

KEY TO THE NON-POLYDORID SPIONIDAE FROM SOUTHERN CALIFORNIA
(INTERTIDAL TO 500 METERS)

by
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1. Branchiae absent; setiger 1 with 1 - 2 large recurved neuropodial spines in addition to capillary setae (Fig. 1) . . . (*Spiophanes*) 2
 Branchiae present; setiger 1 without recurved neuropodial spines (see Fig. 13) 7
2. Prostomium rounded anteriorly, without lateral projections; prostomium with medial orange pigment spot; median antennae absent (Fig. 2) *Spiophanes wigleyi*
 Prostomium bell or T-shaped, with short or long lateral projections (Figs. 3-7); prostomium without pigment spot; median antennae present or absent 3
3. Prostomium T-shaped with long lateral projections 4
 Prostomium bell shaped without lateral projections 5
4. Eyes present (Fig. 3) *Spiophanes bombyx*
 Eyes absent (Fig. 4) *Spiophanes anoculata*
5. Median antennae absent; peristomium poorly developed (Fig. 5) *Spiophanes missionensis*
 Median antennae present; peristomium well developed (Fig. 6) 6
6. Prostomium flairs laterally at distal end; neuropodial glands in setigers 10 - 13 without pigment; ventrum of setiger 8 forms dark transverse band with methyl green stain; dorsal transverse membrane without fimbriae (Fig. 6) *Spiophanes berkeleyorum*
 Prostomium straight or with a slight constriction distally; neuropodial glands in setigers 10 - 13 darkly pigmented; setiger 8 does not form transverse band of methyl green stain; dorsal transverse membrane with fimbriae (Fig. 7) *Spiophanes fimbriata*
7. Modified segment present in anterior region (Figs. 8 & 9) 8
 Modified segment absent in anterior region 9
8. Setiger 5 modified Polydorid complex (includes *Pseudopolydora*, *Polydora* (Fig. 8), *Carazziella* (Fig. 9), *Boccardiella*, and *Boccardia*)
 Setiger 16 modified *Morants duplex*

9.	Notopodial post-setal lamellae of first 2 - 3 parapodia with 1 or more lobes; accessory branchiae present (Fig. 10)	
	<i>Dispio uncinata</i>
	Notopodial post-setal lamellae of anterior parapodia entire; accessory branchiae absent	10
10.	Branchiae limited to middle and posterior setigers, except for a single pair on setiger 2 in males (Fig. 11)	(<i>Pygospio</i>) 11
	Branchiae beginning on setiger 1 or 2 and continuing for a variable number of setigers	12
11.	Branchiae first present from setiger 17 - 21 (Fig. 11)	<i>Pygospio californica</i>
	Branchiae first present from setiger 11 - 12 (Fig. 12)	<i>Pygospio elegans</i>
12.	Prostomium conical, distally pointed, occasionally blunt with minute point; or conical and distally tapering (Figs. 13 & 14)	13
	Prostomium with distal lateral or frontal horns, broadly rounded, or incised on anterior margin (Figs. 19, 26, & 30)	19
13.	Branchiae fused to dorsal lamellae at least basally, continuing to end of body (Fig. 14)	(<i>Scoelelepis</i>) 14
	Branchiae completely free from dorsal lamellae, present on variable number of anterior setigers, absent posteriorly (Fig. 13)	<i>Aonides</i> spp.
14.	Occipital cirrus (median antenna) present (Figs. 14 & 15)	15
	Occipital cirrus (median antenna) absent (Fig. 17)	17
15.	Setiger 1 with notosetae	16
	Setiger 1 without notosetae.	<i>Scoelelepis</i> sp. 1 of Point Loma
16.	Hooded uncini unidentate or bidentate (Fig. 14)	<i>Scoelelepis occidentalis</i>
	Hooded uncini multidentate (Fig. 15)	<i>Scoelelepis (Parascoelelepis) tridentata</i>
17.	Notosetae absent on setiger 1; hooded hooks tridentate or multidentate	18
	Notosetae present on setiger 1; hooded hooks uni-, bi- or tridentate (Fig. 16)	<i>Scoelelepis squamata</i>

18.	Eyes arranged in straight line; hooded hooks tridentate (Fig. 17)	<i>Scolelepis bullibranchia</i>	
	Eyes arranged in trapezoid; hooded hooks multidentate	<i>Scolelepis</i> sp. B of Rossi	
19.	Prostomium with lateral or frontal horns (variable for <i>Malacocerus</i>)		20
	Prostomium broadly rounded or incised on anterior margin, without lateral or frontal horns		21
20.	Branchiae beginning on setiger 1 (Fig. 18)	<i>Malacoceros punctata</i>	
	Branchiae beginning on setiger 2 (Fig. 19)	<i>Rhynchospio glutea</i>	
21.	Branchiae present anteriorly only (Fig. 23)		22
	Branchiae present throughout most of the body (Fig. 32)		31
22.	Branchiae begin on setiger 1		23
	Branchiae begin on setiger 2		24
23.	One pair of apinnate branchiae, with dorsal ridge on setiger 2 (Fig. 20)	<i>Streblospio benedicti</i>	
	Three pairs of pinnate branchiae, with dorsal ridge on setiger 1 (Fig. 21)	<i>Paraprionospio pinnata</i>	
24.	Branchiae all cirriform, 6 or more pairs (Fig. 22)	[<i>Prionospio (Minuspio)</i>]	25
	Branchiae a combination of pinnate and cirriform, 4 or 5 pairs (Figs. 25 & 26)		27
25.	Prostomium with 2 pairs of large eyes, 6 - 8 pairs of branchiae (Fig. 22)	<i>Prionospio (Minuspio) multibranchiata</i>	
	Prostomium with 2 pairs of small eyes, 6 - 12 pairs of branchiae. .26		
26.	Prostomium truncate anteriorly, triangular in appearance, sometimes with 1 medial peak; posterior dorsal lamellae rounded; 6 - 8 pairs of branchiae (Fig. 23)	<i>Prionospio (Minuspio) cirrifera</i>	
	Prostomium narrowly rounded anteriorly, with 5 marginal peaks; posterior dorsal lamellae triangular; 6 - 12 pairs of branchiae (most commonly ten) (Fig. 24)	<i>Prionospio (Minuspio) lighti</i>	

27. First pair of branchiae cirriform; fourth pair pinnate with flat, plate-like pinnules (Fig. 25) *Apoprionospio pygmaea*
- First pair of branchiae pinnate; pinnules digitiform (Fig. 26) [Prionospio (Prionospio)] 28
28. Branchial pairs 2, 3 and 4 cirriform; interramal pouches present from setigers 2 - 4, continuing to mid-body (Fig. 26). *Prionospio ehlersi*
- Branchial pairs 2 - 3 cirriform; interramal pouches absent 29
29. Four pairs of branchiae; pairs 1 and 4 pinnate (Figs. 28 & 29) 30
- Five pairs of branchiae, pairs 1, 4, and 5 pinnate (Fig. 27) *Prionospio heterobranchia*
30. Branchial pairs 1 and 4 pinnate, subequal, or with fourth pair longer than first; dorsal transverse membranes present from setiger 7 (Fig. 28) *Prionospio* sp. A (sensu SCAMIT)
- Branchial pairs 1 and 4 pinnate; first pair two to three times longer than fourth; dorsal transverse membranes absent (Fig. 29) *Prionospio* sp. B (sensu SCAMIT)
31. Branchiae begin on setiger 1 31
- Branchiae begin on setiger 2 34
32. Prostomium incised anteriorly; neurosetae of some anterior setigers with pseudoaristate setae; posterior neuropidal hooks with subdistal secondary tooth (Fig. 30) *Pseudatherospio fauchaldi*
- Prostomium distally entire; anterior neurosetae without pseudoaristate spines; posterior neuropidal hooks with small secondary tooth distal (Fig. 32) 33
33. (**Note: 3 choices**) Branchiae on setigers 1 and 2 subequal; prostomium with dark pigment; hooded hooks bidentate (Fig. 31) *Spio filicornis*
- Branchiae on setiger 1 longer than on setiger 2; first pair of branchiae pigmented, ciliated, and with distal swelling; prostomium without pigment; anterior dorsum pigmented; hooded hooks multi-dentate; nuchal organs form distinct zigzag pattern *Spio* sp. A (sensu SCAMIT)
- Branchiae on setiger 1 shorter than on setiger 2; prostomium without pigment; peristomium with patches of pigment; hooded hooks tridentate (Fig. 32) *Spio maculata*

34. Interramal pouches present (*Laonice*). 34
 Interramal pouches absent (*Microspio*). 36
35. Prostomium protrudes beyond peristomial wings; thoracic
 parapodial fascicles with dense, brassy colored setae (Fig. 33)
 *Laonice appellofi*
 Prostomium does not protrude beyond peristomial wings;
 thoracic parapodial fascicles sparce, pale yellow setae
 (Fig. 34) *Laonice cirrata*
36. Prostomium bilobed, without pigment spot; notosetae absent
 on setiger 1 (Fig. 35) *Microspio microcera*
 Prostomium rounded, with a pigment spot; notosetae present
 on setiger 1 (Fig. 36) *Microspio pigmentata*

NON-POLYDORID SPIONIDAE (POLYCHAETA)
FROM SOUTHERN CALIFORNIA
(INTERTIDAL TO 500 METERS)

Aonides sp.

Apoprionospio pygmaea (Hartman, 1961)

Dispio uncinata Hartman, 1951

Laonice appellofi Soderstrom, 1920

Laonice cirrata (Sars, 1851)

Malacoceros punctata (Hartman, 1961) (formerly *Spio*)

Microspio microcera (Dorsey, 1977) (formerly *Rhynchospio*)

Microspio pigmentata (Reish, 1959)

Morants duplex Chamberlin, 1919

Paraprionospio pinnata (Ehlers, 1901)

Prionospio (*Minuspio*) *cirrifera* Wiren, 1883

Prionospio ehlersi Fauvel, 1928

Prionospio heterobranchia Moore, 1907

Prionospio (*Minuspio*) *lighti* Maciolek, 1985

Prionospio (*Minuspio*) *multibranchiata* Berkeley, 1927

Prionospio sp. A (*sensu* SCAMIT)

Prionospio sp. B (*sensu* SCAMIT)

Pseudathrospio fauchaldi Lovell (in press)

Pygospio californica Hartman, 1936

Pygospio elegans Claparede, 1863

Rhynchospio glutea (Ehlers, 1897)

Scolelepis bullibranchia Rossi, 1982

Scololepis occidentalis (Hartman, 1961)

Scololepis sp. B of Rossi

Scololepis sp. 1 of Point Loma

Scololepis squamata (O.F. Muller, 1806)

Scolelepis (*Parascolelepis*) *tridentata* (Southern, 1914)

Spio filicornis (Muller, 1776)

Spio maculata (Hartman 1961)

Spio sp. A (sensu SCAMIT) [formerly *Microspio* sp. A
(sensu Lovell/Harris)]

Spiophanes anoculata Hartman, 1960

Spiophanes berkeleyorum Pettibone, 1962

Spiophanes bombyx (Claparede, 1870)

Spiophanes fimbriata Moore, 1923

Spiophanes missionensis Hartman, 1941

Spiophanes wigleyi Pettibone, 1962

Streblospio benedicti Webster, 1879

Non-polydorid spionids not included in the list or key which may occur in southern California are: *Prionospio anuncata* Fauchald, 1972; and *Spiophanes lowai* Solis-Weiss, 1983.

Key to the Non-Polydorid Spionidae from Southern California

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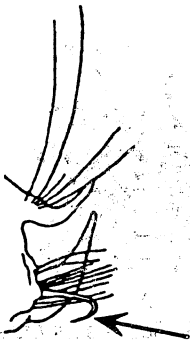


Fig. 1. Setiger 1, showing neuropodial spine of *Spiophanes*.

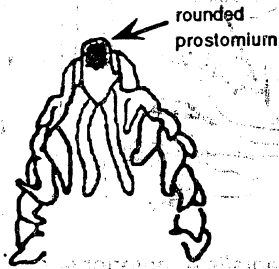


Fig. 2. *Spiophanes wigleyi*: anterior end, dorsal view.

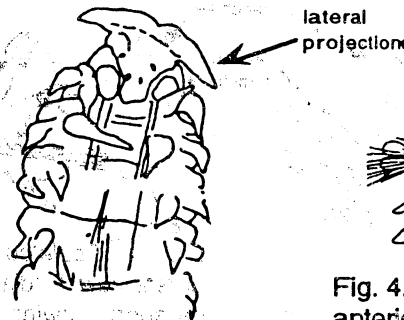


Fig. 3. *Spiophanes bombyx*: anterior end, dorsal view.

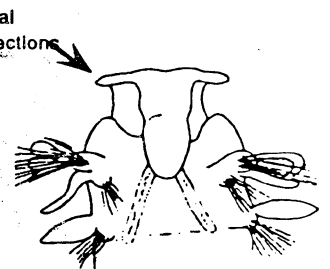


Fig. 4. *Spiophanes anunculata*: anterior end, dorsal view.

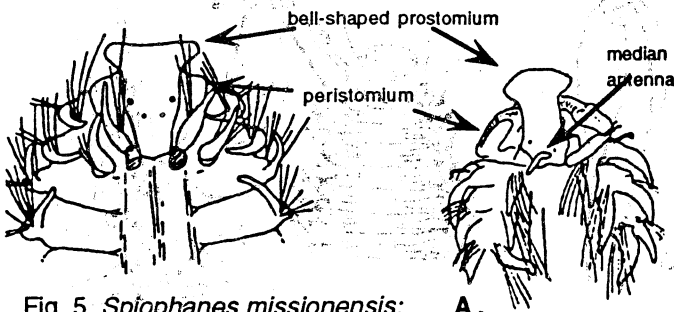


Fig. 5. *Spiophanes missionensis*: anterior end, dorsal view.

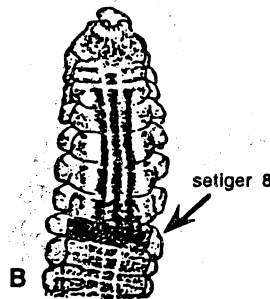


Fig. 6. *Spiophanes berkeleyorum*: A. anterior end, dorsal view; B. ventral view, showing methyl green staining pattern.

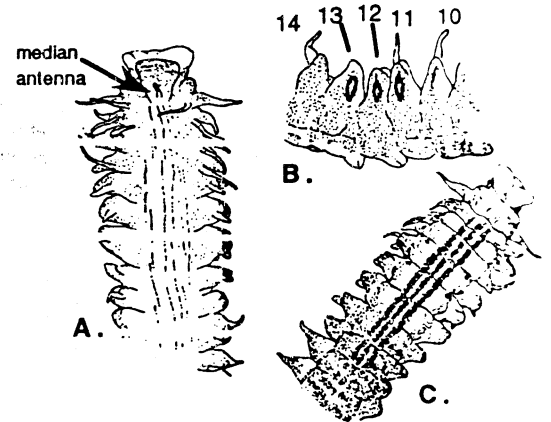


Fig. 7. *Spiophanes fimbriata*: A. anterior end, dorsal view; B. lateral view of setigers 10-14; C. ventral view, showing methyl green staining pattern.

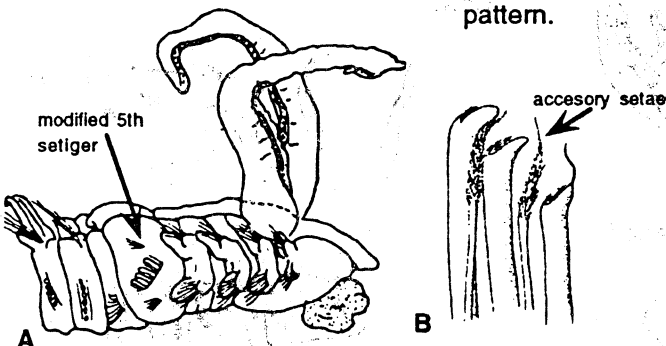


Fig. 8. *Polydora*: A. anterior end, lateral view showing modified 5th setiger; B. spines of modified 5th setiger.

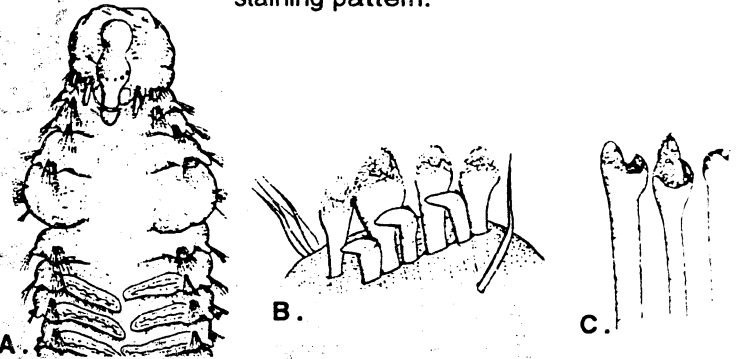


Fig. 9. *Carazziella*: A. anterior end, dorsal view; B. modified 5th setiger showing double row of spines; C. brushtop spines typical of *Carazziella*.

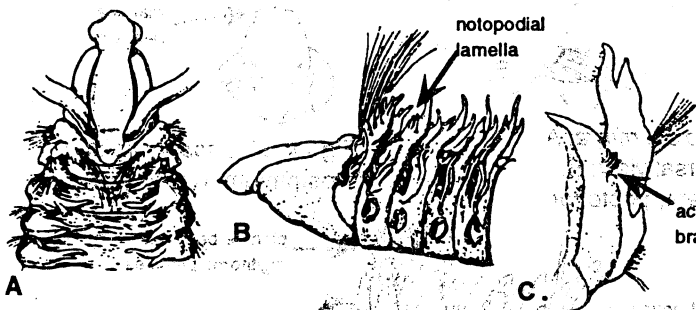


Fig. 10. *Dispio uncinata*: A. anterior end, dorsal view; B. anterior end, lateral view; C. mid-body setiger, posterior view showing accessory branchiae

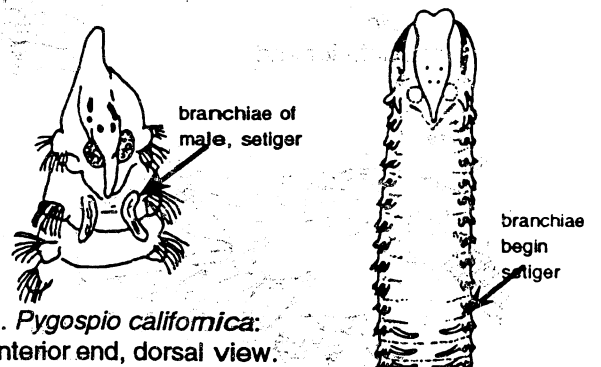


Fig. 11. *Pygospio californica*: male anterior end, dorsal view.

Fig. 12. *Pygospio elegans*: anterior end, dorsal view.

Key to the Non-Polydorid Spionidae from Southern California

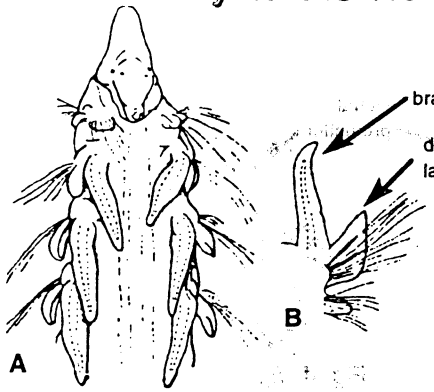


Fig. 13. *Aonides* sp.: A. anterior end, dorsal view; B. setiger 2, posterior view.

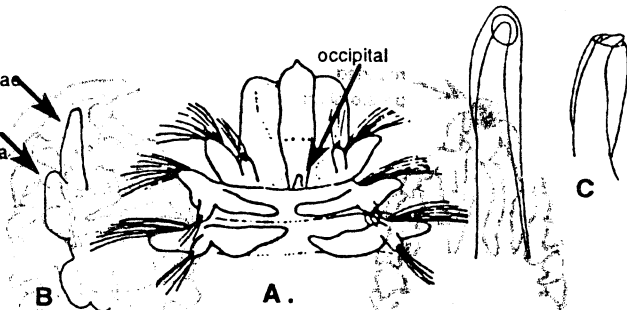


Fig. 14. *Scolelepis occidentalis*: A. anterior end, dorsal view; B. diagrammatic representation of a parapod showing branchia fused to notopod; C. unidentate hooded hook; D. bidentate hooded hook.

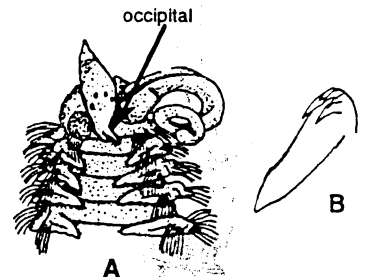


Fig. 15. *Scolelepis tridentata*: A. anterior end, dorsal view; B. head of multidentate hooded hook.

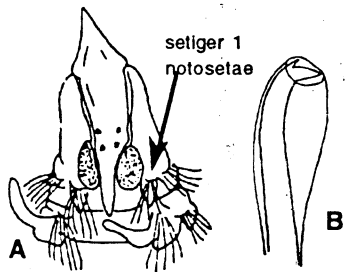


Fig. 16. *Scolelepis squamata*: A. anterior end, dorsal view; B. bidentate hooded hook.

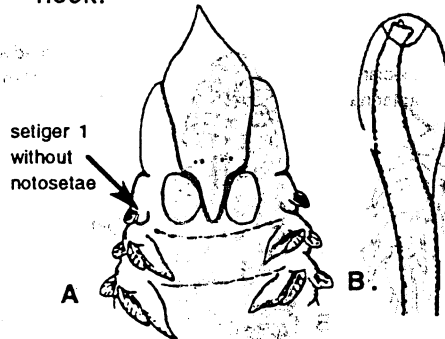


Fig. 17. *Scolelepis bullibranchia*: A. anterior end, dorsal view; B. tridentate hooded hook.

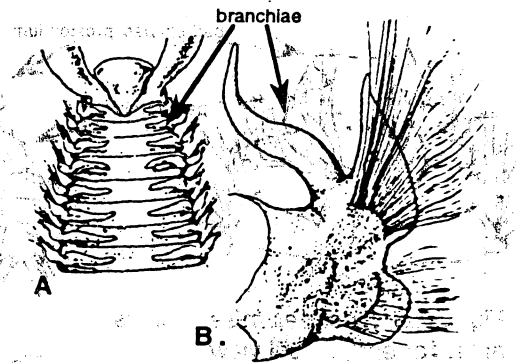


Fig. 18. *Malacocerus punctata*: A. anterior end, dorsal view; B. setiger 9, posterior view.

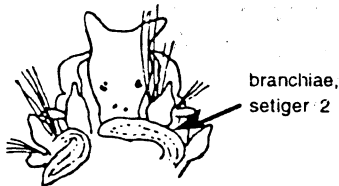


Fig. 19. *Rhyncospio glutea*: anterior end, dorsal view.

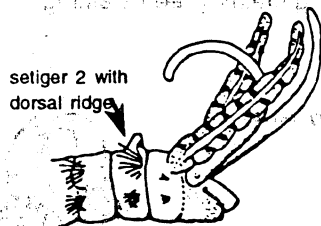


Fig. 20. *Streblospio benedicti*: anterior end, lateral view.

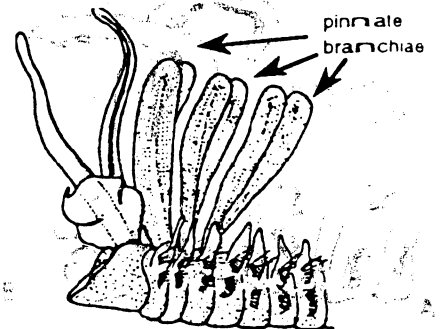


Fig. 21. *Paraprionospio pinnata*: anterior end, lateral view.

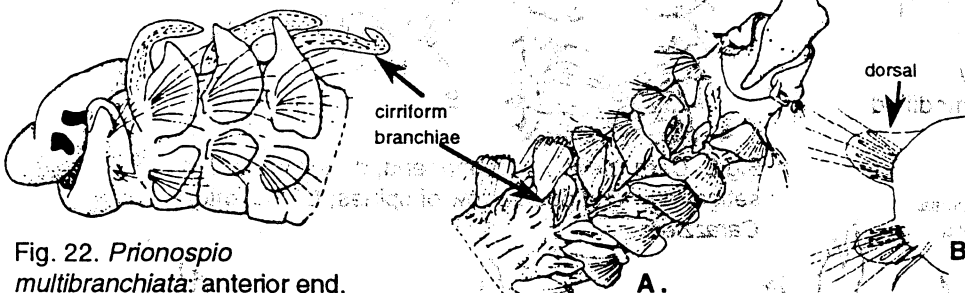


Fig. 22. *Prionospio multibranchiata*: anterior end, lateral view.

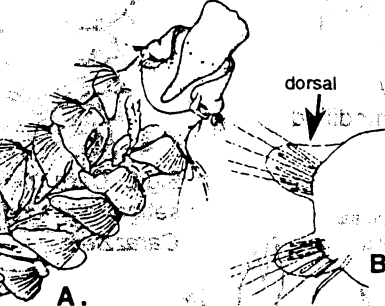


Fig. 23. *Prionospio cirrifera*: A. anterior end, dorsal view; B. posterior segment, posterior view.

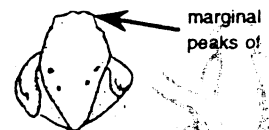


Fig. 24. *Prionospio lighti*: prostomium, dorsal view.

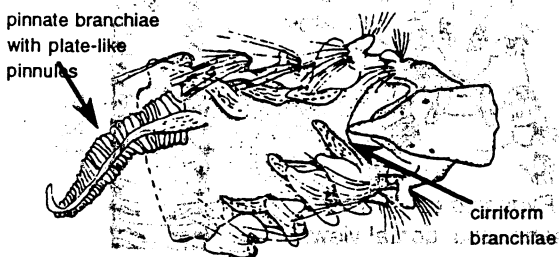


Fig. 25. *Apoprionospio pygmaea*: anterior end, dorsal view.

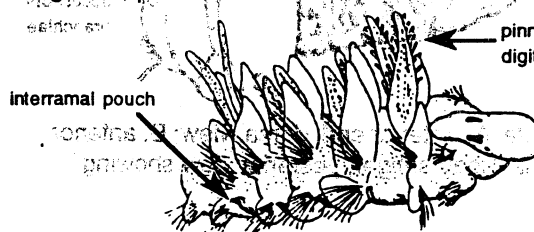


Fig. 26. *Prionospio ehlersi*: anterior end, dorsal view.

