CONCLUSION

Recommended Change in Nomenclature

In view of the findings and conclusions outlined above, it is suggested that the use of the subspecific rank be dropped, at least until the situation has been further clarified. It may in the future be possible to define the limits of variability of the New Zealand populations and to distinguish these as a (or as several) new sub-species, on the definition of the subspecies proposed by Mayr *et al.* (1953). It is suggested, however, that for the present it would be preferable to follow the proposal of Wilson and Brown (1953) and avoid the use of the formal subspecific rank, using instead only the specific name with "the simple vernacular locality citation or a brief statement of the [geographical] range involved." The New Zealand Redpoll could then be referred to as: "*Carduelis flammea* L., New Zealand"; further specification of locality within New Zealand being added as warranted.

ACKNOWLEDGEMENTS

The author's thanks are due to Mr. L. Morrison, sometime head of the Agricultural Zoology Department, Canterbury Agricultural College, who supervised the work; to Mr. R. Gillett and Miss Una Birch, Lincoln, for varied assistance; to Professor W. Stephenson and especially Dr. M. C. Bleakly, Department of Zoology, University of Queensland, for criticism of this paper; to Mr. J. Kikkawa, for data on Fiordland birds; and to the Department of Scientific and Industrial Research, Wellington, for a Research Grant.

REFERENCES

Mayr, E., 1955 — "Comments on some recent studies of song-bird phylogeny," **Wilson Bull.** 67: 33-44.

Mayr, E., E. G. Lindsay and R. L. Usinger — "Methods and Principles of Systematic Zoology" (New York, McGraw-Hill Book Co., 1953).

Riney, T., **et al.**, 1959 — "Lake Monk Expedition," N.Z. D.S.I.R. (Wellington): **Bulletin No. 135.**

Salomonsen, F., 1928 — "Bemerkungen uber die Verbreitung der **Carduelis linaria** Gruppe und Ihre Variationen," **Vid. Medd. Dansk Naturh. Foren.** 86: 123-202.

Stenhouse, D., 1960 — "The Redpoll in New Zealand: Interbreeding Subspecies," **Nature** 186: 488-90.

Stenhouse, D., 1962 — "A New Habit of the Redpoll **Carduelis flammea** in New Zealand," **Ibis** 104: 250-2.

Thomson, G. M. — "The Naturalisation of Animals and Plants in New Zealand." (Cambridge University Press, 1922).

Westerskov, K., 1953 — "Taxonomic Status of the Redpoll in New Zealand." **Notornis** 5: 189-91.

Wilson, E. O., and Brown, W. L., 1953 — "The Subspecies Concept and Its Taxonomic Application," **Systematic Zool.** 2: 97-111.

Witherby, H. F. **et al.** — "Handbook of British Birds" (London, H. F. and G. L. Witherby, 1938, reprinted 1943).

★

OBSERVATIONS ON A TATTLER AT WAIKANAE ESTUARY

By IAN G. ANDREW

The Grey-tailed Tattler or Grey-rumped Sandpiper, *Heteroscelus incanus brevipes* (Vieillot), breeds throughout northeast Siberia and winters in the west Pacific. Its winter range includes the Malay Archipelago, Celebes, New Guinea, Australia, Micronesia, Bismark Archipelago, and Solomon Islands (Bull 1948, Mayr 1945, Neufeldt et al. 1961, Stickney 1943). In Australia it winters around most of the

northwest, north and east coasts, straggling south to the Swan River on the west and to Port Phillip Bay on the east (Keast 1949). New Zealand is south of its normal range. It is probable that a few reach Parengarenga every year (v. Turbott 1951), but more southerly records are sparse (Sibson 1956, 1961, Turbott and Sibson 1961). The occurrence of a solitary Tattler at Waikanae from 1/10/60 to 22/4/61 aroused considerable interest in Wellington. A few observations on this bird are reported here. Relevant observations in the literature are also discussed.

Waikanae Estuary has never been favoured by Arctic waders wintering in New Zealand. Formerly a few Godwits and Knots stopped for a time during the spring migration (Wodzicki 1946), but the estuary even then was too small to be satisfactory for such species, and now urban sprawl has diminished the extent of the estuary further. The tidal area consists largely of bare silt-sand with a fairly high organic content, especially in the lagoon which constitutes the remnant of a former river course and is now filled with black debris. The more conspicuous animals in the intertidal zone are crabs *(Helice crassa)*, snails (mostly *Amphibola crenata*), various amphipods and isopods, and at times large numbers of fishes which attract flocks of several hundred Black-fronted and White-fronted Terns *(C. albostriatus* and *S. striata)*. With no Arctic waders to deplete the food supply, the invertebrate population is high. Crabs are particularly numerous, the only birds which regularly prey on them being White-faced Herons *(A. novaehollandiae)*. The other bird species feeding regularly in the intertidal zone are Pied Stilts *(H. leucocephalus)*, Banded Dotterels *(C. bicinctus)* and Oystercatchers *(H. finschi* and *H. unicolor)*. Small gulls *(L. scopulinus* and *L. bulleri)* also frequent the estuary.

The Grey-tailed Tattler at Waikanae Estuary was probably present by 1/10/60. On this date, B. Boeson saw a puzzling wader, which now appears to have been the Tattler, but it was not then recognised by him. It first came to my notice on 19/11/60, when I saw it during the course of my first visit to the estuary for the season. The immediate task was then to decide to which sub-species it belonged. Both *H. i. brevipes* and *H. i. incanus* (the Wandering Tattler) have been recorded in New Zealand. *H. i. incanus* breeds in Alaska and winters throughout the Pacific, straggling to Australia. Field identification is difficult but has been given considerable study in New Zealand because of the occurrence of both races here. The identity of the Waikanae Tattler was not confirmed until 25/12/60, when C. A. Fleming was able to determine that the nasal groove ended sharply exactly half-way along the upper mandible, as described by Serventy (1944), not tapering to two-thirds of the way along the bill as in *H. i. incanus*. I saw this very clearly on 15/1/61, using a 60 x 60 telescope in excellent light at about twenty-five yards. It had previously been suspected that this bird was *H. i. brevipes* on account of the call-note, which resembled that described by Keast (1949), Turbott (1951) and Sibson (1956). Additional confirmation of the subspecific identity was obtained by observing the plumage changes during the prenuptial moult, described below.

A brief description of the Tattler's appearance in November follows. About the size of a Knot, but of much slimmer build, and with longer legs and bill, in shape and stance it immediately suggested a *Tringa*. Legs bright yellow; bill straight, blackish brown, yellowish

basally except in the culmen; eye dark; white eye-ring; dark stripe through eye to base of bill; white superciliary stripe; remainder of face and entire upperparts white except for grey-fawn breast; underwing greyish; upperparts including tail uniform brownish grey, darker on outer primaries. This plumage closely resembles that of an immature bird collected by the Galatea Expedition in New Guinea on 30/11/51.

The call-note as first heard (19/11/60) was a soft triple note "too-too-too," the notes somewhat slurred and all on the same pitch. The slurring was noticed more later in the season, so that the note became double or occasionally only a single note, as described by Sibson (1956). A four-note call was also sometimes heard, but confusion with the longer trill reported for the American race would be unlikely. Only rarely was a call heard which could possibly be likened to the "irregular screech not of the same intensity or pitch" described by Hanna (Bent 1929). This was an alarm call induced by my sudden approach, which seemed to have a sense of urgency and was transcribed by me as "too-ew, too-ew."

The Tattler was readily recognised in flight by its arched wings and general grey plumage. Its movements on the ground were characteristic — head wagging backwards and forwards at every step as it ran along the water's edge. When standing still it not infrequently bobbed its posterior half up and down, in the manner of a pipit. When alerted, instead of flying, it sometimes held itself erect like an alerted Mallard and ran on to higher ground to get a better view. The length of its neck could then be appreciated and the *Tringa*-like appearance was accentuated. When disturbed in the company of other birds it usually flew with them.

In the absence of any others of its own species, the Tattler's social instincts were diverted mainly to Pied Stilts, but sometimes to a solitary Banded Dotterel or to the Oystercatchers. Its attempts at fraternisation with the Pied Stilts were sometimes not appreciated and a long aerial pursuit of the Tattler by a Stilt was noted on one occasion. On the ground, too, the Stilts often tended to feint at it. Nevertheless it continued to associate with the Stilts more than with any other species while feeding, and often flew with them, probably because both species had similar feeding habits, preferring the shallow water at the edge of the tide or lagoon. Oystercatchers occasionally made a jab at it, and once when it was alone a Black-backed Gull put it to flight by swooping low over it in a "dive-bombing" attack. It roosted on higher ground on bare sand or in a *Samolus* bed, frequently in the company of Oystercatchers or Banded Dotterels. At other times it resorted to its own company on a protruding branch or snag in the lagoon, or a piece of driftwood, a habit observed also in other Tattlers seen in New Zealand, and distinguishing them from most other waders on the New Zealand list. Their perching habit is also observed in the breeding areas, as shown in photographs by Krechmar (Neufeldt et al. 1961). On one occasion, Dr. Fleming observed it sleeping peacefully on a log projecting above the water at high tide, while speedboats towing water-skiers periodically passed close by, making a wave that threatened to wash it from its perch.

The feeding habits of the Tattler were studied by Dr. Fleming and myself. Most of the time it fed actively along the water's edge — usually in about one inch depth of water — hunting for animal life. It ranged from the present river course to the old lagoon filled with

black organic debris. In the latter, Dr. Fleming watched it on 25/12/60 and noted "it caught many small fish, about the size of a whitebait, and occasional crabs, and sometimes took its prey ashore to get a better grip before swallowing." When I watched it in January, the shallows of the old river mouth abounded with small crustacea, of which isopods appeared most numerous. These possibly formed a substantial part of the Tattler's diet. Once it chased an amphipod out of the water, caught it and ate it. By 4/4/61 its feeding habits seemed to have changed, and crabs formed the major part of its diet during April. Two fresh droppings collected on 4/4/61 contained no large fragments of animals, but the finely divided organic remains present appeared to be all or nearly all of crustacean origin; in particular, no vertebrate or molluscan remains were found. Keast first noticed Tattlers eating crabs in the Hunter River area on 23rd March and the habit continued through April. He also observed the habit in New Britain in April. It appears that a seasonal change in the diet of the Grey-tailed Tattler may take place. This probably merely reflects a seasonal change in the faunal composition of the favoured estuaries, but perhaps crabs are eaten in such large numbers in April in order to stock up a reserve food supply prior to the migration. Certainly the food intake of the Waikanae Tattler appeared to be very high in April.

The manner of feeding on crabs was studied in detail with a telescope on 4/4/61 and 22/4/61, but little can be added to the work of Keast (1949). Wading in the water, the Tattler picked up a crab, sometimes immersing its whole head to reach it — possibly out of a burrow. It then shook the crab vigorously by one leg until it became detached and the body flew off. After swallowing the leg it proceeded to remove the others in a similar manner. It held its head down during operations so that the crab did not fly off far. Each time the crab fell into the water it was washed. Finally, after most of the appendages had been removed, the intact body was swallowed whole. Frequently the Tattler left the water to hunt for crabs, although most hunting was done in shallow water. When it picked up a crab from the exposed mudflat, it ran to the water and carried out the washing, dismembering and eating as above, but if water was not handy it sometimes omitted the washing process. Small crabs it often swallowed whole. Many of these were caught in their burrows.

Plumage changes were observed by regularly examining the plumage with a 30 x 60 telescope, although in the early stages exact feather details were not studied. Changes occurred much more slowly than had been expected. On 15/1/61 the plumage was much as described above; the upperparts were uniform grey and unbarred, primaries brown, chin and belly white, lower throat and upper breast very pale grey, and the cheeks now slightly barred. On 26/2/61, the grey breast feathers were seen to have pale tips (which may have passed unnoticed before), and the grey extended on to the flanks. On 4/4/61 there was still no sign of the dark barring of the breast feather characteristic of nuptial plumage, but new feathers had made their appearance on the upper surface, most of them being very narrowly edged with white. The rump feathers and upper tail coverts had a more noticeable white edging, although only once did I get the impression (using 8 x 30 binoculars) that the rump appeared paler in flight than the rest of the upper surface. I had expected the pale rump

to be more conspicuous. The broad pale tips to the rump feathers in fresh plumage are one of the features distinguishing this race from *H. i. incanus,* which has only a very narrow light edging, if any, to these feathers (Stickney 1943). It is unfortunate that this character proved rather unsatisfactory in the field. Also at this time, the scapulars and upper wing coverts were broadly tipped with a browner shade of grey, with the extreme tip white, giving a flecked appearance; the primaries were also browner, tipped dark, and the outer primaries formed a dark leading edge to the wing, quite conspicuous in flight. The forehead was flecked with white.

On 22/4/61 the upperparts were unchanged, and the underparts had assumed partial breeding plumage. The feathers of the breast and flanks were pale grey, conspicuously barred with narrow V-shaped dark brown bars near their tips, the bars reducing almost to spots on the middle and upper edge of the breast. The cheeks were streaked with dark brown on white, more heavily than on 4/4/61, and the eye-stripe was perhaps blacker. Otherwise the plumage was as before, with throat and belly white.

The plumage on 22/4/61 resembled the full breeding plumage, but the barring on the breast was rather paler than normal for an adult (see photographs by Krechmar); and the white edgings to all the feathers of the upper surface, together with the late completion of the moult, suggest that the bird was immature. According to Bent (1929), the first prenuptial moult is only partial, while in some individuals it is suppressed altogether. Keast, in his study of Tattlers in Australia (Keast 1949), showed that by 5th April all birds of a group of twenty had already acquired a plumage at least as heavily barred on the breast as the Waikanae bird on 22nd April. The immature birds observed by Keast had not acquired any barring on the breast by 30th April.

22/4/61 was the last date on which the Tattler was definitely recorded at Waikanae. P. C. Bull failed to find it on 3/5/61, although some of his companions thought they saw it. It was definitely not present on 7/5/61 or 20/5/61. Presumably it migrated to Siberia, as there have been no further records from the Wellington coast. During its stay it was observed by R. A. Falla, K. Westerskov, M. J. Imber, and others mentioned herein.

In the Hunter River area of New South Wales, the prenuptial migration begins in late March and continues till the second week of May (Keast 1949). The last birds reach their breeding areas in the first week of June (Neufeldt et al. 1961). The return migration begins in mid-August (Neufeldt et al. 1961), and the first birds were recorded in North Queensland by Alexander on 1st September (Bent 1929). Thus the time of disappearance of the Waikanae bird, although later than the departure of most Arctic migrants from New Zealand, was consistent with its having migrated.

The only positive record of this race spending the southern winter in New Zealand is of one recorded on 17th July at Heathcote-Avon estuary (Turbott and Sibson 1961), but the one seen at Aramoana on 13/5/61 (Sibson 1961) probably did not migrate to Siberia. A Grey-tailed Tattler observed at Manukau for several successive seasons (Sibson 1956, and subsequent notes in *Notornis*) was never recorded later than 7th May in winter, or earlier than 29th October in spring. This

would allow ample time for migration. However, if all records refer to the same bird, it probably over-wintered here, perhaps in some other locality where the food supply was better, as it is unlikely that it would every season migrate so far beyond the normal range of its species. Most such over-migrating birds are believed to be immature birds which have not made the journey before. The Tattlers at Waikanae and Aramoana probably fall into this category. Immature Arctic waders often remain in New Zealand during the southern winter. Adult Tattlers seen in New Zealand, including the Manukau bird, would thus normally be individuals which have stayed through the winter unnoticed.

In Australia, Keast has studied habitat preferences in the Grey-tailed Tattler. The ecological separation from other waders noted by him was well borne out at Waikanae, and would merit further study. Habitat preferences have been suggested for differentiating between the two races of Tattler, but insufficient evidence is available on this point. However, the fact that both races have been observed together in Alaska (Bent 1929) and that both often resort to reefs and rocky coasts, and avoid extensive mudflats (Bent 1929, Keast 1949, and others), suggests that such a separation is unreliable.

In conclusion, I wish to thank Dr. C. A. Fleming for helpful discussion, the use of his notes, and the loan of a specimen.

REFERENCES

Bent, A. C. (1929) — "Life Histories of North American Shore Birds (Part 2)," U.S. Nat. Mus. Bull, 146, p. 48.
Bull, P. C. (1948) — "Field Notes on Waders in the South-west Pacific, with Special Reference to the Russell Islands," Emu 47, 165-176.
Keast, J. A. (1949) — "Field Notes on the Grey-tailed Tattler," Rec. Aust. Mus. 22, 207-211.
Mayr, E. (1945) — "Birds of the South-west Pacific," New York, illus.
Neufeldt, Irene, A. V. Krechmar and A. I. Ivanov (1961) — "Studies of less familiar birds. 110. The Grey-rumped Sandpiper," Brit. Birds 54(1), 30-33, plates 5 - 8.
Serventy, D. L. (1944) — "Notes on Some Rarer Waders," Emu 43, 274-280.
Sibson, R. B. (1956) — "Tattlers (Heteroscelus incanus) in Manukau," Notornis 6 (8), 243.
Sibson, R. B. (1961), Notornis 9 (5), p. 181.
Stickney, E. H. (1943) — "Northern Shore Birds in the Pacific," Am. Mus. Novit. 1248, pp. 5-6.
Turbott, E. G. (1951) — "Notes on Parengarenga Harbour Waders," Notornis 4 (6), 130-132.
Turbott, E. G. and R. B. Sibson (1961) — Notornis 9 (4), 135-136.
Wodzicki, K. A. (1946) — "The Waikanae Estuary: An Ecological Survey of New Zealand Birds," Emu 46, 3-42.

★

A WEST COAST, SOUTH ISLAND, SEA BIRD LOG IN WINTER, 1961

By ELLIOT W. DAWSON
N.Z. Oceanographic Institute, Wellington

One of the New Zealand Oceanographic Institute's recent winter cruises in the M.V. *Viti* provided an opportunity for noting the birds at sea off the West Coast of the South Island. The purpose of this cruise, from May 31 to June -, 1961, was the investigation of the benthic fauna of the Continental Shelf and the plotting of the bottom topography by echo-sounding. The area covered by these investigations was from Wellington to Foveaux Strait and included some of the fiords of south-west New Zealand. The vessel's track was arranged to cover