

VICTORIAN RECORDS OF *Sterna striata* Gm. AND *Sterna hirundo longipennis* Nordm.

By W. B. Hitchcock, Ornithologist, National Museum of Victoria,
and N. J. Favaloro, Hon. Worker in Ornithology, National
Museum of Victoria.

(Received for publication, November 8, 1950.)

FORMAL RECORDS

S. striata

Although there are several sight records of the White-fronted Tern (*Sterna striata*) for Victoria, there are, to our knowledge, only two skins in existence from that State, both in the National Museum of Victoria. Hindwood (1946: 183), in his exhaustive account of this species in Australia, referred to one of them (B2537, *infra*), but was unable to locate the specimen. It has since been found, and details of both skins follow.

Reg. No.	B2537	B2293
Sex	♂	♂
Plumage	winter; imm.	winter; sub-adult (see plate, A,B)
Locality	Mordialloc	Williamstown
Date	c. 1874	Aug. 6, 1948
Collector	W. Kershaw	J. A. McVeigh
Iris	—	dark brown
Bill	—	black, tipped whitish
Feet	—	reddish-brown, webs yellowish-brown
Stom. contents	—	blue sprats (<i>Stolephorus robustus</i>) lamprey (<i>Mordacia</i> sp.)

S. h. longipennis

In an earlier paper, Hindwood (1944: 41-43) drew attention to the fact that there were two formal records of *Sterna hirundo longipennis* (vernacular names: Black-billed or Eastern Common Tern, Nordmann's Tern and Long-tailed Tern), from Australian waters, viz., 'Warrior Reef,' Torres Strait, and Cape York, North Queensland. Both specimens had previously been identified as *S. striata*, a species which closely resembles *longipennis* in winter plumage. He also listed three examples from Lord Howe Island. Further, it was Hindwood's opinion that these occurrences 'may be considered, in the present state of our knowledge, abnormal.'

We now wish to record a Victorian specimen and hope to show that this race of the Common Tern can be regarded as a rare, but regular *summer* visitant in eastern Australia.

Particulars of specimen: N.M.V. no. B2650, ♂ (?), collected at Williamstown on March 2, 1949, by J. A. McVeigh. Iris brown, bill black (extreme tip of both mandibles whitish), feet reddish-brown, claws black. Stomach contents nil.

The bird appears to be in first-winter plumage, immaturity being indicated by the dark-grey lesser wing-coverts (see plate, C, D). The second (outer) and third primaries have the outer webs and inner portion of the inner webs dark-grey, with the characteristic 'wedge' of white on the third. The succeeding primaries are more silvery-grey on the outer webs, slightly darker on the inner, with white 'wedges.' Wings and tail are in moult, the fourth primary being 27 mm. shorter than the fifth. The outermost pair of rectrices are considerably shorter than the next pair.

MEASUREMENTS

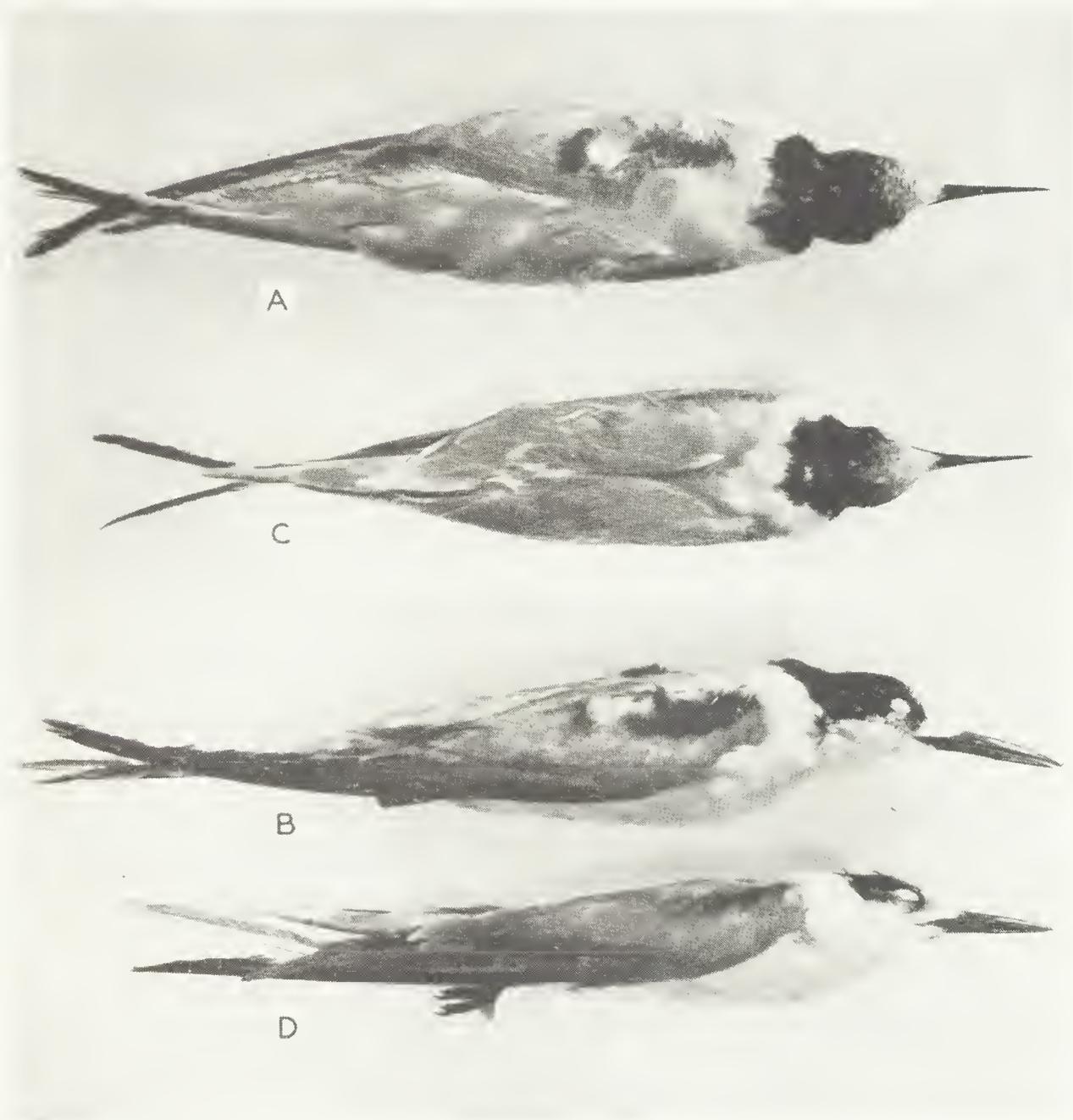
For ease of comparison, measurements of the above three skins are tabulated together. (Wing flattened; bill length, depth and width all taken from end of feathering.)

Reg. No.	Bill			Wing	Tarsus	Toe
	Length	Depth	Width			
B2293	40	8.5	6.5	272	21	26
B2537	37	9	7	265	21	25
B2650	35	9	7	258	20	21

FIELD NOTES

We are indebted to Mr. J. A. McVeigh, a resident of Williamstown, and a keen observer, for the following summary of his extensive field notes on *striata* and *longipennis*. We make no apologies for quoting him at some length. It should be borne in mind that, during the entire period, he was not aware that there were two distinct species involved, although he obviously suspected as much. It was not until quite recently that a critical examination of the March skin revealed the truth.

Williamstown is situated on Port Phillip Bay, 4½ miles S.S.W. of Melbourne. As far as shipping is concerned, it is chiefly a grain export centre. The area under observation comprises a small boat haven, "The Gap," bounded, on one side, by Gellibrand Pier and, on the other, by Breakwater Pier. The "summer tern" was also noted on a nearby beach, "The Cockle Bed," where it occasionally rested in the daytime with Silver and Pacific Gulls and Crested Terns.



A., B. *Sterna striata* Gm. B2293, ♂, Williamstown, Vic., Aug. 6, 1948.
 C., D. *S. hirundo longipennis* Nordm. B2650, ♂ (?), Williamstown, Vic.,
 March 2, 1949.

The iron pipe, which the "summer tern" claimed as a perch, and from which it did a lot of fishing, is embedded in rocks at the entrance to the Gap. The depth of water around the pipe is 8-10 feet, shelving rapidly outside.

The winter of 1948 saw an abnormal number of blue sprats and "greybacks" around the piers and rocks, the close shelter of which they seem to prefer, as we never see them far from shore. Perhaps that accounts for the White-fronted Tern confining its attention to inshore fishing. Lampreys were also present in 1948, apparently in quantity, as they were brought into the boat when we were catching barracouta.

Following are relevant extracts from my diary.

1948

March 26: One small tern has been on pipe at Gap for last three or four months. It is about 11 inches long, grey on back; underparts, tail, back of neck and forehead white; crown, nape, bill and legs black. Seems to be the only one of its kind in the vicinity. Does all its fishing close to rocks (at Gap entrance), where it apparently camps. On one occasion I saw it dive straight down from the pipe, emerge with a pilchard (?) about 4 inches long, then fly to a height of 100 feet or more before swallowing it. This manoeuvre seemed to be a precaution against dropping the fish before its consumption was complete.

March 29: Little tern still on pipe at Gap.

April 3: Photographed small tern on pipe. Saw this bird attack other (Crested) terns between the two piers. It seems to be aggressive, especially towards other terns.

May 16: Small tern not seen for a few weeks now.

July 11: At Gap, on return from fishing trip, a White-fronted Tern flew slowly past shore end of our boat landing. It is very light on back now, almost white, instead of grey. Leading-edge of wings, close to body, is a darker grey. Beak and legs still black, also the cap; forehead white. Seems larger than the summer bird.

July 17: White-fronted Tern still at Gap.

July 31: Morning. At least two W.F. Terns seen at Gap. Strong N. wind. Seems they favour Gap on these days. Afternoon. Two W.F. Terns at Gap, one noticeably smaller, with a short tail. Could this be bird which stayed at Gap last summer? [latter probably *striata* in moult.—W.B.H.]

August 2: Evening. Single W.F. Tern fishing outside, near Gellibrand Pier.

August 6: Evening. Strong nor'-easter blowing; shot a W.F. Tern at Gap. [= *striata*, B2293, W.B.H.]

August 7: 2.30 p.m. One W.F. Tern at Gap; later in afternoon saw another half-way between Pt. Gellibrand and Breakwater.

August 21: Single W.F. Tern on jetty in Gap. Very tame.

August 29: Strong northerly. About a dozen terns fishing on leeward side of Breakwater Pier, two W.F. Terns among them; possibly after whitebait as Gannets diving further out. One W.F. Tern alighted on edge of breakwater. When at rest, dark grey patch on inner part of wing pronounced. The flight of this tern is more erratic than that of the Crested Tern, also its wing beat is quicker.

September 2: W.F. Tern visited Gap and flew over Breakwater Pier.

September 4: Two W.F. Terns seen outside breakwater.

December 12: Evening. A single black-billed tern at entrance to Gap sitting on rocks with Silver Gulls. Later perched on pipe and fished from there.

About same size as winter tern, possibly smaller, but lacks dark shoulder patch. Back is all pale grey and tail whiter.

1949

January 19: Little black-billed tern still perches on pipe. Last night a bird of the same species flew in and was promptly chased away by the pipe occupant.

March 1: Wounded the little tern, which flew off after disgorging stomach contents. These were examined and found to consist of a compact mass of moths covered with a slimy substance.

March 2: Evening. Collected a little tern at Gap. [= *longipennis*, B2650, W.B.H.]

April 9: Watched two summer terns fishing close alongside dry-dock. (Not seen again after this date.)

May-Dec.: Although weekly visits were paid to the Gap during this period, no White-fronted Terns were seen—probably due to the absence of blue sprats and “greybacks.”

1950

January 1: Advised by Mr. E. McDonald that he saw a small black-billed tern on Cockle Bed, apparently in breeding plumage.

January 15: Small black-billed tern on Cockle Bed in company with Silver Gulls and Crested Terns. When first seen it was bathing with one of the latter, then stood with the other birds on the sand. Noted that black cap very distinct and clear-cut against white of neck and face. No white among black feathers on cap.

February 4: Single black-billed summer tern at Cockle Bed—my last record for this bird.

In view of the period and continuity of observation, supported by specimens, it seems reasonable to conclude the following from an analysis of the above data.

1. *Sterna striata* and *S. h. longipennis* may be considered, respectively, as regular winter and summer visitors to Victoria, at least in small numbers.
2. *S. striata* probably visits Victoria between July and September, *longipennis* between December and April, so that they would not normally occur there together.
3. The presence or absence of *striata* may be influenced by the movement of small fish, such as blue sprats, “greybacks” and lampreys. This would not affect *longipennis* to the same extent as it is not wholly piscivorous.
4. The lack of collecting and competent observers at suitable localities, plus the difficulty of distinguishing it from *striata* in the field, have been factors in the previous non-recognition of *longipennis* in Victoria and, for that matter, in Eastern Australia. However, the possibility that *longipennis* has ex-

tended its southern range in comparatively recent years cannot be overlooked.

5. It is more than likely that some of the late Sydney records for *striata*, mentioned by Hindwood (1946: 187), were, in fact, referable to *longipennis*, particularly the January "stragglers."

ECOLOGY

There are differences in the feeding habits and ecological requirements of the two species. They are both shallow divers but, whereas *striata* feeds "exclusively on small fish" (Stead, 1932: 38) and has "the habit of fishing in broken water close to a rocky shore, or a reef, and in the surf zone" (Hindwood, *loc. cit.*: 180), *longipennis* has a more varied diet, confining its fishing to a relatively circumscribed area in rivers and estuaries. Writing of the latter tern in Malaya, Robinson and Chasen (1936: 95) remark: "In the Straits of Malacca it is largely an estuarine and shallow-water bird, frequenting the fishing stakes in large numbers." In Kamchatka, Bergman (1935: 138) observed it breeding along the Kamchatka River. He also found it plentiful around the estuaries of the Avatscha and Paratunka Rivers, but saw no examples on the rocky south-east coast. In brief, *striata* is essentially a marine species, both in habitat and food requirements, while *longipennis* shows a marked preference for a fluviatile and estuarine environment.

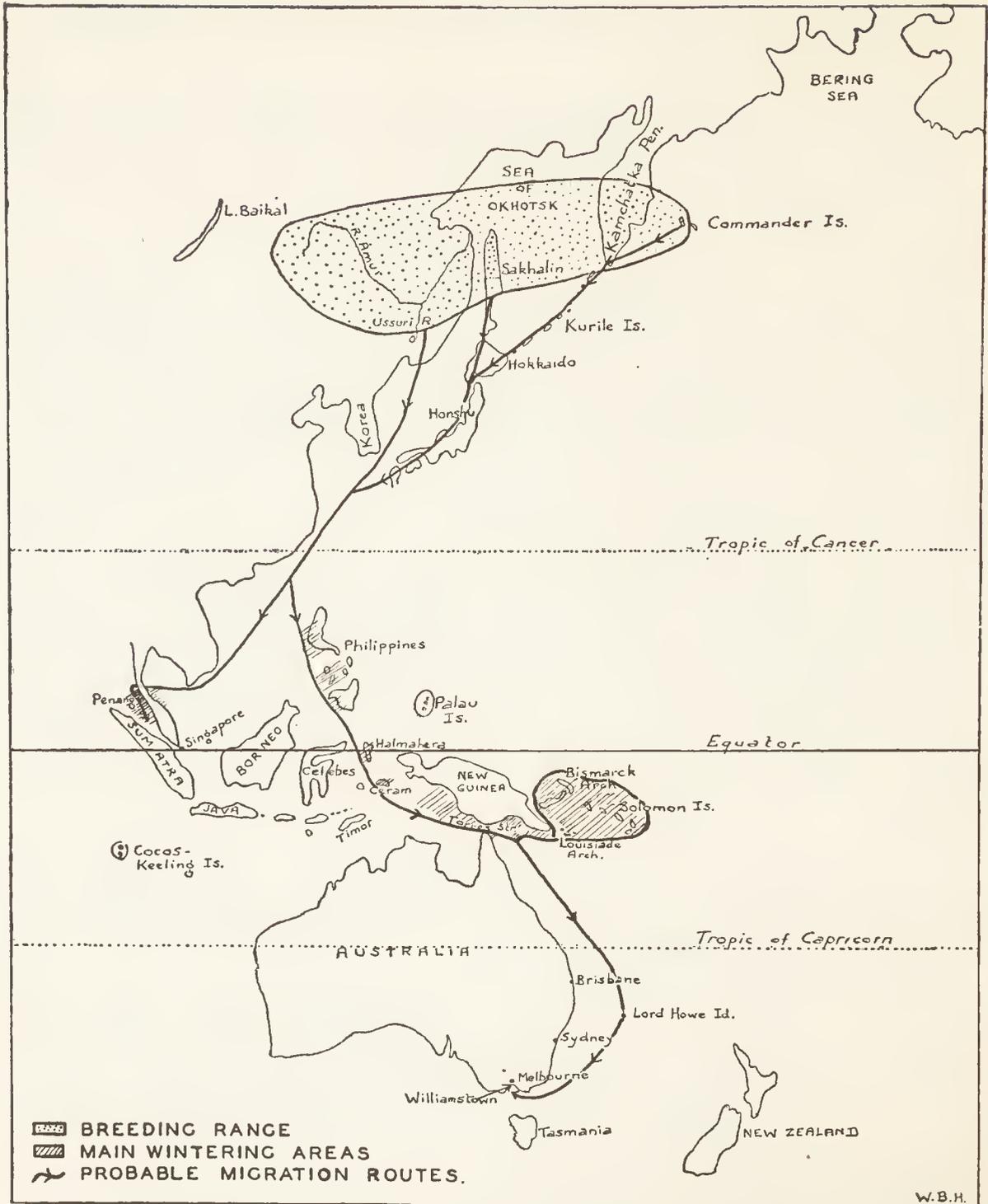
FIELD DIAGNOSIS

For the benefit of Australian observers, who will normally see both species in non-breeding plumage only, the following summary of field characters is offered.

longipennis. *Summer* visitor. Length about 12 inches; bill relatively short and stout; back grey, contrasting with whiter tail; small black spot before eye; sedentary, favouring a single "fishing perch" (stake, pipe, etc.), takes insects (e.g. moths); aggressive, especially towards other terns.

striata. *Winter* visitor. Length 14-15 inches; bill relatively long and slender; back grey, but paler than tail; large black spot before eye; feeding range wider, takes fish only; not aggressive towards other birds.

In skins, the toes and claws of *striata* are noticeably longer and heavier than in *longipennis*, but this would scarcely be evident in the field.



Sketch map showing distribution of *S. hirundo longipennis*.

DISTRIBUTION OF *S. h. longipennis*

The accompanying sketch map is an attempt, based on the literature, to plot the known distribution of *longipennis*. The following comments on it are necessary.

Breeding Range

There are remarkably few references to authentic nesting records. Kamchatka and Sakhalin would appear to be the principal breeding grounds. Bergman (*ibid.*) states that it is particularly numerous along the Kamchatka River, where it breeds in colonies in several places. Kobayashi and Ishizawa (1932-40: 194) include the Kurile Islands in the breeding range and state that eggs were discovered from June to the beginning of August on the bank of Lake Taraika in Sakhalin by K. Shimomura. It possibly breeds, too, on Bering Island (the larger and more westerly of the Commanders), where Stejneger (1885: 85) collected two adult females in May and June. Hartert (1920: 132) also suggested this, basing his opinion on three adults collected there by Sokolnikoff in the same two months. Peters (1934: 333) includes Ussuriland and the upper Amur, while Kozlova (1932: 585) states that it "breeds occasionally in South-West Transbaikalia, where its range meets that of *minussensis*." This locality appears to be much too far west for *longipennis* and the record might be treated with reserve.

Winter Range

Some authors, e.g. Peters (*ibid.*), do not include the Malay States in the range of *longipennis*. However, Robinson and Chasen (*ibid.*) and Gibson-Hill (1949: 76) list it as a common autumn and winter visitor to the Straits of Malacca. There are formal records, too, from the east coast of Peninsular Siam: Nakon Sritamarat (Riley, 1938: 100). Gibson-Hill (1950: 265) records it as a vagrant, on the basis of one specimen and two sight records, in the Cocos-Keeling Islands. The status of *longipennis* in the remainder of Malaysia seems to be ill-defined. We have seen very few references to formal records from Sumatra, Java and Borneo and prefer to consider it only a vagrant to these islands. The principal southernmost wintering grounds are probably the Gulf of Papua, the Louisiade and Bismarck Archipelagos, and the Solomons. However, it undoubtedly winters in small numbers in the Philippines, Halmahera, Moluccas and Aru Islands.

Migration Routes

It is well known that the autumn and spring routes of migrants may be quite distinct, and it would be futile to try and map precise fly-lines without the supporting evidence of banding records. It is suggested, however, that the routes shown on the map indicate approximately the autumn migrations of *longipennis*. An alter-

native route for some individuals may be through Micronesia (Mayr, 1945: 25), as there are formal records from Palau.

SUMMARY

1. Data of two Victorian specimens of *Sterna striata* Gm. and one of *Sterna hirundo longipennis* Nordm. are given. The latter constitutes the first Victorian record and extends its known range far south of Lord Howe Island.
2. Evidence, in the form of detailed field notes, is produced to show that both species may be considered regular visitors to Victoria in small numbers—*striata* in winter, *longipennis* in summer.
3. Some differences in the ecology of the two species are discussed.
4. A summary of certain field characters of *striata* and *longipennis* (in Australia) is submitted as a guide to their identification.
5. A sketch map, with explanatory notes, illustrates the breeding range, winter quarters and probable migration routes of *longipennis*.

REFERENCES

- Bergman, Sten, 1935. Zur Kenntnis Nordostasiatischer Vögel (Stockholm).
- Gibson-Hill, C.A., 1949. An Annotated Checklist of the Birds of Malaya. Bull. Raffles Mus., Singapore. No. 20.
- , 1950. Notes on the Birds of the Cocos-Keeling Islands. *op. cit.*, No. 22.
- Hartert, Ernst, 1920. The Birds of the Commander Islands. Nov. Zool., vol. 27.
- Hindwood, K. A., 1944. Occurrence of the Eastern Common Tern (*Sterna hirundo longipennis*) in Australia. Emu, vol. 44, pt. 1.
- , 1946. The White-fronted Tern (*Sterna striata*) in Australia. *op. cit.*, vol. 45, pt. 3.
- Kobayashi, K., and T. Ishizawa, 1932-40. The Eggs of Japanese Birds. Part 1 (text). (Kobe.)
- Kozlova, E. V., 1932. The Birds of South-West Transbaikalia, Northern Mongolia and Central Gobi. Part III. Ibis, (13), vol. 2, no. 4.
- Mayr, Ernst, 1945. Birds of the Southwest Pacific. (New York.)
- Peters, J. L., 1934. Checklist of Birds of the World. Vol. 2.
- Riley, J. H., 1938. Birds from Siam and the Malay Peninsula in the U.S. National Museum collected by Drs. Hugh M. Smith and William L. Abbott. Bull. U.S. Nat. Mus., No. 172.
- Robinson, H. C., and F. N. Chasen, 1936. The Birds of the Malay Peninsula. Vol. 3.
- Stead, E. F., 1932. The Life Histories of New Zealand Birds. (London.)
- Stejneger, L., 1885. Results of Ornithological Explorations in the Commander Islands and in Kamchatka. Bull. U.S. Nat. Mus., No. 29.