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Max A. Nickerson; Mark D. Tohulka

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Two Ozark hellbender, *Cryptobranchus alleganiensis bishopi*, nests were discovered by the authors in early October 1980 within crevices between dolomitic limestone bedrock in the North Fork of the White River, Ozark County, Missouri. Although we were unable to pry into the crevices with steel bars we assume they were nests because of the presence of egg strands (Figs. 1-3) and social activity. Since the nests of Ozark hellbenders have not been described, and because our observations seem to vary from *Cryptobranchus* nests described by Alexander (1927) and Bishop (1941), we herein include a brief description of the two nests.

Nest One was discovered at 13:30 h CSDST on 2 October along the eastern margin of a riffle. Water temperature was 17°C and there was no noticeable current. A single strand of eggs was protruding (Figs. 1-3) from a crevice. The top portion of bedrock was almost 2 m in length, 35 to 40 cm thick and rested in a huge slab of bedrock. The opening extended for more than a meter in length and to 4.0 cm in height, was mostly perpendicular to the stream bed, and faced upstream. At least one *C. a. bishopi* was in the nest, and within fifteen minutes an adult female, which appeared to be spent, walked to the nest rock and slid under its margin (Fig. 3).

Nest Two was found 8 October at 13:20 h CSDST within 4 m of the east bank of a riffle. Water temperature was 16°C and there was a slight current. Egg strands were observed near the opening. The protruding portion of bedrock measured 1.2 m in length and 1.8 m in width, and varied from 20 to 30 cm in thickness. The opening was about 12-15 cm long and 4.0 cm in height at maximum, and was perpendicular to the stream. Water depth was 75 to 80 cm. Three hellbender tails were observed under the nest rock and an additional small male approached and entered the nest within 5 minutes of our discovery of the nest.

Both nests differ from Alexander's (1927) and Bishop's (1941) descriptions in that the nest openings didn't face downstream and were virtually crevices in bedrock which could not be excavated by the male.

The choice of such a "secure" site may be related to the deep and intricate dissection characteristic of the southern side of the Salem Plateau. Along the White River local relief on the interfluve upland tracts may reach 500 ft. After heavy rains the cu ft./sec discharge rates may increase more than



Fig. 1. Arrow denotes egg strand leading to nest No. 1.



Fig. 2. Underwater photograph of entrance to nest No. 1.

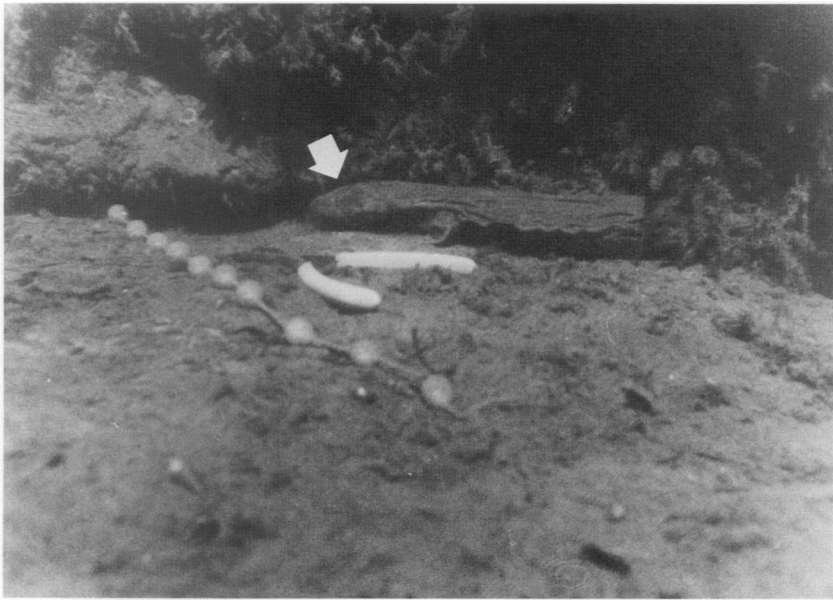


Fig. 3. Underwater photograph of spent female *C. a. bishopi* about to enter nest No. 1 at ca 13:45 h CSDST. Needle-nose pliers between egg strand and *Cryptobranchus* indicate scale.

14 fold, within 48 h in this section of the North Fork of the White River (Nickerson and Mays, 1973a). Such flooding may dislodge and sweep away mature trees, tumble large boulders, relocate beds of chert and even cause meanders. Selecting such "secure" sites would also explain why, in spite of large *Cryptobranchus* populations (Nickerson and Mays, 1973b) and thousands of man hours spent observing and turning thousands of rocks and boulders within this habitat since 1968, no nests were discovered until 1980.

By contrast local relief along interfluvial upland tracts of most of the Salem Plateau is rarely as much as 100 ft. It is within this section where several *C. a. alleganiensis* nests have been found under turnable-sized rocks (Dundee and Dundee, 1965; Dean Metter and Robt. Wilkinson, pers. comm., 1984).

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