

NOTES ON THE IMMATURE PLUMAGES OF *LARUS* *BULLERI* AND *L. NOVAEHOLLANDIAE*.

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From 21 January, 1945, to 12 January, 1946, I was able to make some rather cursory observations of the juvenile plumages of a black-billed gull, *Larus bulleri* and a red-billed gull, *L. novaehollandiae*. On the former date the birds were almost at flying age. In view of the fact that many ornithologists are studying these birds in the field, it is felt that publication (which has been delayed owing to the notes being mislaid) of some of the features, however meagre, of the plumage sequences throughout the year on individual birds will be of benefit. The identification of these two species when immature is notoriously difficult, and further field and laboratory work is being carried out to enable the differences to be clearly described.

On 21 January, 1945, both birds were not long out of the downy stage. Observations on other downy chicks showed that the down, which varied tremendously in colour and pattern, is indistinguishable in the two species, but *bulleri* had pinkish-grey legs and bill, while *novaehollandiae* had dark grey legs and bill without any pinkish tinge. The gape of both was a light pink. The iris was a dark brown, irides dark grey and the pupil, rather a light blue at first, rapidly became a dark blue-black. The table of measurements shows that even at first flying stage the bill of *bulleri* was much longer but thinner than that of *novaehollandiae*, which grew but little during the following year. In the first plumage the wing coverts of both were heavily spotted brownish.

These spots gradually disappeared, faster in *bulleri*, which on 25 August had many fewer spots left visible. At this date, the legs of *bulleri* had darkened and were only slightly pinker than those of *novaehollandiae*. In the bills, black was extending slowly from the tip to the base which was flesh coloured, and had reached about halfway in both, the base of the bill in *bulleri* being slightly pinker.

On 12 November the brown spots on the wing coverts, still prominent in *novaehollandiae*, were not visible in *bulleri*. The legs of *bulleri* were still flesh coloured, but not as pink as the legs of *novaehollandiae* had become. At this stage the bill of *bulleri* was entirely black (though not the glossy black of adults) while *novaehollandiae* still had a dark-tipped bill with a fleshy-coloured base. The voice of *novaehollandiae* during early November also developed to almost full adult tone.

On 12 January, 1946, when the final observations were made, *novaehollandiae* still had brown spots on the wing coverts, the legs of both were similar, a darkish flesh colour, and both bills were again similar, flesh at the base and dark-tipped. It was then noted that the gape was pinkish in *bulleri* and orange in *novaehollandiae*.

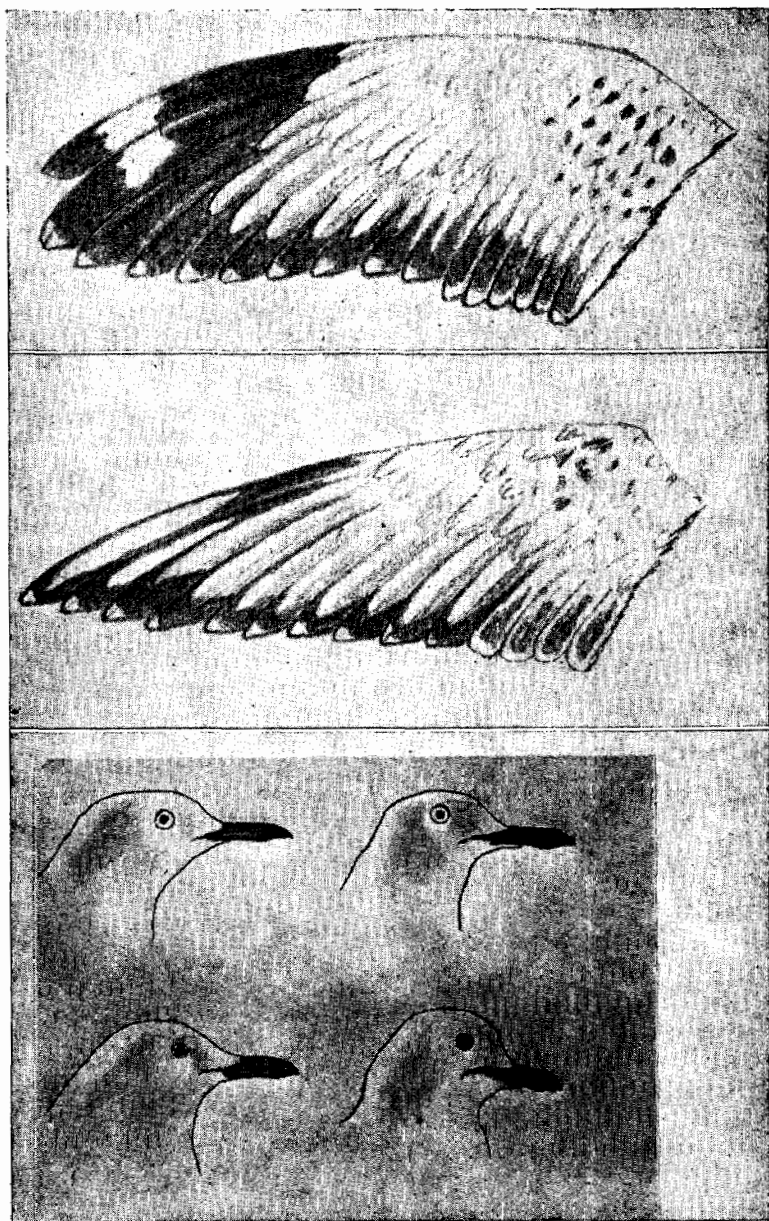
At all stages, the pattern of the primary feathers was different, *novaehollandiae* showing much more black with small white "mirrors" near the tips of the two outer primaries. These "mirrors" were elongated along the shafts in *bulleri*, giving the tip of the wing a whiter appearance.

MEASUREMENTS (mm) 29/1/45.

	<i>L. bulleri</i>	<i>L. novaehollandiae</i>
Bill length	297	272
Bill depth at base	76.2	86.4
Bill width at base	55.9	73.7
Bill depth at gonys	69.9	78.8
Wing	1981	1968
Tail	699	813
Tarsus	503	523

SUMMARY.

Cursory observations on the plumage sequences and the colours of soft parts, together with some measurements, are given for one individual each of *Larus bulleri* and *L. novaehollandiae*, during their first year. Features which are of especial interest are the pinkish bill and legs of *bulleri* and the dark grey bill and legs of *novaehollandiae*, and the much thinner and longer bill of *bulleri* at first flying age, the blackening of its bill in November, the more rapid disappearance of its wing covert spots, and the different wing patterns in the two species.



WINGS OF GULLS AT FIRST FLYING AGE, 10/2/45,
AND TYPICAL BILLS.

Top.—Red-billed Gull.

Middle.—Black-billed Gull.

Lower.—Bills of typical Black-billed (upper) and Red-billed (lower) Gulls.
(Immatures on left, adults on right.)

(Adapted by J. M. Cunningham from photographs.)