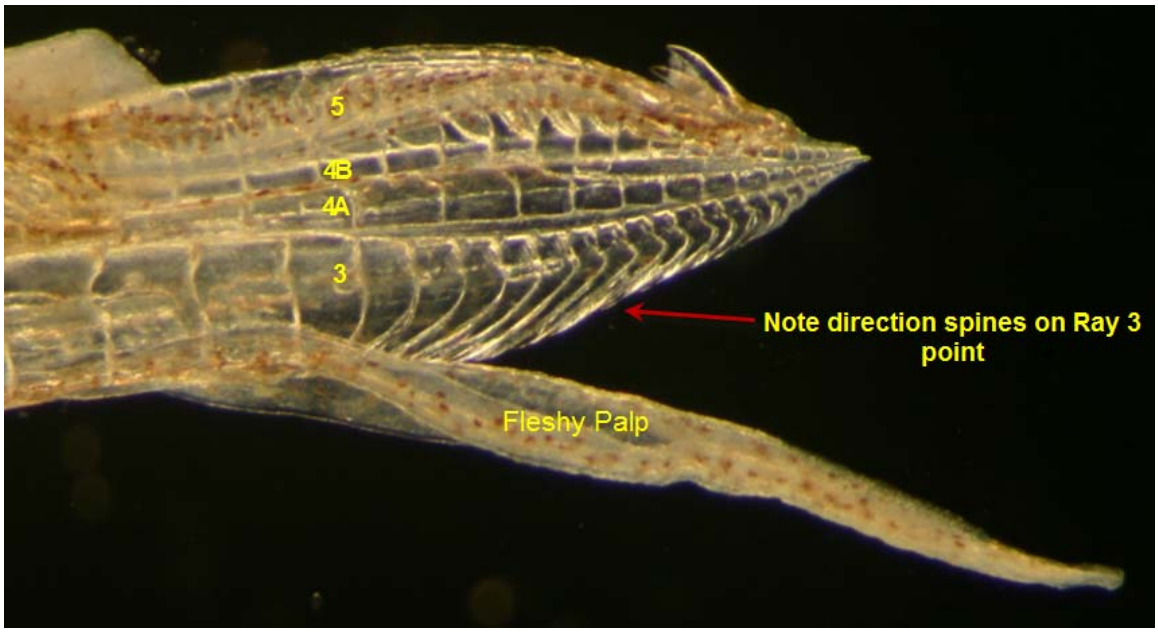
Key to the Poeciliid Fishes of Texas (excluding *P. formosa*) Based on Gonopodial Characters
By: F. Douglas Martin

Most of the anatomical characteristics in the key couplets can be understood from the accompanying illustrations of gonopodia of the species in question but there is an illustration of some of the landmark features at the end of this document.

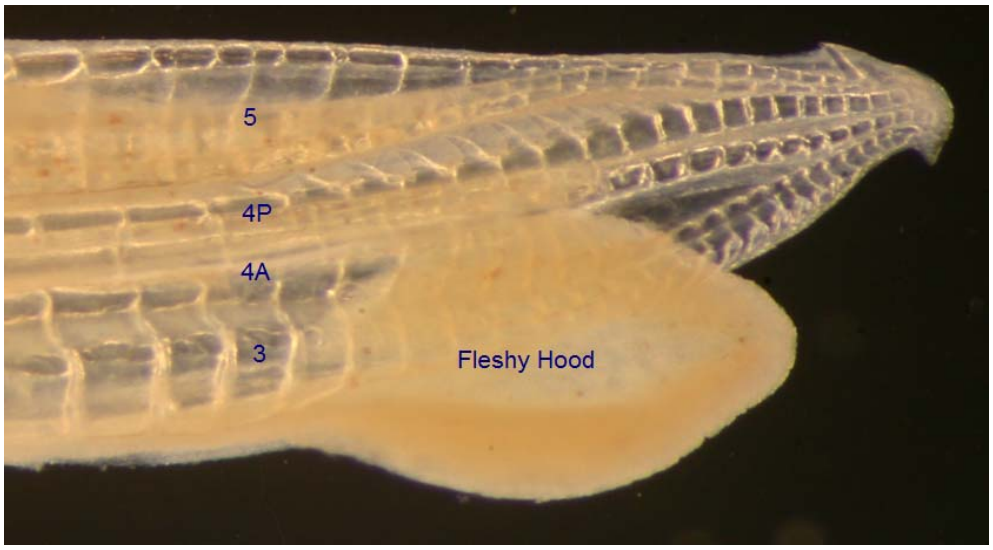
1a. End of gonopodium having a fleshy hood or palp ……. 2
1b. End of gonopodium lacking fleshy hood or palp …….. 3

2a. Spines on anterior surface of ray 3 long, pointing toward base of gonopodium; fleshy palp long … *Poecilia reticulata* (Peters), Guppy



Poecilia reticulata (Peters), Guppy, TNHC 8958

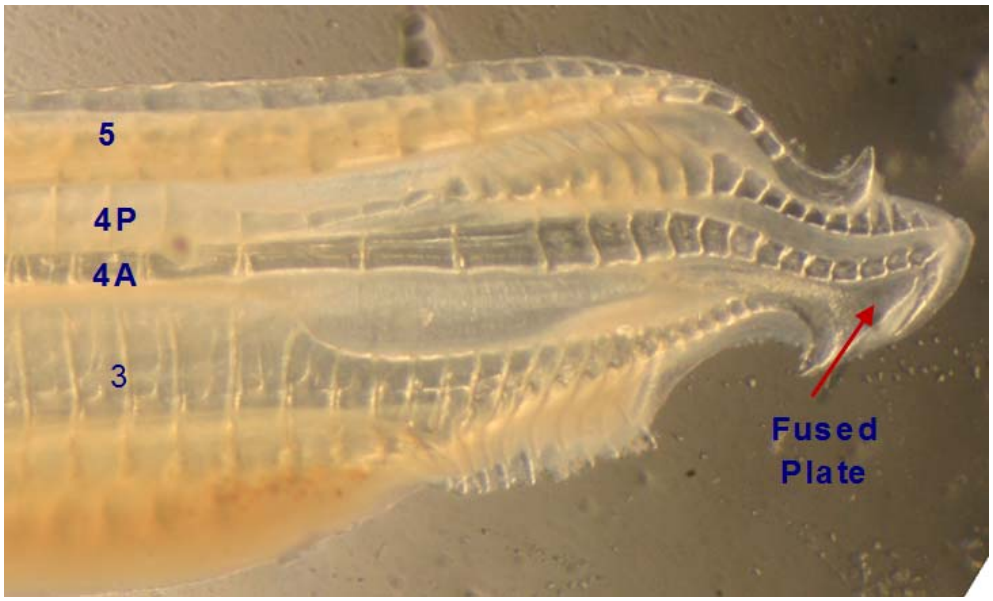
2b. Spines on anterior surface of ray 3 very short or absent; fleshy hood may cover end of ray 3 and ray 4a … *Poecilia latipinna* (Lesueur), Sailfin molly



Poecilia latipinna (Lesueur), Sailfin molly, TNHC 6255

3a. Ray 3 having a terminal hook …… 4
3b. Ray 3 lacking a terminal hook …… 5

4a. Terminal segments of ray 3 fused and flattened into a hooked plate … *Xiphophorus hellerii* Heckel, Green swordtail



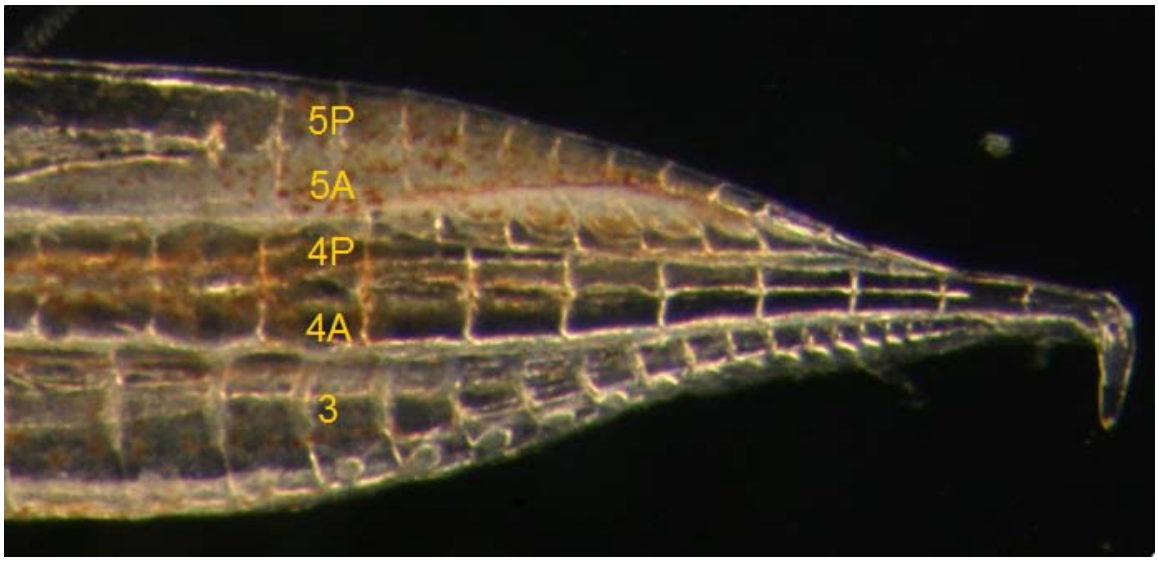
Xiphophorus helerii Heckel, Green swordtail, TNHC 11615

4b. Terminal segments of ray 3 separate, not plate-like … *Xiphophorus variatus* (Meek) Variable platyfish

Xiphophorus variatus (Meek), Variable platyfish, TNHC 33240

5a. Ray 4a nearly same length as or shorter than either ray 4P and ray 5A or if longer, ray 3 has a number of spines that are more than three times longer than wide ……..…….. 6

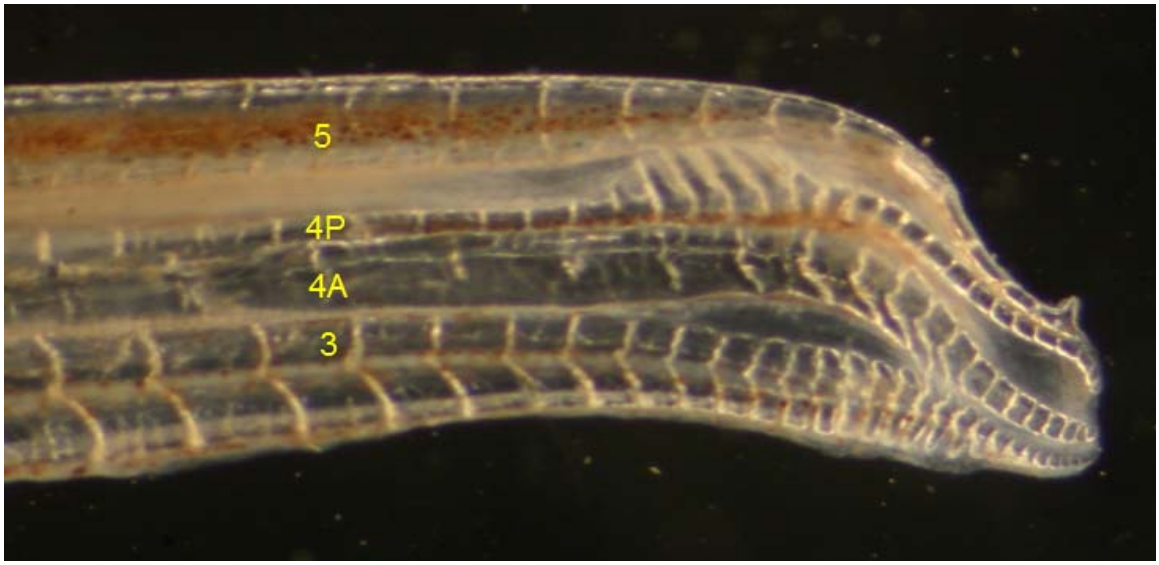
5b. Ray 4a much longer than either ray 4P or ray 5A, tip or ray 4A may be straight or may end in a hook with this hook being strongly decurved, pointing away from the body when gonopodium is in the resting position … *Heterandria formosa* Girard, Least killifish



Heterandria formosa Girard, Least killifish, TNHC 35108

6a. Rays 4p and 5 with well developed terminal hooks ……. 7

6b. Rays 4p and 5 lacking terminal hooks or having very small, poorly developed hooks (compare with the hooks on rays 4p and 5 in any of the *Gambusia* species) … *Belonesox belizanus* Kner, Pike livebearer



Belonesox belizanus Belonesox belizanus Kner, Pike livebearer, TNHC 14038

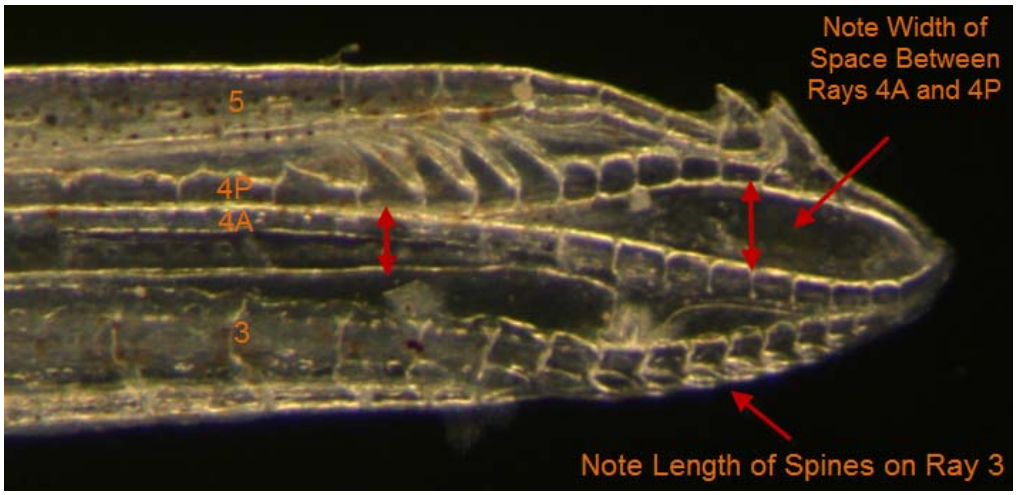
7a Spines on anterior surface of ray 3 short, usually length around 3 times width …….. ……. 8

7b. Spines on anterior surface of ray 3 moderate to long, length usually more than 5 times width …….. 9

8a. Distal space between rays 4a and 4p narrow, less than to slightly more than the width of ray 4a (measure width of ray 4a at about the level of the most proximal spine on ray 4p) … *Gambusia affinis* (Baird and Girard), Western mosquitofish

Gambusia affinis (Baird and Girard), Western mosquitofish, TNHC 23311

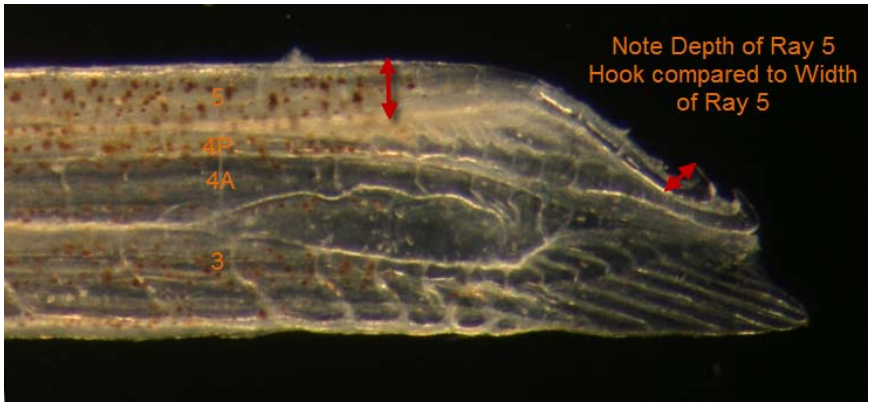
8b. Distal space between rays 4a and 4b broader, usually much wider than the width of ray 4a … *Gambusia speciosa* Girard, Tex-Mex gambusia



Gambusia speciosa Girard, Tex-Mex gambusia, TNHC 27411

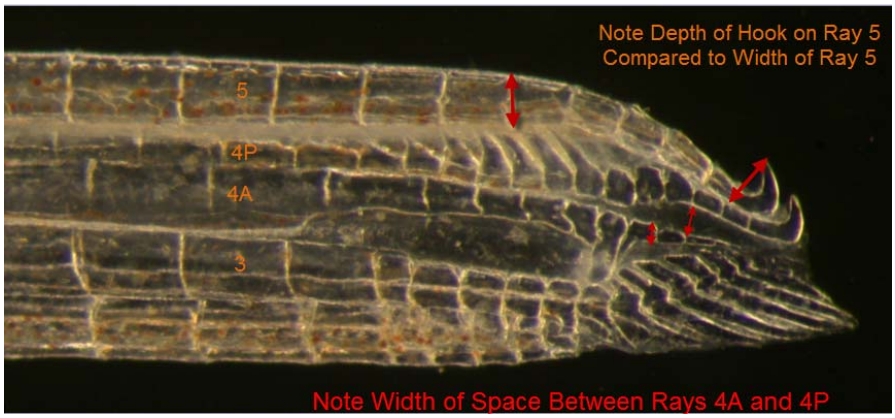
9a. Ray 4a clearly shorter than ray 4p …… 10
9b. Ray 4a longer than or equal in length to ray 4p …….. 12

10a. Depth of hook on Ray 5 greater than or approximately equal to width of Ray 5 behind the elbow on Ray 4A ……..... 11
10b. Depth of hook on Ray 5 less than width of Ray 5 behind elbow on Ray 4A … *Gambusia senilis* Girard, Blotched gambusia



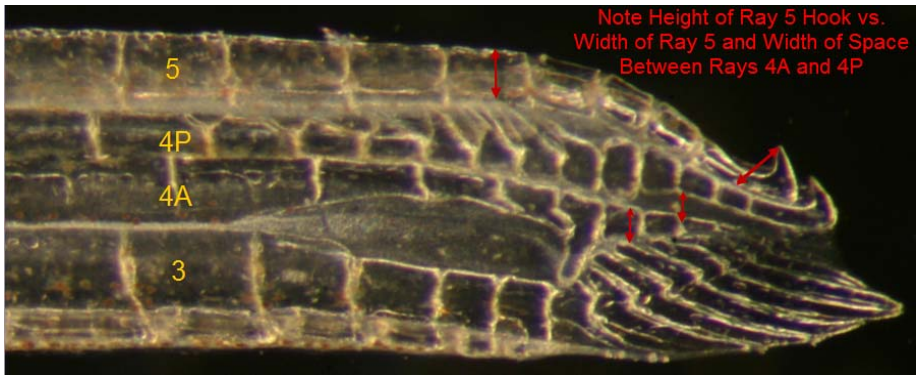
Gambusia senilis Girard, Blotched gambusia, TNHC 4209

11a. Greatest width of space between rays 4a and 4p distal to elbow wider than ray 4a width ahead of elbow … *Gambusia amistadensis* Peden, Amistad gambusia



Gambusia amistadensis Peden, Amistad gambusia TNHC 7247

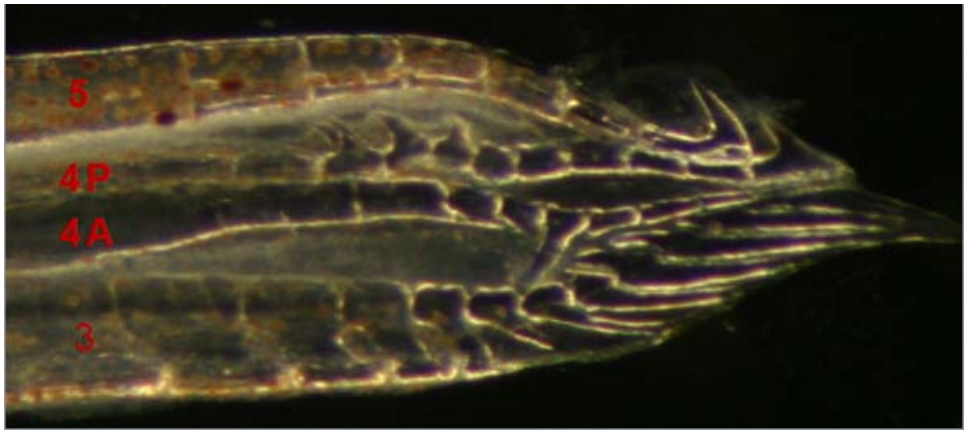
11b. Greatest width of space between rays 4a and 4p distal to elbow narrower than width of ray 4a … *Gambusia gaigei* Hubbs, Big Bend gambusia



Gambusia gaigei Hubbs, Big Bend gambusia, TNHC 4575

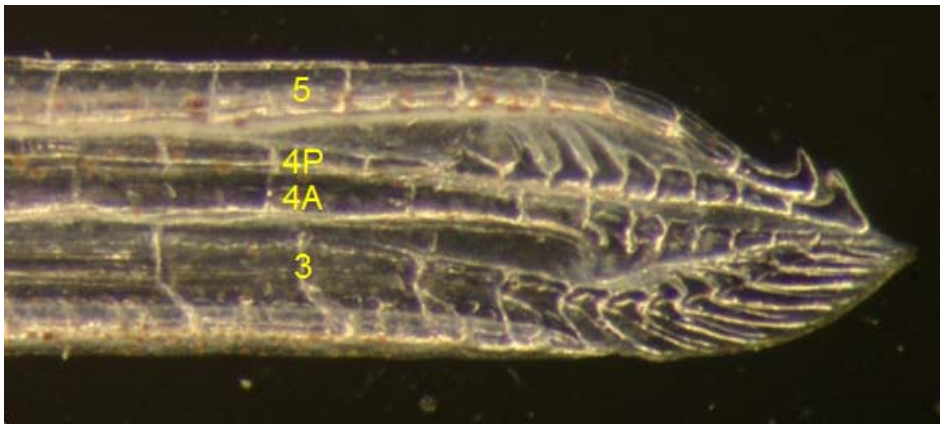
12a. Elbow on ray 4a composed of three or more segments which may or may not be fused; segments distal to the elbow more or less square in outline …….. 13

12b. Elbow on ray 4a composed of one or two segments; segments distal to the elbow much longer than wide … *Gambusia geiseri* (Hubbs & Hubbs) Largespring gambusia



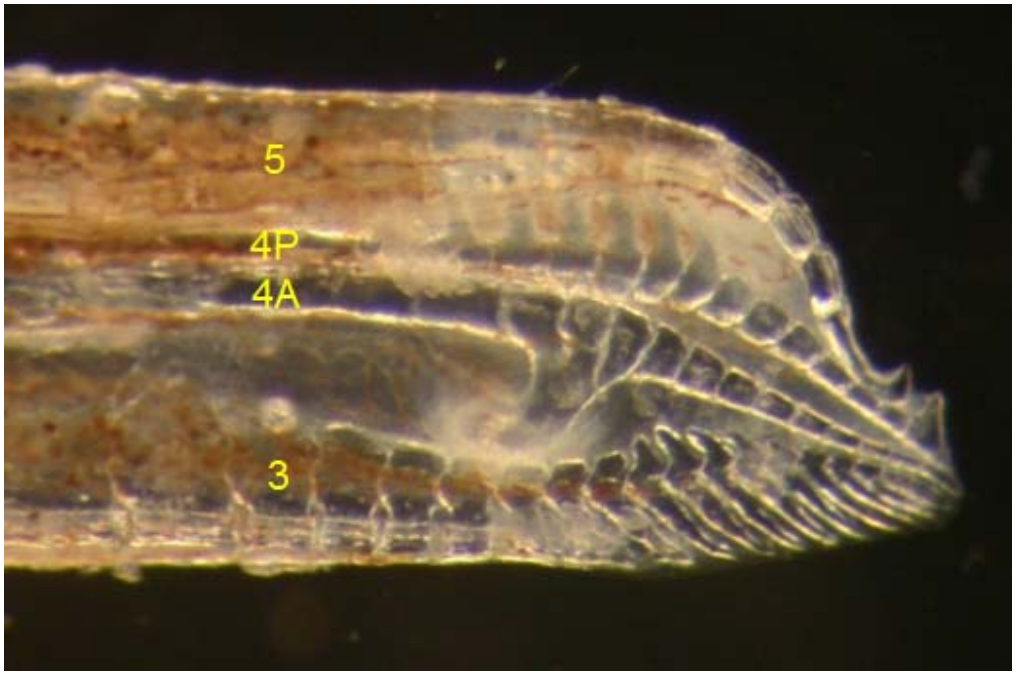
Gambusia geiseri (Hubbs & Hubbs) Largespring gambusia, TNHC 43208

13a. Ray 4a clearly reaches past tip of terminal hook on ray 4p ……. 14
13b. Ray 4a about equal in length to ray 4p … *Gambusia georgei* Hubbs & Peden—San Marcos gambusia



Gambusia georgei Hubbs & Peden, San Marcos gambusia, TNHC 7203

14a. Spines on ray 3 clearly reaching beyond tip of ray 4a …….. 15
14b. Spines on ray 3 not reaching or just reaches tip of ray 4a … *Gambusia heterochir* Hubbs, Clear Creek gambusia



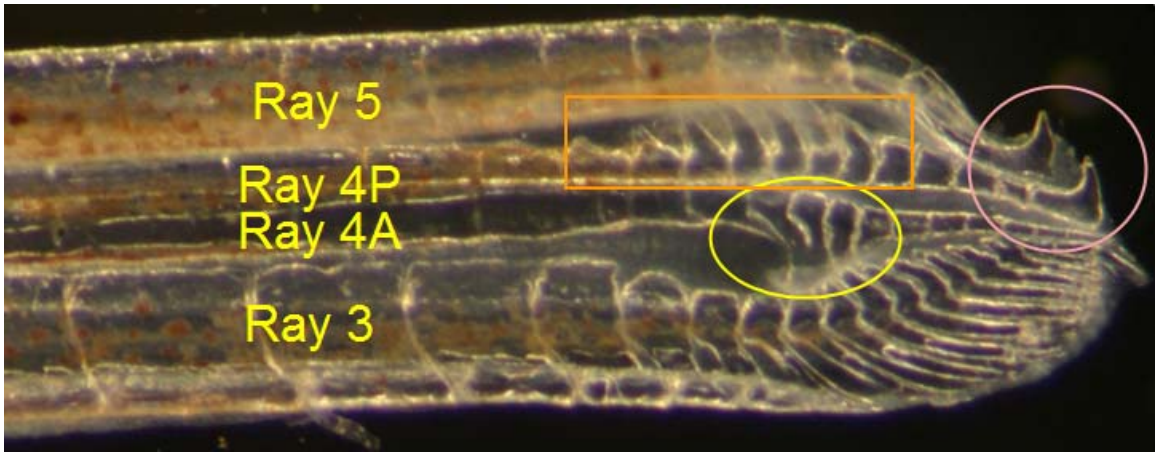
Gambusia heterochir Hubbs, Clear Creek gambusia, TNHC 16831

15a. Elbow of ray 4a composed of 3 or more separate segments … *Gambusia clarkhubbsi* Garrett & Edwards, San Felipe gambusia

Gambusia clarkhubbsi Garrett & Edwards, San Felipe gambusia, TNHC uncataloged

15b. Elbow of ray 4a composed of three or four segments, two or three of which are partly or completely fused … *Gambusia nobilis* (Baird & Girard) Pecos gambusia

Gambusia nobilis (Baird & Girard), Pecos gambusia, TNHC 39733



Anatomical characteristics of a gonopodium. In this picture anterior is to the left and posterior is to the right. The orange box has within it the spines located on Ray 4P. The yellow oval has within it the elbow of ray 4A. The pink circle contains the terminal hooks of rays 4P and 5.