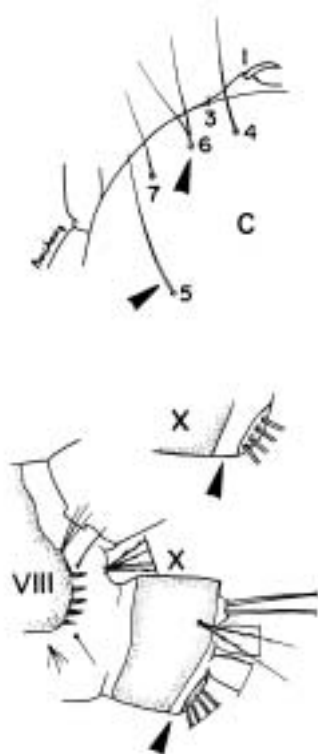


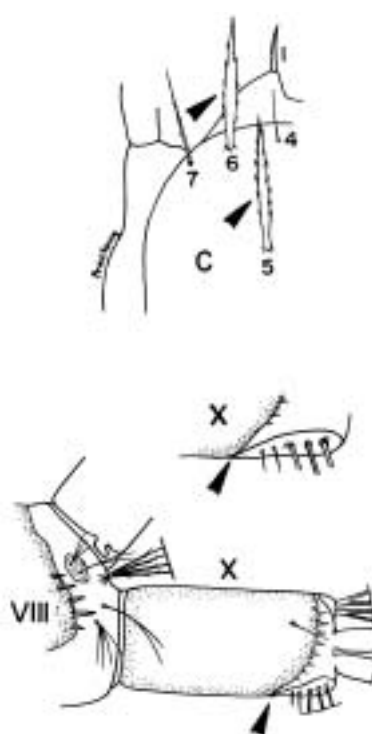
KEY TO THE SUBGENERA OF *URANOTAENIA* FOURTH-INSTAR LARVAE

Characters: Ventral brush (seta 4-X) with 3 or more pairs of setae; setae 1-S represented by single pair of setae arising beyond basal 0.33 of siphon; siphon with pecten; hypostomal suture absent or incomplete, not reaching posterior tentorial pit; setae 5,6-C stout and spine-like in some species; abdominal segment VIII with sclerotized plate

1. Setae 5,6-C (except *Ur. maxima*) not stout and spiny or spikelike^a
2. Grid of segment X rarely joined midventrally to saddle

Subgenus *Pseudoficalbia*

1. Setae 5,6-C very stout and spiny or spikelike
2. Grid of segment X usually distinctly joined midventrally to saddle

Subgenus *Uranotaenia*

└─▶ To PLATE 12

└─▶ To PLATE 23

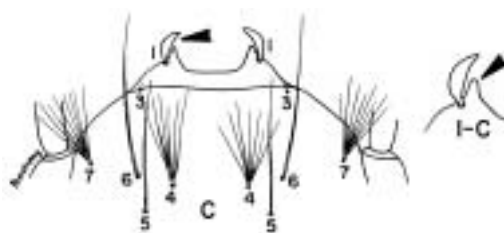
^a *Uranotaenia maxima* has seta 5-C stout and spikelike and 6-C thin and attenuated.

KEY TO THE SPECIES OF SUBGENUS *PSEUDOFICALBIA* FOURTH-INSTAR LARVAE^a

From PLATE 11: Setae 5,6-C not stout and spiny or spikelike; grid of segment X rarely joined midventrally to saddle

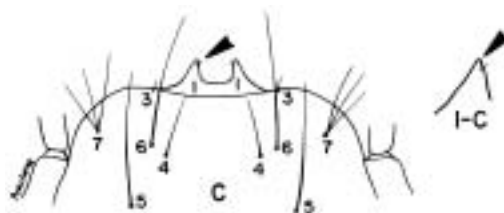


- Seta 1-C narrow at base and distinctly expanded apically, bladelike, clublike or foliiform; apical process and median labral plate with distinct angular apical projection on basomesal side of seta 1-C



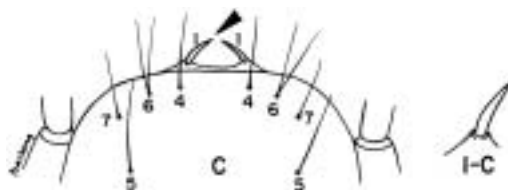
→ To PLATE 13

- Seta 1-C very weak, minute, inapparent; apical labral process more or less rounded, without apicomesal projection



→ To PLATE 16

- Seta 1-C conspicuous, strong at base and tapered to apex, spinelike; apical labral process rounded or angular but without distinct apical projection on basomesal side of seta 1-C



→ To PLATE 18 (Above)

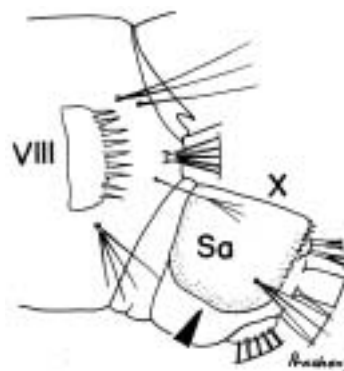
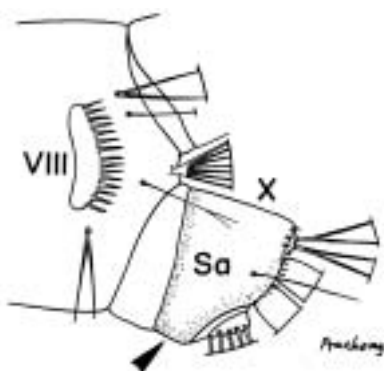
^a*Uranotaenia albipes* is unknown.

PLATE 13

From PLATE 12: Seta 1-C narrow at base and distinctly expanded apically, bladelike, clublike or foliform; apical process and median labral plate with distinct angular apical projection on basomesal side of seta 1-C

Abdominal segment X with complete saddle

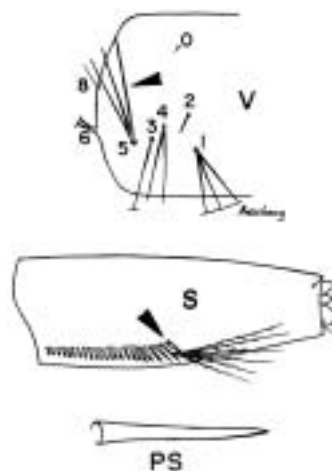
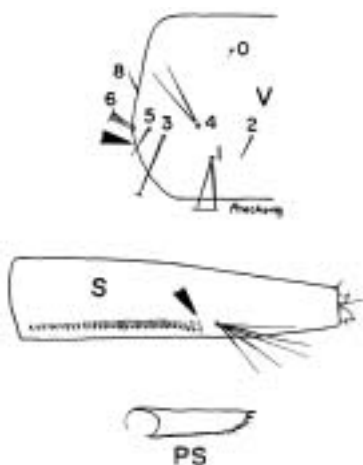
Abdominal segment X with incomplete saddle



➡ To PLATE 14 (Above)

1. Seta 5-III-VI single, weak or stout spinelike
2. Siphon with pecten spines short with apical spicules

1. Seta 5-III-VI with two or more stout branches
2. Siphon with one or more distal pecten spines long and simple

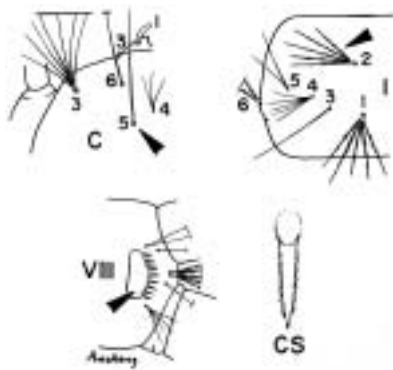


➡ To PLATE 14 (Below)

➡ To PLATE 15

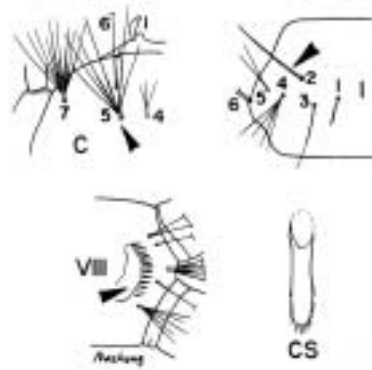
From PLATE 13: Abdominal segment X with incomplete saddle

1. Seta 5-C single
2. Seta 2-I with 3-5 stout branches
3. Comb scales apically pointed and laterally spiculate



Ur. nocticola

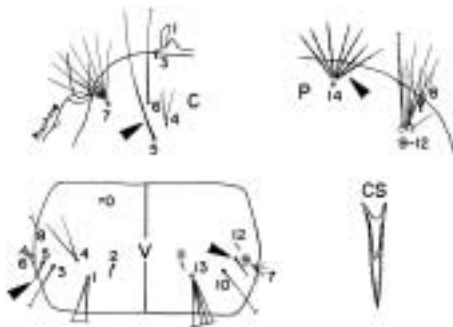
1. Seta 5-C with 2-9 branches
2. Seta 2-I single or double, minute or long, stout, spinelike
3. Comb scales rounded, each fringed from base to apex



Ur. stricklandi

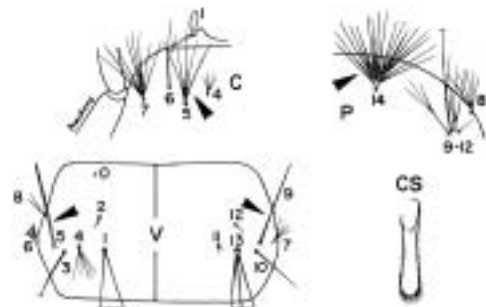
From PLATE 13: Seta 5-III-VI single, weak or stout spinelike; siphon with pecten spines short with apical spicules

1. Seta 5-C single or double, occasionally triple
2. Seta 5-III-VI minute, weak, single or double seta 9-II-V short, stout, single
3. Seta 14-P with 6-10 moderately stout, acutely pointed, strongly barbed branches
4. Comb scales with pointed apices



Ur. sumethi

1. Seta 5-C with 3-9 branches
2. Setae 5-III-VI and 9-II-V single, exceptionally long, stout, acutely pointed
3. Seta 14-P with 16-24 stout branches, each branch barbed to apex and finely pointed
4. Comb scales rounded, each fringed from base to apex



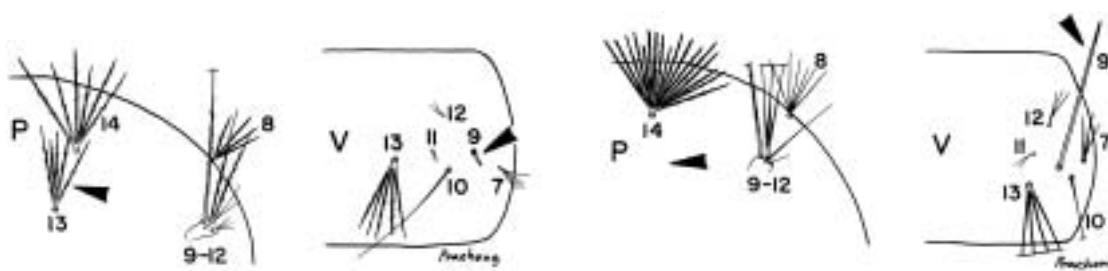
Ur. koli

PLATE 15

From PLATE 13: Seta 5-III-VI with two or more stout branches; siphon with one or more distal pecten spines long and simple

1. Seta 13-P stout, stellate with 4-7 branches
2. Seta 9-III-VI single, short, stout, much less than 0.5 length of segment

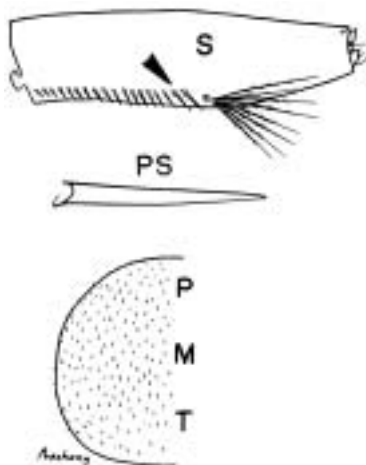
1. Seta 13-P absent
2. Seta 9-III-VI single, stout, longer than 0.5 length of segment



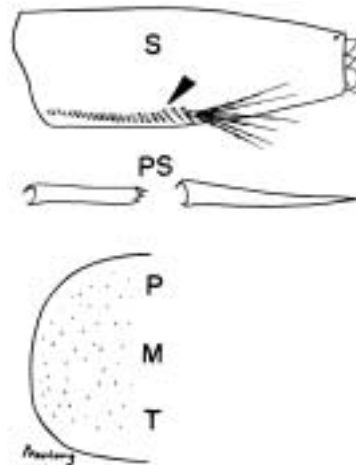
Ur. spiculosa

1. All pecten spines simple, spinelike
2. Integument of thorax and abdomen with dense spicules

1. Distal 1-3 pecten spines simple, spinelike remainder with apical spicules
2. Integument of thorax with scattered minute spicules



Ur. enigmatica



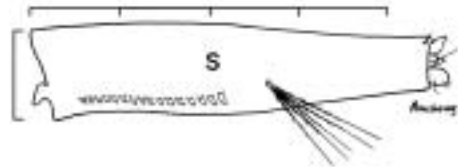
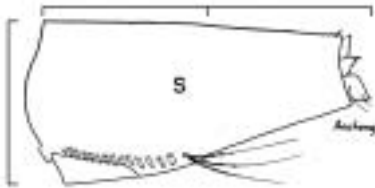
Ur. abdita

PLATE 16

From PLATE 12: Seta 1-C very weak, minute, inapparent; apical labral process more or less rounded, without apicomesal projection

Siphon short, length 3.5 or less width at base

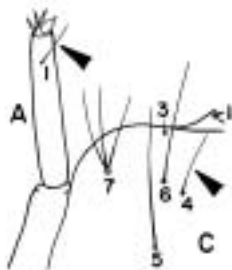
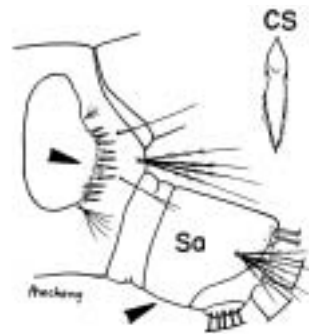
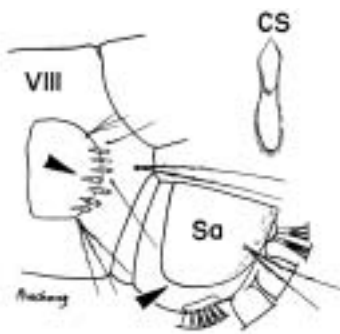
Siphon long, length 4 or more times width at base



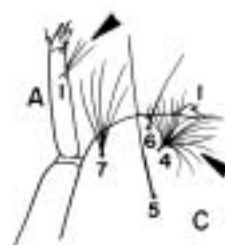
➔ To PLATE 17

1. Saddle of segment X incomplete
2. Seta 4-C single
3. Seta 1-A single
4. Comb scales slightly expanded and rounded apically

1. Saddle of segment X complete
2. Seta 4-C multiple branched
3. Seta 1-A 2-4 branched
4. Comb scales with pointed apices



Ur. nivipleura



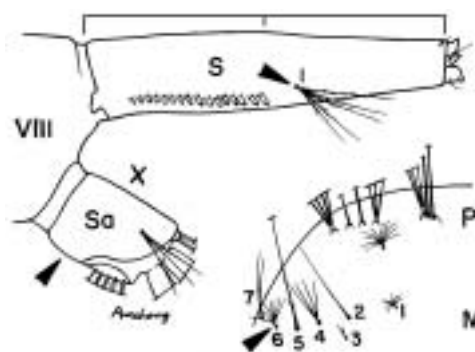
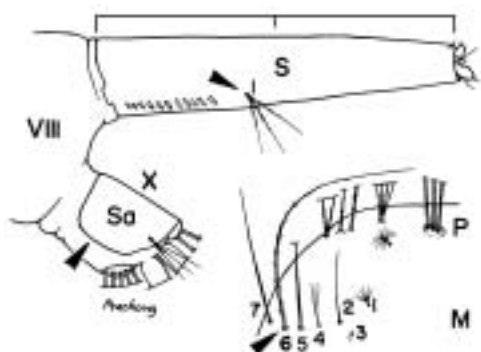
Ur. novobscura

PLATE 17

From PLATE 16: Siphon long, length 4 or more times width at base

1. Saddle of segment X incomplete
2. Seta 1-S inserted before 0.5 of siphon
3. Seta 6-M long, stout, single

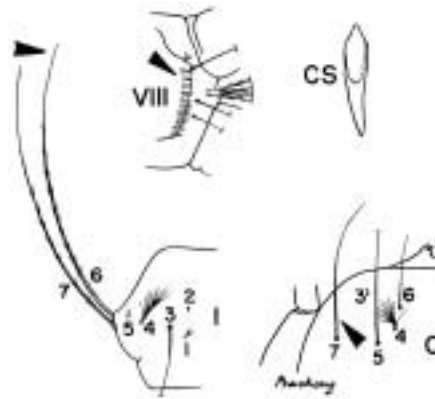
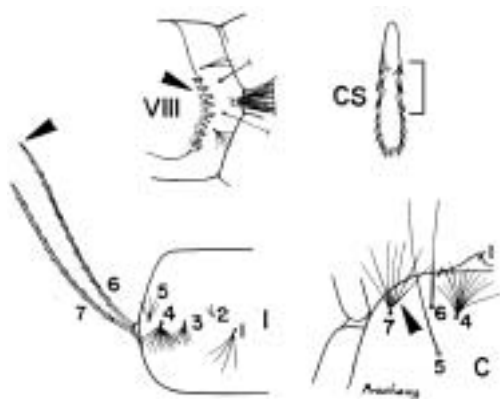
1. Saddle of segment X complete
2. Seta 1-S inserted beyond 0.5 of siphon
3. Seta 6-M minute, single or branched



Ur. bimaculata

1. Comb scales with 1-4 stout basolateral denticles, rounded apically
2. Setae 6,7-I, II stout with acute tips
3. Seta 7-C with 5-9 branches

1. Comb scales without stout basolateral denticles, pointed apically
2. Setae 6,7-I, II filamentous with fine tips
3. Seta 7-C single



Ur. pseudomaculipleura

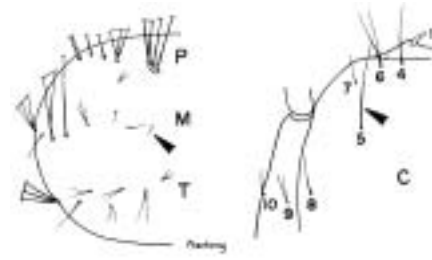
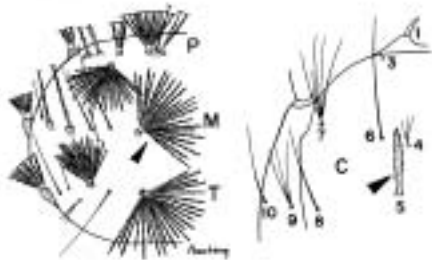
To PLATE 18 (Below)

PLATE 18

From PLATE 12: Seta 1-C conspicuous, strong at base and tapered to apex, spinelike; apical labral process rounded or angular but without distinct apical projection on basomesal side of seta 1-C

1. Thorax and abdomen with numerous stout, multiple branched, stellate setae
2. Seta 5-C very stout, spikelike

1. Thorax and abdomen without stellate setae
2. Seta 5-C slender



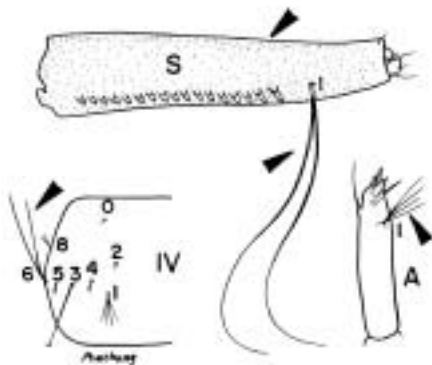
Ur. maxima

→ To PLATE 19

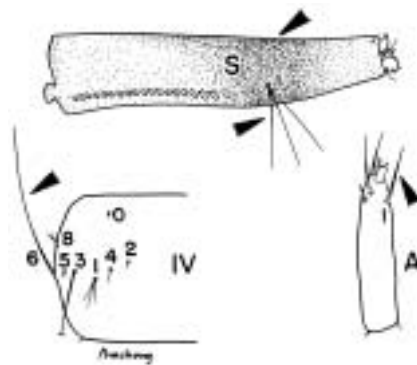
From PLATE 17: Comb scales without stout basolateral denticles, pointed apically; setae 6, 7-I, II filamentous with fine tips; seta 7-C single

1. Siphon and saddle of segment X pale brown or pale yellowish brown
2. Seta 1-S longer than siphon and inserted on distal 0.76-0.90 of siphon
3. Seta 6-III-V with 2-5 branches
4. Seta 1-A with 3 or 4 branches

1. Siphon and saddle dark rust-brown at least on middle portion
2. Seta 1-S less than length of siphon and never inserted beyond 0.72 from base of siphon
3. Seta 6-III-V single
4. Seta 1-A single, strong



Ur. patriciae



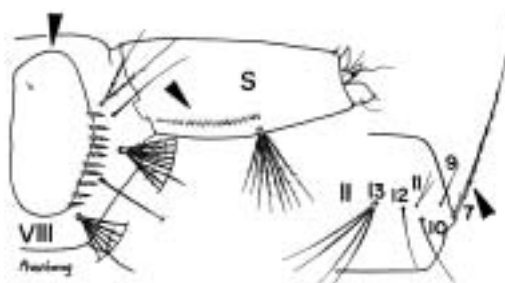
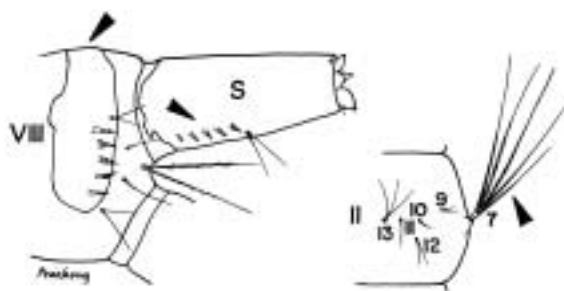
Ur. modesta

PLATE 19

From PLATE 18: Thorax and abdomen without stellate setae; seta 5-C slender

1. Comb plates joined dorsally
2. Pecten with 2-9 spines
3. Seta 7-I,II with 2-5 branches

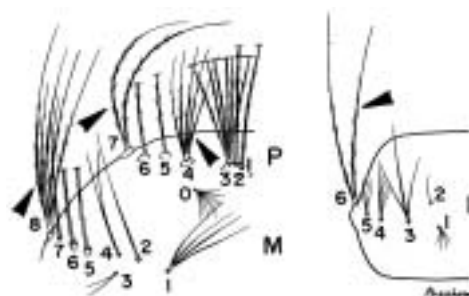
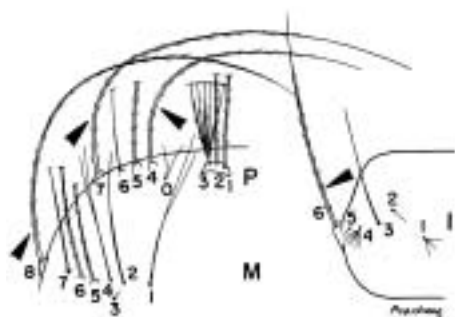
1. Comb plates not jointed dorsally
2. Pecten with 11-30 spines
3. Seta 7-I,II single



Ur. obscura

1. Setae 4,7-P and 8-M single and longer than 2 times length of thorax
2. Seta 6-I,II single

1. Setae 4,7-P and 8-M at least double and shorter than 2 times length of thorax
2. Seta 6-I,II at least double



Ur. lutescens

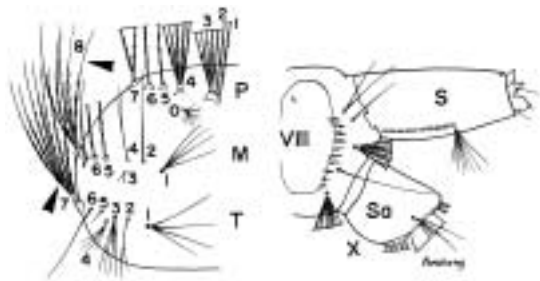
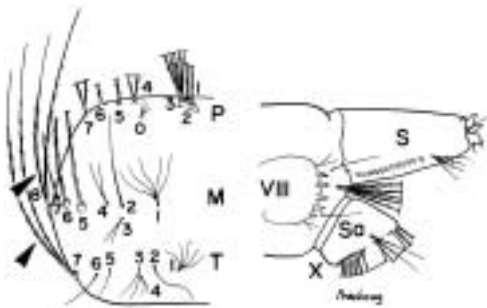
➔ To PLATE 20

PLATE 20

From PLATE 19: Setae 4,7-P and 8-M at least double and shorter than 2 times length of thorax; seta 6-I,II at least double

1. Seta 8-M double or triple
2. Seta 7-T with 2-4 branches
3. Saddle index (length÷width) less than 1.0

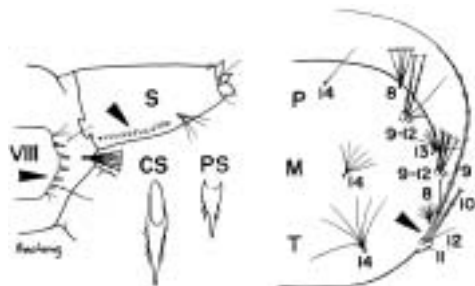
1. Seta 8-M with 4-7 branches
2. Seta 7-T with 5-10 branches
3. Saddle index greater than 1.0



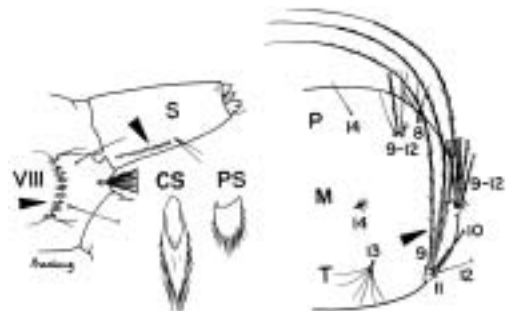
➡ To PLATE 21

1. Comb scales and pecten spines with simple spinelike apices
2. Seta 9-T single

1. Comb scales and pecten teeth fringed to apex
2. Seta 9-T double or triple



Ur. demeilloni

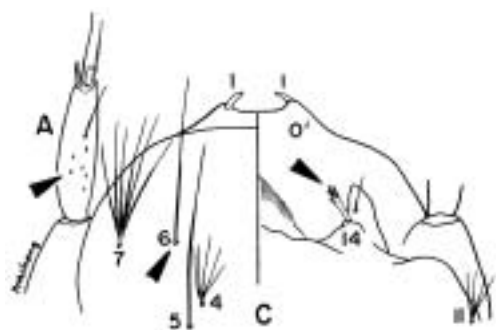


Ur. approximata

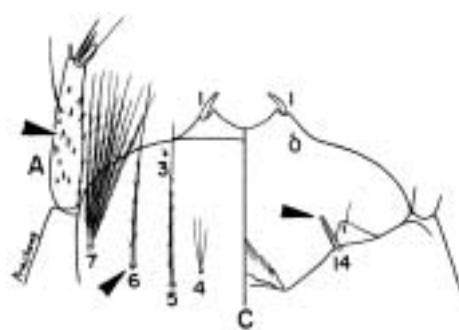
PLATE 21

From PLATE 20: Seta 8-M with 4-7 branches; seta 7-T with 5-10 branches; saddle index greater than 1.0

1. Seta 6-C not noticeably laterad of 5-C and considerably anterior to 7-C
2. Antenna with at most few small scattered, inconspicuous spicules
3. Seta 14-C stout and frayed apically

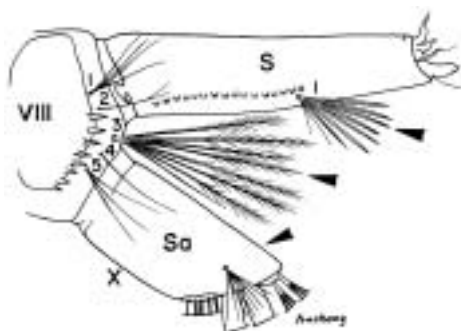


1. Seta 6-C located considerably laterad of 5-C and on level with or posterior to 7-C
2. Antenna with stout, conspicuous spicules dorsally and ventrally
3. Seta 14-C broad, pigmented, spinelike

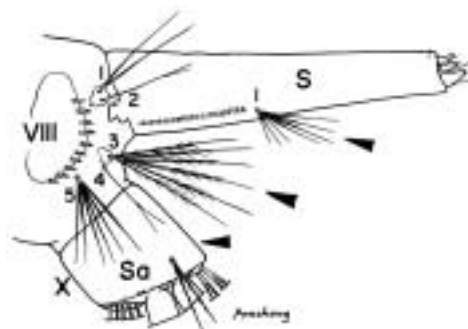


Ur. bicolor

1. Saddle longer than 0.5 times length of siphon
2. Seta 1-S with flattened, bladelike branches
3. Seta 3-VIII long, aciculate distally



1. Saddle shorter than 0.5 times length of siphon
2. Seta 1-S without flattened, bladelike branches
3. Seta 3-VIII shorter, fine-tipped



Ur. hirsutifemora

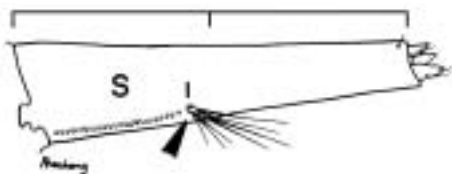
➡ To PLATE 22

PLATE 22

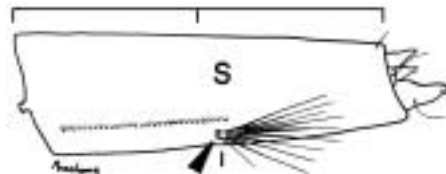
From PLATE 21: Saddle shorter than 0.5 times length of siphon; seta 1-S without flattened, bladelike branches; seta 3-VIII shorter, fine-tipped

Seta 1-S inserted on basal 0.43-0.48 of siphon

Seta 1-S inserted on basal 0.51-0.56 of siphon



Ur. gouldi

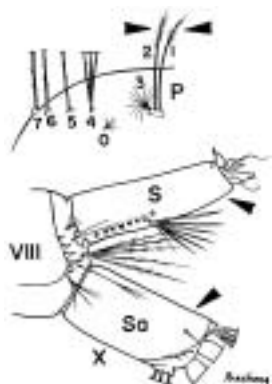


Ur. abstrusa

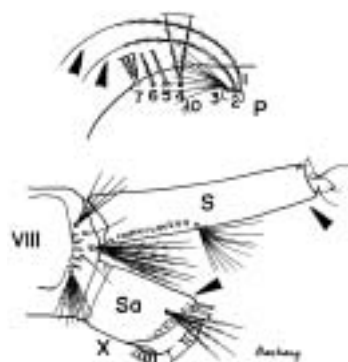
KEY TO THE SPECIES OF SUBGENUS *URANOTAENIA* FOURTH-INSTAR LARVAE^a

From PLATE 11: Setae 5,6-C very stout and spiny or spikelike; grid of segment X usually distinctly joined midventrally to saddle

1. Seta 1-and/or 2-P with aciculate-tips and/or
2. Saddle as long as or longer than 0.5 length of siphon

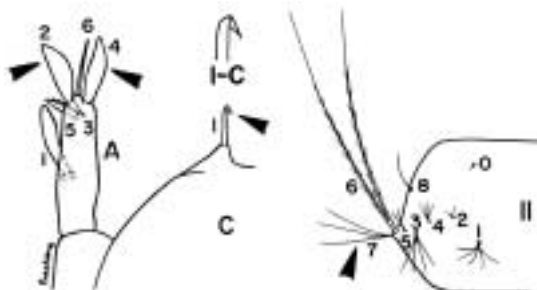


1. Seta 1-and/or 2-P without aciculate-tips
2. Saddle usually shorter than 0.5 length of siphon



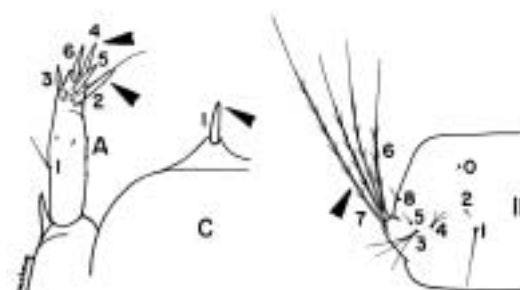
➡ To PLATE 26 (Above)

1. Setae 2,4-A broad and flattened and/or
2. Seta 1-C flattened and apically bent
3. Seta 7-II short and branched, less than 0.5 length of seta 6-II



➡ To PLATE 24

1. Seta 2-A may be broad and flattened, but not 4-A
2. Seta 1-C rounded and not bent at apex
3. Seta 7-II long and single, 0.7 or more length of seta 6-II



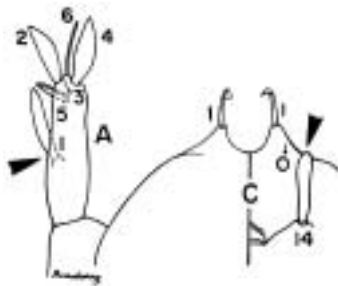
➡ To PLATE 25

^a*Uranotaenia edwardsi* and *Ur. orientalis* are not included.

PLATE 24

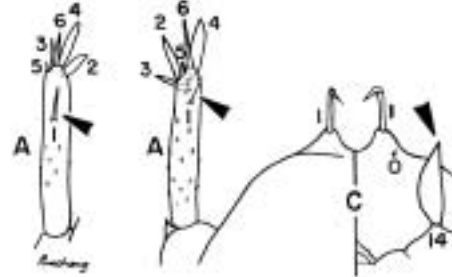
From PLATE 23: Setae 2,4-A broad and flattened and/or; seta 1-C flattened and apically bent; seta 7-II short and branched, less than 0.5 length of seta 6-II

1. Seta 1-A broad and flattened, placed at middle of antenna shaft
2. Seta 14-C spinelike, apex rounded

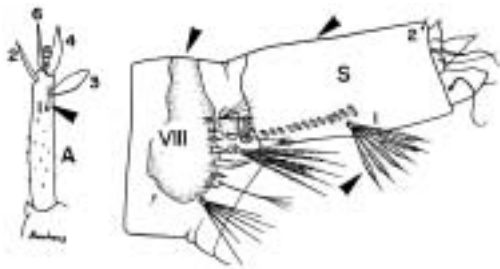


Ur. annandalei

1. Seta 1-A simple, weak or stout, placed near apex of antenna shaft
2. Seta 14-C spinelike, apex pointed

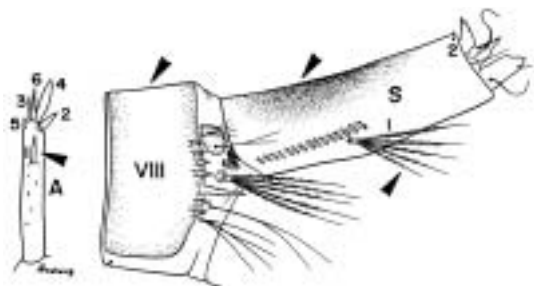


1. Seta 1-A weak, antenna shaft with strong spicules
2. Abdominal segment VIII with narrow sclerotized plate dorsally, less than 0.5 length of segment
3. Siphon short, 2 times or less length at base, without dorsal pigmentation
4. Branches of seta 1-S flattened and lanceolate with apical filament



Ur. prajimi

1. Seta 1-A stout, antenna shaft smooth or lightly spiculate
2. Abdominal segment VIII with broad sclerotized plate, nearly covering the whole segment
3. Siphon long, more than 2 times length at base, occasionally with dark pigmentation dorsally
4. Branches of seta 1-S not flattened and lanceolate



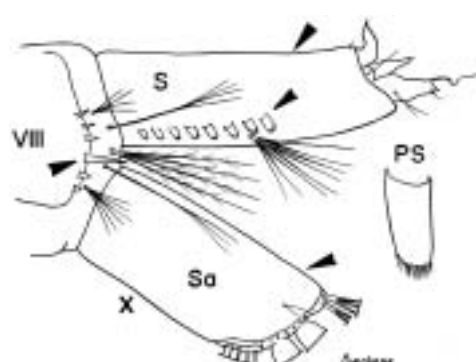
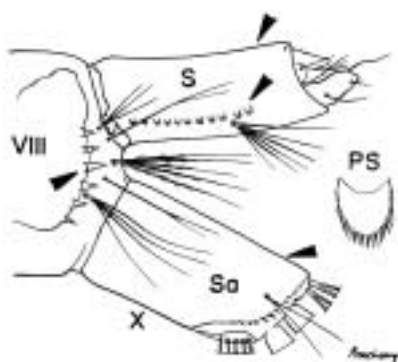
Ur. sombooni

PLATE 25

From PLATE 23: Setae 2-A may be broad and flattened but not 4-A; seta 1-C rounded and not bent at apex; seta 7-II long and single, 0.7 or more length of seta 6-II

1. Pecten spines fringed at sides and apex
2. Siphon short, 1.0 or less length of saddle
3. Comb scales of similar size

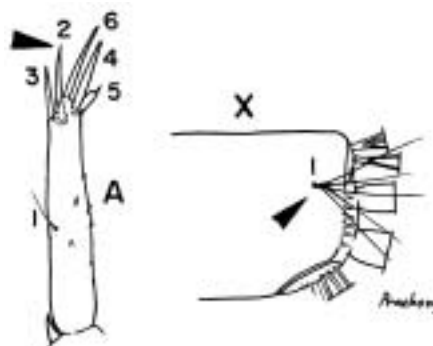
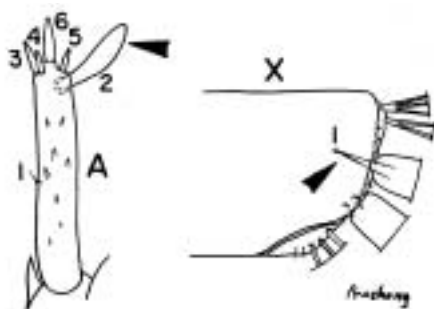
1. Pecten spines fringed at apex only
2. Siphon longer than 1.0 length of saddle
3. One comb scale distinctly longer than the others



Ur. dirapathi

1. Seta 2-A stout with rounded tip
2. Seta 1-X with fewer than 4 branches

1. Seta 2-A simple with pointed tip
2. Seta 1-X with more than 4 branches



Ur. longirostris

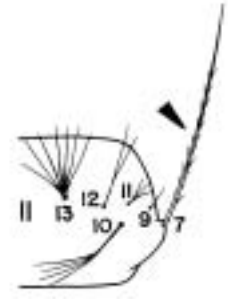
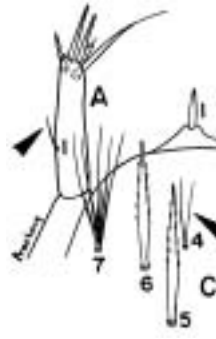
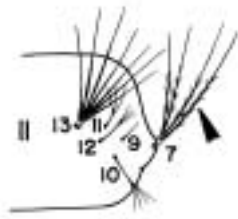
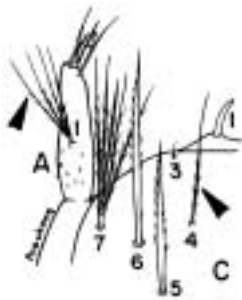
➡ To PLATE 26 (Below)

PLATE 26

From PLATE 23: Seta 1-and/or 2-P without aciculate tips; saddle usually shorter than 0.5 length of siphon

1. Seta 4-C single (rarely double)
2. Seta 7-II single or branched
3. Seta 1-A long, single or branched, inserted at or beyond middle of antenna shaft

1. Seta 4-C branched
2. Seta 7-II single
3. Seta 1-A short, usually inserted before middle of antenna shaft



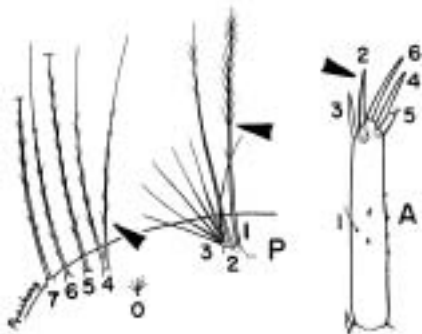
➡ To PLATE 27

➡ To PLATE 28

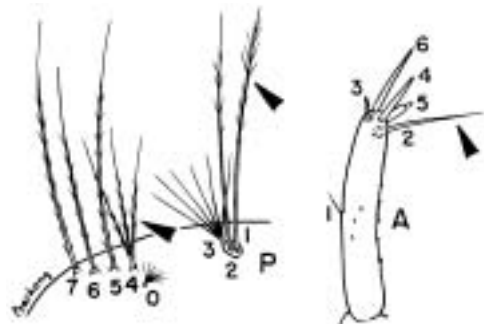
From PLATE 25: Seta 2-A simple with pointed tip; seta 1-X with more than 4 branches

1. Seta 4-P double
2. Seta 1-P densely aciculate on distal 0.5
3. Seta 2-A with short filament, as long as or shorter than setae 4-and 6-A

1. Seta 4-P triple
2. Seta 1-P sparsely aciculate on distal 0.25
3. Seta 2-A with filament longer than setae 4-and 6-A



Ur. micans

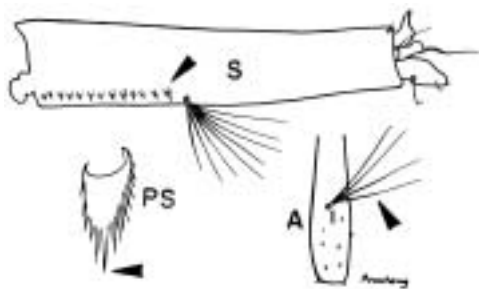


Ur. species 2

PLATE 27

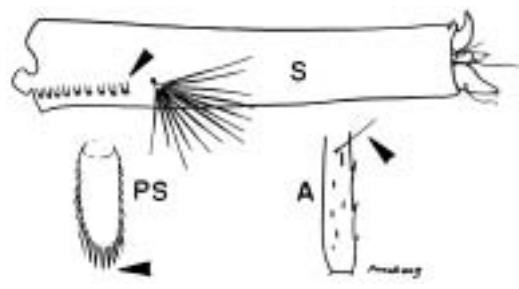
From PLATE 26: Seta 4-C single (rarely double); seta 7-II single or branched; seta 1-A long, single or branched, inserted at or beyond middle of antenna shaft

1. Pecten spines pointed at apex, with apical spicules stouter than lateral spicules, most distal spine on basal 0.33 or more of siphon
2. Seta 1-A branched

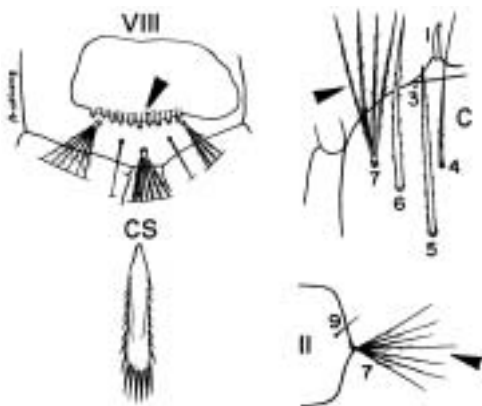


Ur. testacea

1. Pecten spines rounded, fringed at sides and/or apex, most distal spine on basal 0.33 or less of siphon
2. Seta 1-A single

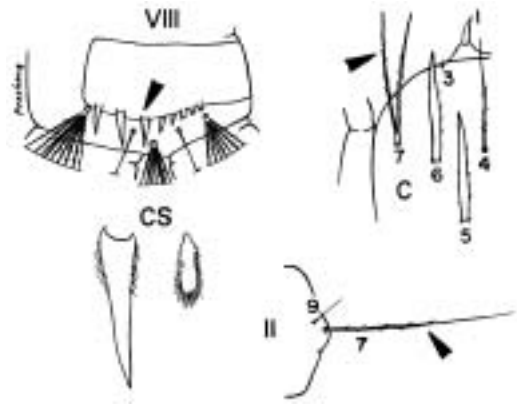


1. Comb plates not joined dorsally, with scales similar in length and size, apically rounded and fringed at sides and apex
2. Setae 7-C with more than 2 branches
3. Seta 7-II branched



Ur. hebes

1. Comb plates joined dorsally, with spinelike scales or these mixed with small rounded scales
2. Setae 7-C single or double
3. Seta 7-II single

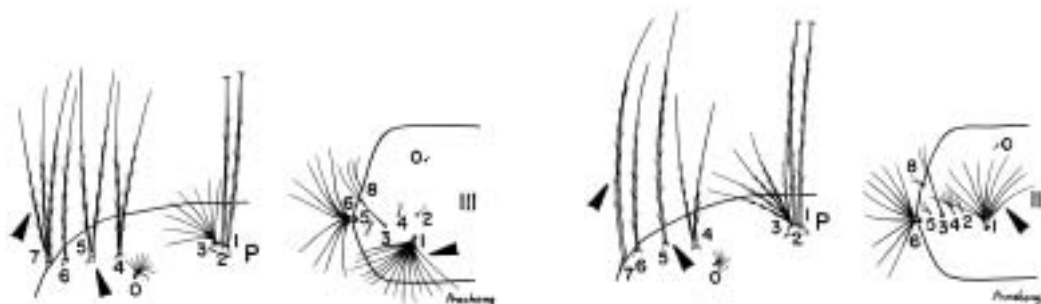


Ur. species 1

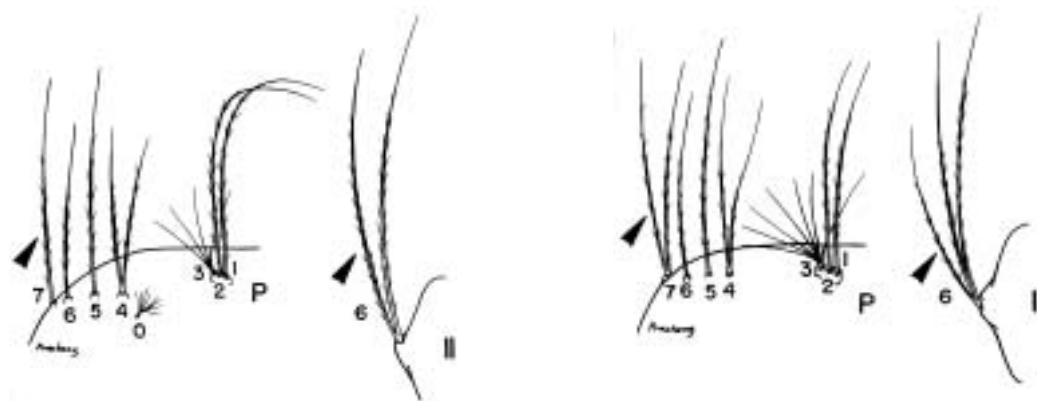
PLATE 28

From PLATE 26: Seta 4-C branched; seta 7-II single; seta 1-A short, usually inserted before middle of antenna shaft

- | | |
|---|--|
| 1. Seta 5-P double | 1. Seta 5-P single |
| 2. Seta 7-P with 3 branches | 2. Seta 7-P single or double |
| 3. Seta 1-III-VI with more than 10 branches | 3. Seta 1-III-VI with 10 or fewer branches |

*Ur. metatarsata*

- | | |
|-------------------------------|--------------------------------------|
| 1. Seta 7-P single | 1. Seta 7-P double |
| 2. Seta 6-II double or triple | 2. Seta 6-II usually with 3 branches |



└─▶ To PLATE 29 (Above)

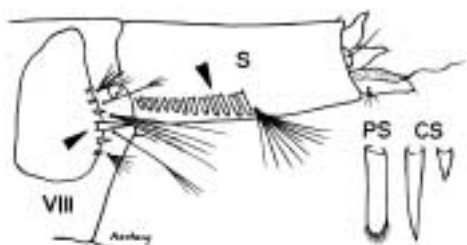
└─▶ To PLATE 29 (Below)

PLATE 29

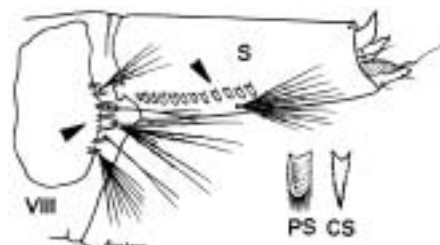
From PLATE 28: Seta 7-P single; seta 6-II double or triple

1. Pecten spines fringed at apex
2. One comb scale distinctly longer than the others

1. Pecten spines fringed at sides and apex
2. Comb scales of similar size



Ur. bimaculiala
and *Ur. species 4*

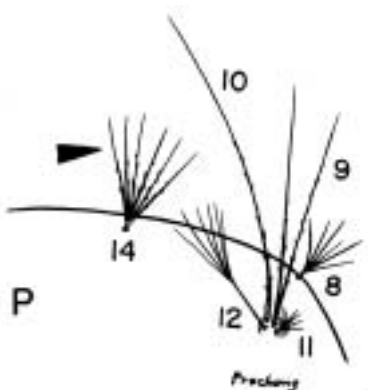


Ur. lateralis

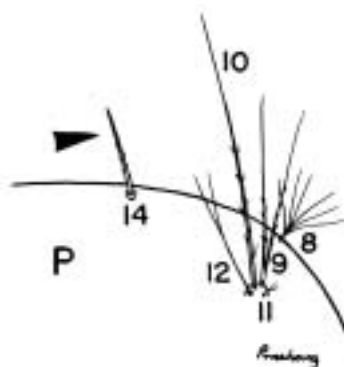
From PLATE 28: Seta 7-P double; seta 6-II usually with 3 branches

Seta 14-P branched

Seta 14-P single



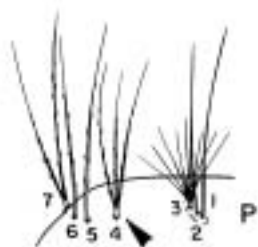
Ur. trilineatus



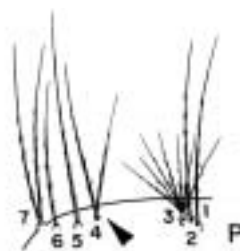
➡ To PLATE 30

From PLATE 29: Seta 14-P single

1. Siphon shorter than 2.5 times width at base
2. Seta 4-P usually with 3 or more branches



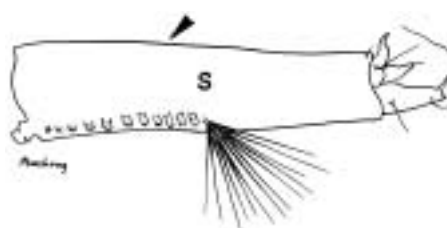
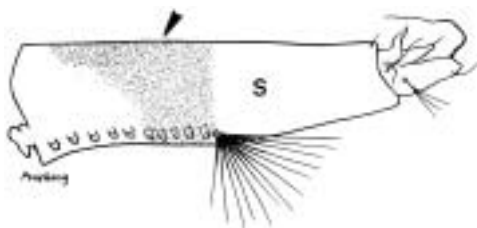
1. Siphon longer than 2.5 times width at base
2. Seta 4-P double



Ur. species 3

Siphon with reddish brown band before middle

Siphon without reddish brown band before middle, occasionally with dorsal dark area



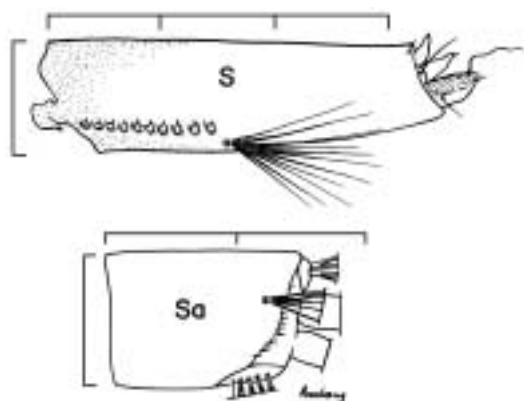
Ur. rampae

→ To PLATE 31

PLATE 31

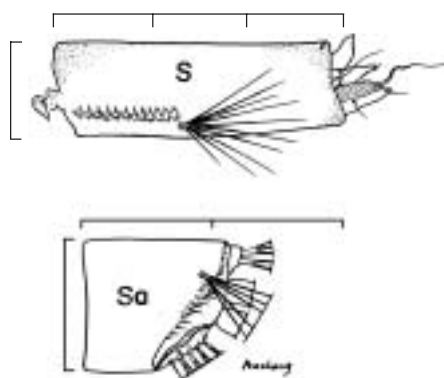
From PLATE 30: Siphon without reddish brown band before middle, occasionally with dorsal dark area

1. Siphon long, length more than 3 times width at base
2. Saddle index 1:1.5



Ur. macfarlanei^a

1. Siphon short, length less than 3 times width at base
2. Saddle index 1: 1.25



Ur. campestris^a

^a*Uranotaenia subnormalis* may key to this couplet.