

NOTES ON THE OCCURRENCE OF WADERS IN FIJI

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ABSTRACT

This paper lists the waders recorded in Fiji, summarises information on them collected by the writer during nearly three years residence in Fiji, 1969 to 1971, and compares wader counts made at Parengarenga Harbour, New Zealand, and at Rewa sandbank, Fiji, in January - February, 1971.

The Fiji group of islands situated in the South-West Pacific around latitude 18° South and the 180° meridian is visited annually by migratory waders but there is little recorded data on their occurrence. In recent years Mayr 1945 (9) and the Morgans 1965 (11) have recorded one migratory wader from New Zealand and eight from the holarctic region and one additional species was noted by Morris (12); while Sibson 1965 (16) and Mercer 1967 (10) have also written about waders but do not add to the species list. During the period January, 1969, to September, 1971, the writer was resident in Fiji and made additional sight records of four species and one race. The complete species list is shown in Table I.

The writer lived in Suva and most observations were made in that area. Waders can be seen on the shore at Suva Point and Vatuwanga at low tide; and at high tide can be found roosting on barges in Suva harbour, on the playing fields at Suva Point and Lauthala Bay and on the sea wall and breakwater at Lauthala Bay. The largest concentration of waders around Suva can be found roosting at high tide on a sandbank at Lauthala Point at the mouth of the Rewa river, from where they spread out over the extensive area of exposed reefs and mudbanks in the vicinity at low tide. This is the sandbank where the Morgans recorded their largest flocks and where the writer found most of the scarcer birds. Sibson's observations were made on the adjoining Nukulau island. Another favourite high tide roost is on a sandbank near Tomberua island in Bau Waters and there is a smaller roost at Nasilai. All these places are shown in the accompanying map.

There is little information about the occurrence of waders on the other islands although the writer has heard verbal reports of large numbers of shore birds at the mouth of a river on the eastern side of Ono island and on mudflats at Ono-i-Lau island. Ono-i-Lau is at the extreme south-east corner of Fiji and could well be a convenient resting place for birds flying north from New Zealand.

Waders are notoriously difficult to identify in non-breeding plumage and the conditions under which they occur in Fiji are no better than elsewhere. In addition to the normal difficulties the presence of a Lesser Frigate Bird *Fregata ariel* overhead may scare birds away prematurely and Whimbrel can also be a nuisance. The writer found most difficulty with small dotterel due to the presence of different species in non-breeding plumage at the same time from both the northern and the southern hemispheres. All observations were made with 8x binoculars.

The Morgans made counts of Pacific Golden Plover on the Suva Point playing fields at high tide; and of other waders on the adjoining shore at half tide when they are congregated in groups quite close to the sea wall. The writer also made counts in the same locality, shown in Table II. These counts were made when opportunity offered and at no particular time in relation to the tide.

Some waders occur at Suva throughout the year. Although none were seen at Suva Point on 17th June, 1969, this was probably due to the state of the tide at the time and not to the absence of birds in the area. Most of the birds occurring on the shore at Suva Point and Vatuwanga were thought to be discrete from those roosting at high tide on the Rewa sandbank, although the Long-billed Curlew, Whimbrel and some of the Eastern Bar-tailed Godwit probably roosted at Rewa. For a period the Pacific Golden Plover on the shore at Suva Point did not use the adjoining playing fields, possibly as a result of too much interference from games players. The Wandering Tattler using the same shore flew to either Lauthala Bay or to Suva harbour to roost at high tide; and occasional birds could be found resting with Crested Tern *Sterna bergii* on beacons in shallow water.

Some counts were also made at the Rewa sandbank where counting was much more difficult due to the larger numbers of birds. These counts are shown in Table III. The sandbank is practically deserted at low tide and counts at this time give no indication of the number of birds in the vicinity.

The counts at the Rewa sandbank suggest that the first returns of Wandering Tattler and Eastern Bar-tailed Godwit occur towards the end of July; and that these are followed by Pacific Golden Plover and Turnstone in September and by Whimbrel by the end of September or in early October. The largest number of birds occurred in November. These trends are generally confirmed by the Suva Point counts where the numbers are smaller. Insufficient counts were made from March to May to determine the period of main passage migration but these indicate that departures had been largely completed by the end of the first week in May.

Many birds can be seen in breeding plumage just before their departure in April; and a sudden increase of numbers in breeding plumage at this time is taken to indicate the presence of passage migrants from further south. Over-summering birds are predominantly in non-breeding plumage although some show traces of breeding plumage. The presence of returning migrants in August and September is indicated by increased numbers retaining some breeding plumage, particularly noticeable in Wandering Tattler, Turnstone and Pacific Golden Plover. Both the Banded Dotterel and the Mongolian Dotterel assume breeding plumage before they leave and thus make their identification certain, at least at this time.

Notes on individual species follow:—

1. Pacific Golden Plover *Pluvialis dominica fulva*:

This may be the commonest wader in Fiji and certainly has the widest distribution. It is found both inland and on the shore, occurring along rivers where there are gravel banks, on rice fields,

and on airfields and playing fields where the grass is kept close cut. It is also the most common wader occurring on areas of open mud on the landward side of mangrove swamps, and is usually the most numerous species on the Rewa sandbank.

Some birds over-summer but the larger numbers begin to return from their breeding grounds in September. First return in 1969 was noted at Nausori airfield near Suva on 11th September and large numbers had returned to the Rewa sandbank by 20th September. Return may have been slightly earlier in 1970, indicated by a few birds in nearly full summer plumage at the Rewa sandbank on 29th August. In 1926 Belcher 1929 (1) noted an arriving flock of 40 to 50 birds flying inland on 16th September, including one bird in an exhausted condition. He also noted that they departed from the cultivated fields in the Rewa valley between 12th and 19th April, 1927. By 27th September, 1970, the birds at the Rewa sandbank were blotchy in appearance and fast losing their black underparts; although one bird still had traces of a black belly on 22nd November.

Around Suva they prefer to roost on playing fields at high tide where they are quite discrete from the Wandering Tattler which roost elsewhere, but where they may be joined by a few Turnstone and Eastern Bar-tailed Godwit. Large numbers also roost on the Rewa sandbank where they usually occur on the landward side of the mixed wader flock and where they are much more spread out over the available roosting area than the other species.

2. Banded Dotterel *Charadrius bicinctus*:

This migrant from New Zealand was first recorded by the Morgans at Suva Point between 26th May and 9th August, 1962. It was first identified positively by the writer on 26th July, 1969, from which time birds in breeding plumage continued to be present until 20th August but had departed before the end of that month. In 1970 returning birds in non-breeding plumage were first seen on the shore at Vatuwanga on 10th March, being identified primarily by call note and leg colour; and had departed from the Rewa sandbank before 29th August. A small number of birds reoccurred in 1971 and two birds were still using the Rewa sandbank on 15th August.

In 1969 and 1970 Vatuwanga beach was used at low tide as a feeding area, but birds were not observed here in 1971. This beach is an area of compact sandy mud which dries out at low tide apart from a number of shallow pools; and there is no coral. The Banded Dotterel is an active bird when feeding, undertaking frequent short runs over the sand.

One bird in breeding plumage was recorded by Templeton 1971 (18) on Ono-i-Lau island in July, 1971; and on the available evidence this species appears to be a regular visitor to Fiji in small numbers outside its breeding season.

3. Mongolian Dotterel *Charadrius mongolus*:

The Morgans recorded this species at the Rewa estuary on 18th February and at Suva Point on 20th May, 1962, but unfortunately gave no details of plumage condition. The writer experienced con-

siderable difficulty for a long time in identifying satisfactorily the small dotterel which were usually present in small numbers at the Rewa sandbank; but eventually concluded that they were mostly this species.

When in breeding plumage the Mongolian Dotterel is quite distinct and it is irritating that so few books give a good description of this plumage which is so striking. One bird at the Rewa sandbank on 21st February, 1971, was in almost complete breeding plumage and, from the description, was a male bird of either the race *mongolus* or *stegmanni*: bright chestnut breast band very broad and extending onto the nape; black around the eye extending forward to the bill and separating the white forehead from the brown crown; white forehead divided longitudinally by a black line; chin and throat plain white, appearing very bright in contrast to the surrounding chestnut and black colouration. The full breeding plumage is also described as having a narrow black line separating the white throat from the chestnut breast band; but Mathews 1913-14 (14) notes that this is not assumed before leaving Australia on spring migration.

Most birds seen were in rather nondescript non-breeding plumage when they were difficult to separate from the Banded Dotterel and the Large Sand Dotterel *Charadrius leschenaulti* in similar plumage. After seeing the Banded Dotterel in breeding plumage, locating their preferred feeding area in the Suva neighbourhood and learning to distinguish their call-note, little difficulty was experienced in distinguishing the Banded Dotterel in non-breeding plumage. The description of field differences between the two species by McGill and Keast 1945 (7) was most helpful.

Descriptions of the Large Sand Dotterel and Mongolian Dotterel by Falla et al. 1967 (5) suggest that the main differences are in size and shape and in leg colour: the Large Sand Dotterel being larger and leggier with a longer and stouter bill and with grey-green or greyish brown in contrast to slate grey legs. Bill sizes given by Witherby et al. 1940 (20) and by Serventy and Whittell 1967 (15) are as follows:—

Pacific Golden Plover	.....	.....	21 - 27 mm
Oriental Dotterel <i>Charadrius veredus</i>			22 - 25 mm
Large Sand Dotterel	.....	.....	22 - 27 mm
Mongolian Dotterel	.....	.....	17 - 20 mm
Banded Dotterel	.....	.....	16 - 19 mm

When compared closely with Pacific Golden Plover the Fiji birds were found to have appreciably shorter bills, although difficult to see except at close range. It was concluded that they were Mongolian Dotterel.

Mongolian Dotterel have not been seen by the writer elsewhere than on the Rewa sandbank at high tide and their preferred feeding area has not yet been found. They are present at all times of the year in small numbers, and on available limited evidence appear to be regular visitors. They are silent birds, their trilling call having been heard on only two occasions. At the Rewa sand-

bank they should be looked for along the margin of the area occupied by Pacific Golden Plover or at the top of the beach proper above the mass of small waders.

Small dotterel (*species* ?):

Small dotterel in non-breeding plumage are present throughout the year at the Rewa sandbank but positive identification of them has proved difficult. Most will have been either the Banded Dotterel or the Mongolian Dotterel, although the Large Sand Dotterel is also likely to occur occasionally; but one bird seen on 3rd January, 1970, may have been either a Ringed Plover *Charadrius hiaticula* or a Semipalmated Plover *Charadrius semipalmatus*, more probably the former which has been recorded in Australia, Condon and McGill 1967 (3) and very recently in New Zealand (Notornis 18).

This bird had appreciably shorter legs than other small dotterel present, with which it was directly compared; and the legs appeared to have a yellowish tinge but their colour was not determined satisfactorily. It showed a complete brown breast band, white collar on the hind neck, white wing bar, white sides to rump and tail, and a small white mark behind the eye. There was no white on the forehead and no black in the plumage, and in other respects was similar to the other small dotterel present (presumed to be Mongolian Dotterel) although relative bill size and shape was not noted. This is not considered to be a positive identification although it fits in most respects an immature Ringed Plover.

4. Long-billed Curlew *Numenius madagascariensis*:

This species can be regarded as a regular visitor in very small numbers which occasionally oversummers. The largest number seen together was three at the Rewa sandbank on 4th January, 1970. The birds which frequented the beach at Suva Point in 1969 were almost certainly the same two birds roosting at the Rewa sandbank at high tide, the two places being only 6 miles apart in a direct line.

5. Asiatic Whimbrel *Numenius phaeopus variegatus*:

Around Suva this species is practically confined to the Rewa sandbank area and is seldom seen on the shore at Suva Point, although it can be seen feeding on the exposed reef around Nukulau island at low tide. It is a wary bird which is difficult to observe at close quarters. The narrow white patch on the back of this race is somewhat variable in shade and is not always easy to distinguish unless the birds are seen flying directly away from the observer. However, there is no doubt that this race predominates. This is the latest of the regular migrants to return to Fiji, arriving at the end of September or beginning of October. A few birds over-summer, including four birds reported by Templeton at Ono-i-Lau in 1971.

6. American Whimbrel *Numenius phaeopus hudsonicus*:

A single bird with no trace of white on the back was clearly seen on two occasions at the Rewa sandbank in November, 1969.

7. Bristle-thighed Curlew *Numenius tahitiensis*:

Fiji is on the south-west extremity of the range of this curlew and it appears to be of infrequent occurrence. Stickney 1943 (17) records the collection of one bird at Ngele Levu by the Whitney South Seas Expedition on 28th November (presumably 1924); and Belcher noted that he had taken one in July. The Morgans were unable to find it. One bird was clearly seen and heard calling at the Rewa sandbank no 19th October, 1969, both the call note and the rump and tail pattern being quite distinctive. Although it is possible that two birds were seen at the Rewa sandbank on 22nd November, 1969, careful scrutiny failed to detect this bird on all other occasions.

Note: The reference by Layard 1876 (9) to "the acquisition by my son of the rare little curlew (*Numenius femoralis*) a few days ago at Coconut Point in Sandalwood Bay" (that is Bua Bay, Vanua Levu) is worth noting although the species referred to is not clear.

8. Eastern Bar-tailed Godwit *Limosa lapponica baueri*:

Bar-tailed Godwits are frequently seen on the shore around Suva when their characteristic 'bottoms up' stance while feeding and white appearance from a distance, make them unmistakable even without binoculars. They favour pools on the beach left behind by the tide. The beach at both Vatuwanga and Suva Point are favoured localities for feeding near Suva but the largest numbers can be seen roosting on the Rewa sandbank where fifty or more birds over-summured in 1969. Another favoured roosting place is on a sandbank off the north-eastern side of Tomberua island in Bau Waters to the north of the Rewa delta where 250 birds were seen on 7th November, 1970.

Although their numbers increase before the end of August few birds are seen at this time of year with remaining traces of breeding plumage, for instance none of the fifty birds at the Rewa sandbank on 29th August, 1970, showed any red colouration. In contrast, birds in breeding plumage are plentiful in March and April.

9. Wandering Tattler *Tringa incana*:

This is the most abundant wader occurring in Fiji apart from the Pacific Golden Plover, and Fiji must be one of its most important areas outside the breeding season. Its abundance was first commented on by Ramsay 1877 (14) and later by Stickney and Sibson. It is present at all times of the year. Although it seems to be more abundant around Suva and the Rewa delta than elsewhere, it can be seen anywhere along the coast in small numbers, single birds frequently being seen resting on protruding rocks, beacons or fishtraps and it also occurs along rivers inland in small numbers.

At Suva many birds feed on the beach at Suva Point at low tide and follow a regular flight line to roost on barges on the northern side of Suva harbour. Other birds roost on the breakwater at Lauthala Bay.

10. Siberian Tattler *Tringa brevipes*:

This is an uncommon bird in Fiji, not having been recorded previously, and was only identified positively among the large number of Wandering Tattler on a few occasions. It is a difficult species

to pick out among scattered feeding birds where close comparison with Wandering Tattler is hardly possible. Even in April many Wandering Tattler have white undertail coverts and are quite slim in build; and the Siberian Tattler cannot be identified on these characters alone. These characters together with a generally paler grey colouring, prominent clear white eyestripe and underparts and straighter looking bill identified the Fiji birds. The records in the tables are restricted to those occasions when prolonged direct comparison between the two species was possible.

Two were identified at the Rewa sandbank on 29th August, 1970, when a small group of New Zealand ornithologists accompanied the writer. The writer has also seen the Siberian Tattler on the Queensland coast and is in no doubt of the identification.

This species has been heard calling but the writer is not yet able to pick out the call note with certainty from the variety of Wandering Tattler calls, although the normal trilling call note of the latter is quite different.

On the limited evidence available it is probably a regular visitor to Fiji in very small numbers but has not yet been found over-summering.

11. Terek Sandpiper *Xenus cinereus*:

A single bird was seen at the Rewa sandbank on a number of occasions between 24th May, 1969, and 5th April, 1970, and appears to have over-summered in Fiji. It has not been seen again and this species can be regarded as an irregular, rare visitor.

12. Turnstone *Arenaria interpres*:

Turnstone are present in Fiji throughout the year. A few roost on or near the Lauthala Bay breakwater but larger numbers can be found on the Rewa sandbank. Feeding birds are most frequently seen around the edge of small pools or close to the water line on the shore at Suva Point and Vatuwanga. When roosting they squat on the ground in a close-packed huddle and are not easy to count; but the maximum number seen was about 250 birds at the Rewa sandbank on 21st February, 1971. A few of the returning birds at the end of August show traces of chestnut breeding plumage on the upperparts.

13. Sharp-tailed Sandpiper *Calidris acuminata*:

Previously noted by Morris who saw two birds among Pacific Golden Plover and Turnstone on the Vieuto playing fields at Suva Point on 2nd November, 1963.

14. Red-necked Stint *Calidris ruficollis*:

The first stint was seen at the Rewa sandbank on 22nd November, 1969, and the first positive identification of this species was made of a single bird at the same locality on 4th January, 1970. Bill and legs were distinctly black, the back was noticeably vermiculated and its small size was compared directly with a Sanderling with which it associated and to which it was otherwise very similar. A bird seen in the same locality on 27th and 28th March, 1970, was assuming breeding plumage and its tail was noted as having a very dark centre. It was not seen again and can be regarded as an irregular and uncommon visitor.

15. Sanderling *Calidris alba*:

Sanderling were seen at the Rewa sandbank on most occasions and four birds over-summered in 1969. The maximum number seen was seven on 14th March, 1970. They were usually to be seen resting quietly on the sandbank among Wandering Tattler and Turnstone but occasionally they could be seen at the water's edge running up and down in typical action. Their feeding area was not found. A single bird was also seen near Tomberua island on 26th December, 1970, and three on the shore near Navua on 28th February, 1971. Although not recorded before this evidence suggests that it is a regular visitor in small numbers.

The writer has made only a sporadic search for fresh water and inland areas frequented by waders, inspecting flooded rice fields around Navua, in the Rewa valley and elsewhere, a small fresh water lake near Nandi and some brackish pools near Lomawai, all on Viti Levu island, and has only found Pacific Golden Plover and a few Wandering Tattler in these places. Practically all the writer's observations have been made on the shore, particularly around Suva, where careful scrutiny of each bird in a wader flock will occasionally reveal an uncommon species. Reference has already been made to reports of large numbers of shore birds occurring on Ono and Ono-i-Lau islands; and it is expected that all river deltas anywhere in Fiji with sandbanks or other isolated potential roosting places near their mouths would well repay investigation. The wader list is still a short one and there are several species which occur in Australia and New Zealand which can be expected to occur in Fiji occasionally.

The account of the January, 1971, field study course by Edgar 1971 (4) contains a list of waders recorded at that time for the whole of Parengarenga harbour, New Zealand, and provides the opportunity of comparison with the list for one high tide roost on the Rewa estuary, Fiji, on 21st February, 1971. Parengarenga is some 1,100 miles to the South of Suva and 5½° further to the West. The two lists are given in Table IV.

Of the more abundant species, Fiji has the Wandering Tattler which has not occurred at Parengarenga, more Asiatic Whimbrel and rather more Pacific Golden Plover (although it was stated to be a poor season for this species in the far North of New Zealand); while Parengarenga has Knot which have not occurred in Fiji, and considerably more Bar-tailed Godwit and Turnstone. Of the less common species, Fiji has the Mongolian Dotterel which has not occurred at Parengarenga; whereas Parengarenga has more Red-necked Stint and has recorded six Asiatic and two American species which have not yet been recorded in Fiji.

The four common species in New Zealand all have a more northerly distribution in their breeding grounds than the other species which reach New Zealand, and in all cases their breeding distribution spreads across the Bering Straits from Eastern Siberia into Western or North-Western Alaska. The species which are more common in Fiji do not extend so far to the north in their breeding grounds as the common New Zealand species; and have a generally more eastern distribution in Siberia than those species from Asia which

TABLE 1 — LIST OF WADERS RECORDED IN FIJI

Species	Recorded Previously	New Record
1. Pacific Golden Plover <u>Pluvialis dominica fulva</u>	(x)	
2. Banded Dotterel <u>Charadrius bicinctus</u>	x	
3. Mongolian Dotterel <u>Charadrius mongolus</u>	x	()
4. Long-billed Curlew <u>Numenius madagascariensis</u>	x	()
5. Asiatic Whimbrel <u>Numenius phaeopus variegatus</u>	x	()
6. American Whimbrel <u>Numenius phaeopus hudsonicus</u>		x
7. Bristle-thighed Curlew <u>Numenius tahitiensis</u>	x	
8. Eastern Bar-tailed Godwit <u>Limosa lapponica baueri</u>	(x)	
9. Wandering Tattler <u>Tringa incana</u>	(x)	
10. Siberian Tattler <u>Tringa brevipes</u>		x
11. Terek Sandpiper <u>Xenus cinereus</u>		(x)
12. Turnstone <u>Arenaria interpres</u>	x	()
13. Sharp-tailed Sandpiper <u>Calidris acuminata</u>	x	
14. Red-necked Stint <u>Calidris ruficollis</u>		x
15. Sanderling <u>Calidris alba</u>		(x)

NOTES: 1. Nomenclature follows the Annotated Checklist of the birds of New Zealand.

2. Notation: x indicates a record.

() indicates a species which has been recorded as staying in Fiji over the Northern summer (referred to later as 'over-summering') between May and July.

TABLE II: COUNTS OF WADERS AT SUVA POINT AND

YEAR	1969																												1970																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
DATE	Jan. 26	Feb. 2	Feb. 17	Mar. 21	Mar. 26	Mar. 27	Apr. 10	May 8	May 19	May 23	Jun. 6	Jun. 17	Jul. 2	Jul. 6	Jul. 16	Jul. 19	Jul. 20	Jul. 24	Jul. 31	Aug. 9	Aug. 14	Aug. 30	Sept. 4	Sept. 18	Sept. 28	Oct. 2	Oct. 17	Nov. 22	Dec. 5	Dec. 6	Jan. 23	Mar. 19	June 16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
TIME OF DAY	Falling	1100	Feb. 2				1700	May 8	Rising	1700	May 23	Low	1700	Jun. 6	Low	1700	Jul. 2	Low	1700	Jul. 31	Low	1700	Aug. 14	Falling	1130	Aug. 30	Low	1700	Sept. 4	Falling	1720	Sept. 28	Falling	1730	Oct. 2	Low	1730	Oct. 17	Low	1130	Nov. 22	High	1730	Dec. 5	High	1730	Dec. 6	Rising	Jan. 23	Rising	1330	Mar. 19	June 16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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LAUCALA BAY, 1969-1970

- NOTES: 1. All figures are for Suva Point alone, except: December 5 and 6 which are combined totals for Suva Point and Laucala Bay; and January 23 which are for Laucala Bay alone.
2. Notation: See Footnote to Table III.

TABLE III: COUNTS OF WADERS AT REWA SANDBANK 1969-1971

YEAR	1969												1970										1971											
DATE	May 24	May 31	Jun 8	Jun 22	Jun 26	Jul 5	Jul 26	Aug 9	Aug 31	Sep 20	Oct 19	Nov 22	Nov 30	Jan 3	Jan 5	Jan 25	Mar 14	Mar 27	Jul 11	Aug 29	Sep 27	Oct 12	Nov 22	Jan 3	Feb 21	Mar 6	May 30	Aug 15	Aug 29					
TIME OF DAY					13.30	13.30	1600	0900	1400	1500	1600	1100	1430	1500	1200	A.M.	1300	1600						1130	1430	1400	2100	1300	1130					
PACIFIC GOLDEN PLOVER	50	40	50	10	-	64	37	39	540	200	*	176	*	*	350	*	52	70	283	*	*	*	242	400	400	40	50	100						
BANDED DOTTEREL	-	-	-	-	-	10	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	3	-					
MONGOLIAN DOTTEREL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	8	8	-	-	-					
SMALL DOTTEREL (SPECIES?)	2	10	2	2	2	1	-	2	2	7	7	2	11	5	9	5	1	1	6	3	2	9	-	-	-	-	-	-	-					
LONG-BILLED CURLEW	-	1	2	2	-	2	2	2	2	2	-	2	2	3	1	1	-	-	1	1	1	1	1	1	1	1	-	-	-					
ASIATIC WHIMBREL	2	5	10	7	-	13	11	14	16	50	70 to 100	40	*	*	30	*	*	-	26	75	40	100	*	80	70	10	13	2						
AMERICAN WHIMBREL	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
BRISTLE-THIGHED CURLEW	-	-	-	-	-	-	-	-	-	1	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
EASTERN BAR-TAILED GODWIT	50	15	70	60	-	110	121	133	170	200	*	101	*	*	200	*	24	50	202	*	*	*	*	250	*	40	14	13						
WANDERING TATTLER	50	20	40	70	7	159	151	140	300	200	*	188	*	*	250	*	2	150	203	*	*	*	*	250	*	60	150	150						
SIBERIAN TATTLER	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	1	-	2	3	1	1	1	1	-	1	-	1	-					
TEREK SAND-PIPER	-	1	-	-	-	1	1	1	-	-	-	-	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-					
TURNSTONE	20	10	10	15	-	9	17	13	100	70	*	52	*	*	50	*	150	43	50	173	*	*	*	250	*	25	50	30						
RED-NECKED STINT	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-					
SANDERLINGS	4	4	3	3	4	4	4	4	4	2	-	3	4	4	5	7	4	2	-	1	2	3	3	5	5	4	4	4						

- NOTES: 1. About 2000 birds present on 22nd November.
2. All counts were made at high tide except on 31st May on a falling tide.
3. Notation: - = no birds seen.
* = birds present but not counted.
+ = incomplete count.
? = not a positive identification.

TABLE IV: Comparison of wader counts made in January, 1971, at Parengarenga Harbour, New Zealand, and in February, 1971, at Rewa Sandbank, Fiji.

Location	Parengarenga Harbour, New Zealand	Rewa Sandbank, Fiji
Date of Count	11 to 18.1.71	21.2.71
Species	Numbers	
Pacific Golden Plover	c 100	c 400
Mongolian Dotterel	x	8
Oriental Dotterel <u>Charadrius veredus</u>	-	x
Long-billed Curlew	4	1
Asiatic Whimbrel	-	c 80
American Whimbrel	-	-
Bristle-thighed Curlew	x	-
Little Whimbrel <u>Numenius minutus</u>	-	x
Asiatic Black-tailed Godwit <u>Limosa limosa</u>	-	x
American Black-tailed Godwit <u>Limosa haemastica</u>	-	x
Eastern Bar-tailed Godwit	c 1500	c 250
Greenshank <u>Tringa nebularia</u>	-	x
Wandering Tattler	x	c 250
Siberian Tattler	4	-
Terek Sandpiper	1	-
Turnstone	c 800	c 250
Knot <u>Calidris canutus</u>	c 100	x
Sharp-tailed Sandpiper	10	-
Curlew Sandpiper <u>Calidris ferruginea</u>	7	x
White-rumped Sandpiper <u>Calidris fuscicollis</u>	-	x
Red-necked Stint	24	-
Sanderling	-	5
Broad-billed Sandpiper <u>Limicola falcinellus</u>	-	x
Total number of birds counted	2550	1244
Number of species counted	10	8
Total number of species ever recorded at site	20	14

Origin of Species	Common to both Countries	Confined to N.Z.	Confined to Fiji	Total
Neartic	1	2	1	4
Palearctic	6	6	1	13
Holarctic	4	1	1	6
Total	11	9	3	23

Notation: - indicates not recorded on the date of the count although it has occurred at the site.

x indicates never recorded at the site.

have not yet been recorded in Fiji. The obvious exceptions to this statement are the Knot* and the Pectoral Sandpiper *Calidris melanotos* which are possibly the most likely species to be added to the Fiji list.

Apart from the Sanderling which is a great wanderer outside the breeding season, speculation suggests that Fiji's waders originate largely from that part of the centre of East Siberia lying to the north-east of the Kamtschatka Peninsula, with a few birds originating from Western Alaska.

Grateful acknowledgement is made of the encouragement and assistance given to the writer on numerous occasions by R. B. Sibson.

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† See also by the same author: Shore birds of Fiji and their migration habits. *Trans. and Proc. of the Fiji Society* 10, for the years 1964 and 1965. In press.

*[The first Fijian Knots have now been recorded. In a letter posted on 14/10/71, J.B.S. writes: "27 Knots at the Rewa estuary sandbank on 10th October, with Bar-tailed Godwits." Ed.]