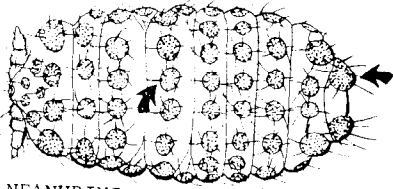


COLLEMBOLA: PICTORIAL KEY TO NEARCTIC GENERA
Harold George Scott, Ph.D.

SUBFAMILY NEANURINAE

abd VI large, bilobed
segmental tubercles present

abd VI small, rounded
segmental tubercles absent



NEANURINI

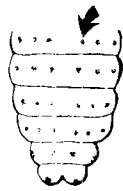
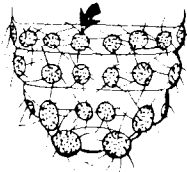
PSEUDACHORUTINI

segmental tubercles large

segmental tubercles small

anal spines present

anal spines absent



Neanura

Neanurodes

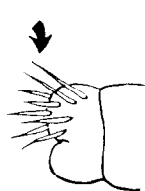
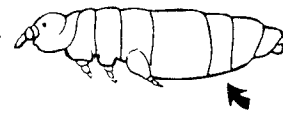
furcula present

furcula absent

anal spines 2

anal spines 3-5

anal spines 8

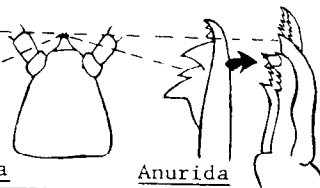
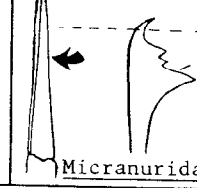


Xenyllodes

Friesea

Prospinanura

maxilla untoothed maxilla toothed



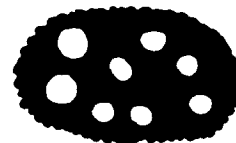
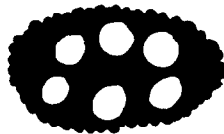
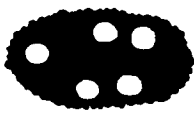
Micranurida

Anurida

eyes 5 and 5

eyes 6 and 6

eyes 8 and 8



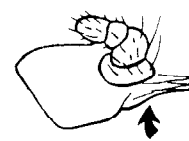
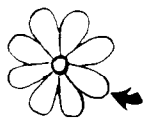
Microgastrura

postantennal tubercles 8

postantennal tubercles 4-5

with buccal cone

without buccal cone



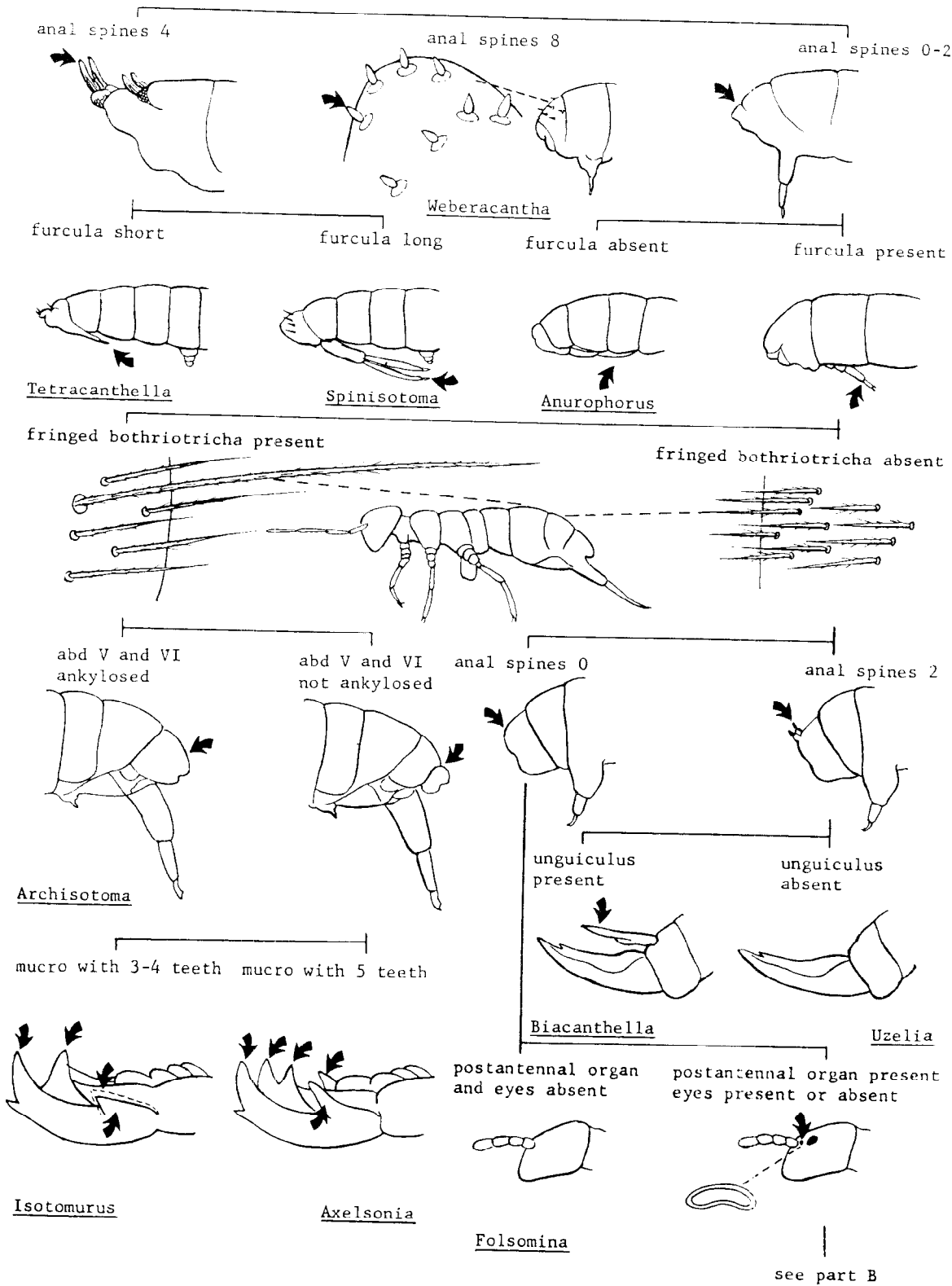
Logcanura

Odontella

Brachystomella

Pseudachorutes

COLLEMBOLA: PICTORIAL KEY TO NEARCTIC GENERA
 Harold George Scott, Ph.D.
 SUBFAMILY ISOTOMINAE - Part A



COLLEMBOLA: PICTORIAL KEY TO NEARCTIC GENERA

SUBFAMILY ISOTOMINAE - Part B

continued from part A

anus ventral anus terminal

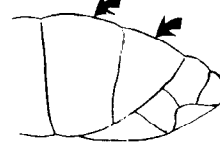
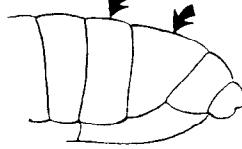
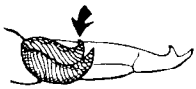


manubrium with hooks

manubrium without hooks

abd IV not shorter than III

abd IV shorter than III



Isotomodes

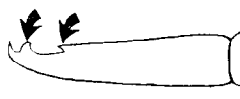
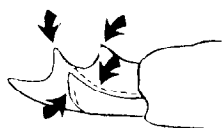
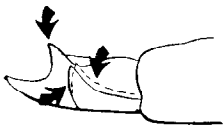
Folsomia

micropod with 0-3 teeth

micropod with 4 teeth

micropod with 2 teeth

micropod with 3-4 teeth



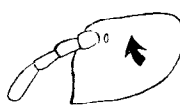
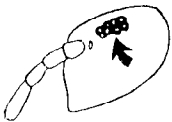
Proisotoma

Metisotoma

eyes 8 and 8

eyes 2 and 2 to 4 and 4

eyes absent



Folsomides

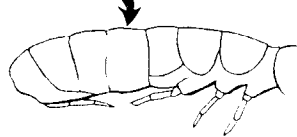
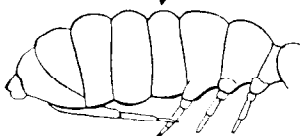
Micrisotoma

body segments bulging

body segments not bulging

unguis tunicate

unguis not tunicate



Guthriella

Isotomina

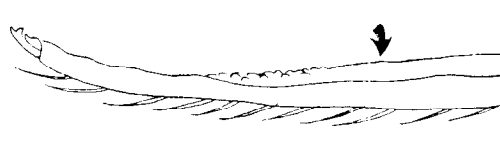
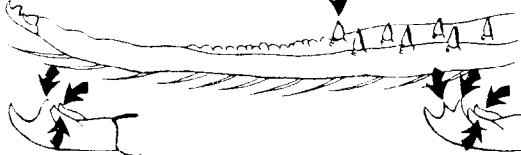
Agrenia

with dental spines

without dental spines

micropod with 3 teeth

micropod with 4 teeth



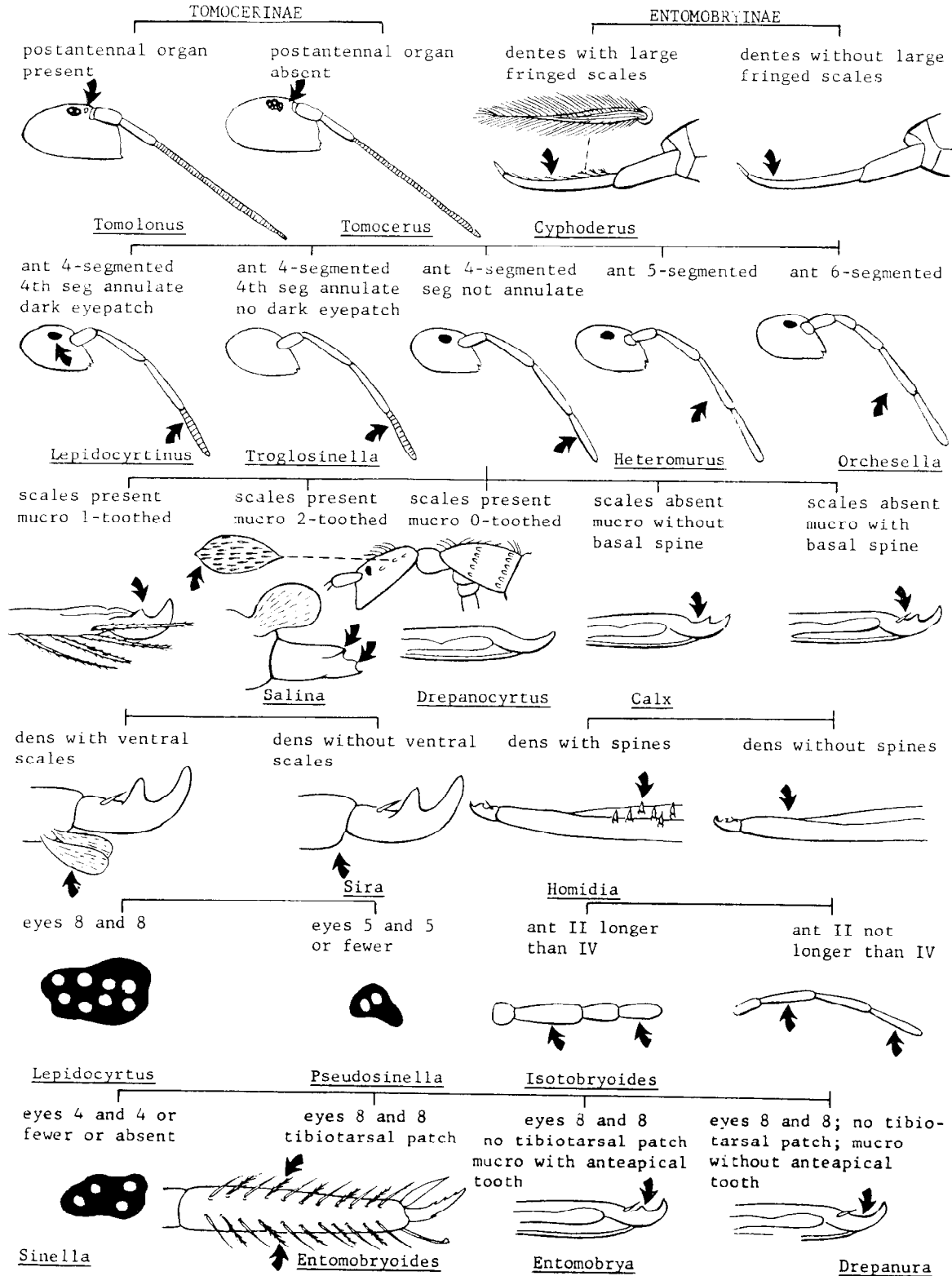
Senicerura

Tomocerura

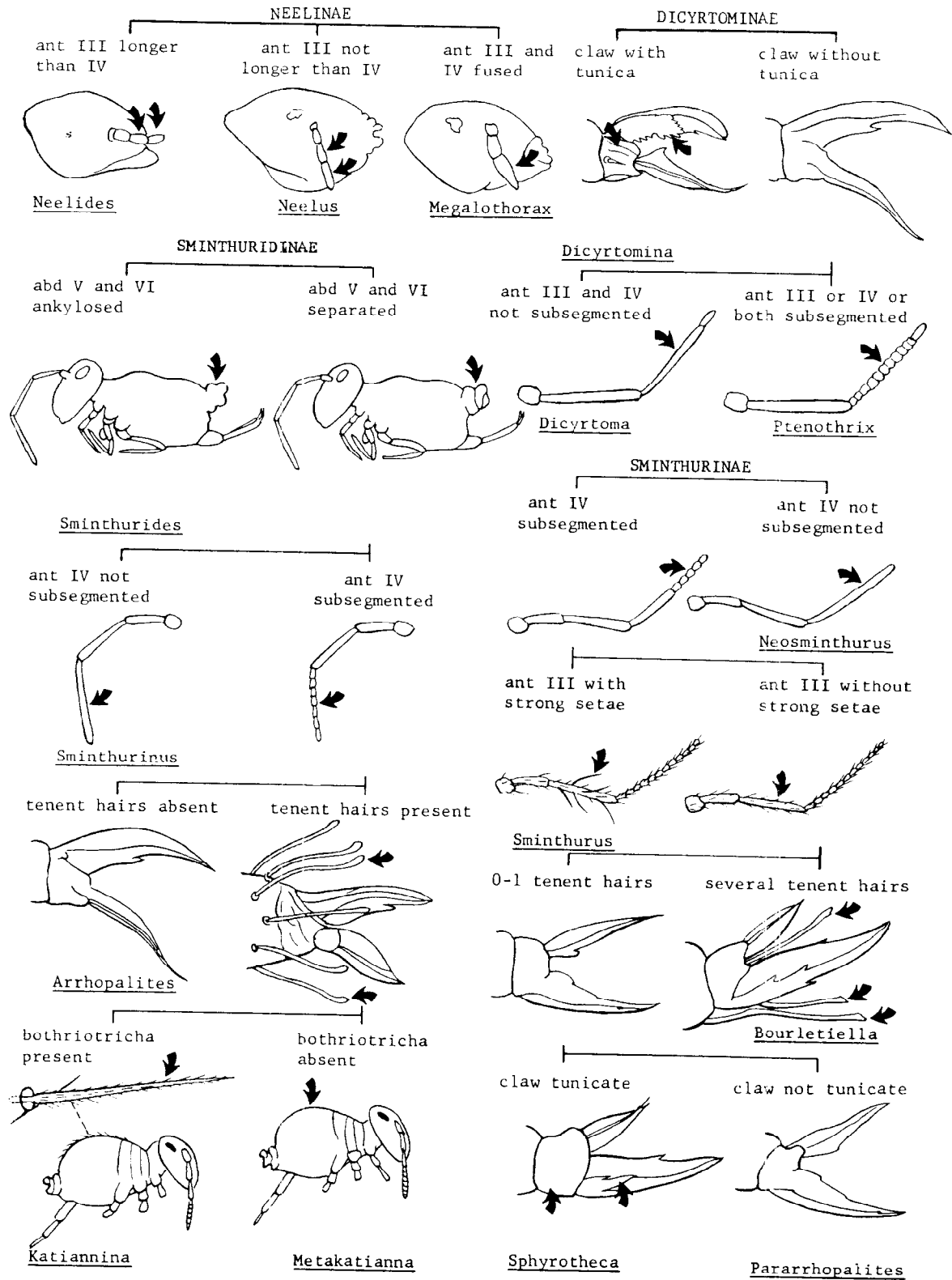
Isotoma

COLLEMBOLA: PICTORIAL KEY TO NEARCTIC GENERA
Harold George Scott, Ph.D.

SUBFAMILIES TOMOCERINAE AND ENTOMOBRYINAE

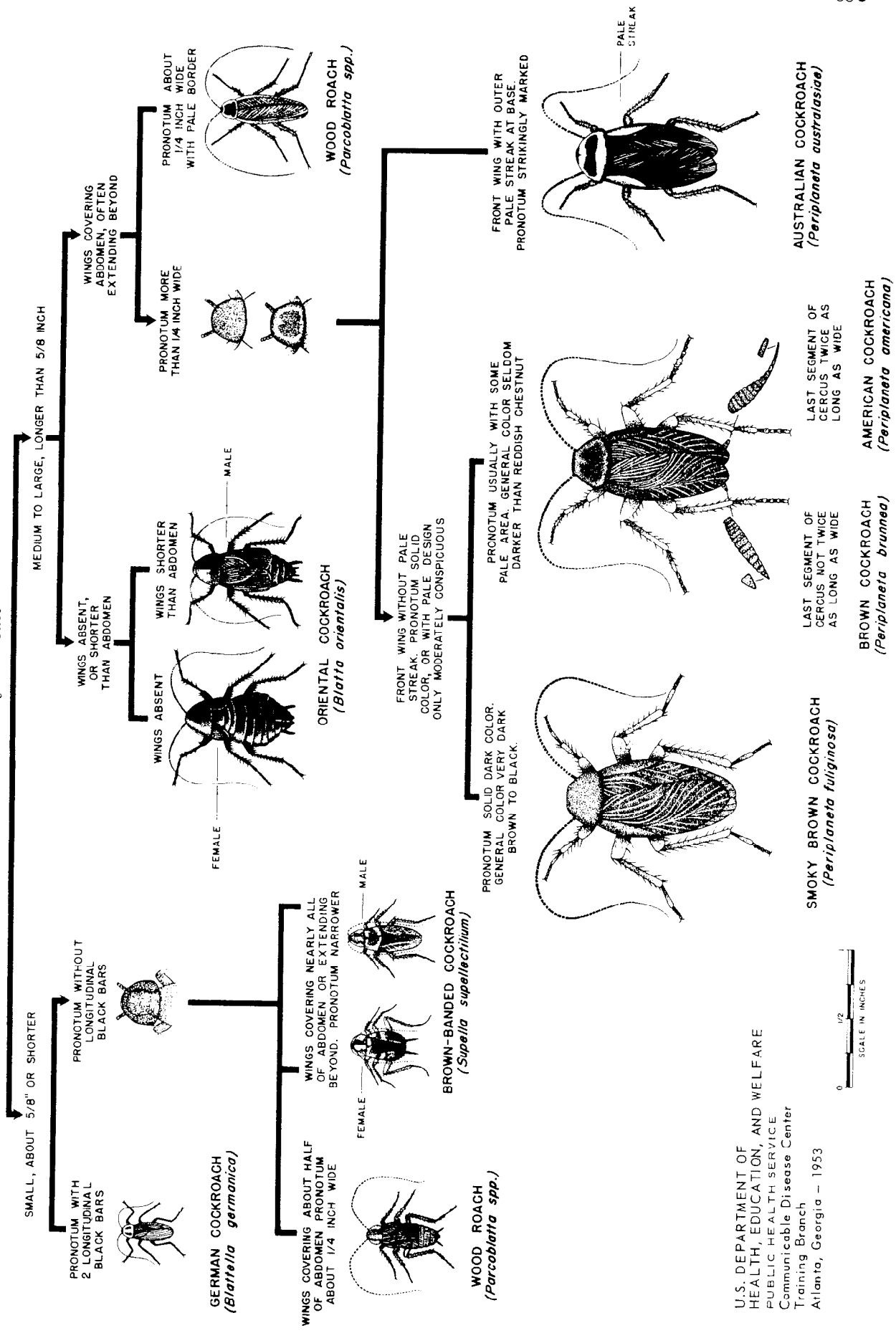


COLLEMBOLA: PICTORIAL KEY TO NEARCTIC GENERA
 Harold George Scott, Ph.D.
 FAMILY SMINTHURIDAE

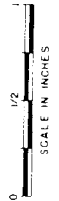


COCKROACHES: PICTORIAL KEY TO SOME COMMON SPECIES

Harry D. Pratt

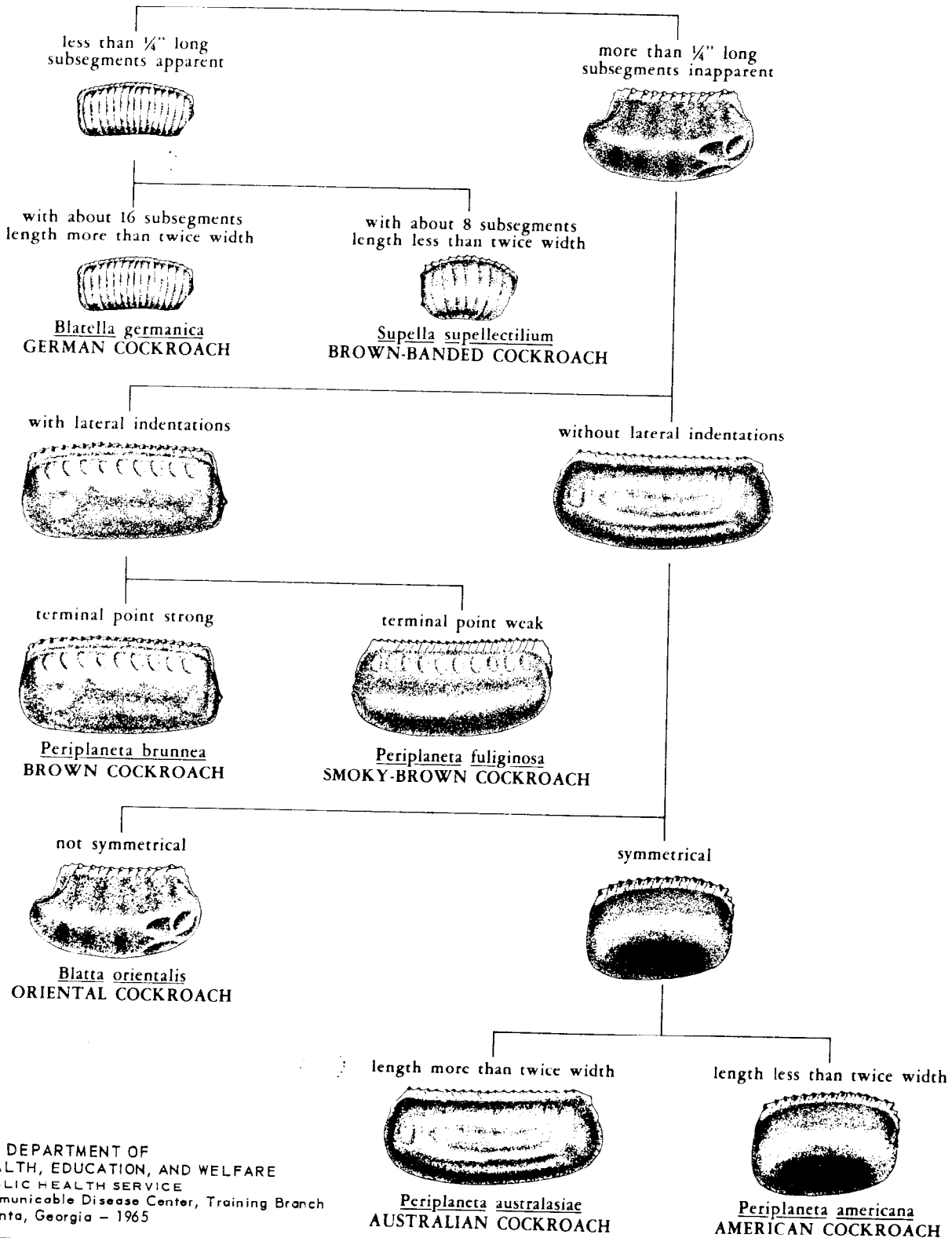


U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
Communicable Disease Center
Training Branch
Atlanta, Georgia - 1953



COCKROACHES: KEY TO EGG CASES OF COMMON DOMESTIC SPECIES

Harold George Scott, Ph.D. and Margery R. Borom



U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
Communicable Disease Center, Training Branch
Atlanta, Georgia - 1965

COCKROACHES: KEY TO SOME COMMON SPECIES FOUND IN THE UNITED STATES
 Harry D. Pratt & Chester J. Stojanovich

1. Middle and hind femora both with numerous strong spines along the ventral margin (Fig. 1 A)..2
 Middle and hind femora without strong spines along the ventral margin (Fig. 1 B).....12

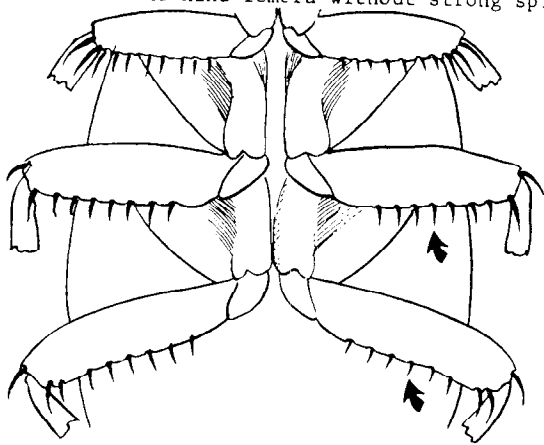


Fig. 1 A

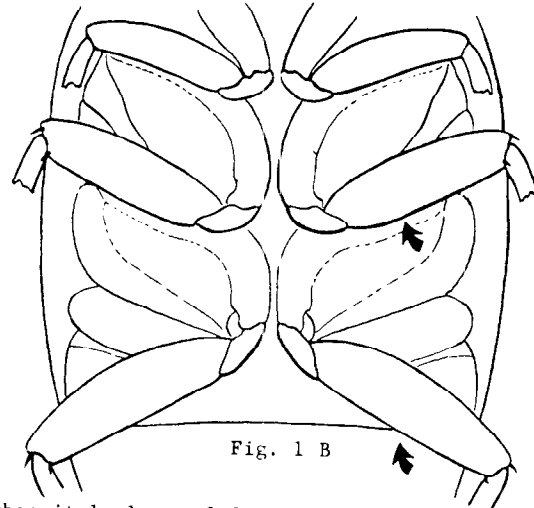


Fig. 1 B

2. Comparatively large species 18 mm. or longer; subgenital plate of female divided longitudinal-ly, valvular (Fig. 2 A); male styli similar, slender, elongate and straight (Fig. 2 B).....3

Species usually less than 18 mm. long; or, if longer, anterior-ventral margin of front femur with several large stout spines on basal portion, followed by a row of smaller spines (Fig. 2 C); female subgenital plate simple, not divided (Fig. 2 D); male styli variable, frequently modified, asymmetrical, or unequal in size (Fig. 2 E).....8

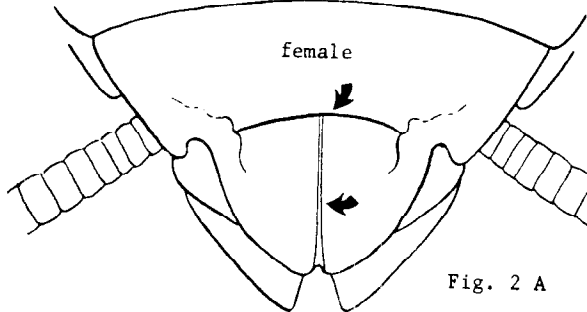


Fig. 2 A

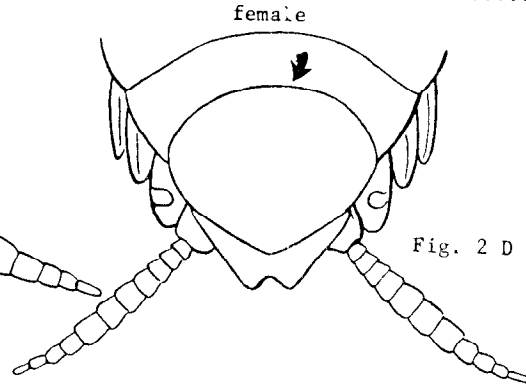


Fig. 2 D

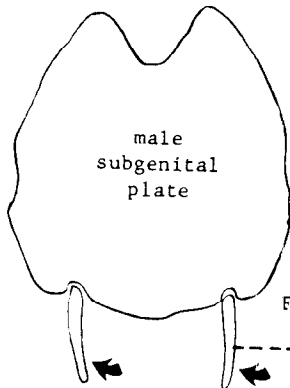


Fig. 2 B

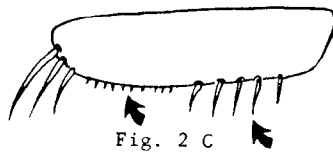


Fig. 2 C

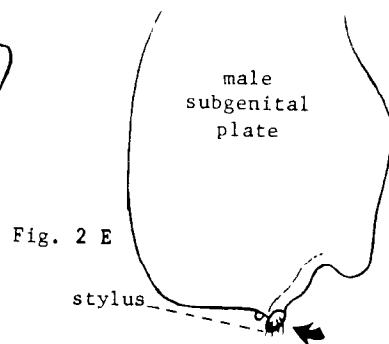


Fig. 2 E

- 3. Front wing in both sexes extending beyond tip of abdomen (Fig. 3 A).....4
- Front wing in both sexes not reaching tip of abdomen (Fig. 3 B).....7

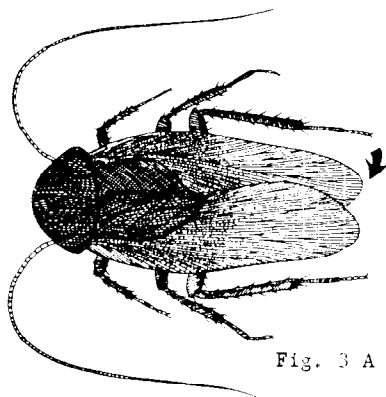


Fig. 3 A

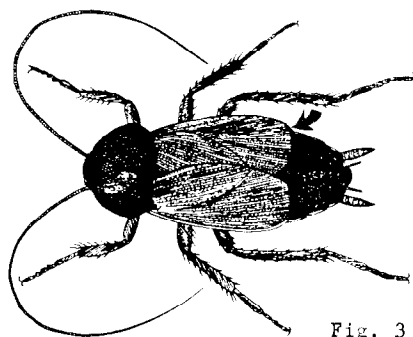


Fig. 3 B

- 4. Uniformly dark blackish-brown, shining species (Fig. 4 A).....
(*Periplaneta fuliginosa*) SMOKY BROWN COCKROACH
- Species with some yellowish markings on pronotum or front wing or both (Fig. 4 B).....5

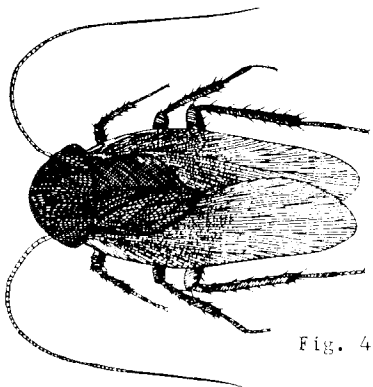


Fig. 4 A

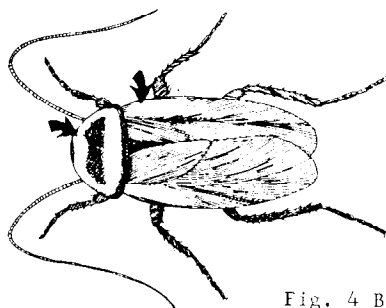


Fig. 4 B

- 5. Front wing with yellowish stripe; pronotum with yellowish and darker areas very contrastingly marked (Fig. 5 A).....(*Periplaneta australasiae*) AUSTRALIAN COCKROACH
- Front wing entirely brownish; pronotum with yellowish and darker areas less contrastingly marked (Fig. 5 B).....6

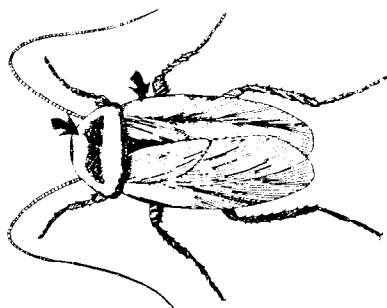


Fig. 5 A

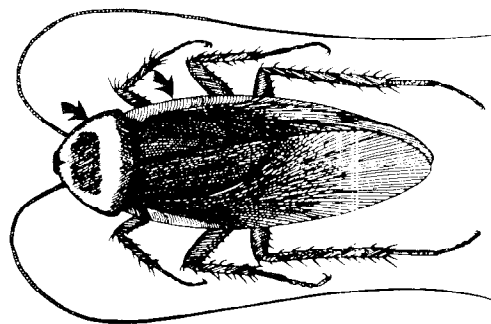
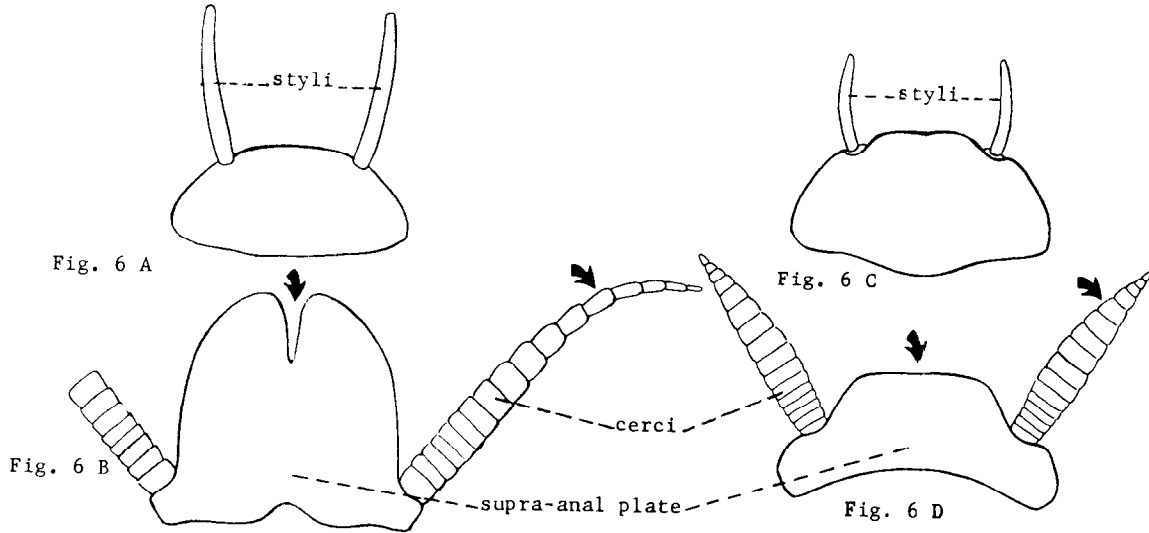


Fig. 5 B

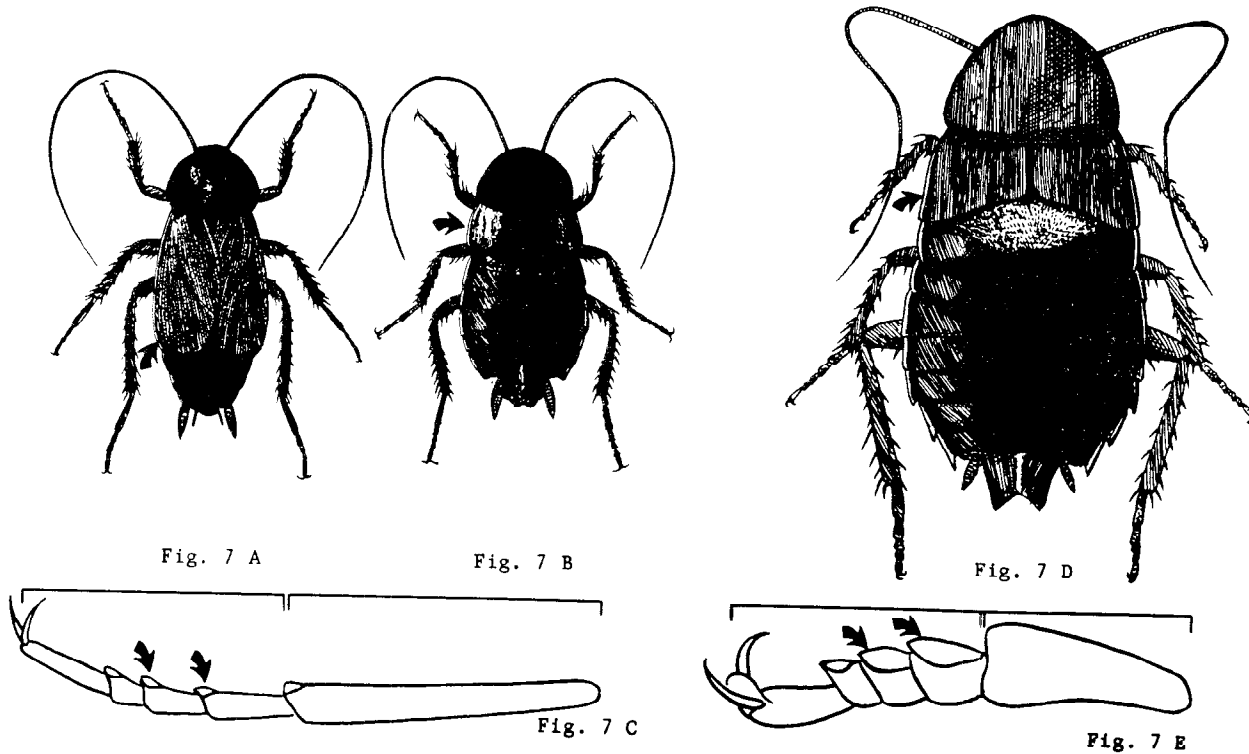
6. Styli very long and slender, longer than space between their bases (Fig. 6 A); cercus long and slender particularly in the male; male supra-anal plate deeply notched (Fig. 6 B).....(*Periplaneta americana*) AMERICAN COCKROACH

Styli shorter, not as long as space between their bases (Fig. 6 C); cercus stouter and more evenly spindle-shaped; male supra-anal plate truncate or feebly notched (Fig. 6 D).....(*Periplaneta brunnea*) BROWN COCKROACH



7. Blackish species, 15-27 mm. long; male front wings covering two-thirds of abdomen (Fig. 7 A); female front wings widely separated pads (Fig. 7 B); first segment of hind tarsus longer than segments 2-5 combined, pulvilli of second and third segments small (Fig. 7 C).....(*Blatta orientalis*) ORIENTAL COCKROACH

Mahogany brownish species, 30-40 mm. long; front wings reduced to short pads, not widely separated (Fig. 7 D); first segment of hind tarsus shorter than segments 2-5 combined, pulvilli of second and third segments large (Fig. 7 E)....(*Eurycotis floridana*) LARGE FLORIDA COCKROACH



8. Pronotum with two conspicuous longitudinal dark bars on a pale background (Fig. 8 A).....9
 Pronotum variously marked, but without two conspicuous dark longitudinal bars (Fig. 8 B)....10



Fig. 8 A

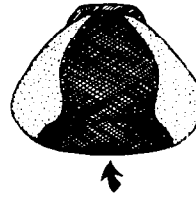


Fig. 8 B

9. Face pale (Fig. 9 A); male subgenital plate asymmetrical, styli very unequal, short and rounded (Fig. 9 B).....(*Blattella germanica*) GERMAN COCKROACH
 Face dark; male subgenital plate almost symmetrical, styli somewhat elongate and subequal in size (Fig. 9 C).....(*Blattella vaga*) FIELD COCKROACH

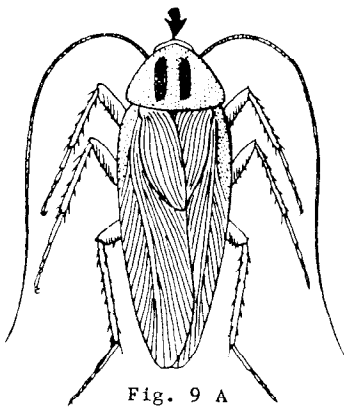


Fig. 9 A

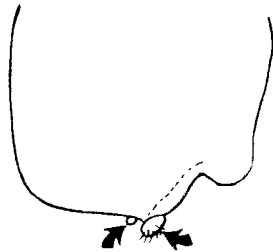


Fig. 9 B

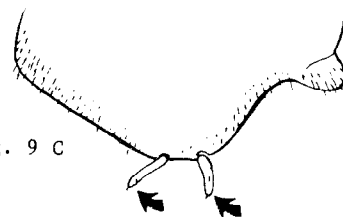


Fig. 9 C

10. Pronotum with a broad dark central stripe; front wings of both sexes appearing to have two transverse brownish bars, some pale specimens showing bars poorly (Fig. 10 A). Width of pronotum usually not exceeding 4.5 mm.....(*Supella supellectilium*) BROWN-BANDED COCKROACH
 Pronotum and front wings otherwise, or, if pronotum is so marked, its width exceeding 4.5 mm. (Fig. 10 B).....11

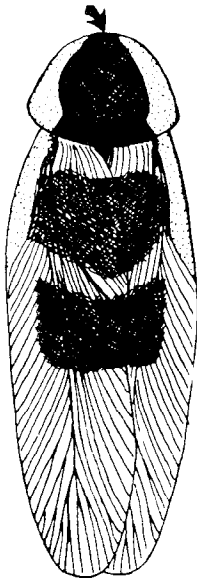


Fig. 10 A

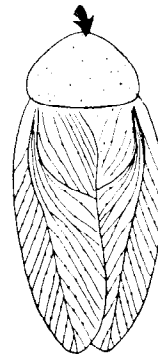


Fig. 10 B

11. Larger species 9-25 mm. or more in length; front wing without small dark spots in winged specimens (Fig. 11 A); claws equal (Fig. 11 B); ventral anterior margin of front femur with 3 long apical spines (Fig. 11 C).....(Parcoblatta species) WOOD COCKROACHES

Small species, 8-9 mm. long; front wing with small dark spots (Fig. 11 D); claws unequal (Fig. 11 E); ventral anterior margin of front femur with 2 long apical spines (Fig. 11 F)....
.....(Ectobius pallidus) SPOTTED MEDITERRANEAN COCKROACH

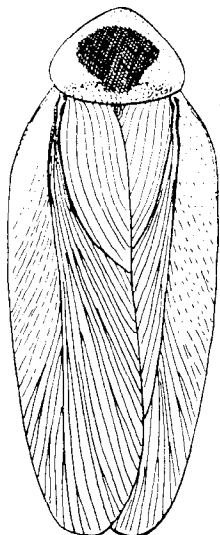


Fig. 11 A

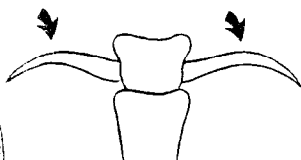


Fig. 11 B

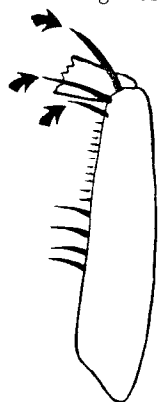


Fig. 11 C

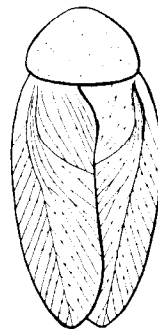


Fig. 11 D

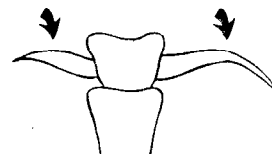


Fig. 11 E

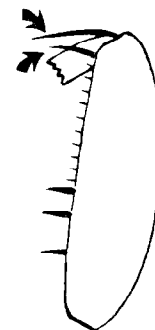


Fig. 11 F

12. Top of eyes close together (Fig. 12 A); general color a nearly uniform greenish; posterior margin of pronotum somewhat angularly produced (Fig. 12 B) (Panchlora nivea) CUBAN COCKROACH

Top of eyes sometimes distant (Fig. 12 C); general color various shades of brown and gray; pronotum usually not angularly produced posteriorly (Fig. 12 D).....13

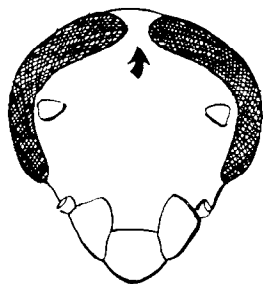


Fig. 12 A

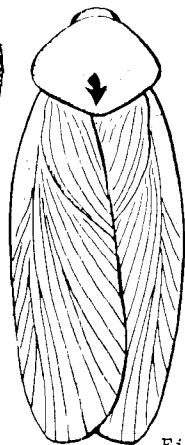


Fig. 12 B

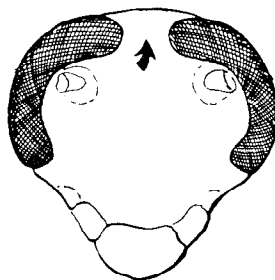


Fig. 12 C

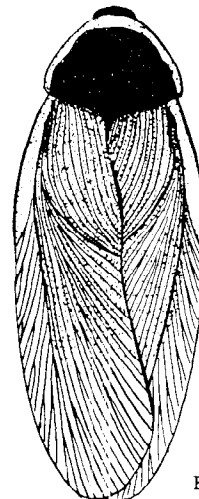


Fig. 12 D

- 13. Medium sized species, 30 mm. or less in length, including folded wings (Fig. 14 A & B).....14
- Large species 40 mm. or more in length, including folded wings (Fig. 15 A & C).....15
- 14. Pronotum uniformly blackish except a narrow yellowish band along anterior and lateral margins (Fig. 14 A).....(*Pycnoscelus surinamensis*) SURINAM COCKROACH
- Pronotum pale with a narrow dark longitudinal submarginal band on each side and irregular brownish blotches on disc (Fig. 14 B).....(*Nauphoeta cinerea*) CINEREOUS COCKROACH

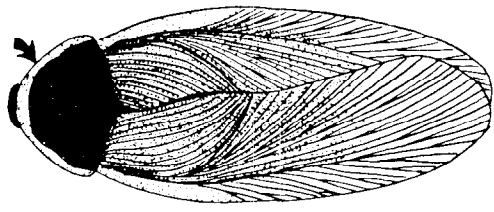


Fig. 14 A

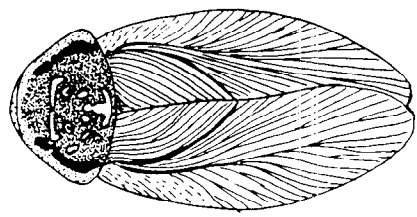


Fig. 14 B

- 15. Disc or pronotum with shield-like design, sometimes skull-like design (Fig. 15 A); front femur with one or more stout spurs on underside (Fig. 15 B).....(*Blaberus giganteus*; *Blaberus craniifer*) GIANT COCKROACH
- Disc of pronotum with shield-like design darkened in outline only, not solid black (Fig. 15 C); front femur with a line of stiff hairs on anterior-ventral margin (Fig. 15 D).....(*Leucophaea maderae*) MADEIRA COCKROACH

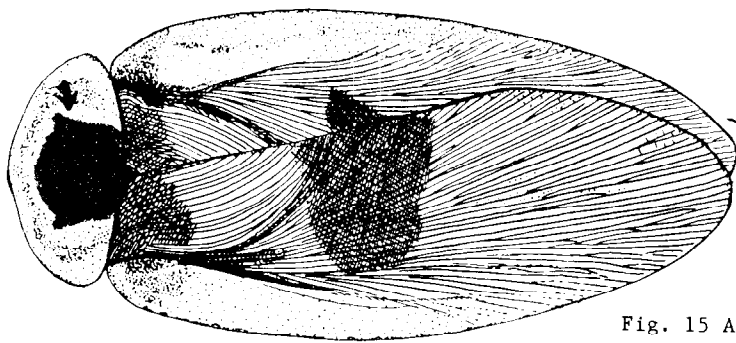


Fig. 15 A

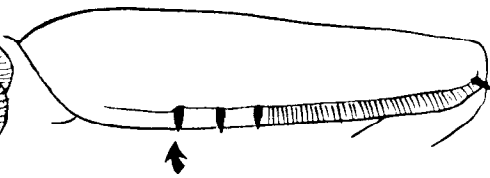


Fig. 15 B

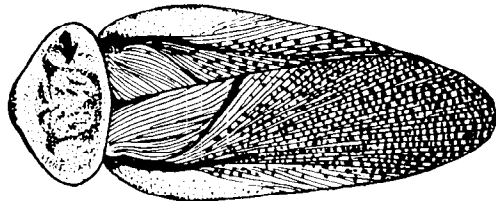


Fig. 15 C



Fig. 15 D

TERMITES: KEY TO SOME COMMON NORTH AMERICAN SPECIES
Harold George Scott



Fig. A - Winged Adult



Fig. B - Soldier



Fig. C - Worker

Key to Winged Adults

1. Radius without branches; fontanel (fig. E) usually present 2
Radius (fig. D) with branches; fontanel absent 4
2. Tibia (fig. F) slightly to plainly blackish 3
Tibia entirely pale; Ontario to Guatemala, west to Utah and Arizona
(*Reticulitermes flavipes*) EASTERN SUBTERRANEAN TERMITE
3. Tibia slightly darkened; length 9 mm.; British Columbia to Baja California,
east to Idaho and Sonora
(*Reticulitermes hesperus*) WESTERN SUBTERRANEAN TERMITE
Tibia generally darkened; length 9.5- 10 mm.; Oregon and Montana to western
Mexico, Missouri, and Texas
(*Reticulitermes tibialis*) ARID SUBTERRANEAN TERMITE
4. Ocelli (fig. E) present 5
Ocelli absent; western Canada to Baja California
(*Zootermopsis angusticollis*) WESTERN ROTTEN-WOOD TERMITE
5. Body yellow to light brown 6
Body blackish; California to Baja California, east to Arizona and Utah
(*Kaloterms minor*) WESTERN DRY-WOOD TERMITE
6. Transverse rows of long hairs on tergites; South Carolina to Florida,
west to eastern Texas (*Kaloterms snyderi*) EASTERN DRY-WOOD TERMITE
No transverse rows of hairs on tergites; Arizona and California
(*Procryptotermes hubbardi*) ARID DRY-WOOD TERMITE

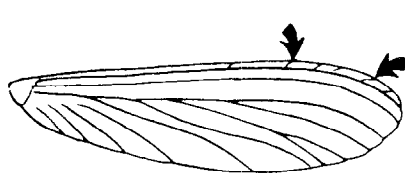


Fig. D - Wing

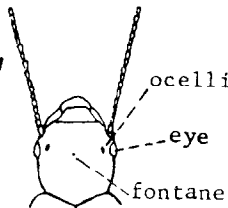


Fig. E - Head



Fig. F - Leg

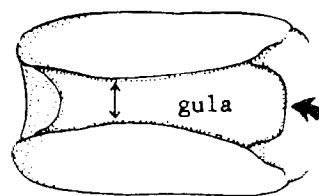


Fig. G - Throat

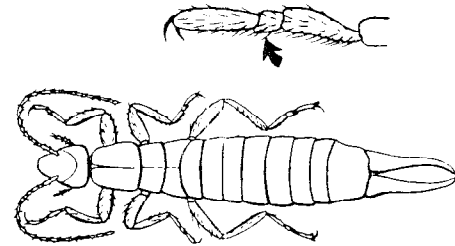
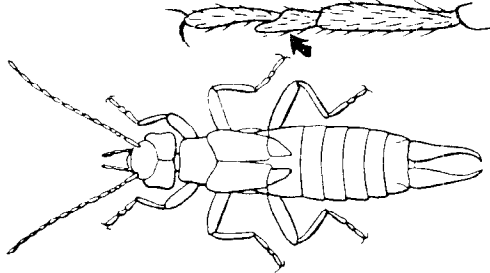
Key to Soldiers

1. Fontanel (fig. E) present; eyes usually absent 2
Fontanel absent; eyes (fig. E) present 4
2. Gula (fig. G) not twice as broad in front as in middle ARID SUBTERRANEAN TERMITE
Gula twice as broad in front as in middle 3
3. Head twice as long as broad WESTERN SUBTERRANEAN TERMITE
Head less than twice as long as broad EASTERN SUBTERRANEAN TERMITE
4. Antenna (fig. E) with 23-31 segments 5
Antenna with 10-20 segments WESTERN ROTTEN-WOOD TERMITE
5. Third antennal segment as long as next 3 combined EASTERN DRY-WOOD TERMITE
Third antennal segment shorter than next 3 combined WESTERN DRY-WOOD TERMITE
Third antennal segment as long as next 4 combined ARID DRY-WOOD TERMITE

EARWIGS: PICTORIAL KEY TO COMMON DOMESTIC SPECIES
Chester J. Stojanovich and Harold George Scott

tarsus II prolonged beneath III

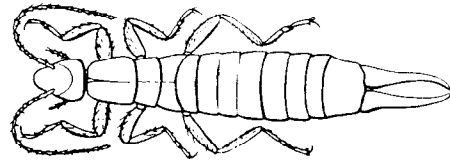
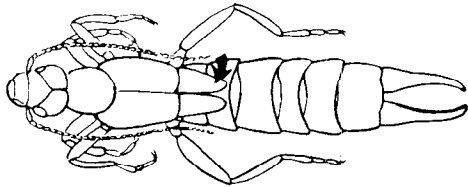
tarsus II not prolonged beneath III



EUROPEAN EARWIG
Forficula auricularia

wings present

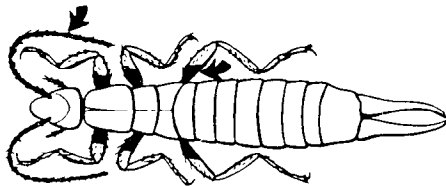
wings absent



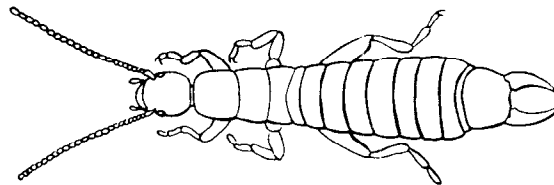
SHORE EARWIG
Ligidura riparia

legs and antennae banded

legs and antennae not banded



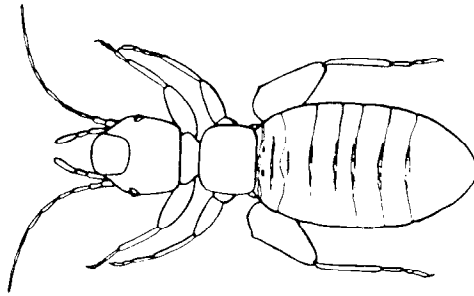
RING-LEGGED EARWIG
Euborellia annulipes



SEASIDE EARWIG
Anisolabis maritima

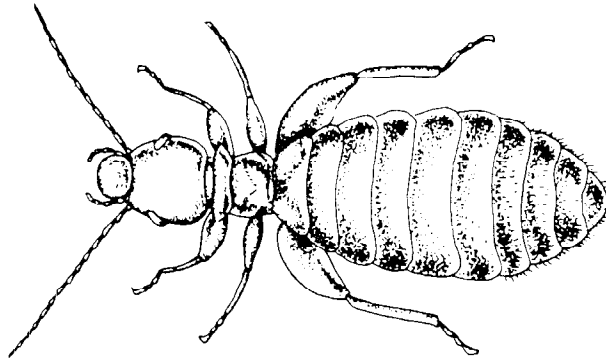
PSOCIDS: KEY TO SOME SPECIES COMMONLY INFESTING STORED FOOD
Harold George Scott and Chester J. Stojanovich

1. Two distinct thoracic segments 2
 Three distinct thoracic segments (*Trogium pulsatorium*) DEATH WATCH
2. Without large pronotal bristles 3
 With large pronotal bristles 4
3. Eye with 7 facets; head and body brown (*Liposcelis bostrychophilus*) BANDED PSOCID
 Eye with 2-4 facets; head brown, body yellow (*Liposcelis paetus*) WAREHOUSE PSOCID



Warehouse Psocid

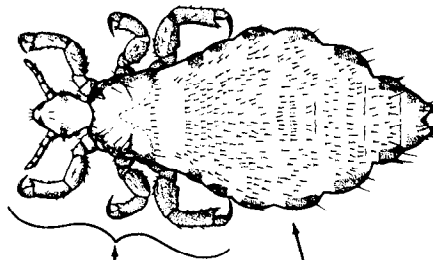
4. Two to 5 large pronotal bristles (*Liposcelis entomophilus*) GRAIN PSOCID
 One large pronotal bristle (*Liposcelis terricolus*) BOOK LOUSE



Book Louse

Fig. 140 LICE COMMONLY FOUND ON MAN
Harry D. Pratt

BODY LOUSE
AND
HEAD LOUSE

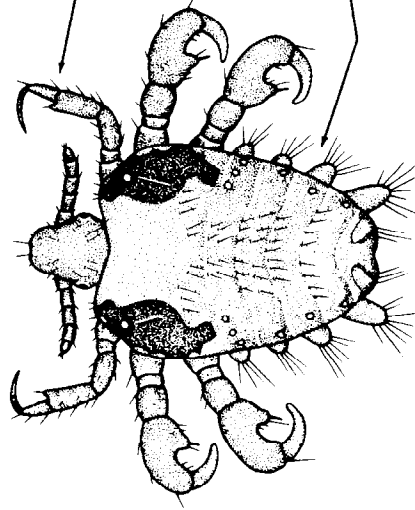


All legs of about the same length

Abdomen elongate without hairy processes laterally

PEDICULUS HUMANUS

CRAB LOUSE



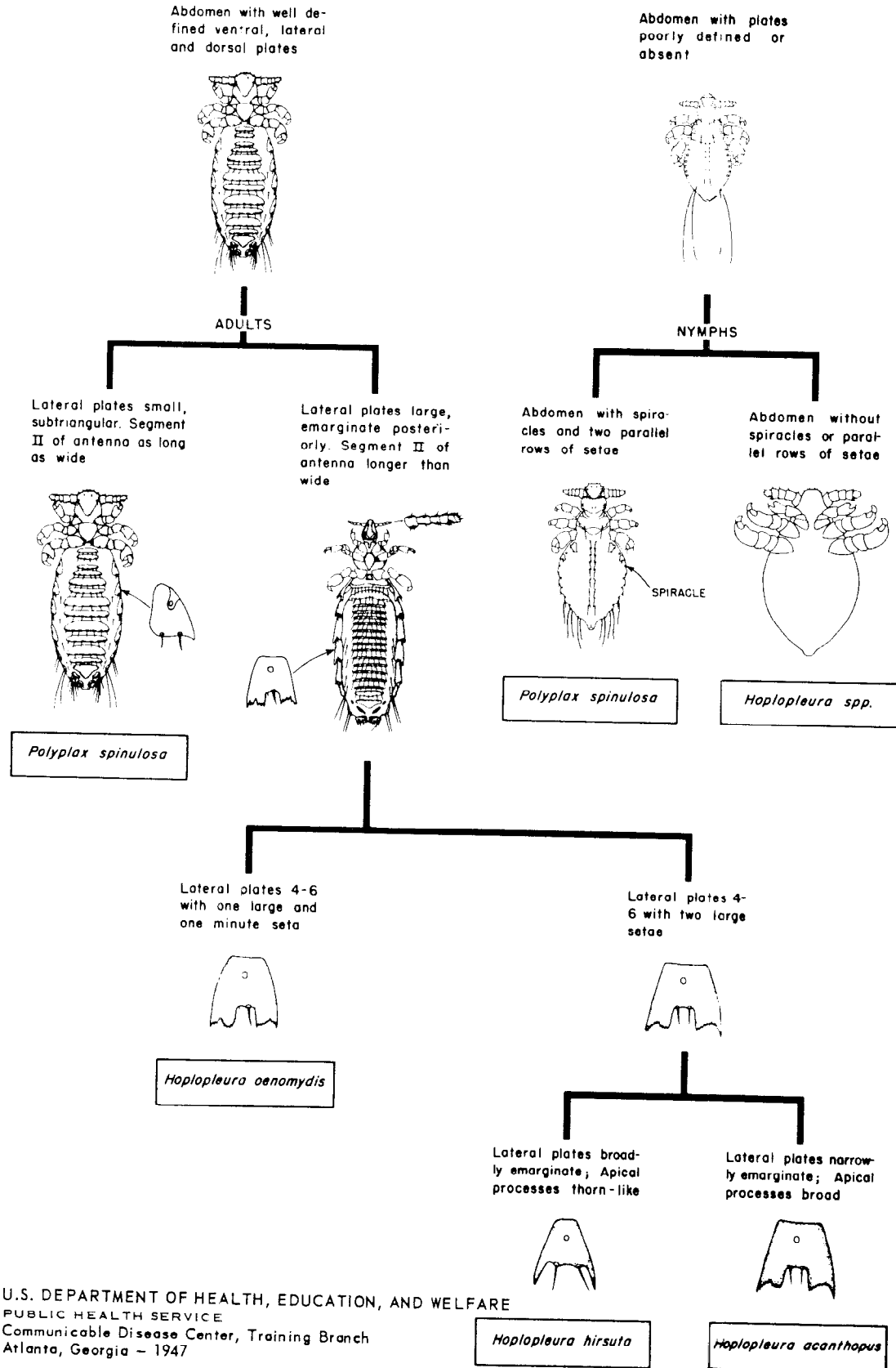
First pair of legs smaller than second and third pairs of legs

Abdomen shorter with hairy processes laterally

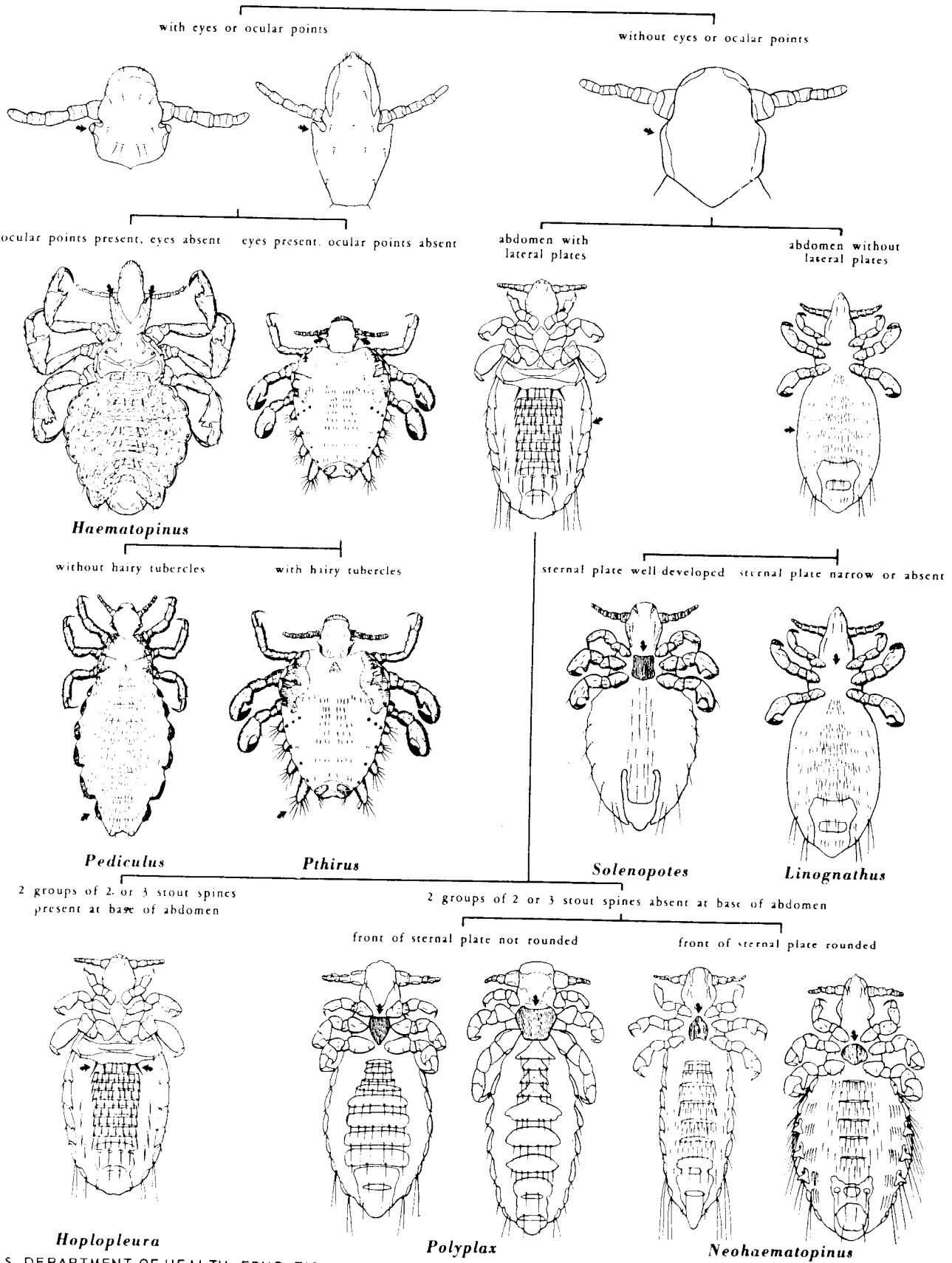
PHTHIRUS PUBIS

**ANOPLURA: PICTORIAL KEY TO SPECIES ON DOMESTIC RATS
IN SOUTHERN UNITED STATES**

Roy F. Fritz and Harry D. Pratt



ANOPLURA: PICTORIAL KEY TO SOME COMMON GENERA OF SUCKING LICE
 Chester J. Stojanovich and Harry D. Pratt



ANOPLURA: KEY TO NORTH AMERICAN SPECIES
 Chester J. Stojanovich and Harry D. Pratt

Key to Families of Anoplura

1. Head and thorax more or less thickly covered with setae; in some species the setae are modified into scales (Fig. 1 A). On marine animals.....FAMILY ECHINOPHTHIRIIDAE
- Head and thorax with only a few setae (Fig. 1 B).....2

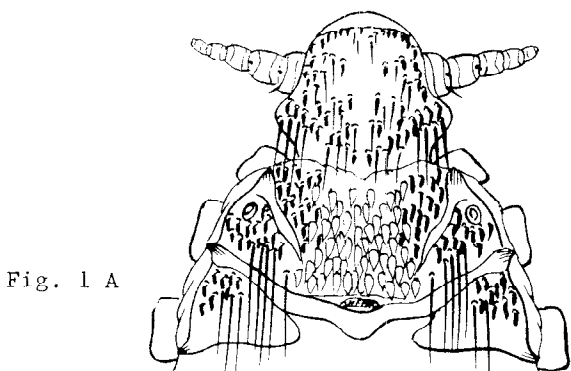


Fig. 1 A

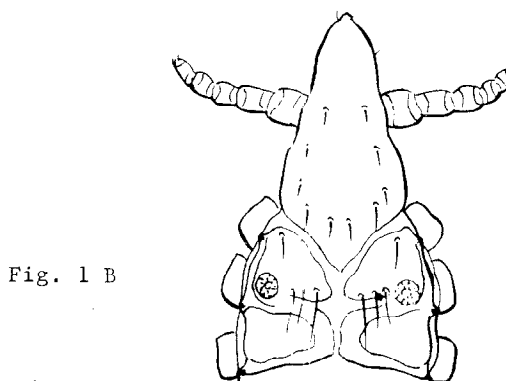


Fig. 1 B

2. Eyes present or with prominent ocular points (Fig. 2 A & B).....3
- Eyes and ocular points absent (Fig. 2 C).....4

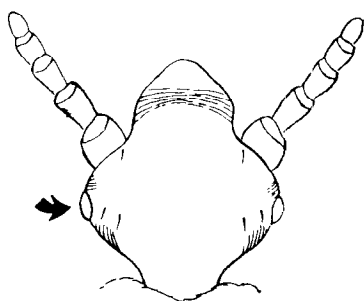


Fig. 2 A

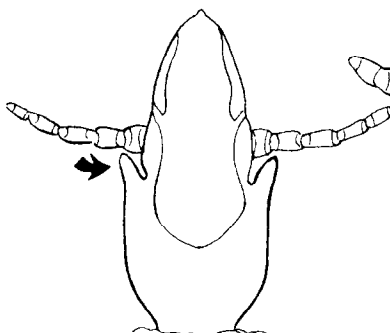


Fig. 2 B

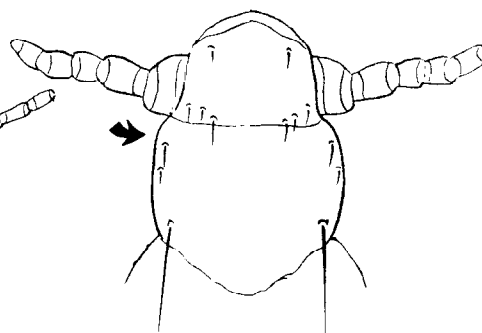


Fig. 2 C

3. Abdomen without irregular sclerotized plates on dorsum and venter (Fig. 3 A). On man.FAMILY PEDICULIDAE
- Abdomen with irregular sclerotized plates on dorsum and venter (Fig. 3 B). On hoofed animals.....FAMILY HAEMATOPINIDAE

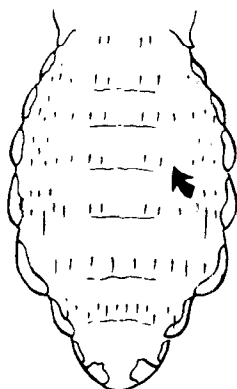


Fig. 3 A

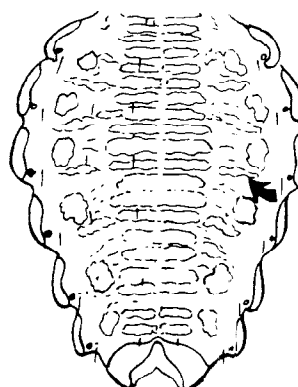


Fig. 3 B

4. Paratergal plates absent (Fig. 4 A). On hoofed animals or carnivores.....
FAMILY LINOGNATHIDAE
- Paratergal plates present (Fig. 4 B). On rodents and lagomorphs...FAMILY HOPLOPLEURIDAE

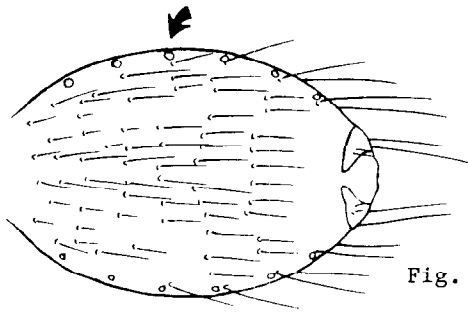


Fig. 4 A

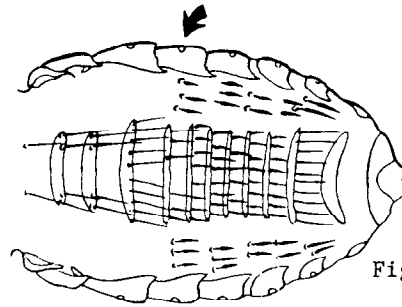


Fig. 4 B

Key to Genera of Echinophthiriidae

1. Antennae four-segmented; abdomen without scale-like setae (Fig. 1 A).....2
- Antennae five-segmented; abdomen with scale-like setae (Fig. 1 B).....Antarctophthirus

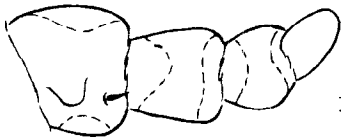


Fig. 1 A

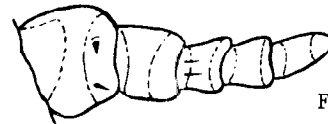


Fig. 1 B

2. Legs all essentially the same size (Fig. 2 A).....Echinophthirus horridus (von Olfers)
- Anterior legs small; second and third legs stout (Fig. 2 B).....
Proechinophthirus fluctus (Ferris)

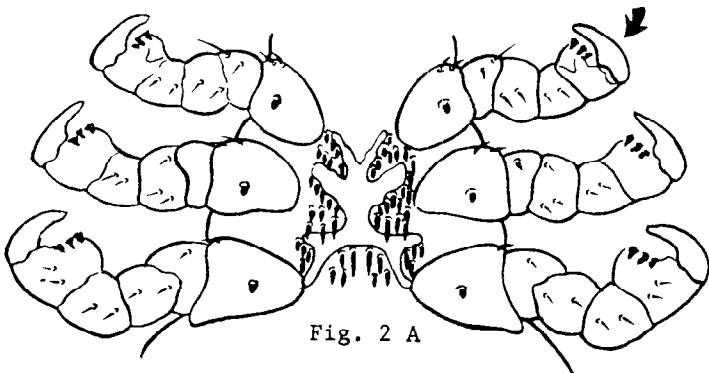


Fig. 2 A

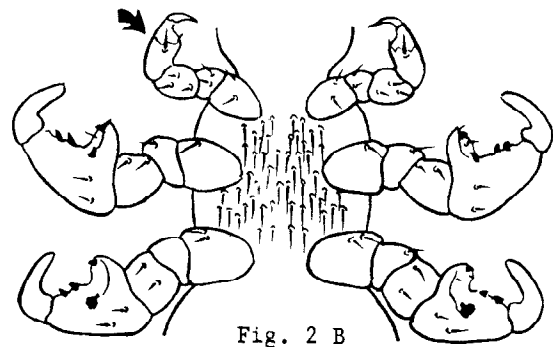


Fig. 2 B

Key to Species of *Antarctophthirus*

1. Scale-like setae present only on abdomen (Fig. 1 A). *Antarctophthirus callorhini* (Osborn)
 Scale-like setae present on thorax and abdomen (Fig. 1 B).....2

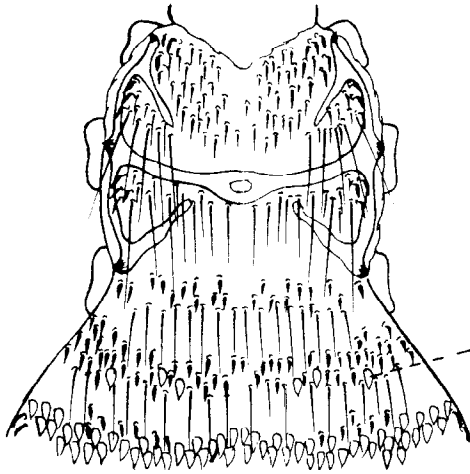


Fig. 1 A

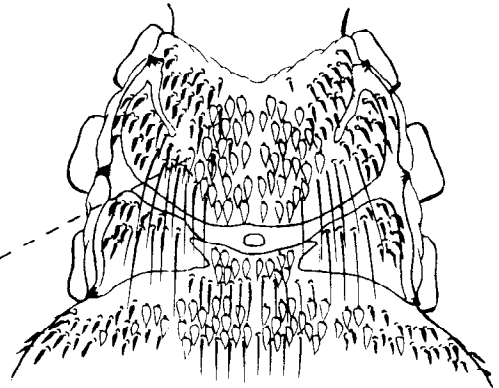


Fig. 1 B

2. Thoracic sternum with a few long setae on posterior border (Fig. 2 A).....
*Antarctophthirus microchir* (Troussart & Neumann)
 Thoracic sternum without long setae on posterior border (Fig. 2 B).....
*Antarctophthirus trichechi* (Bohemann)

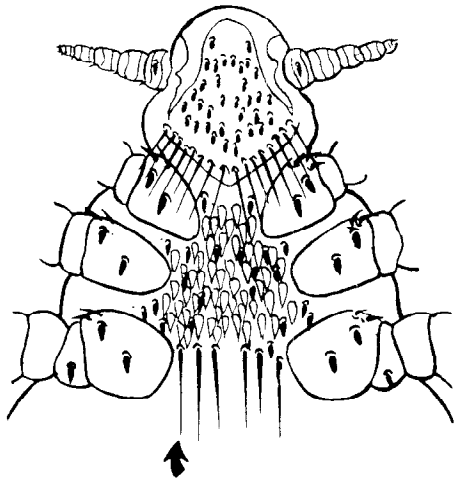


Fig. 2 A

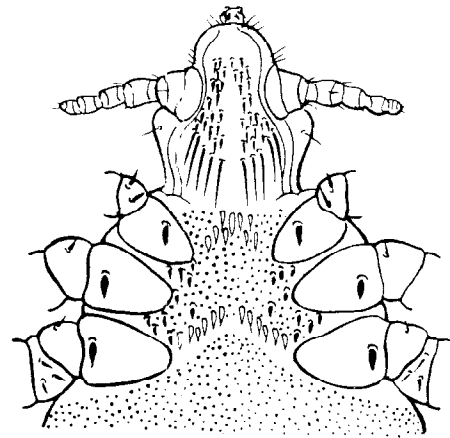


Fig. 2 B

Key to Genera of Haematopinidae

1. Sternal plate of thorax present; eyes absent but with prominent ocular points (Fig. 1 A)Haematopinus
- Sternal plate of thorax absent; eyes present (Fig. 1 B). On peccary.....Pecaroeus javalii Babcock & Ewing

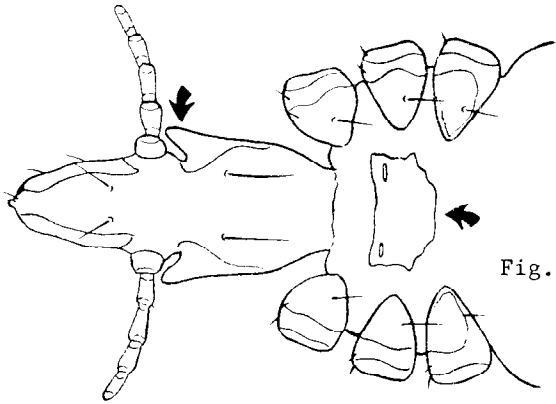


Fig. 1 A

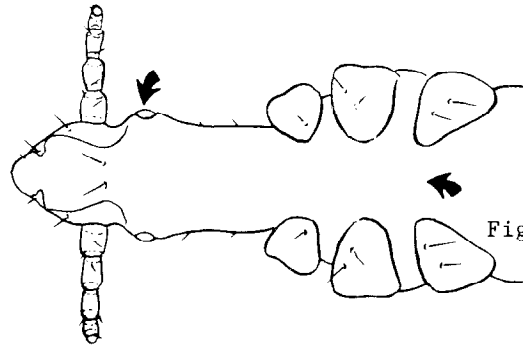


Fig. 1 B

Key to Species of Haematopinus

1. Thoracic sternal plate wider than long, sternal pits on plate (Fig. 1 A). Hog louse....
.....Haematopinus suis (Linnaeus)
- Thoracic sternal plate longer than wide; sternal pits off plate (Fig. 1 B).....2

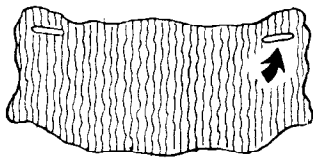


Fig. 2 A

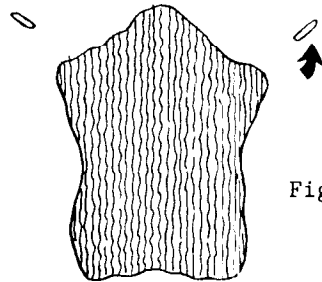


Fig. 2 B

2. Head at least two times as long as wide at ocular points; sternal plate without a median projection (Fig. 2 A & B). On equines. Horse sucking louse.....
.....Haematopinus asini (Linnaeus)

Head not two times as long as wide at ocular points; sternal plate with a median projection (Fig. 2 C & D). On cattle.....3

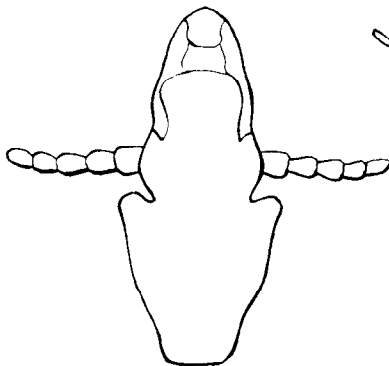


Fig. 2 A

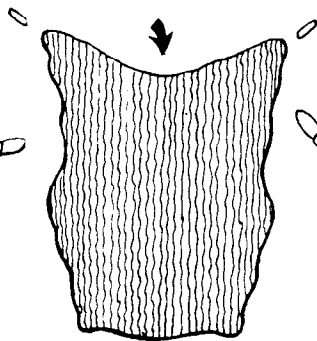


Fig. 2 B

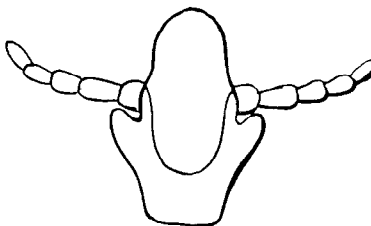


Fig. 2 C

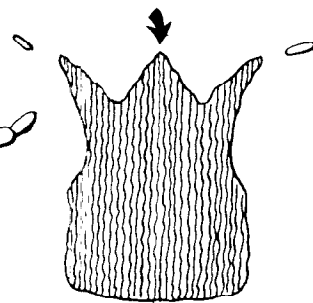


Fig. 2 D

3. Thoracic sternal plate with median projection blunt and rounded; male genital plate with six setae (Fig. 3 A & B). Short-nosed cattle louse.....
Haematopinus eurysternus (Nitzsch)

Thoracic sternal plate with median projection more acute and longer; male genital plate with four setae (Fig. 3 C & D). Cattle tail louse.....
Haematopinus quadripertusus Fahrenholz

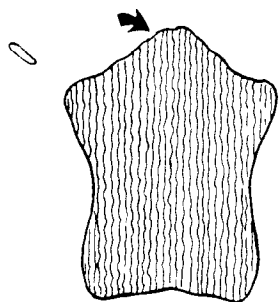


Fig. 3 A

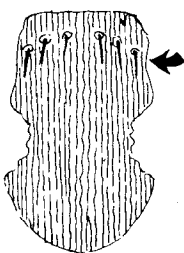


Fig. 3 B

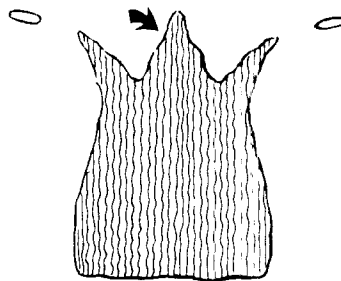


Fig. 3 C



Fig. 3 D

Key to Genera of Hoplopleuridae

1. Paratergal plates very small being merely slightly sclerotized points (Fig. 1 A).....
Haemodipsus

Paratergal plates on at least one abdominal segment usually as long as, or at least half as long as, the sternal plate (Fig. 1 B).....2

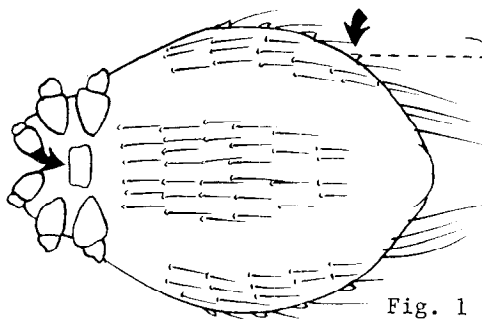


Fig. 1 A

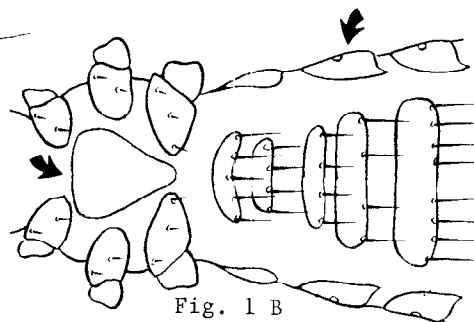


Fig. 1 B

2. First and second pair of legs of the same size and form, both being more slender and smaller than the third pair of legs (Fig. 2 A).....3

First pair of legs smallest of the three pairs; the second pair with stouter claws (Fig. 2 B).....4

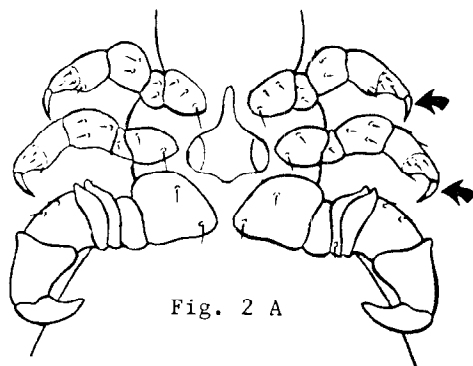


Fig. 2 A

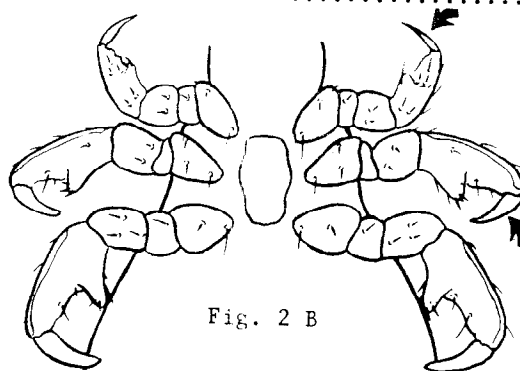


Fig. 2 B

3. A pair of small sclerotized plates present on venter of abdominal segment 2 (Fig. 3 A); antennae and head without hook-like processes.....Enderleinellus

Sclerotized plates entirely lacking on venter of abdominal segment 2; antennae and head with hook-like processes (Fig. 3 B).....Microphthirus uncinatus (Ferris)

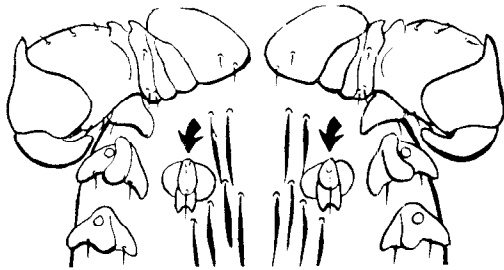


Fig. 3 A

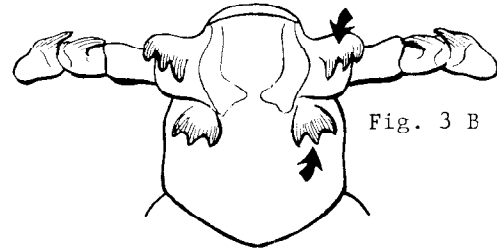


Fig. 3 B

4. Antennae four-segmented (sometimes appearing three-segmented); bladder-like expansions on third leg (Fig. 4 A & B).....Haematopinoides squamosus Osborn

Antennae five-segmented; bladder-like expansions lacking on third leg (Fig. 4 C).....5

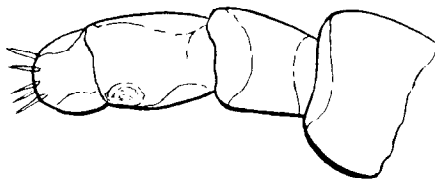


Fig. 4 A

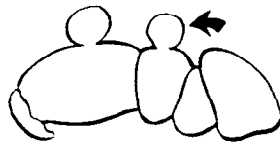


Fig. 4 B

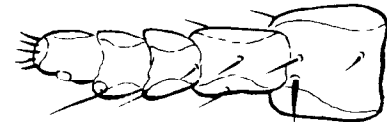


Fig. 4 C

5. First sternite of abdominal segment 3 extended laterally to articulate with its corresponding paratergal plate; this sternite bearing two groups of two or three stout setae (Fig. 5 A).....Hoplopleura

First sternite of abdominal segment 3 never articulating with paratergal plate (Fig. 5 B).....6

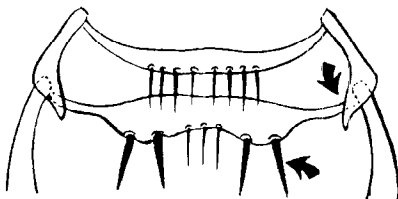


Fig. 5 A

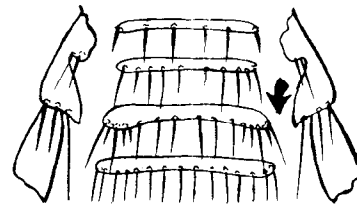


Fig. 5 B

6. Paratergal plate 2 completely divided longitudinally, one plate on the dorsum and the other on the venter of the abdomen (Fig. 6 A).....Fahrenheitzia

Paratergal plate 2 never completely divided to form two distinct plates (Fig. 6 B)....7

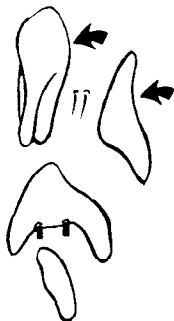


Fig. 6 A



Fig. 6 B

.....Sternal plate of thorax usually pointed posteriorly or, if truncate, always associated with a huge enlargement of the first antennal segment (Fig. 7 A & B).....Polyplax

Sternal plate of thorax usually emarginate posteriorly or sometimes quadrate in shape (Fig. 7 C & D).....Neohaematopinus

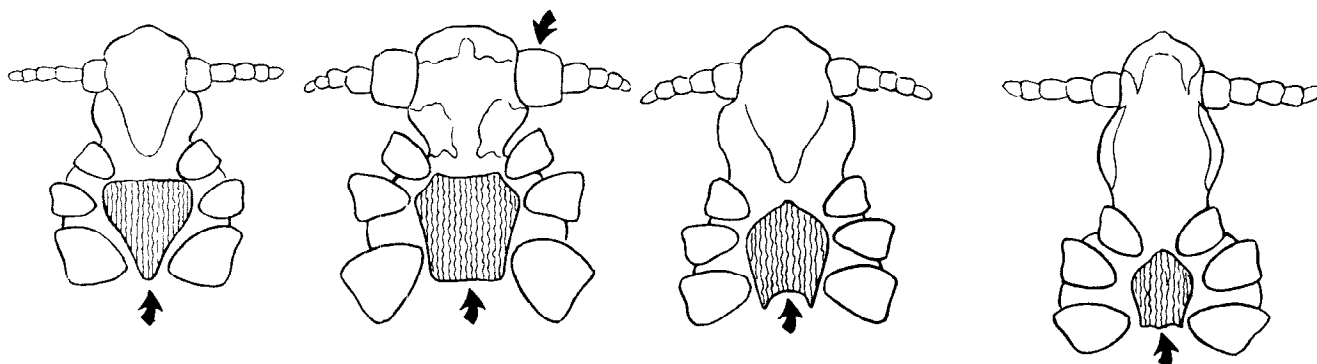


Fig. 7 A

Fig. 7 B

Fig. 7 C

Fig. 7 D

Key to Species of Enderleinellus

1. Paratergal plates present on abdominal segments 2-5 (Fig. 1 A).....2

Paratergal plates present on abdominal segments 2-6; abdominal sternites and tergites present in both sexes (Fig. 1 B). On Sciurus.....Enderleinellus nitzschi Fahrenholz

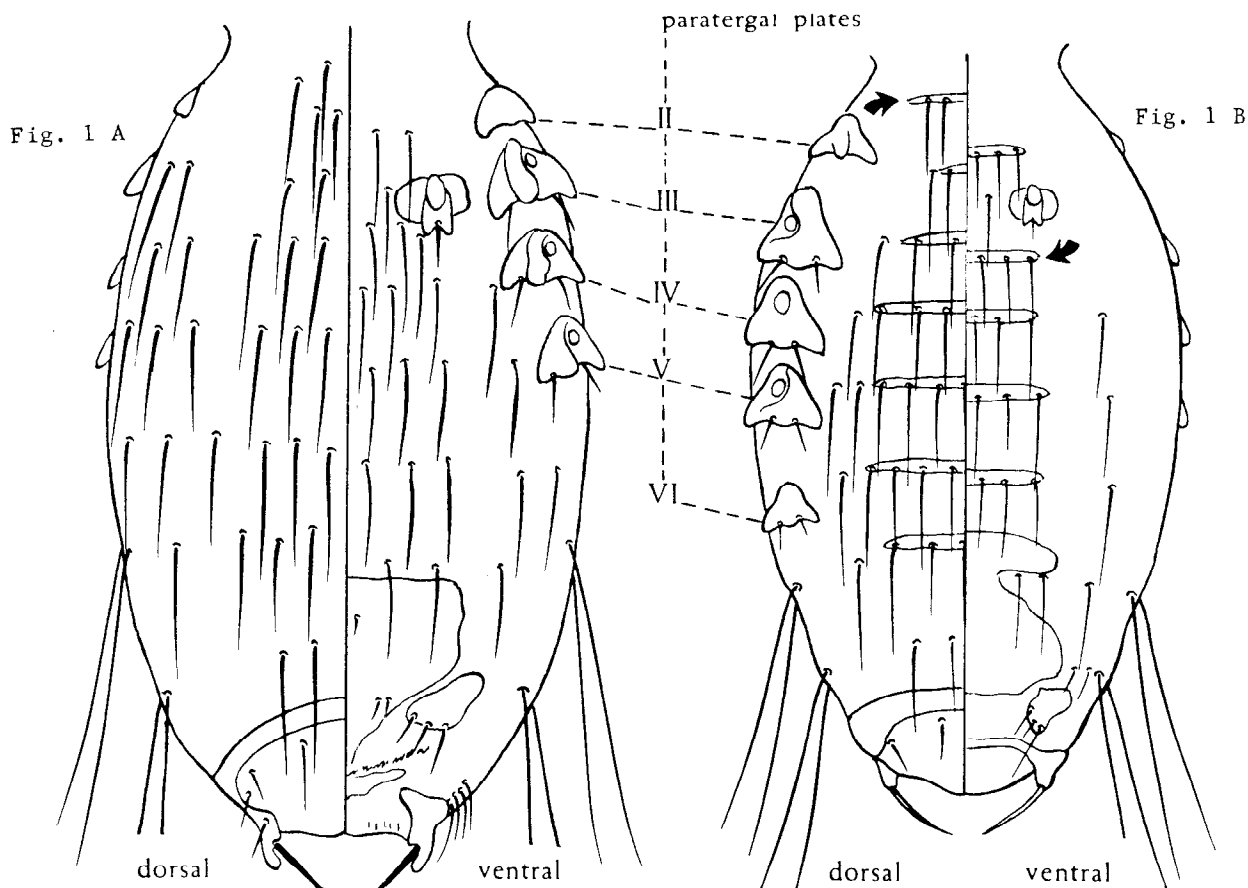


Fig. 1 A

Fig. 1 B