

**Starlings nesting in rocky cliffs.**—Starlings (*Sturnus vulgaris*) generally favor man's buildings for nesting purposes but probably utilize any opening available. In North America they have been reported to use buildings (Kessel, *Am. Midl. Nat.* 58: 257, 1957) woodpecker holes (Imhof, *Alabama Birds*, 1962), and palm fronds (Royall, *Condor* 68: 196, 1966). To my knowledge no one has previously reported them nesting in openings in rocky cliffs. While traveling in southern and central Kentucky in May, 1970, 27 Starlings were seen entering cavities in rock faces of cuts made for highway construction. Of the 27, 15 were carrying nesting material and 8 had food items. All holes being utilized were over 4 m above the ground and all were in limestone shale formations. During June, 1970, two Starlings were observed using openings in similar road cuts in Harrison County, West Virginia, and six were observed using openings in the walls of two rock quarries in Preston County, West Virginia. Holes in cliffs are ideally located to prevent nest predation since few if any predators could ascend or descend the nearly vertical rock walls.

In Britain, nesting sites of *S. v. vulgaris* include rocks and heaps of stones or in holes in the ground. In the extreme north and west, on treeless islands, *S. v. zelandicus* "breeds usually in recesses in sea-cliffs, also under boulders on shore, holes in walls of any kind and frequently in rabbit, rat and other holes in ground, as well as in stone-heaps . . ." (Witherby *et al.*, *Handbook of British Birds*, 1: 41, 44 (1940)). While *zelandicus* has been recorded in Greenland, the present North American population of the species presumably derived almost entirely from *vulgaris*. The Kentucky and West Virginia examples seem to reflect the general adaptability of the species.—Edwin D. Michael, Division of Forestry, West Virginia University, Morgantown, West Virginia 26506.

**A method for marsh-trapping breeding Franklin's gulls.**—Much information has been gathered concerning the movements and dispersal patterns of immature gulls (notably Herring Gulls, *Larus argentatus*, and Ring-billed Gulls, *L. delawarensis*). Little information is available, however, regarding the local movements and interactions among breeding adults. In order to obtain such data, it is first necessary to trap and color mark them individually without disrupting the colony.

I was interested primarily in collecting behavioral information on a breeding colony of Franklin's Gulls (*L. pipixcan*). This species is difficult to trap by conventional methods because it nests on platforms in 2 to 3 feet of water in prairie cattail marshes. In addition, birds may desert as a result of excessive disturbance. Several trapping methods were considered and rejected: cannon-netting (Dill & Thornsberry, 1950; Thompson & Delong, 1967), clap traps (Kadlec & Drury, 1969), drugs (Smith, 1966, and 1967, Kadlec & Drury, 1969), and the Coulson Trap (Weaver & Kadlec, 1970). The first two were deemed unfeasible because of the disturbance factor and habitat-related difficulties. The Coulson Trap was rejected because Franklin's Gulls do not enter the nest from the side, but enter from the top. Drugs were considered to be too much of a risk since the study was dependent upon observations of birds around a permanently situated blind.

#### *Procedure and Results*

The trap found to be most effective was designed by the author and Virgil D. Erickson at Agassiz National Wildlife Refuge, Middle River, Minnesota. It consists of a cylinder of 1" x 2" welded wire with a 1" mesh chicken wire top (see photo.). It measures 20" in diameter and 24" high. An elliptical 8" x 12" hole cut in the center of the top facilitates the maneuvering of birds into the trap.

The trap is constructed so that it fits over the nest, and around the edge of the nest platform. The ragged edges of the bottom hold the trap firmly on the nest. Adult Franklin's Gulls land on the top of the "Marsh-Trap", survey the situation, and usually jump into it. In most cases they proceed to incubate after entering the trap. Trapped birds usually do not struggle until I approach to retrieve them, but the height of the trap and the small size of the hole prevent trapped birds from flying or jumping out. Fifty to 75% of the traps capture an adult within ½ hour and sometimes both parents are trapped at the same time. In the case of one very close nest a neighbor went in the trap to attack the owner already in the trap.

Fig. 1. Franklin's Gull "Marsh Trap".



The Franklin's Gull "Marsh-Trap" has not been used for other marsh-nesting species, but it should prove effective for species such as Laughing Gulls, Forster's Terns, and Black Terns.

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