

GENERAL NOTES

Strange Disappearance of Nesting Penikese Island Terns.—

For seven years Penikese Island, lying southeast of New Bedford, Massachusetts, in Buzzard's Bay, has been visited by members of the North-eastern Bird-Banding Association who band thousands of Common Terns (*Sterna hirundo*) and Roseate Terns (*Sterna dougalli dougalli*) there annually each breeding season. This year (1932) for the first time a limited amount of trapping was done, and fifty-eight adult Common Terns were captured by using a simple wire pull-string trap set over the nests. One Common Tern was taken wearing band 404788, which was placed on the bird when a chick on Tern Island, Chatham, Massachusetts, fifty-two miles northeast of the place of capture, the date of banding being July 18, 1926.

This fascinating rookery has an interesting historical background and is different topographically from the flat sandy islands or low sand-bars on which terns nest in the other colonies in the Cape Cod region. Penikese Island was the home of the Anderson School of Natural History founded by Louis Agassiz. In later years and until 1920 it was used by the Commonwealth of Massachusetts for a leper colony where unfortunates afflicted with this disease were concentrated and tended. The graveyard, ruins of the hospital, laundry, cottages, and other buildings, which were burned or dynamited upon the discontinuance of the island for this purpose, are grim reminders of the past. In 1924 the island was transferred to the Massachusetts Division of Fisheries and Game by legislative enactment and declared a Wild Life Sanctuary. The warden, H. S. Turner, and his family of three are the sole inhabitants and live there throughout the year. The area of the island is from eighty-four to one hundred acres and is made up of rolling uplands covered largely with grass, but devoid of trees except a struggling group of Scotch pines planted in a sheltered hollow. The shore-line is so covered with stones that there is hardly room for even a few terns' nests in the sand between. There are three small ponds, one of which contains a satisfactory flow of fresh water where the birds drink and bathe. Here, too, ducks and geese remain throughout the winter.

The wild-life inhabitants, in addition to the terns, are hundreds of Eastern Garter Snakes (*Thamnophis sirtalis sirtalis*) and numbers of common Cotton-tail Rabbits. The snakes, we are informed, were introduced upon the island by Professor Agassiz for biological experiments, and as there are no natural enemies to hold their numbers in check except man and an occasional hawk, they have multiplied until they are very numerous. Some conception of their numbers may be gained from the following record of those killed by Warden Turner, who spent a small portion of each day listed below in extermination work:

April 15, 1932—	65 snakes destroyed
April 18, 1932—	165 snakes destroyed
April 20, 1932—	175 snakes destroyed
April 21, 1932—	40 snakes destroyed
April 22, 1932—	45 snakes destroyed
April 23, 1932—	60 snakes destroyed

Eggs and young terns are eaten by these reptiles, and the destruction caused by them must be considerable, although apparently up to the present year there was no appreciable diminution in the numbers of young raised to maturity. Snakes have been observed swallowing eggs, and we

captured one with a partly grown chick in its stomach. The terns are present in thousands, and to count their numbers with any degree of accuracy is an impossibility, but we estimate that between ten and fifteen thousand make this island their breeding ground.

Cotton-tail rabbits were released on the island by the Division of Fisheries and Game, and they have multiplied greatly as they have no enemies but a passing hawk or Snowy Owl. In Warden Turner's opinion they are not molested by the snakes. Each fall many are trapped and shipped to parts of the State where the covers are depleted of this popular little game animal.

The terns have undoubtedly inhabited the island for many years, and their nests are everywhere in the long grass. One can stand on an elevated point overlooking the rolling uplands and observe adult birds in every direction, in the air or on the ground covering eggs or young. The location of these nests in the long grass is quite in contrast to the breeding areas selected by the terns in the other large rookeries on Tern Island, Chatham, Egg Island, Hyannis, and Muskeget Island, where nearly open sand is chosen in preference to grassy sections. Here and there are brown patches formed by dead grass which is killed by the terns and closely matted to the earth. A slight depression in this soft material makes an ideal nest. To the bird-banders there is no more delightful picture than the beautifully colored nesting birds against the background of green in as naturally secure a locality as can be found in the State.

On July 2d, 3d, and 4th, 1932, there were eggs in great numbers and few had hatched. During those three days only 490 young could be found and these were banded, but the possibility at this time of banding several thousand later in the season seemed excellent.

Ten days after the writer visited this colony four other members of the Northeastern Bird-Banding Association, who have worked there in other years, arrived to continue the banding and were astonished to find that of the thousands of adult terns not over five hundred were present, an unprecedentedly small number at the height of the breeding season. There were very few eggs, and these were scattered about, some broken and many more out of the nests. Only four live chicks were found and almost no dead ones: of the 490 banded by the writer and his party, only one was noted, and that was dead.

Two questions at once arise: why did the birds desert eggs and young, and to what place did they go? Warden Turner noticed no diminution in numbers for ten days after our departure. When the adults disappeared, many of the eggs and young would, of course, be easy prey for the snakes. The only explanation that the writer can offer for the departure of the adults is the disappearance of their food-supply, for if the schools of small fish upon which the terns prey leave the immediate vicinity of the island, the old birds would be forced to leave and thus to desert eggs and young. Reports are current along the Massachusetts coast that the eel-grass which is generally abundant in every favorable spot has entirely vanished. Can there be any connection between the disappearance of the eel-grass and the small fish, thereby explaining the desertion of Penikese Island by the terns?—CHARLES B. FLOYD.

Early Bird-Banding in Europe.—After reading in the April, 1932, issue of *Bird-Banding* the interesting account of "An Early Successful Bird-Banding Venture in England," I wondered whether any notice had