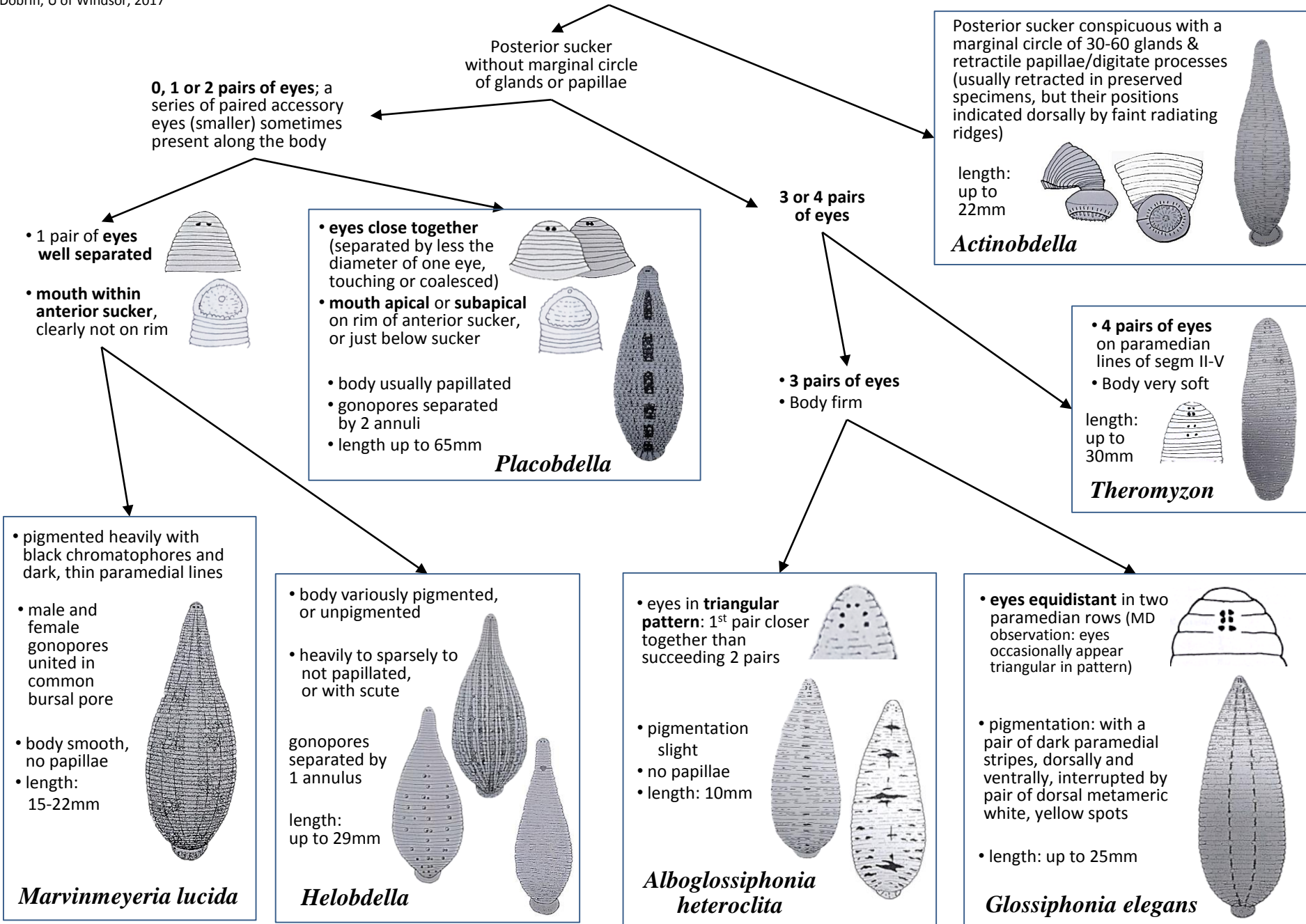


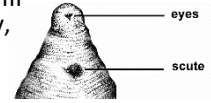
HIRUDINEA: Glossiphoniidae



HIRUDINEA: Glossiphoniidae: *Helobdella*

Without nuchal plate

Dorsum of segm VIII with brown, horny, chitinous scute (nuchal plate)



Dorsal surface smooth

- Body **unpigmented and translucent**
- Rounded and **subcylindrical**, lateral margins almost parallel
- Posterior sucker small and terminal
- Length: 25mm



H. elongata

- Body **pigmented**, with or without longitudinal or transverse bands
- Body **flat**, with posterior wider than tapering anterior

Dorsal surface with 3-7 **longitudinal series of papillae**, or with scattered papillae

No longitudinal stripes or middorsal row of papillae



H. stagnalis

Dorsum with middorsal row of papillae, or with stripes



MD note: uncertain if found in Great Lakes area

H. californica

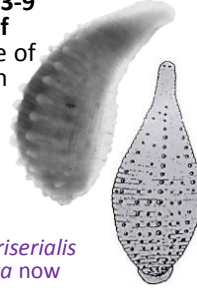
Dorsum with **transverse** brown interrupted **stripes** alternating with irregular white bands
Length 10mm



H. transversa

- Dorsum **without transverse** pigmentation
- Bearing **longitudinal stripes**

Dorsal surface with **3-9 longitudinal rows of papillae** irrespective of size or pigmentation
Length: 14mm



H. papillata

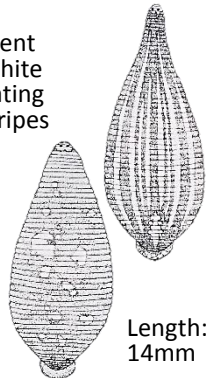
MD note: Former *H. triserialis* keys out as *H. papillata* now

- Dorsal surface with **3 or fewer incomplete series of small papillae**, or with scattered papillae
- Ratio of body width to body length $0.37 \pm 0.01SD$

Dorsum:
• with approx. 12 longitudinal brown stripes
• nearly smooth, with few papillae

H. lineata

Dorsum:
• with 6 prominent longitudinal white stripes alternating with brown stripes
• OR uniformly brown with unpigmented patches



H. fusca

Length: 14mm

Dorsum with longitudinal lines and irregularly arranged black and white papillae, white pigment spots on just the central annulus

Length: 13-17mm

H. austinensis



- Dorsal surface with 5 narrow longitudinal stripes, which extend unbroken along body
- white pigment spots may occur on every annulus and are concentrated in regions between stripes
- brown chromatophores grouped on dorsal surface into reliable pattern of narrow longitudinal stripes which extend unbroken throughout most of body length

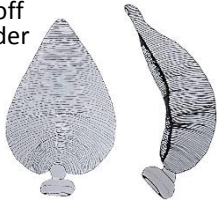


H. robusta

HIRUDINEA: Glossiphoniidae: *Placobdella* (key A)

- Eyes: 1 small pair on segm II and 1 larger pair (sometimes coalesced)
- No supplementary eyes

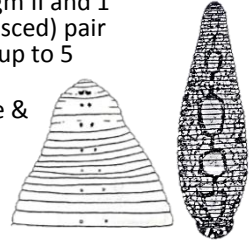
- Caudal sucker set off from body by slender stalk (**pedicel**)
- No papillae
- Length: 35mm



P. pediculata

- **No pedicel**
- Anus close to caudal sucker

- Eyes: 1 small pair on segm II and 1 larger (sometimes coalesced) pair on segm III followed by up to 5 pairs accessory eyes
- 3 rows of dorsal papillae & 3 pairs pre-anal papillae
- Length 30-55mm



P. hollensis

- Head expanded and discoid, set off from body by **narrow neck**
- Margins of caudal sucker denticulate

- Head continuous with body, **not distinctly expanded or set off from body**
- Margins of caudal sucker not denticulate

Dorsum with 3 prominent tuberculate keels or ridges

Length: 16mm



P. montifera

- Dorsum smooth
- No keels or ridges

Length: 25mm



P. nuchalis

Dorsum smooth, or with numerous small sensillae

Dorsum moderately to roughly **papillated**

Dorsum:

- without white patches
 - with or without white band in neck region
- See Placobdella Key B**

Dorsum:

- conspicuous white genital and anal patches
- one or more medial white patches
- white band in neck region

Length: 60mm



P. parasitica

- Dorsum brownish-yellow & extremely variable pigment from simple (medial pigmented yellow line) to elaborate (medial and paramedial marbled patches),
- Ventral surface with 8-13 blue, brown or green stripes

- Dorsum olive green
- 2-annulate
- Posterior sucker large

Length: 7mm



P. biannulata

- **No Dorsal papillae**
- Body lanceolate

P. nuchalis

Dorsal **papillae present**

See Placobdella Key C

HIRUDINEA: Glossiphoniidae: *Placobdella* (key B)



Dorsum:

- moderately to roughly **papillated**
- without white patches
- with/without white band in neck region



Body with **ventral stripes**

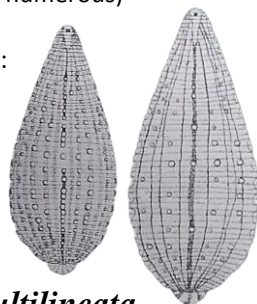
- body **without ventral stripes**
- with dorsal medial line, typically interrupted by papillae

- Dorsum:
- **7 longitudinal rows** of small white-tipped papillae
 - Interrupted dorsomedial line
 - Alternating rows of light and dark pigmentation
 - 3 pair of pre-anal papillae

Dorsum with **small papillae** (few or numerous) arranged in rows

Dorsum with: **5 distinct longitudinal rows** of small papillae (few or numerous)

Length: 50mm



P. multilineata

Dorsal papillae: **6-7 rows**

Dorsal papillae: **5 rows**

Dorsum:

- greenish-brown, variegated with orange
- with thin dark dorsal medial line
- 6-7 rows of white-tipped papillae
- Nuchal band



Length: 13-25mm

P. picta

Dorsum:

- Brownish with yellowish/cream
- heavily papillated with 5 rows of papillae
- interrupted dorsal medial pigment line
- 2 pair prominent paramedial pre-anal papillae followed by 2 rows of 3 papillae

Length: 30-50mm

P. rugosa

Dorsum smooth, with few papillae or tubercles

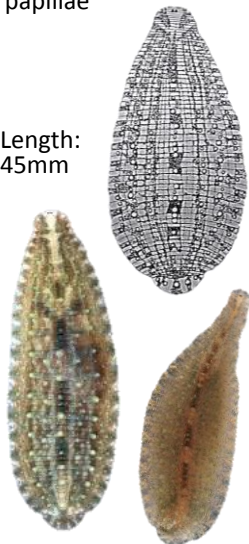
P. mexicana

Dorsum with:

- **3 inconspicuous longitudinal rows** of papillae
- small papillae irregularly dispersed in the space not occupied by rows of papillae

P. lamothei

Length: 45mm



P. papillifera

HIRUDINEA: Glossiphoniidae: *Placobdella* (key C)



- Dorsum:
- moderately to roughly **papillated**
 - conspicuous white genital and anal patches
 - one or more medial white patches
 - white band in neck region

Dorsal papillae in 2-3 rows

- **No pedicel**
- Anus close to caudal sucker

Dorsal papillae in 5-6 rows

- Dorsum:
- Reddish-brown
 - with/without medial pigment line and unpigmented nuchal band
 - Unpigmented genital bar and anal patch with/without 2-3 unpigmented patches in between

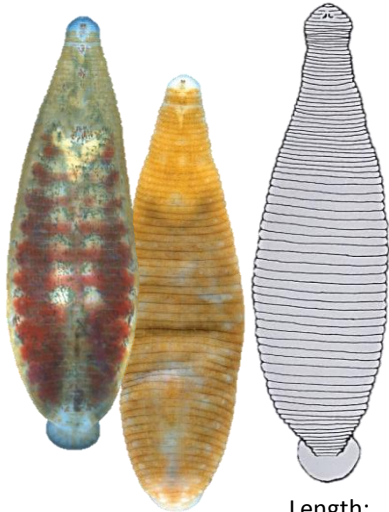


- 3 rows of papillae (paralateral papillae white tipped to genital bar and black tipped to nuchal band; medial papillae are black tipped)
- 5 pair of pre-anal papillae

Length: 16-26mm

P. ornata

- Dorsum:
- Rust to reddish-brown
 - with 2 lateral rows of unpigmented papillae
 - 2 unpigmented nuchal bands
 - unpigmented genital bar and anal patch
 - 4 pair of pre-anal papillae

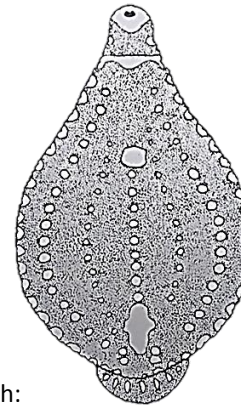


Length: 13-17mm

P. cryptobranchii

- Dorsum:
- 5 rows of white-tipped papillae surrounded by yellowish dots
 - unpigmented nuchal band
 - unpigmented genital bar and anal patch with unpigmented patches in between

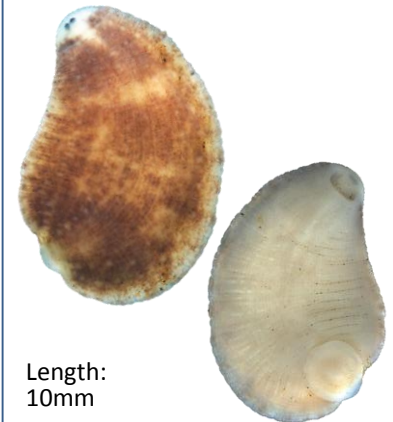
Body ovate and dorsoventrally flattened



Length: 10mm

P. michiganensis

- Dorsum:
- Chocolate to russet-brown
 - with 6 rows of papillae
 - many thin unpigmented lines
 - unpigmented nuchal band
 - small genital unpigmented bar and unpigmented genital patch with few scattered unpigmented patches in between
 - no pre-anal papillae



Length: 10mm

P. appalachiensis