Kanab Ambersnail

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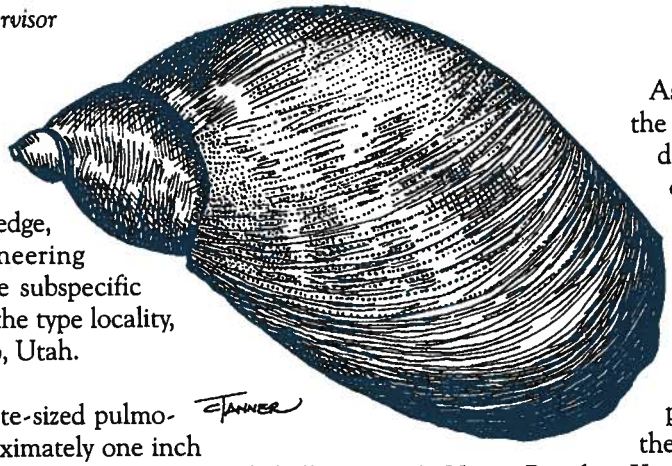

SCIENTIFIC NAME: *Oxyloma haydeni kanabensis*, Pilsbry 1948. From the Greek *oxyloma* for sharp-fringe, referring to the shell's edge, and *haydeni* after the pioneering naturalist F.V. Hayden. The subspecific epithet *kanabensis* refers to the type locality, ca. 9.6 miles north of Kanab, Utah.

DESCRIPTION: A moderate-sized pulmonate snail. Adults are approximately one inch in length, having a mottled brown, spired, dextral shell. Young ambersnails are a scant tenth of an inch long, if that.

HABITAT: Considered a land snail, but lives at the edge of water on damp substrates. Often found on stems of semi-aquatic plants, in particular cattail (*Typha*), monkey flower (*Mimulus*), and watercress (*Nasturtium officinale*), but also found on bedrock supporting algae.

DISTRIBUTION: This subspecies is known from only three locations, two in southern Utah and one in Grand Canyon, Arizona. One Utah population appears to have been extirpated recently. In Arizona, surveys of 81 springs near Vaseys Paradise failed to find any Kanab ambersnails. However, in 1995 a small population of the nominate subspecies *O.h. haydeni* was found at Grand Canyon National Park's Indian Gardens Campground. Previously the closest known occurrence of *O.h. haydeni* was in Nebraska.

BIOLOGY: As you might expect for such a rare, small, and isolated animal, very little is known of the life habits and ecological requirements of the Kanab ambersnail. In an ongoing study in the Grand Canyon by the Department and various cooperators to help determine the possible effects of water management changes at Glen Canyon Dam, Kanab ambersnails have been found to overwinter encased in a mucoid plug on the stems of host plants, and to emerge from winter dormancy in March. Maturation occurs after overwintering. Large snails are uncommon until early summer, and reproduction occurs in midsummer (July-August).

As do most pulmonate snails, the Kanab ambersnail breathes air directly, rather than extracting oxygen from water. Food is obtained by scraping material, probably algae, bacteria, and dead organic matter, from the substrate using a longitudinal, toothed structure, the radula, which occupies a position analogous to that of the human tongue.

At Vaseys Paradise, Kanab ambersnails were found to be infested with a parasite, tentatively identified as a trematode flatworm. The effects of this parasite on the ambersnail population are unknown, but as much as 25 percent or more of the population may be infested. The brightly colored, green-and-red parasite pulsates inside the tentacle of the snail. This presumably makes the snail more visible to a bird or another predator, which then serves as a secondary host to complete the parasite's life cycle.

STATUS: *Oxyloma haydeni kanabensis* was listed by the U.S. Fish and Wildlife Service as an endangered species in 1992. It is also included on the Department's draft list of *Wildlife of Special Concern in Arizona* (AGFD in prep.). The Utah localities were proposed as critical habitat, but only the Arizona locality is environmentally unaltered by human activities and relatively secure.

MANAGEMENT NEEDS: The primary management concern for the Kanab ambersnail is loss of habitat due to human development. The single site known to be occupied in Arizona is frequently used by river runners as a source of fresh water. The extremely small number of populations remaining in existence causes great concern for the future of the snail. This precarious position is further complicated by the small amount of knowledge concerning ecological requirements of the snail, since recovery activities should be founded upon this knowledge. Securing existing habitat is certainly the highest priority. Recovery of the snail will most likely require introduction into additional suitable habitat to establish more populations of this extremely rare animal.