



The creeper can be found in Baskahegan Stream, a large tributary of the Mattawamkeag River in northern Washington County. ETHAN NEDEAU

Creeper*

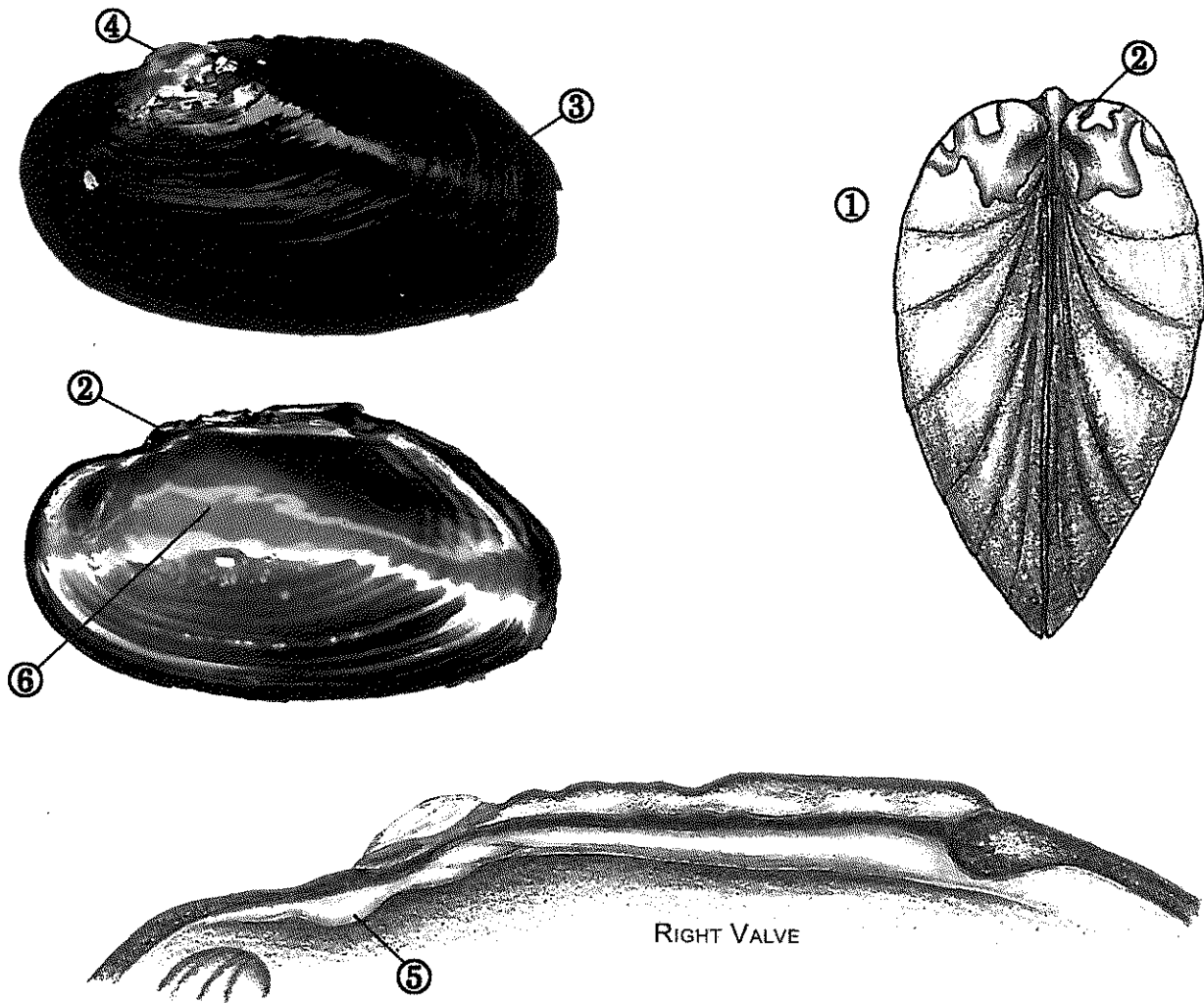
Strophitus undulatus (Say, 1817)

MAINE
SPECIAL CONCERN
SPECIES

Description: This is a small to medium-sized (usually < 3 inches) mussel. The valves are laterally compressed ①, and the umbos are not very prominent and barely raised above the hinge line ②. The shell is thin and fragile, and somewhat rough due to prominent growth lines ③. The beak sculpture is usually coarse and prominent ④, though often obscured by shell erosion. The periostracum is yellowish or greenish-brown in young individuals, and typically brown or black in older individuals. Rays on the periostracum are usually evident only in young specimens. Hinge teeth are almost entirely absent — pseudocardinals are present but consist of simple swellings that are difficult to distinguish ⑤. Lateral teeth are absent. The nacre is usually white or bluish-white, and is conspicuously dull yellow or greenish toward the beak cavity ⑥.

Confusing Species: The creeper is one of the most nondescript mussels in Maine and can be confused with a number of other species. Shells are quite easy to distinguish because of the nature of the hinge teeth and the coloration pattern of the nacre. However, without the benefit of internal shell features, the novice can sometimes confuse live individuals with the eastern elliptio, brook floater, triangle floater, alewife floater, and eastern floater. The most common error is to confuse the creeper with young individuals of the eastern elliptio. The best way to distinguish these species is by the "squeeze test" — the creeper has a very thin shell, and you can force open the two valves by applying gentle pressure on the dorsal and ventral surfaces (see page 56). The eastern elliptio has a very strong shell, and cannot be forcibly opened in this manner. The creeper lacks the ridges on the dorso-posterior slope that are typical of the brook floater. It is more laterally compressed than the brook floater and triangle

* Previously known as the squawfoot, this species' common name has recently been changed to creeper (Turgeon et al. 1998)



floater and is not as wide as the triangle floater. Since the creeper is listed as special concern in Maine, the identity of live specimens should be verified by an expert, rather than sacrificing animals to examine internal shell features.

Range: The creeper is one of the most widely distributed species in North America. It is found as far west as Texas and Saskatchewan and is widely distributed in the Atlantic coastal drainages, St. Lawrence River system, Great Lakes basin, and the Ohio and Mississippi River systems. It is found in most major watersheds in Maine, though it is never common.

Habitat: The creeper has been found only in streams and rivers in Maine (and sometimes in impounded river sections), though elsewhere it is reported to live in lakes. It can tolerate a range of flow conditions, but is rarely found in high-gradient streams of mountainous regions. Lake outlets are especially productive habitats for this species. It seems to prefer sand and fine gravel substrates.

Reproductive Characteristics: The creeper is a long-term brooder, with eggs being fertilized in the summer and glochidia released the following spring. One study found that glochidia can transform into juveniles without a fish host (Lefevre and Curtis 1911). This is one of the few studies to show such a reproductive trait among unionaceans, and though it is widely cited in the scientific literature, no one has since been able to support these findings for the creeper. Other species have been shown to be able to metamorphose without a vertebrate host, but further work is needed to determine if the creeper has this ability. There are a number of confirmed vertebrate hosts, including the largemouth bass (*Micropterus salmoides*), creek chub (*Semotilus atromaculatus*), fallfish (*Semotilus corporalis*), fathead

minnow (*Pimephales promelas*), golden shiner (*Notemigonus crysoleucas*), common shiner (*Luxilus cornutus*) slimy sculpin (*Cottus cognatus*), bluegill (*Lepomis macrochirus*), longnose dace (*Rhinichthys cataractae*), yellow perch (*Perca flavescens*), and several other darters and minnows not found in Maine (Wicklow and Beisheim 1998, Watters et al. 1999, Gray et al. 1999). Recently the Atlantic salmon was found to be a suitable host (Barry Wicklow, Saint Anselm College, *personal communication*). Wicklow and Beisheim (1998) also reported that larvae (but not adults) of the northern two-lined salamander (*Eurycea bislineata*) were suitable hosts. Given its tremendously broad geographical distribution, host-suitability studies must be assessed carefully because individuals living in Maine would probably not be able to parasitize the same fish as individuals living in Texas.

Conservation: Although the creeper is widely distributed in Maine, it is rarely abundant. Usually fewer than ten individuals are found at a single location, and there is considerable question about the long-term viability of such small populations. Consequently, Maine has listed the creeper as special concern. The only other northeastern state to list the creeper is Massachusetts (special concern). Like the other special concern species in Maine, it prefers clean, flowing water, and thus habitat degradation and pollution have probably affected this species in similar ways.

KNOWN RANGE OF THE CREEPER IN MAINE

COUNTY	SPECIFIC WATERBODIES
Androscoggin	Androscoggin R, Little Androscoggin R
Aroostook	Mattawamkeag R (EB, WB, MB), Molunkus S, Wytovitlock S, Fish S
Cumberland	Chandler R
Franklin	Baker S, Kennebago R, Sandy R, Wilson S, Webb R
Hancock	Nicatous S
Kennebec	Outlet S, Sheepscot R (WB)
Knox	
Lincoln	
Oxford	Nezinscot R (EB, WB), Ellis R, Androscoggin R, Little Androscoggin R, Mill B, Alder R, Spears S
Penobscot	Piscataquis R, Madagascal S, Passadumkeag R, Seboeis S, Mattamiscotis S, Penobscot R (MB, EB, WB), Dead S (WB, MB), Souadabscook S (MB, WB), Black S, Kenduskeag S, French S, Olamon S, Medunkeunk S, Sawtelle B, Great Works S, Millinocket S, Seboeis R, Mattawamkeag R
Piscataquis	Piscataquis R (WB, MB), Pleasant R (EB, MB), Pine S, Ragged S, Seboeis L Outlet, Russell S, Duck B, Soper B, Cuxabaxis S, Onawa L, Loon S, Nahmakanta S, Kingsbury S
Sagadahoc	Androscoggin R
Somerset	Fall B, Elm S, Black B, Carrabassett S, Penobscot R (WB), Wesserunsett S (WB, MB), Sandy R, Gilman S, Sandy S, Lemon S, Little Spencer S, Carry B
Waldo	Marsh S, Saint George R, Halfmoon S, Twentyfive Mile S
Washington	Baskahegan S
York	

