

portantly, chemical control should be delayed until it is apparent that birds cannot provide the desired degree of insect control.

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Interactions between Forster's Terns and American Coots.—Recently Burger (Wilson Bull. 85:449-451, 1973) documented competition for nest sites and aggression between Franklin's Gulls (*Larus pipixcan*) and American Coots (*Fulica americana*) nesting in a Minnesota marsh. I will present data collected at Delta, Manitoba on interactions between coots and Forster's Terns (*Sterna forsteri*), another larid nesting in the same sort of marsh habitat as Franklin's Gull (McNicholl, M.S. thesis, Univ. Manitoba, 1971). As was the case in Burger's study, several species nested among the larids, but most were never attacked by the tern. Black-crowned Night Herons (*Nycticorax nycticorax*) and American Coots were the only exceptions. The herons were attacked only while attempting to land in the colony (McNicholl, Auk 90:902-904, 1973); the coots were attacked as described below.

The tern colony, situated on seven "islands" of *Scirpus acutus* in a marsh bay, had nests placed on floating vegetation and muskrat (*Ondatra zibethicus*) houses. Coots nested both on solid ground along the edges of the bay and on floating mats on the *Scirpus* "islands." Six coot nests were on the "islands" in 1968 and eight in 1969, but most were not among the tern nests. Of the three that were among tern nests, two were closer to tern nests than the adjacent tern nests were to each other. Thus, coots tended to nest close to but not among terns, but were tolerated at close range by the terns. The selective advantage for the coots of nesting in the vicinity of the terns may be related to predator avoidance, as the terns and Yellow-headed Blackbirds (*Xanthocephalus xanthocephalus*) were efficient at keeping away avian predators (McNicholl 1973) by mobbing them, a behavior not practiced by coots. As these predators were usually kept from the entire bay, this advantage would be imparted to the coots whether or not they nested close to the terns. On the other hand, since coots were attacked if approaching tern nests (see below), it would be advantageous for the coots to nest away from the immediate vicinity of tern nests.

Although coots fed daily in open parts of the bay, I only once saw one attacked there by a Forster's Tern. In this case the tern had attacked the coot near the tern's nest just prior to the attack in the open bay. Similarly terns did not attack coots swimming slowly along the edges of the "island" feeding. However terns always attacked coots either approaching a tern nest directly or swimming in a deliberate manner (charging) toward the "islands." After my daily visits to the tern nest and in about 20 additional observations, coots of the three nests close to tern nests always approached their own nests from the side opposite the tern nest. Usually one tern attacked one coot, but once a coot was attacked by two terns simultaneously, and once by six terns. In two cases two terns attacked two coots simultaneously, that is both terns attacked both coots. Attacks consisted of swoops from above, usually resulting in the coot's either turning away or diving immediately. In one case a coot did not retreat immediately, and was struck several times on the head by the tern. This was the only case in which a tern actually struck a coot on the water. Once a flying coot was struck on the head and legs by a tern. This was the only case of an attack on a flying coot.

There may be at least three advantages to terns in keeping coots away from nests or young. The use of similar nesting substrates makes coots potential nest site competitors (see below and Burger 1973). The clumsy manner in which coots land and take off, especially if frightened, may make their mere presence near a nest dangerous. Burger (1973) twice observed coots preying on gull eggs in Minnesota and reported other observations of egg predation by coots. In addition Lawrence (Chickadee Notes No. 596, Winnipeg Free Press, 4 Aug. 1932) reported a coot drowning a downy Canvasback (*Aythya valisineria*), and later (Chickadee Notes No. 796, Winnipeg Free Press, 26 June 1936) suspected them of killing young Franklin's Gulls, and Collins (Auk 61:299, 1944) observed a coot drowning a downy Mallard (*Anas platyrhynchos*).

Although coots have been observed to use muskrat houses for loafing, copulating, and brooding in other areas (Fredrickson, Wilson Bull. 82:445-457, 1970), on Forster's Bay they used only floating mats of dead *Scirpus* for these activities, and only those not used by terns for courtship or maintenance activities. This was true even in 1969 when several muskrat houses were not used for nesting by terns. The terns used all these structures for courtship activities before either the terns or coots were nesting, and this may have discouraged the coots from using them. This contrasts with Burger's observations on Franklin's Gulls in which approaching coots usually caused gulls to leave such sites, and occasionally coots even charged the gulls. I never observed a coot attack or threaten a tern, but Van Rossem (Condor 35:49-51, 1933) saw a coot chase a Forster's Tern away from the vicinity of the coot's nest, and Ryder (Auk 76:424-442, 1959) included Forster's Tern among birds threatened by coots when near coot young. As Forster's Terns have been reported to prey on eggs (Van Rossem 1933), it may be to the coot's advantage to keep the terns away.

Thus, a complex situation involving potential competition for nest sites, protection to coots from predators by nesting among aggressive terns, and potential predation by either species on the other may exist between Forster's Terns and American Coots similar to that reported by Segré et al. (Wilson Bull. 80:213-219, 1968) for Laughing Gulls (*Larus atricilla*) and Clapper Rails (*Rallus longirostris*).

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Mobbing and other interspecific aggression by Barn Swallows.—Hartley (Symp. Soc. Exp. Biol. No. 4:313-336, 1950) defines mobbing as a "demonstration made by a bird against a potential or supposed enemy belonging to another and more powerful species, it is initiated by the member of the weaker species, and is not a reaction to an attack upon the person, mate, nest, eggs, or young." We recognize mobbing as a form of interspecific aggression, but we do not recognize all forms of interspecific aggression as being synonymous with mobbing. Bent (U.S. Natl. Mus. Bull. 179, 1942), Cross (Wilson Bull. 62:39, 1950), Samuel (Wilson Bull. 83:296-297, 1971), and Beason (Int. Bird-Banding News 46:55-56, 1974) have reported instances of Barn Swallow (*Hirundo rustica*) mobbing behavior or other interspecific aggression directed toward a Sharp-shinned Hawk (*Accipiter striatus*), a Loggerhead Shrike (*Lanius ludovicianus*),