CENSUS RECORDS OF TURNSTONE
For Firth of Thames and Manukau Harbour

By H. R. McKENZIE

The Turnstone *(Arenaria interpres)* is the third most numerous of the Arctic waders migrating to New Zealand. It is a holarctic species, breeding in high altitudes and its migration southwards is similarly world embracing. It is not definitely known from what part of the Arctic and Sub-Arctic it comes here to winter in our summer, but recently (1968) two birds, one in Australia and one in New Zealand, have been reported seen with brightly painted feathers. This kind of marking, plus leg bands, has been lately used by biologists of South-Western College, Winfield, Kansas, U.S.A., working in the Pribilof Islands, west of Alaska and north of the Kurile Chain and may prove that some of our birds come, perhaps via Hawaii, from the Alaskan side of the Bering Sea. George C. Munro, " Birds of Hawaii," 2nd ed., revised, p. 37, 1960, states that Turnstones winter in Hawaii in large flocks and that Coultas estimated there were 50,000 on Laysan Island (of the Hawaiian Chain) in Dec. 1963 (Northern winter).

The summer population in New Zealand could be well over 2000. Its winter (New Zealand winter) population here is higher in proportion to its summer numbers than those of the Godwit, Knot and Golden Plover. This could indicate that as a species the Turnstone takes longer to mature.

A close study of all notes taken shows that it is not safe to include early May and late August in winter figures. Munro, 1960, states that the winter migrants to Hawaii arrive from the north in August and September and leave about May. This agrees well with observations made here. The first Turnstones arrive in New Zealand in the latter half of August and the last depart as late as May. The Godwit and Knot begin to arrive in mid-September and depart up to mid-April, so that they spend up to two months less time here than does the Turnstone. Exceptions must of course be expected.

The post-Christmas build-up of Knots at Karaka, Manukau Harbour, is discussed in Notornis 14, 156. It was thought likely that the Knot movement, or the greater part of it, came from Farewell Spit. The Turnstone chart indicates that this species has a build-up which is similar, though less emphasised. As Farewell Spit has one of the largest populations of Turnstones, the Karaka increase could well stem from there. The Firth of Thames shows a post-Christmas build-up in a lesser degree.

In large and small flocks Turnstones occur from Parengarenga Harbour in the north to the coast of Southland. Parengarenga Harbour and Farewell Spit have the largest flocks. The Firth of Thames, so far as records indicate, has been occupied only in recent years, but the Turnstone was known in the Manukau Harbour in numbers from earlier than 1880.

The Turnstone is a good subject for census work because it flocks densely and does not move inland to any great distance. This

contrasts with its habit in Hawaii where Munro mentions that it is common in large flocks in upland pastures as well as along shorelines and lagoons.

FIRTH OF THAMES SUMMER COUNTS

Records were kept by R. B. Sibson and the writer from the spring of 1941 and many industrious members and friends took part in censuses for most years from 1950-51 to the summer of 1966-67.

A single bird was seen on 27/10/41, but of course the species could have occurred for some years before that. Three were found on 2/1/44 and one, two or three each summer up to 1949. No further sightings were made up to the summer of 1951-52. The census counts began in 1951 and are shown on the chart. Information gained on visits other than censuses is recorded on the chart in brackets. Such visits do not cover the whole census area so are styled "stab counts."

The pre-chart records were compiled in years when almost monthly visits were made. They and the chart show that this was a rare bird for the first twelve years of our observations. The further figures, from 1951 to 1967, are sometimes irregular, but show a firm trend towards higher numbers.

FIRTH OF THAMES WINTER COUNTS

From 1941 to 1952 patrols were made as often as in summer, but no wintering birds were found. The chart shows relatively high numbers for winter on from 1953, indicating a real increase for this important bird haunt.

MANUKAU HARBOUR SUMMER COUNTS

Records kept from 1941 to 1949, plus the first six years as charted, i.e., 1950-51 to 1955-56, agree with Buller's (1888) statement reading "Flocks of as many as a hundred are regularly observed in a few favoured localities." It should be quite safe to infer that Manukau was one of these localities. Oliver, 2nd ed., 254, says "Buller quotes Cheeseman as stating that in March 1880, in the Manukau Harbour, he met a flock of 1000 Turnstones." According to our experience this would be abnormal for the summer flock, or for a pre-migration movement from further south. It could be an error made in passing the figure from one to the other. Birds do unpredictable things so it will have to be left as an unusual happening. For the years 1940 to 1945 inclusive autumn counts were 60 to 85 (Sibson, N.Z. B.N. II, 5). These were all or mostly near Puketutu. Karaka was not then being observed, but 47 in a field on Urquhart's farm on 3/3/46 could indicate that either the population had moved from Puketutu or that Karaka could have been regularly patronised in the earlier years. From 1953 onward there are few records from Puketutu, perhaps owing to the inundation of their habitat, caused by the establishment of oxidation ponds by the A.M.D.B.

From the evidence available one could be led to believe that migration to and from New Zealand has been in progress for a very long time, perhaps in cycles of greater and lesser numbers. For the eleven years 1956-57 to 1966-67 the annual numbers have steadily increased from approximately 100 to almost 400. Why has the relatively sudden acceleration taken place? It seems to be in line with the apparent recent increases of some other migrants, particularly some that have quickly risen from very small to quite moderate

TURNSTONE CENSUS TOTALS FOR FIRTH OF THAMES AND MANUKAU HARBOUR from Feb. 1951 to January 1967

Firth of Thames Summer Counts Date			Manukau Harbour Summer Counts Date		
29- 4-51	Nil		25- 2-51	9	(75 on 8- 4-51)
2-12-51	Nil		1951-52	NC	
1952-53	NC	(5 on 23-11-52)	1952-53	NC	(55 on 14- 2-53)
13-12-53	13		22-11-53	105	(200 on 11-10-53) (120 on 21- 3-54)
1954-55	NC	(10 on 17-10-54) (2 on 11- 4-55)	1954-55	NC	(50 on 16-10-54) (30 on 10- 4-55)
4-12-55	5	(16 on 8- 1-56)	1955-56	NC	(132 on 3-12-55) (120 on 4- 3-56)
25-11-56	22	(25 on 9-12-56)	4-11-56	93	(130 on 18-12-56) (180 on 3- 2-57)
1957-58	NC	(196+on 3- 2-58)	1957-58	NC	(130 on 28- 9-57) (300 on 6- 4-58)
1958-59	NC	(32 on 15- 2-59)	1958-59	NC	(200 on 18-10-58) (200 on 27- 2-59)
6-12-59	28	(41 on 5- 1-60)	8-11-59	190	(250 on 17- 2-60)
27-11-60	48	(76 on 22-12-60)	4-12-60	200	(255 on 1- 1-61)
26-11-61	59	(65 on 31-12-61)	10-12-61	180	(250 on 10- 3-62)
2-12-62	20	(61 on 3- 1-63)	16-12-62	220	(330 on 30-10-62)
8-12-63	41	(78 on 4- 2-64)	3-11-63	150	(350 on 31- 1-64)
8-11-64	47	(64 on 23-12-64)	22-11-64	Nil	(170 on 25-11-64) (365 on 21- 2-65)
14-11-65	91		12-12-65	300	
4-12-66	23	(114on 3- 3-67)	11-12-66	320	(400 on 27- 3-67)

Firth of Thames Winter Counts			Manukau Harbour Winter Counts		
24- 6- 51	Nil		6- 5-51	3	(4 on 8- 7-51)
13- 7-52	Nil	(	14- 6-52	2	(6 On 26- 7-52)
2- 8-53	7		14- 6-53	36	(56 on 31- 5-53)
1954	NC	(4 on 23- 5-54)	1954	NC	(31 on 7- 6-54)
26- 6-65	22		24- 7-55	Nil	(24 on 7- 5-55)
17- 6-56	5		8- 7-56	50+	(
1957	NC	(18 on 9- 6-57)	1957	NC	
1958	NC		1958	NC	(40 on 6- 7-58)
1959	NC	(4 on 16- 6-59)	1959	NC	
1960	NC		10- 7-60	20	
2- 7-61	42		30- 7-61	89	
24- 6-62	3		22- 7-62	2	
14- 7-63	4		23- 6-63	1	
17- 5-64	25		14- 6-64	49	
4- 7-65	11	(22 on 2- 6-65)	1- 8-65	8	(30 on 3- 7-65)
24- 7-66	8		5- 6-66	31	

Note____ "Nil" = Census held but none seen.
"NC" = No census held, or records lost.

Errata. In Vol. 14, 19 and 14, 155 read 24- 6-62 for 24- 4-62.

numbers; while others are appearing now that we have not known before. If there is anything in the cycle theory a decline may be expected sonner or later. If the increase continues the Turnstone will have to extend its habitat and resort to inland living places as in Hawaii. We like to think that we have been very clever in "shrinking the world" with our sudden improvement in communications, but the birds may be keeping up with us.

MANUKAU HARBOUR WINTER COUNTS

Prior to the census period fewer and less comprehensive visits were made to Manukau, which could explain there being few records, 10 on 13/7/47, 13 on 2/7/50 and 16 on 16/7/50. The chart shows an increase which is roughly in line with the summer figures. It is good to know that this engaging little bird is more than holding its own.

★

RED-NECKED STINTS IN NORTHERN NEW ZEALAND

By R. B. SIBSON

The history of the Red-necked Stint *(Calidris ruficollis)* as a New Zealand bird begins in the South Island in 1902, when Edgar Stead obtained two specimens of what he called the Red-necked Sandpiper, at Lake Ellesmere, one in January and the other in July. Apparently in the same year another stint was collected in Otago at Taieri Flat and was thought to be an example of the Little Stint *(C. minuta)*. About 1910 when Stead (1) secured several more stints in winter plumage at L. Ellesmere, all were identified as *minuta*. According to Falla (3) more stints were collected at L. Ellesmere between 1928 and 1930, by which time it was generally agreed that the migratory stints which normally reach New Zealand are referable to *ruficollis*.

It is relevant to mention that not only first year birds of *ruficollis* and *minuta* but also adults in winter plumage are virtually inseparable in the field; and are distinguishable in the hand only under the most critical examination. Some authors have been inclined to treat *minuta* and *ruficollis* as conspecific; *minuta* being the form which breeds in the western palaearctic, and being supplanted in the extreme east by *ruficollis*. But Russian ornithologists (5) treat them as full species as there is a broad zone where their feeding ranges overlap; and Vaurie (10) states that they are sympatric on the eastern Taimyr Peninsula and around the delta of the Lena. Males of the two species in breeding plumage are markedly dissimilar.

The first mention of the occurrence of the Red-necked Stint in the North Island is by Falla (3). It was taken at Waikanae on the Wellington coast on 30 March 1930. Thus when four were found together in the Firth of Thames (4) on 27/10/41 and again on 9/11/41, this was the first record of anything resembling a flock in the North Island. During the ensuing years the study of shore-birds in the Firth of Thames became much more thorough; yet