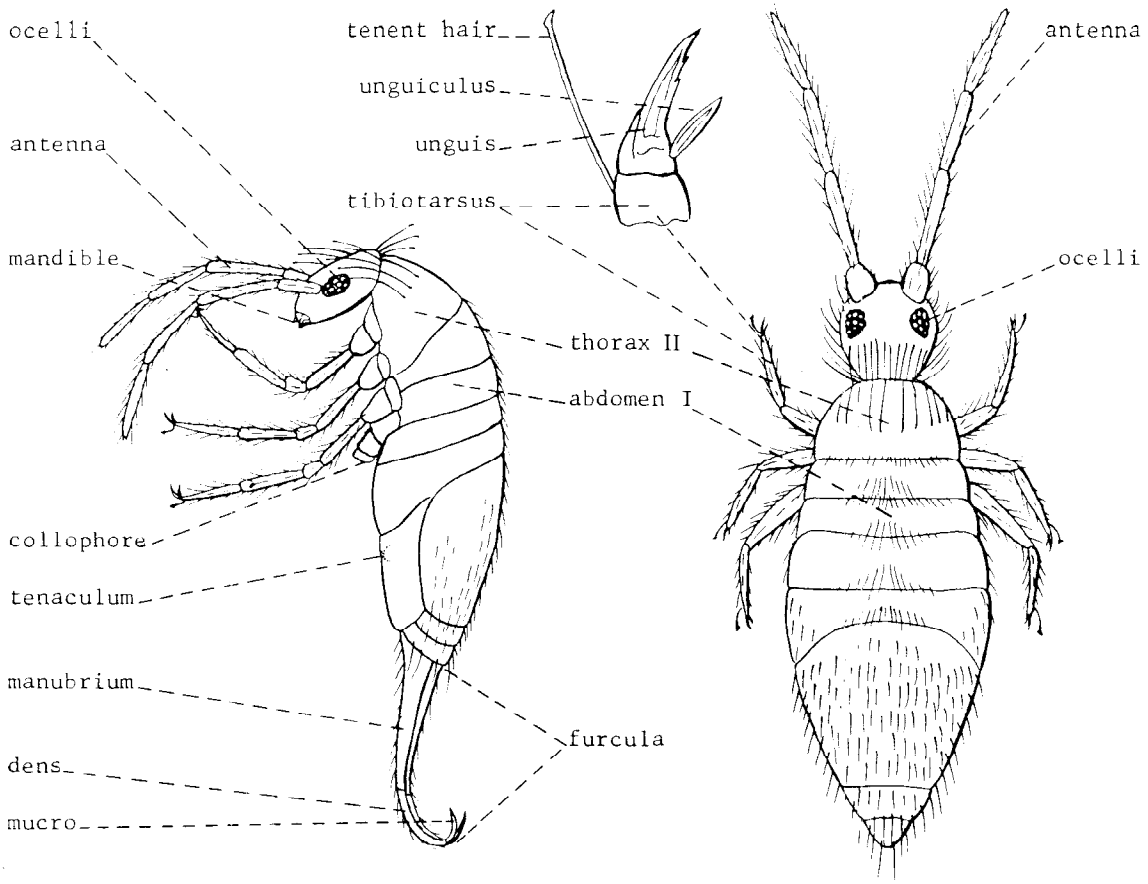
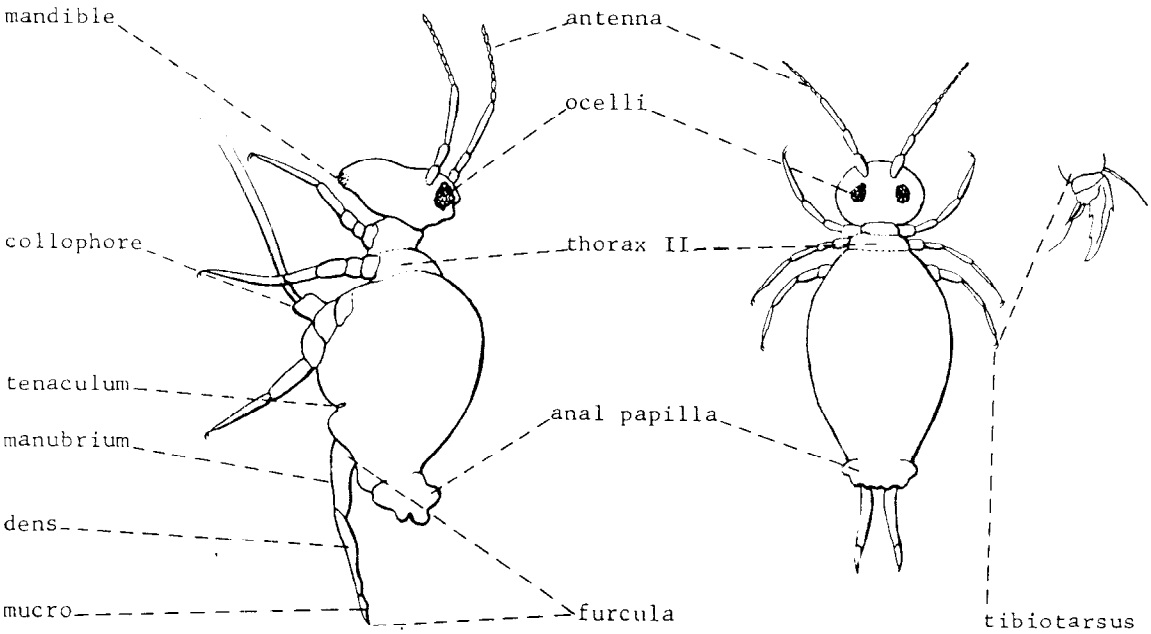
COLLEMBOLA DIAGRAMS

Harold George Scott



SUBORDER ARTHROPLEONA



SUBORDER SYMPHYPLEONA

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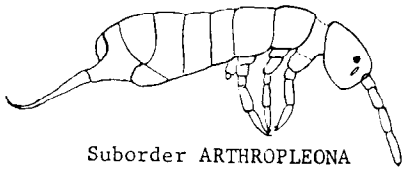
COLLEMBOLA: PICTORIAL KEY TO WORLD SUBFAMILIES

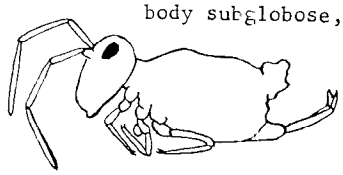
Harold George Scott, Ph.D.

body elongate, segmented



Suborder ARTHROPLEONA

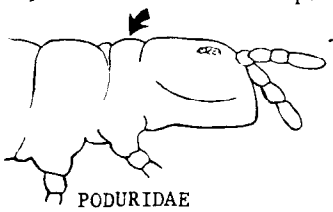
body subglobose, fused



Suborder SYMPHYPLEONA

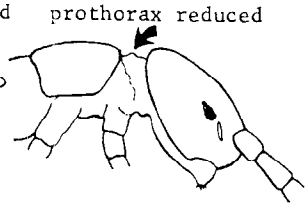
SMINTHURIDAE

prothorax well developed



PODURIDAE

prothorax reduced



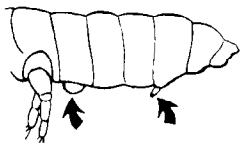
ENTOMOBRYIDAE

antenna longer than head

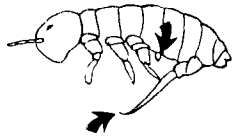
antenna shorter than head

NEELINAE

furcula not reaching beyond collophore

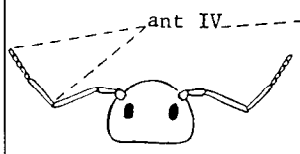


furcula reaching beyond collophore

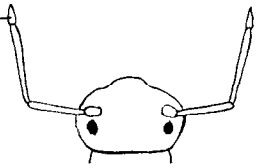


PODURINAE

ant IV subequal to or longer than III

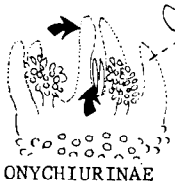


ant IV shorter than III

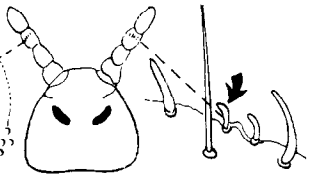


DICYRTOMINAE

ant III sense organ with rods and cones eyes absent

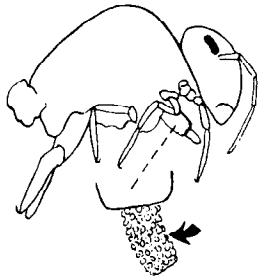


ant III sense organ with rods only eyes usually present



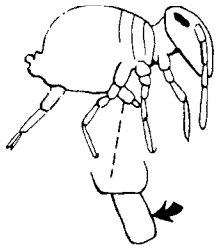
ONYCHIURINAE

thoracic sutures indefinite collophore warty



SMINTHURINAE

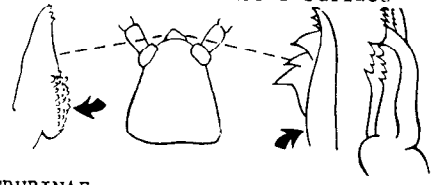
thoracic sutures evident collophore smooth



SMINTHURIDINAE

mandible with molar surface

mandible without molar surface

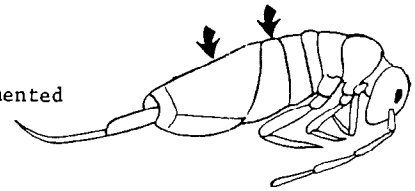


HYPOGASTRURINAE

NEANURINAE

abd IV not twice III (or terminal segments fused)

abd IV at least twice III



ENTOMOBRYINAE

ant III and IV subsegmented

TOMOCERINAE

ant III and IV not subsegmented

ISOTOMINAE

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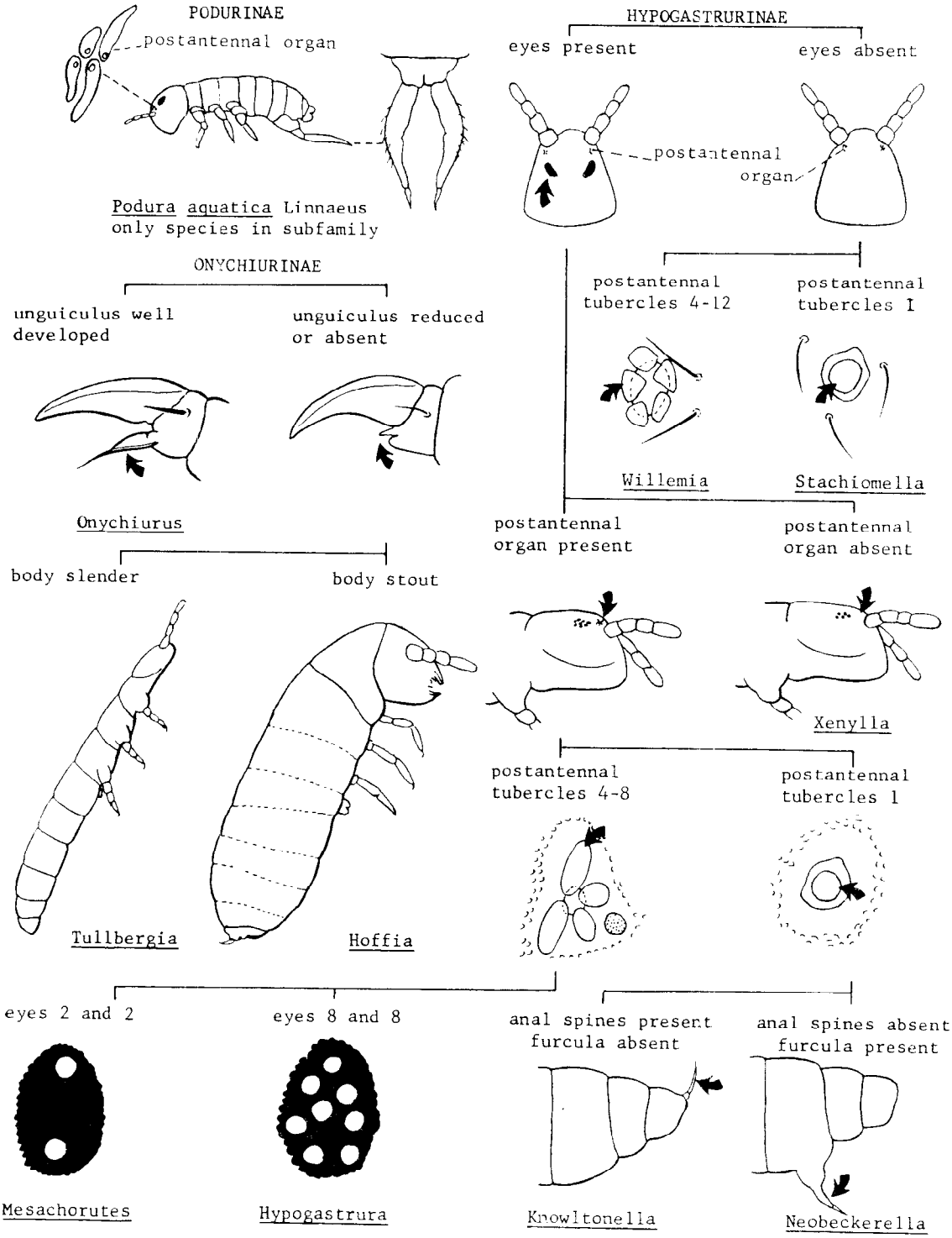
COLLEMBOLA: PICTORIAL KEY TO NEARCTIC GENERA

Harold George Scott, Ph.D.

SUBFAMILIES PODURINAE, HYPOGASTRURINAE, AND ONYCHIURINAE



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