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CHARACTERISTICS FOR DISTINGUISHING  
THE PROTOLARVAE OF THE  
PADDLEFISH AND STURGEON

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Most chondrosteian larvae hatch at lengths of 8 to 10 mm TL (some species of sturgeon may hatch at slightly larger sizes). Except for the early protolarvae, the larvae of paddlefish (*Polydon spathula*) and the sturgeons (*Acipenseridae*) are so distinctive that identification to the family level should be no problem. Even the later protolarvae can be distinguished using obvious adult characteristics such as the number of snout barbels (two in paddlefish; four in sturgeon), dorsal fin origin (anterior to vent in paddlefish, posterior to vent in sturgeon), and the posterior margin of the operculum (well beyond the base of the pectoral fin in paddlefish but extending no further than the base in sturgeon).

Recently hatched protolarvae of the paddlefish and sturgeon are similar but readily distinguished by a few easily observed characters. One such character is snout-to-vent (posterior margin) or preanal length which for recently hatched paddlefish and sturgeon is about 60% and 65% TL, respectively. However, as the larvae grow beyond 10 to 11 mm TL, snout-to-vent length decreases to about 50% for paddlefish and about 60% or a bit less for sturgeon. By about 20 mm TL (still protolarvae) the snout on both fish begins to elongate significantly and snout-to-vent length increases, eventually reaching 70% or more in adult paddlefish. Another, perhaps more obvious pair of diagnostic characteristics for recently hatched specimens is the origin and form of the dorsal finfold. The snout-to-dorsal-finfold-origin length (pre-

dorsal-finfold length) is about 35% TL for paddlefish and 25% TL for sturgeon. In sturgeon the dorsal finfold rises immediately to a moderate height and remains so for much of its length. In paddlefish the dorsal finfold remains close to the body until it reaches to the posterior margin of the yolk sac where it rises sharply outlining the approximate position of the future dorsal fin. This rise indicating the future dorsal fin occurs a bit later in sturgeon and at a somewhat more posterior position. Melanophore pigmentation, although distinctly distributed is frequently light in overall appearance and brownish in color. Early protolarvae of the paddlefish tend to have little pigmentation except over the yolk sac (particularly the dorso-lateral surface), while protolarvae of sturgeon tend to have melanophores over most of their dorsal and lateral surfaces (this might not be the case for all species). Myomere counts are similar (at least for the unidentified species of sturgeon examined). Recently hatched paddlefish had about 32 (preanal) + 23 (postanal) myomeres (Siefert method) while recently hatched sturgeon had about 33 or 34 + 20 myomeres.

The above notes are based on existing descriptions, a series of paddlefish reared at Gavins Point National Fish Hatchery (Yankton, SD) and provided by Ronald L. Brant, and several sturgeon protolarvae from the Mississippi River System sent for verification of identification by Joseph B. Kaskey of Geo-Marine, Inc., and Ross Rasmussen of Texas Instruments, Inc.