continuous watch was kept of the nest from 8:25 A. M. to 7:30 P. M., when the female settled down for the night. During that time the young were fed seven times by the male, seventeen times by the female. The next four days were very busy ones, and the male had no time for singing.

The first young left on May 27 and was cared for by the male. On May 29 the last two young fluttered down; the other had disappeared in the meantime. The whole group stayed about the lawn for several days, with both parents feeding and training the young.

The history of the nest comprised: 9 days nest building; 5 days egg laying; 15 days brooding; and 11 days nest feeding.

Watertown
New York

OBSERVATIONS ON THE BIRDS OF THE NORTH ATLANTIC

BY ROLLIN H. BAKER

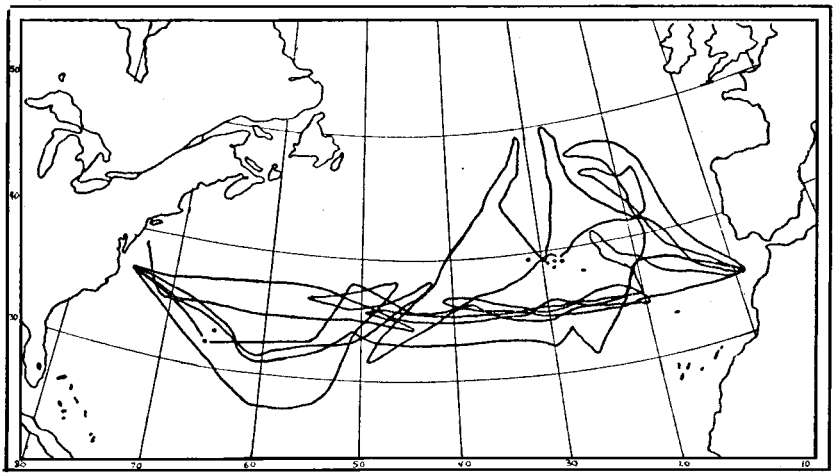
As part of my war-time duties in the United States Navy, I served on board a destroyer, which included in its operations as an escort and antisubmarine patrol vessel, several cruises into the North Atlantic Ocean. I was able to record the birds observed on voyages during the period from August, 1943, to June, 1944.

In the months from August through January, six Atlantic crossings between the United States and French Morocco were made. From February to June, trips were made in the western Atlantic as far north as New York, as far east as Bermuda, as far south as Trinidad, and as far west as Texas in the Gulf of Mexico.

Birds Recorded on Trans-Atlantic Cruises

Text-figure 1 presents the routes taken in six crossings of the Atlantic Ocean. The time occupied by each trip was about three weeks. The following dates are included: eastbound, August 7 through August 26; westbound, August 30 through September 18; eastbound, October 5 through October 27; westbound, October 30 through November 19; eastbound, December 5 through December 24; westbound, December 27 through January 18. In the longitudes of 40° W. to 75° W., birds were observed in the latitudes of 31° N. to 38° N. In the longitudes of 8° W. to 39° W., bird populations were recorded in the latitudes of 31° N. to 50° N.

There were never more than four ships in the group. This small number did not appear to be as attractive to birds as did the large cargo-ship convoys, which operated during the same period. Further-



TEXT-FIGURE 1. Routes taken on six Atlantic voyages: August through January.

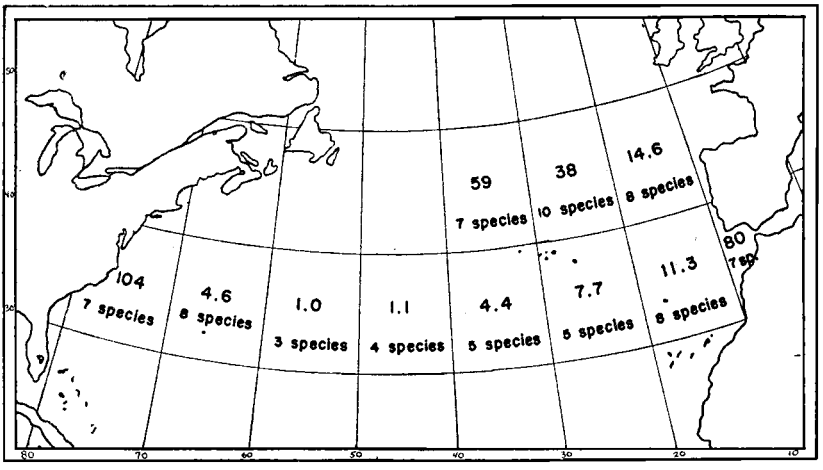
more, the ship traveled at faster speeds than cargo-ship convoys, usually between 15 and 18 knots. These factors helped to present an unexaggerated picture of the oceanic bird life.

Populations are recorded by the use of bird counts. A count consisted of a day's observation of birds, covering a period of four to six hours. A total of 111 counts were made. The location of each count was set at the point midway in the distance traveled during the period of observation. Surface water temperatures in Fahrenheit degrees were obtained on board ship, where temperatures were recorded hourly.

In Text-figure 2 is presented the number of birds seen per count in each ten-degree area of latitude and longitude visited from August through January. The total species count is also listed although these records are not too significant since a number of the birds encountered were not identified to species.

Tables 1 and 2 show bird population figures for the three periods: August–September, October–November, December–January. The longitude limits are 69° W. (about 400 miles east of the American coast at 36° N.) and 10° W. (about 240 miles west of the African coast at the same latitude). Counts made closer to the coastlines are excluded from the tables so as to present only oceanic records.

As presented in Table 1, birds seen in latitudes of 31° N. to 39° N. decreased from 8.6 birds per count in August–September to 3.1 in October–November and 1.4 in December–January. Most of this de-



TEXT-FIGURE 2. Birds observed per count on Atlantic voyages: August through January.

cline occurred in the longitudes of 10° W. to 39° W., where an average of 10.7 birds per count in the first period dropped to 7.3 in October–November and 1.6 in December–January.

In the area between 40° W. and 69° W., the average number of birds observed was 4.25 per count in the first period as compared with 1.1 in the second and third periods. The higher number found in August–September was caused by the recording of a flock of 25 storm petrels. Other than this record there were no sizable bird concentrations noted in this area. The total number of species encountered in the eastern longitudes was 13 as compared with 9 in the western ones. In the latter case most of the species were found between 60° W. and 69° W. as shown in Text-figure 2. Tropic-birds, petrels and shearwaters were the birds usually seen in the western longitudes. This area is within the region known as the Sargasso Sea, which is noted for a comparatively smaller fauna than is found at other positions in the Atlantic.

Within the latitudes of 31° N. to 39° N., the mean surface water temperature per count in the longitudes of 10° W. to 39° W. was 71.6° F. (76.5° in August–September, 70.1° in October–November, and 63.4° in December–January) while in the longitudes of 40° W. to 69° W. the mean was 75.5° (80.6° in August–September, 76.0° in October–November, and 69.1° in December–January), a difference of 3.9°. Into this colder water to the east ranged such species as

TABLE 1. BIRDS RECORDED IN THE LONGITUDES OF 10° W TO 69° W IN THE LATITUDES OF 31° N TO 39° N

Longitudes	*Daily counts*	*Latitude limits*	*Surface water temperature*	*Birds*	*Species*	*Birds per count*
PERIOD ONE, AUGUST–SEPTEMBER						
10°–19° W	5	35°–37° N	72°–74°	106	7	21.5
20°–29° W	12	34°–38° N	70°–80°	119	4	9.9
30°–39° W	7	35°–36° N	78°–80°	33	3	4.7
40°–49° W	4	36°–37° N	78°–80°	3	2	0.7
50°–59° W	4	32°–38° N	80°–82°	6	2	1.5
60°–69° W	4	33°–38° N	80°	42	4	10.5
Totals:						
10°–39° W	24	34°–38° N	70°–80°	258	7	10.7
40°–69° W	12	32°–38° N	78°–82°	51	4	4.25
10°–69° W	36	32°–38° N	70°–82°	309	10	8.6
PERIOD TWO, OCTOBER–NOVEMBER						
10°–19° W	2	34°–37° N	68°–70°	4	2	2.0
20°–29° W	2	34°–35° N	70°–72°	20	1	10.0
30°–39° W	3	34°–39° N	66°–73°	27	2	9.0
40°–49° W	6	32°–38° N	72°–78°	7	4	1.2
50°–59° W	5	33°–37° N	72°–80°	3	2	0.4
60°–69° W	4	31°–35° N	78°–80°	7	5	1.4
Totals:						
10°–39° W	7	34°–39° N	66°–73°	51	3	7.3
40°–69° W	15	31°–38° N	72°–80°	17	8	1.1
10°–69° W	22	31°–39° N	66°–80°	68	8	3.1
PERIOD THREE, DECEMBER–JANUARY						
10°–19° W	4	35°–37° N	60°–64°	14	5	3.5
20°–29° W	4	31°–34° N	62°–68°	1	1	0.2
30°–39° W	5	32°–38° N	60°–68°	6	3	1.2
40°–49° W	5	33°–34° N	66°–72°	7	2	1.4
50°–59° W	3	32°–35° N	66°–72°	3	2	1.0
60°–69° W	3	32°–35° N	66°–74°	2	2	0.6
Totals:						
10°–39° W	13	31°–38° N	60°–68°	21	6	1.6
40°–69° W	11	32°–35° N	66°–74°	12	3	1.1
10°–69° W	24	31°–38° N	60°–74°	33	8	1.4

kittiwakes and fulmars. Larger numbers of shearwaters were also noted in these waters.

As shown in Text-figure 2 and Table 2, birds were found to be much more numerous in the latitudes of 40° N. to 50° N. than in those of 31° N. to 39° N. Birds were found more frequently during the period of October–November when 64.8 birds per count were

TABLE 2. BIRDS RECORDED IN THE LONGITUDES OF 10° W TO 39° W IN THE LATITUDES OF 40° N TO 50° N

Longitudes	*Daily counts*	*Latitude limits*	*Surface water temperature*	*Birds*	*Species*	*Birds per count*
PERIOD ONE, AUGUST–SEPTEMBER						
20°–29° W	2	40°–41° N	69°–70°	16	3	8.0
PERIOD TWO, OCTOBER–NOVEMBER						
10°–19° W	1	41° N	62°	62	3	62.0
20°–29° W	6	43°–50° N	58°–64°	418	7	69.7
30°–39° W	5	42°–49° N	60°–68°	297	7	59.4
Totals	12	41°–50° N	58°–68°	777	10	64.8
PERIOD THREE, DECEMBER–JANUARY						
10°–19° W	7	41°–44° N	56°–62°	55	7	7.9
20°–29° W	8	41°–47° N	58°–60°	179	3	22.4
Totals	15	41°–47° N	56°–62°	234	7	15.3

recorded as compared with 8.0 in August–September and 15.3 in December–January.

In October to November, north of the 45th parallel, there were several large flocks of fulmars and kittiwakes. The presence of these flocks accounts for the larger total number of birds recorded in comparison with the total in more southern latitudes. Surface water was colder, ranging from 56° to 70° F., as compared with a range of 60° to 80° F. in the area directly south. There was also a larger number of species encountered in the more northern latitudes.

The presence of the Azores did not appear to be a factor affecting the fall and winter bird populations, since birds were not found to be more numerous in or near the islands. Likewise, birds were not more abundant in the vicinity of Bermuda, although there were tropicbirds and other sea birds at the island in August.

ACCOUNT OF THE SPECIES

The following is an account of the birds observed. Since most of the oceanic birds were previously unknown to me, I was unable to make positive sight identifications in some cases. Of course, there was no opportunity to examine specimens in hand. My best aid for identification was a copy of Alexander's 'Birds of the Ocean.' In all cases of questionable identity, records have been discarded.

I wish to thank Professor V. C. Wynne-Edwards for his editorial comments and Dr. Robert Cushman Murphy for his suggestions of pertinent reference material.

FULMAR, *Fulmarus glacialis* subsp.—Fulmars were encountered in large numbers during October in latitudes of 46° N. to 50° N. between longitudes of 26° W. and 31° W. A total of 345 birds were seen on five occasions. Flocks containing as many as 100 individuals were observed, often remaining in view for hours following the wake of the ship. No Fulmars were seen in December during a cruise as far north as 47° N.; however, the western limit of this trip was 26° W. The October birds were found west of this region. In January single birds were noted at two localities, 41° N. and 19° W. and 42° N. and 18° W. Surface water temperatures ranged from 58° to 62° F. in the areas where this species was found.

It is apparent from my observations that Fulmars, in large concentrations, ranged south to 46° N. in the region of 26° W. to 31° W., but probably did not reach this latitude in more eastern longitudes, except as stragglers. These observations agree with those of Wynne-Edwards (1935).

CORY'S SHEARWATER, *Puffinus kuhlii* subsp.—Cory's Shearwater was one of the most frequently observed oceanic birds. Singles were usually encountered, though occasionally as many as 10 or 15 individuals were found together. Generally the birds did not follow the wake of the ship, ordinarily paying little attention to us unless their flight was directed on a converging course with that of the ship. Their flight was swift; many times birds would cross in front or outdistance the ship at speeds of 20 to 25 knots.

TABLE 3. RECORDS OF CORY'S SHEARWATER

Month	*Birds*	*Latitude limits*	*Longitude limits*	*Water temperature*
Aug.	49	33° N to 41° N	9° W to 58° W	69° to 80°
Sept.	81	34° N to 37° N	19° W to 35° W	74° to 80°
Oct.	5	37° N to 39° N	30° W to 45° W	66° to 78°
Nov.	2	37° N	73° W	60°
Dec.	1	35° N	68° W	70°
Feb.	1	30° N	64° W	70°

As shown in Table 3, no shearwaters of this species were recorded north of 41° N. Moore (1941) records the species as far north as 50° N. in the eastern Atlantic in early fall. Most of the birds were seen in August and September, with only a few birds being found in later months. The majority were found in the eastern Atlantic. These eastern birds apparently left the area, probably moving south of 32° N., since none was recorded east of 64° W. after the middle of October. Flocks of ten or more birds were encountered in Sep-

tember, which might have been migrants. Bird concentrations were not noted the previous month. Few western records were obtained during the fall months. In November, December and February, however, four birds were seen west of 64° W.

GREATER SHEARWATER, *Puffinus gravis* (O'Reilly). — In the fall months, the Greater Shearwater was usually encountered at the northern limits of the Atlantic cruises. As far as could be determined, none was seen together with Cory's Shearwater; however, in some of the large flocks it was quite possible that individuals of both species were present. Usually the Greater Shearwater was found north of the range of the latter species.

TABLE 4. RECORDS OF THE GREATER SHEARWATER

Month	*Birds*	*Latitude limits*	*Longitude limits*	*Water temperature*
Sept.	10	38° N	61° W	80°
Oct.	273	34° N to 48° N	8° W to 36° W	60° to 70°
Nov.	14	34° N to 36° N	34° W to 38° W	72° to 73°
May	5	30° N	79° W	80°
June	8	37° N	73° W to 75° W	66°

As shown in Table 4, the majority of the birds was seen in the month of October in the region north of the Azores. Most of these 273 birds were found in flocks numbering 40 or more individuals. Usually a large flock would be encountered in a compact group on the water. They seemed sluggish and would seldom rise except when they saw that they were directly in the path of the ship. Only 14 birds were noted in November while none was recorded in the winter months.

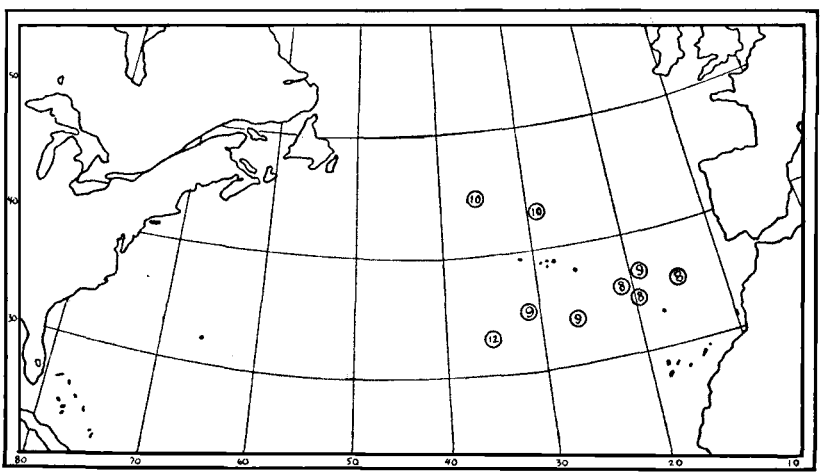
Observations indicate that during August and September of 1943 the Greater Shearwater probably ranged north of latitude 40° N., since only one record was obtained south of that parallel. This agrees with the observations of Wynne-Edwards (1935). Records for the western Atlantic are lacking. In fact, few shearwaters of any species were seen in the western Atlantic from August through October in the latitudes of 31° N. to 38° N. In October the eastern birds were found in flocks and were apparently moving south, since few birds were found in November and none in the winter months. In May and June, birds began to appear in the western Atlantic. Surface water temperatures in the region did not appear to be a factor in the movements of this species.

SOOTY SHEARWATER, *Puffinus griseus* (Gmelin).—It seems unlikely that the Sooty Shearwater was absent from areas visited; however,

no individuals that I could identify as this species were observed. It was not until April 26 that a single bird of this species was seen. This was some 40 miles off the coast of New Jersey (39° N. and 74° W.). Bent (1922) lists this species in May off the Atlantic Coast of the United States. Two more birds were seen at 28° N. and 78° W. on April 28, and on April 29 five were recorded at 24° N. and 83° W. On May 5, a concentration of about 50 Sootys was observed at 24° N.

TABLE 5. RECORDS OF THE MANX SHEARWATER

Month	*Birds*	*Latitude limits*	*Longitude limits*	*Water temperature*
Aug.	18	35° N to 36° N	15° W to 29° W	72° to 80°
Sept.	18	34° N to 37° N	19° W to 31° W	74° to 80°
Oct.	6	43° N to 44° N	29° W to 36° W	64° to 68°
Dec.	1	33° N	35° W	68°



TEXT-FIGURE 3. Distribution of monthly records of the Manx Shearwater. The numeral in each circle designates the month of observation.

and 81° W.; two more birds were seen the next day off San Augustine, Florida. On May 21, two were sighted at 39° 30′ N. and 72° 30′ W.

MANX SHEARWATER, *Puffinus puffinus* subsp.—Unlike the others of this genus observed, the Manx Shearwater was not seen in flocks. Usually one or two birds were noted, sometimes in company with other species. The smaller shearwater (*Puffinus assimilis*) was not encountered.

As shown in Table 5 and Text-figure 3, the Manx Shearwater was recorded several times during August, September and October.

Although a cruise as far north as 50° N. was made in October, birds were not seen north of 44° N. Only one winter record was obtained, observations indicating that the birds moved south of 35° N. beginning in October.

All birds were found in the eastern Atlantic; none was noted west of 36° W. All records were oceanic, usually quite remote from land. Individuals were seen in nearly all directions from the Azores, though never closer than about 250 miles from the islands. The nearest continental record was about 360 miles west of Portugal on August 31.

STORM PETRELS.—The small white-rumped petrels were the most widespread and abundant of all the oceanic birds observed. It is unfortunate that I was unable to make definite identifications of the forms involved: Leach's and Madeiran Petrels (*Oceanodroma*), Storm Petrel (*Hydrobates*), and Wilson's Petrel (*Oceanites*), although I was fairly certain that all four species were encountered at one time or another. The records presented in Table 6 show that populations dropped considerably in the winter and spring months.

TABLE 6. RECORDS OF THE STORM PETRELS

Month	*Birds*	*Latitude limits*	*Longitude limits*	*Water temperature*
Aug.	37	35° N to 41° N	18° W to 48° W	68° to 80°
Sept.	41	35° N to 38° N	19° W to 61° W	74° to 80°
Oct.	53	34° N to 46° N	15° W to 45° W	60° to 78°
Nov.	31	32° N to 38° N	28° W to 50° W	72° to 74°
Dec.	14	33° N to 47° N	16° W to 67° W	58° to 72°
Jan.	1	39° N	30° W	60°
April	3	33° N to 39° N	64° W to 73° W	44° to 68°
May	38	24° N to 39° N	68° W to 81° W	56° to 80°
June	32	37° N	73° W to 74° W	66°

YELLOW-BILLED TROPIC-BIRD, *Phaëthon lepturus* subsp.—It is probable that the yellow-billed species was the only Tropic-bird encountered north of the latitude of 25° N., while birds observed to the south on the American side may have been either the above species or the Red-billed Tropic-bird (*Phaëthon aethereus* subsp.).

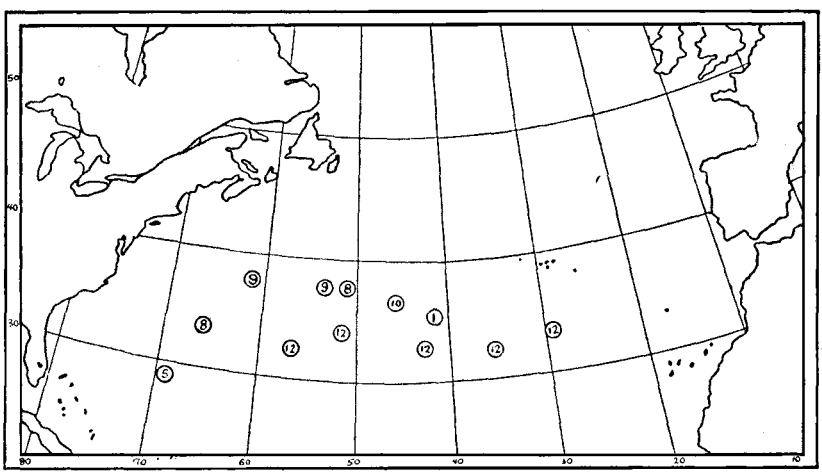
The Tropic-bird was always a pleasant bird to see. On long cruises this striking species would occasionally appear, pausing a few moments to look us over and then continue its flight. I never observed one to fly near the surface of the ocean. All would hold a steady course at elevations from 50 to 150 feet above the water.

As shown in Table 7 and Text-figure 4, there are records for the Tropic-bird as far east as 29° W. and as far north as 38° N. This agrees

TABLE 7. RECORDS OF THE TROPIC-BIRD

Month	*Birds*	*Latitude limits*	*Longitude limits*	*Water temperature*
Aug.	6	33° N to 38° N	50° W to 65° W	78° to 80°
Sept.	3	38° N	53° W to 61° W	80°
Oct.	1	37° N	45° W	78°
Dec.	8	32° N to 34° N	29° W to 57° W	68° to 72°
Jan.	1	35° N	41° W	66°
Feb.	2	13° N to 19° N	65° W	80°
May	3	22° N to 29° N	66° W to 68° W	76° to 80°

with the observations of Jespersen (1930). Records indicate that birds wandered as far east as the Azores, but that in the fall months they extended their ranges north and east more in the western Atlantic. while delaying until the winter months to move into the eastern Atlantic area. No birds (except the West Indian ones) were found west of 67° W., which seemed to indicate that—at least during the period of observations—movements between breeding seasons of birds



TEXT-FIGURE 4. Distribution of monthly records of the Yellow-billed Tropic-bird.

from Bermuda and other American nesting places were southward, northward and eastward into the region of the Sargasso Sea rather than toward the North American mainland. The western edge of the Gulf Stream might act as a barrier. Most of the birds were recorded in areas where surface water temperatures were 76° to 80°; only six birds were found where temperatures ranged from 66° to 68°.

With the exception of the West Indian records and the one from near Bermuda, all birds were found at great distances from land.

The most eastern record was directly south of the Azores at 34° N. and 29° W. on December 14. Others were at 33° N. and 35° W. on December 12 and at 35° N. and 41° W. on January 11. No records of the Red-billed Tropic-bird were obtained in the eastern Atlantic. These eastern records are probably for White-tailed Tropic-birds from western-Atlantic breeding areas but could conceivably be for individuals of the subspecies (*Phaëthon lepturus ascensionis*) which breeds on Ascension and other islands on the African side below the Equator.

NORTHERN GANNET, *Sula bassana* (Linnaeus).—Gannets were encountered along the eastern coast of the United States from November through April, as far south as latitude 37° N. (off Norfolk, Virginia). Birds were found from 15 to 200 miles off the coast, ranging apparently as far east as the western edge of the Gulf Stream, in water that had a surface temperature from 38° to 60°. The birds were observed to be fast flyers, often flying at 25 knots to overtake our ship. Singles, as well as flocks numbering as many as 50 individuals and containing both adults and juveniles, were seen. The earliest record was on November 19 at 37° N. and 73° W., and the last spring record was on April 26 at 39° N. and 74° W. Both localities were visited on several occasions by the ship prior to and following these dates.

In the eastern Atlantic, gannets were found on three occasions. On October 25, an immature bird was seen at 41° N. and 18° W., about 500 miles west of Portugal. On December 24, six birds were sighted at 37° N. and 12° W., about 180 miles west of the coast of southern Portugal. On December 29, a single bird was noted at 42° N. and 18° W. These eastern records were taken in areas where the surface water temperature ranged from 58° to 62°.

GREAT SKUA, *Catharacta skua* subsp.—The Skua was seen five times during the months of October, December and January. All observations were recorded north and east of the Azores in latitudes ranging from 37° N. to 45° N. between the longitudes of 12° W. to 23° W. The birds were encountered at great distances from land, except for one record on December 24 when four birds were sighted about 180 miles west of Cape St. Vincent, Portugal. This large and conspicuous sea bird was usually seen in company with other birds of the region, including fulmars, kittiwakes and jaegers. In the areas where this bird was found the surface water temperature ranged from 56° to 62°.

POMARINE JAEGER, *Stercorarius pomarinus* (Temminck).—It is possible that other species of jaegers were encountered, but I saw no

birds that could be definitely distinguished as the Long-tailed or the Parasitic Jaegers.

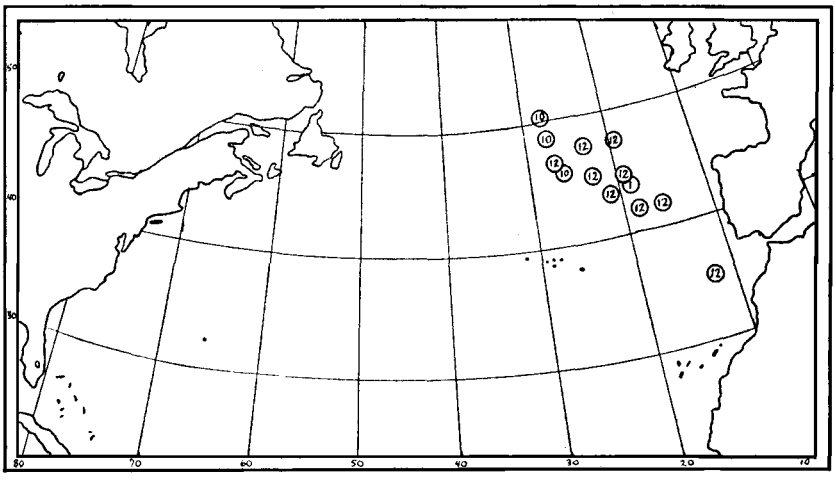
The Pomarine Jaeger was found principally in the region north of the Azores. Most of the records were obtained in October, during which month 19 birds were found in latitudes of 34° N. to 49° N. between the longitudes of 8° W. and 33° W. All but two of the birds were recorded north of 43° N. In November, ten birds were seen at 37° N. and 73° W. and a single bird at 34° N. and 46° W. In December, two individuals were counted at 42° N. and 16° W. Surface water temperatures in areas where the jaeger was seen ranged from 58° to 72°.

Most of the records were obtained at great distances from land, although on October 30, two birds were seen some 50 miles west of Casablanca, French Morocco. Also, on November 19, ten birds were sighted about 130 miles east of Norfolk, Virginia. The last record was the only one obtained in the western Atlantic; all others were noted east of 46° W.

ATLANTIC KITTIWAKE, *Rissa tridactyla* subsp.—Like the Fulmar, the Kittiwake was found during the extended patrols north of the Azores. Flocks were encountered numbering from 10 to 100 individuals and

TABLE 8. RECORDS OF THE ATLANTIC KITTIWAKE

Month	*Birds*	*Latitude limits*	*Longitude limits*	*Water temperature*
Oct.	80	46° N to 50° N	26° W to 28° W	58° to 62°
Dec.	191	35° N to 47° N	12° W to 26° W	58° to 64°
Jan.	20	44° N	18° W	56°



TEXT-FIGURE 5. Distribution of monthly records of the Atlantic Kittiwake.

containing both adult and juvenile birds, and often in company with other species.

As presented in Table 8 and Text-figure 5, 80 birds were seen in October ranging from 46° N. to 50° N. in longitudes of 26° W. to 28 W°. In December, 191 Kittiwakes were counted in latitudes from 35° N. to 47° N. and longitudes of 12° W. to 26° W. All birds except two were found north of the 42nd parallel. The exception was on December 27 when two birds were noted at 35° N. and 12° W., about 250 miles west of Casablanca, French Morocco. This isolated record was also the one nearest land. In January, 20 birds were seen at 44° N. and 18° W. No records were obtained west of 28° W.; however, in the western Atlantic, cruises were made no farther north than 39° N., except in the area adjacent to New York harbor (41° N.).

BIRDS SEEN IN AMERICAN WATERS

The following accounts are of birds observed in the waters adjacent to the American coast and in the West Indian area.

BROWN BOOBY, *Sula leucogaster* subsp. — On February 18, eight Brown Boobies were seen in the Caribbean Sea at 65° 30′ W. and 30° 30′ N.

BLUE-FACED BOOBY, *Sula dactylatra* subsp.—Two Blue-faced Boobies were noted in the Caribbean Sea at 65° 30′ W. and 30° 30′ N. on February 18.

FRIGATE-BIRD, *Fregata magnificens* subsp. — Frigate-birds were encountered on two voyages in the West Indian area. In February, birds were recorded near San Juan, Puerto Rico (19° N. and 65° W.), in the Caribbean Sea at 16° N. and 64° W. and at 13° N. and 65° W. On May 1, two birds were seen at the approaches to Galveston Bay, Texas (29° N. and 95° W.) and one in the Straits of Florida, May 5.

SOOTY TERN, *Sterna fuscata* subsp. and

BRIDLED TERN, *Sterna anaethetus* subsp.—Both species of terns were undoubtedly encountered during cruises in the West Indies. In February, large flocks of 50 or more birds were sighted in the Caribbean between the latitudes of 13° N. and 15° N. and the longitudes of 65° W. and 70° W. The birds were very noisy and on several occasions were heard flying overhead at night. In April, about 150 birds, comprising several flocks, were counted between Florida and the Bahamas at 28° N. and 78° W. and off the Florida Keys. In May, flocks were found in the Straits of Florida, between Puerto Rico and the Virgin Islands, and on May 6, a flock of 25 was noted some 40 miles east of San Augustine, Florida. No birds were seen west of the Florida Keys in the Gulf of Mexico.

BROWN NODDY, *Anous stolidus* subsp.—Flocks of these birds were seen on April 29 and May 5 in the Straits of Florida.

OSPREY, *Pandion haliaetus* subsp.—Land birds were often visitors to our ship, especially in the West Indian area. The record of an Osprey some 200 miles northwest of Bermuda seems noteworthy. A single bird rested on our mainmast for several hours on October 7 at 35° N. and 68° W. Apparently this bird was migrating in the direction of Bermuda. It has been recorded there by Bradlee, Mowbray and Eaton (1931) as an occasional autumn and winter visitor.

MOURNING DOVE, *Zenaidura macroura* subsp.—On October 6, a Mourning Dove flew by the ship at 35° N. and 69° W., which is about 240 miles northwest of Bermuda. It is recorded in the list of Bermuda birds by Bradlee, Mowbray and Eaton (1931).

FLORIDA GALLINULE, *Gallinula chloropus* subsp.—A single Florida Gallinule was observed on April 28, apparently flying from the eastern coast of Florida to the Bahamas; at least that was its direction of flight. When seen, the bird was about 25 miles northwest of Grand Bahamas Bank.

BOBOLINK, *Dolichonyx oryzivorus* (Linnaeus).—A Bobolink rested for a short time on the forecastle of the ship on May 7. This location was about 150 miles east of Norfolk, Virginia. The bird was in breeding plumage.

SUMMARY

While on duty on board a United States destroyer, the writer was able to record the birds observed during the period from August, 1943, to June, 1944, on cruises into the North Atlantic, the Caribbean and the Gulf of Mexico.

In the months of August through January six crossings of the Atlantic were made, during which time birds were recorded in the latitudes of 31° N. to 50° N.

In the latitudes of 31° N. to 39° N., birds were found to be more abundant in the eastern longitudes (10° W. to 39° W.) and less numerous in the western longitudes (40° W. to 69° W.). This latter area is within the region known as the Sargasso Sea. Within these latitudes, bird populations in the western longitudes remained rather constant through the fall and winter months while there was a considerable reduction in numbers in the eastern longitudes from a high of 10.7 birds per count in August–September to a low of 1.6 birds per count in December–January. Movement of shearwaters out of the region was the apparent reason for this decrease. The average surface water temperature taken during bird counts in the eastern longitudes was found to be 3.9° F. colder than in the western longitudes.

Birds were found to be much more numerous in the latitudes of 40° N. to 50° N. as compared with the latitudes of 31° N. to 39° N. directly to the south. The presence of more northern species in this colder water area is apparently the reason for the difference in population densities.

A list of the birds, together with notes on distribution and abundance, is given.

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