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### A Live Collection of a Pistolgrip from Nebraska

Steven C. Schainost

*Nebraska Game and Parks Commission*

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**A LIVE COLLECTION OF A PISTOLGRIP FROM NEBRASKA** -- Freshwater mussels (Mollusca: Bivalvia: Unionidae) are one of Nebraska's more poorly known faunas. Studies have documented the presence of 31 species of which only 19 have been found either live or freshly dead. The remaining twelve species have only been found as weathered or subfossil shells, seven of which were considered to be extirpated including the pistolgrip (*Tritogonia verrucosa*). While a statewide survey never has been done there is distributional information available in several published papers and unpublished reports (Baxa 1981; Hoke 1983, 1994a, 1995, 1996, 1997; Roedel 1990; Lingle 1992; Freeman and Perkins 1992, 1997; Clausen and Havlik 1994; Peyton and Maher 1995; Perkins and Backlund 2000) on the distributions of mussels in eight of Nebraska's 13 river basins and a portion of the Missouri River. An additional publication (Hoke, 1994b) is a one page synopsis of collections in a ninth river basin. There is no published information for the Big Blue River, which is the subject of my note.

The pistolgrip, inhabiting medium to large rivers and a variety of substrates (Cummings and Mayer 1992), is widespread in the central United States (Williams et.al. 1993) but relatively uncommon. Reported fish hosts include the flathead catfish (*Pylodictis olivaris*) (Howells et.al. 1996) and yellow bullhead (*Ameiurus natalis*) (Pepi and Hove 1997).

The pistolgrip appears to have been confined to the eastern third of Nebraska. Hoke (1983) surveyed 320 km of the Missouri River between the Platte River and Lewis and Clark Lake but found no pistolgrips. He did report on a museum specimen that had been collected from the Missouri River in Cedar County, Nebraska. A recent survey of the 93 km of Missouri River between Ponca State Park, Nebraska, and Gavins Point Dam (Perkins and Backlund 2000) found no pistolgrips out of over 2,000 specimens collected. Clausen and Havlik (1994), in their survey of the mainstem Elkhorn River, found no pistolgrips, but Hoke (1994a) did find them at three sites on a tributary. Hoke (1996) also found weathered or subfossil specimens at several locations in the Nemaha River basin in southeast Nebraska and I found a subfossil specimen in Turkey Creek in the same basin. Hoke (1996) felt that the species "has probably been extirpated from the Nemaha basins". An Internet search of museum catalogs found three additional Nebraska specimens in the Ohio State University Museum of Biological Diversity, which were collected by F. Ellet Hoke in Gage County. These included a weathered whole specimen and a single subfossil specimen found in the Big Blue River in 1976 and a single subfossil specimen found in Big Indian Creek, a Big Blue River tributary, in 1981. My objective is to report the recent collection of a live specimen in Nebraska.

I have been collecting freshwater mussels in the Big Blue River basin since 1998 and have found pistolgrip valves at three locations in Gage County. One site was 24 km downstream of Blue Springs, Nebraska, where 24 heavily weathered

single valves were collected in July 2003. The second site was below the old power dam at Blue Springs where I found two weathered single valves in August 2002. The third location was 23 km upstream in Beatrice where weathered specimens of the pistolgrip were collected just downstream of the Highway 77 bridge in 1998 (Illinois Natural History Survey, INHS 28359), and a pair of valves in good condition were found here in October 1999 (Illinois Natural History Survey, INHS 28360). Additional weathered valves were found upstream of this bridge in 2002 and 2003.

The above mentioned section of river is contained wholly within the city limits of Beatrice, Nebraska. It begins at an old flour mill dam beneath the Highway 136 bridge and extends to an island and shallow bar area just downstream of the Highway 77 bridge. The section is about 1.4 km long and includes two long and one short cobble/gravel/sand riffle areas. The upper riffle begins at the old flour mill dam, is about 400 m long, and consists of cobbles embedded in sand. In the midst of this riffle is a short island that begins 135 m downstream from the dam. Below the island the cobbles grade into a looser, shifting sand substrate before entering a long pool. At the lower end of this pool is a second large riffle composed of large cobbles, which grade into another long pool that ends at the Highway 77 bridge. There is a short riffle and bar area beneath the Highway 77 bridge.

These three riffle areas previously had been productive for several species of mussels, in addition to the pistolgrip, including live specimens of mapleleaf (*Quadrula quadrula*), pink papershell (*Potamilus ohioensis*), and white heelsplitter (*Lasmigona complanata*), and weathered or chalky specimens of the pimpleback (*Quadrula pustulosa*), black sandshell (*Ligumia recta*), plain pocketbook (*Lampsilis cardium*), fatmucket (*Lampsilis siliquoidea*), and giant floater (*Pyganodon grandis*).

On 2 August 2002, the Big Blue River flow at Beatrice was an unusually low 108 cfs (Patterson 2002), which presented an opportunity to revisit these sites in an effort to find better specimens of species that had been found previously. I searched both sides of the island, a riffle that extended downstream from the island to the east shore, both west and east shores, and exposed cobble bars. Live and freshly dead mapleleafs found throughout the area were especially common on both sides of the island and on the associated downstream riffle. On the downstream riffle I found the pistolgrip.

The pistolgrip was laying flat on a riffle of scattered cobbles embedded in sand and gravel and in the midst of a large number of mapleleafs. The water was very shallow as one side of the shell was exposed to air. The 120 mm specimen was confirmed alive as the shell closed and squirted water when picked up and was the only one found even after a search of the entire area. The pistolgrip has a unique, rather easily identified shell and I took several photographs of both sides of the specimen. As my policy has been to collect live mussels only when no dead

specimens of that species can be found and as I already had several dead pistolgrips from this area, I returned it to deeper water a few meters away. After returning to the office and reviewing the literature, I learned that this was the only live collection of the species from Nebraska waters.

Photos of the specimen have been sent to the Illinois Natural History Survey for archiving (INHS 28324). The collection of a live pistolgrip is evidence that the species still survives in the Big Blue River of Nebraska. -- *Steven C. Schainost, Fisheries Division, Nebraska Game and Parks Commission, PO Box 725, Alliance, NE 69301-0725.*

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