

THE TERNS OF MUSKEGET ISLAND, MASSACHUSETTS. PART IV.¹

BY GEORGE H. MACKAY.

ALTHOUGH the readers of 'The Auk' may be by this time familiar with my subject, I am nevertheless tempted to risk being thought monotonous in again presenting for their perusal further matter similar in character to some of my previous articles. I do this for the reason that the occupants of the breeding resorts to which my data relate may at any time transfer themselves to other places where perhaps such observations cannot be easily taken. Civilization is continually encroaching upon and appropriating such places along the coast until there remain at the present time few localities adapted for such breeding resorts. My desire to record what observations I have made in view of the possibility of the birds leaving us, is my excuse for the present contribution.

The Muskeget Island Terns, *Sterna hirundo*, *Sterna paradisæa*, and *Sterna dougalli*, and the Laughing Gulls, *Larus atricilla*, under the protection extended to them by a few individuals for a series of years, have increased from small numbers at the beginning to colonies of magnificent proportions in 1896, at which time the Terns, *S. hirundo* and *S. dougalli*, were beyond estimate, while the Laughing Gulls had increased to a fairly good sized colony, after having virtually abandoned these waters. The Terns of Penikese Island had never until 1897 enjoyed an *entire* undisturbed breeding season, when I interested myself in their behalf. As a result the increase has been a subject of remark among people living in the vicinity. At both Muskeget and Penikese Islands the situation is precarious, inasmuch as the birds may be compelled at any time to seek new breeding grounds elsewhere. Life saving stations, fortifications, etc., located in their midst, are likely to prove disturbing factors.

I visited and remained on Muskeget Island July 3-5, 1897, and while there made, as has heretofore been my custom, an exhaus-

¹ Read before the Nuttall Ornithological Club, October 18, 1897.

tive examination of all the breeding grounds of the Terns and Laughing Gulls. I found on visiting Gravelly Island a considerable falling off from the status of June 26, 1896, in both nests and eggs; the occupants were also different, being now almost entirely Common Terns (*S. hirundo*), its former possessors, the Roseate Tern (*S. dougalli*) having to a large extent abandoned it, there being, by my estimate, not more than ten per cent. of the latter now nesting there. I endeavored for over an hour to procure a few specimens of Roseates having the basal half of the bill of a dark orange red, with legs and feet carmine. I have noted such flying about in numbers during former years, they being noticeably abundant July 29, 1895; some of these birds had slaty, while others had white underparts. I failed in securing any, obtaining only one bird with the bill partially so colored.

I subjoin the following statement of nests and eggs noted here:

GRAVELLY ISLAND. JULY 3, 1897.

Terns.

128 nests with 1 egg each	128		5 nests with 1 egg and 1 chick
232 " " 2 eggs "	464		2 " " 1 " " 2 chicks
51 " " 3 " "	153		4 " " 2 eggs " 1 chick
7 " " 4 " "	28		
0 " " 5 " "	0		82 live chicks
418	773		53 dead "

Laughing Gulls.

5 nests with 1 egg and 1 chick in down,	10	
4 " " 2 eggs " 1 " "	12	
2 " " 1 egg " 2 chicks " "	6	
11	28	

I have not before noted Laughing Gulls breeding here, although I have heard that they did so formerly. This year their nests were placed in the longest and thickest lodged beach grass, *Ammophila arundinacea*, and were consequently well concealed. These birds undoubtedly came from their former haunt, Muskeget Island proper, which place they abandoned this season.

On leaving Gravelly Island I rowed over and examined the

adjacent shoals, or more correctly speaking, pieces of the old south beach, which are now all that remains of the northwestern half, and which formerly served as a barrier on this side and protected Muskeget and contiguous islands from the fury of the ocean. It will be seen that the conditions here are constantly changing to a greater or less extent, and I would refer those of my readers who may be interested to know how this locality looked, as also Penikese Island, at the time of the American Revolution, to the 'Atlantic Neptune,' an atlas published for the use of the Royal Navy of Great Britain, by Samuel Holland, Esq., London, 1777, Vol. II, Part 2. I found no birds nesting, nor chicks, nor eggs on these pieces of beach. Attempts at incubation had been made, as shown by the remains of egg shells, some nearly whole, with a good sized hole towards the larger end. This orifice had the appearance of having been gnawed or pecked to obtain the contents. Everything indicated that these places had been abandoned by the birds.

My next stopping place was at South Point Island. Changes were also noticeable here, my check-list of eggs and nests showing five hundred less eggs, and nearly a hundred less nests than on June 26, 1896. I again tried, without success, to procure some of the Roseates with a deep orange colored bill. There was only a small number of Roseates nesting here, intermingled with the Common Terns and Laughing Gulls. These latter, about fifteen pairs, probably came from their old nesting place on Muskeget proper, they nesting here for the first time, in the thickest and tallest beach grass. This place was, until 1897, one of the strongholds of the Roseates, but this year these beautiful birds are not in evidence as formerly, a large part of the colony heretofore domiciled here having apparently abandoned these waters. I think there are more Common Terns breeding on South Point Island than in 1896, they having come, like their neighbors, the Laughing Gulls, from Muskeget proper, having, like them, also abandoned it. I also found here some empty egg shells of the Terns and one of a Laughing Gull which had holes apparently gnawed or pecked in them. The nests and eggs noted are as follows :

SOUTH POINT ISLAND, JULY 3, 1897.

Terns.

<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px 10px 2px 10px;">144 nests with 1 egg each, 144</td> <td style="padding: 2px 10px 2px 10px;"> 5 nests with 1 egg & 1 chick in down</td> </tr> <tr> <td style="padding: 2px 10px 2px 10px;">342 " " 2 eggs " 684</td> <td style="padding: 2px 10px 2px 10px;"> 3 " " 1 " 2 chicks "</td> </tr> <tr> <td style="padding: 2px 10px 2px 10px;">68 " " 3 " " 204</td> <td style="padding: 2px 10px 2px 10px;"> 1 nest with 2 eggs and 1 chick "</td> </tr> <tr> <td style="padding: 2px 10px 2px 10px;">9 " " 4 " " 36</td> <td style="padding: 2px 10px 2px 10px;"> 1 " " no " 2 chicks "</td> </tr> <tr> <td style="padding: 2px 10px 2px 10px;">0 " " 5 " " 0</td> <td style="padding: 2px 10px 2px 10px;"> 103 live chicks in the down</td> </tr> <tr> <td style="padding: 2px 10px 2px 10px; border-top: 1px solid black;">563</td> <td style="padding: 2px 10px 2px 10px; border-top: 1px solid black;"> 67 dead " " "</td> </tr> <tr> <td style="padding: 2px 10px 2px 10px; text-align: right;">1068</td> <td></td> </tr> </table>	144 nests with 1 egg each, 144	5 nests with 1 egg & 1 chick in down	342 " " 2 eggs " 684	3 " " 1 " 2 chicks "	68 " " 3 " " 204	1 nest with 2 eggs and 1 chick "	9 " " 4 " " 36	1 " " no " 2 chicks "	0 " " 5 " " 0	103 live chicks in the down	563	67 dead " " "	1068		
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Laughing Gulls.

1 nest with 1 egg each, 1	
4 nests " 2 eggs " 8	
7 " " 3 " " 21	
12	30

On South Point (of Muskeget Island proper), now united to South Point Island, I found very few eggs although the Terns used it as a nesting place. I observed no eggs this season but what were normal.

I visited Adams Island but, as heretofore, found no birds nesting on it. This island has been considerably reduced in size since the washing away of the south beach.

I surveyed Muskeget Island proper on July 4 and 5, 1897, with feelings of concern and regret, for great changes had taken place regarding the domiciled birds since last season, as I found that this great breeding resort of the Terns and Laughing Gulls had been practically abandoned, there being only a few Terns still nesting at the westernmost part of the island. The cause of this abandonment I attribute to the building of a new life saving station in the midst of their former breeding grounds on the northern side of the island, together with some minor causes. This particular area has been the stronghold of the Common Terns, where they congregated in thousands, as well as of the Laughing Gulls. I am of the opinion that a portion of these birds have re-located on some of the small adjoining islands, while others have apparently abandoned these waters. The comparatively small number of the Roseates remaining, in comparison with 1895 and 1896, together with the diminished aggregate of

Laughing Gulls, indicate that they must have departed elsewhere.

For the first time to my knowledge, or so far as I can learn from others, a small colony of Terns nested this season on the Dry Shoal (without vegetation) located about half a mile from the northwestern end of Nantucket Island; about one hundred eggs were noted there, but unfortunately a high course of tides swept over this shoal and carried away the eggs.

This season the Terns arrived at Muskeget in large flocks, thousands dropping from the sky when they were first observed, similar arrivals as I am informed, not having been before noted. Up to the night of May 2, 1897, no Terns or Laughing Gulls had been seen in the locality. Early on the morning of May 3, the Terns were in evidence in large numbers, estimated at one thousand; the wind had been easterly during the night. This is the earliest date of their arrival in Massachusetts of which I have any knowledge. At Penikese Island, the greater portion of the Terns left the island on September 1, 1897, the wind being southwest and the weather fine. On the 4th and 5th a total of one hundred and twenty-five Terns, nearly all of them young birds and not strong on the wing, were counted at three different points on the island. These continued to decrease until the 24th, and on the 25th not a Tern was visible in the neighborhood. The body of birds which departed on migration September 1 resembled a great cloud as they mounted into the air. The number of young birds was unusually large this season, larger than has been before noticed by Mr. Fred A. Homer, one of the owners of the island. This result is probably due to the protection which has been extended to them *throughout* the breeding season, a condition they have not before enjoyed, as far as I am aware. The writer avails of the present opportunity to express his acknowledgments of the considerate co-operation of the Messrs. Homer in bringing about such satisfactory results.