

## LARUS KUMLIENI AND ITS ALLIES \*

By A. L. RAND

Ornithologist, National Museum of Canada, Ottawa

NO TWO ANIMALS are exactly alike, nor is it likely that any two populations of animals are identical. When the differences between populations are great enough, and constant enough, to enable one to distinguish seventy-five per cent or more of two populations from each other it is customary to consider them subspecies. These subspecies, or geographical variants, are probably incipient species;—species in the making. One of the best demonstrations of this is where two quite distinct forms inhabit the same area, but represent opposite overlapping ends of a circle of intergrading subspecies. Mayr (*Amer. Nat.*, 74: 249-278, 1940), has brought together a number of such examples, but they are rare.

From a study of the Nearctic gulls of the genus *Larus* in the National Museum of Canada, it appears that they represent such overlapping series of intergrading forms. The entities concerned are *hyperboreus*, *barrovianus*, *nelsoni*, *leucopterus*, *kumlieni*, *thayeri* and *smithsonianus*. Dwight (*Bull. Amer. Mus. Nat. Hist.*, 52: 63-336, 1925) lists them as *L. hyperboreus* (*L. nelsoni* as a hybrid between *L. hyperboreus* and *L. argentatus vegae*) *L. leucopterus*, (*L. kumlieni* as a hybrid between *L. leucopterus* and *L. a. thayeri*) *L. argentatus thayeri* and *L. a. smithsonianus*. This has been widely accepted. Stegmann (*Journ. f. Ornith.*, 82: 340-380, 1934) from a *formenkreis* point of view has included *leucopterus* in *argentatus*, regarding *thayeri* as an intergrade, and *kumlieni* as a hybrid; but *hyperboreus* he regards as a separate species, in which he includes *glaucescens*, and *nelsoni* as a hybrid between them. Taverner (*Can. Field-Nat.* 47: 88-90, 1933) has shown that *kumlieni* has a definite breeding range in an area where *smithsonianus* also breeds, and where neither of *kumlieni*'s alleged parents occur.

The following is a brief outline of the breeding distribution and relationships of these birds in the Nearctic, as it appears to me, from a review of available material. For descriptions of plumages see Dwight (*l.c.*).

### HYPERBOREUS

*Larus hyperboreus* Gunn.

Breeding from Newfoundland, Labrador, Hudson Bay, and Coronation Gulf to Greenland, and Ellesmere Island.

This is a large, big-billed, grey-mantled white-primaried bird, with a pale white-

winged immature plumage. There is little variation in its characters over the area.

Apparently a small proportion of the adults migrate southward in winter.

It is a distinctive form, liable to be confused only with the next.

### BARROVIANUS

*Larus barrovianus* Ridgway

Breeding in the Mackenzie Delta and Point Barrow areas.

This is a western representative of *hyperboreus* distinguished by smaller size, shorter, more slender bill, darker mantle, and more greyish primaries. The young differ in their smaller size.

Oberholser (*Auk*, 35: 467-474, 1918) demonstrated the distinctness of this form, as did Bishop (*Condor*, 29: 204, 205, 1927) but Dwight (*l.c.* and *Auk*, 36: 242-248, 1919) did not recognize it and most people followed his example.

However it is a distinguishable form. It is interesting to note that *hyperboreus* and *barrovianus* do not represent opposite ends of a "cline". The difference between the two populations, although not great, is abrupt and if intergradation occurs it must be in the small area between Coronation Gulf and the Mackenzie Delta area.

### NELSONI

*Larus nelsoni* Henshaw

Definitely known from but a few western Arctic specimens (none examined). It is a grey-mantled bird with a lightly grey patterned wing. It appears to bear the relationship to *barrovianus* that *kumlieni* does to *leucopterus* (see below) and the darker primaries of *barrovianus* accentuate this. The form *kumlieni* appears to be its geographical representative. Thus, if the direct relationship between *leucopterus* and *hyperboreus* be doubtful, there is also this indirect line of relationship. As to the young, I have seen Pacific coast first year birds that could be considered either *glaucescens* or *nelsoni*.

### LEUCOPTERUS

*Larus leucopterus* Vieillot

Only known to breed in Greenland (Taverner, *l.c.*).

This is a smaller edition of *barrovianus*, with a considerably smaller, more slender bill. I have no fully adult material.

Evidently only a small proportion of the adults migrate southward. Differing from *barrovianus* only in size, especially of bill, my scanty material does not show an overlap.

\*Published by permission of the Director, Mines and Geology Branch, Department of Mines and Resources, Ottawa.



But published records of *leucopterus* from north-western America indicate that it may happen, as witness Bishop's record (*Program Activities Chicago Acad. Sci.*, 4: 30, 1933) of an adult *leucopterus* with a large bill from Wainwright, Alaska. He even suggests it may be a hybrid *leucopterus* X *hyperboreus*.

#### KUMLIENI

*Larus kumlieni* Brewster

Breeds in south Baffin Land and northern Ungava (Taverner, *l.c.*).

The adult is a grey-mantled bird with, typically, a grey pattern on the white primaries; the bill averages slightly larger than in *leucopterus*. That some of the young are separable from those of *leucopterus* is doubtful (see below).

Most of the grounds for considering this form a hybrid between *leucopterus* and *thayeri*, and the objections to considering it a valid form, have disappeared with the discovery that it has a breeding range in which neither of the two alleged parent species occur (Soper, *Nat. Mus. Canada*, Bull. 53: 83, 84, 1928, and Taverner, *Can. Field-Nat.*, 47: 88-90, 1933).

It is true that *kumlieni* is variable in wing pattern, but so is *thayeri* and so are other forms. The fact that the variation in *kumlieni* is near the disappearing end of the patterned series makes this variation more evident.

A biological difference, not hitherto noted, is that the proportion of adult *kumlieni* that comes south along the Atlantic coast in winter is greater than in *leucopterus*.

Much of the question about identifying *kumlieni* appears to have arisen over the immatures, a problem also with some distinct forms such as *smithsonianus* and *glaucescens*.

A striking thing about our series is that the ten Baffin Island adult birds are clearly referable to this form, as are nine of the ten Atlantic coast adults. A Churchill and a Cornwallis Island bird approach *thayeri* in the darker mantle, larger bill, and dark extensive pattern of the wing. They have been identified as *thayeri* by Brooks, and *kumlieni* by Taverner (on the labels). The single doubtful east coast winter bird approaches *leucopterus*, but differs in the darker mantle, greyer (unpatterned) primaries and larger bill.

It appears that *kumlieni* has a population with distinctive characters breeding over a considerable area and that occasional birds intergrade with *leucopterus* on the one hand and *thayeri* on the other. Dwight (1925, *l.c.*) recognized this, but without information as to the breeding ranges of these birds, correlated his facts with the most obvious generalization, hybridization.

#### LEUCOPTERUS-KUMLIENI

As mentioned above we have a series of 23 immature gulls of general pale color, and grey primaries that I am unable to allocate to species. They are from Nova Scotia (winter), New Brunswick (winter) and Baffin Island.

We know that the young Iceland gull is of this type (moulting specimens) as is young *kumlieni* (Hickey, *Proc. Linn. Soc. N.Y.*, 1937, No. 49: 63-66, 1938). Both forms occur here in recognizable plumages. Presumably this series represents both forms.

But in examining it I am unable to separate it into two groups with distinguishing characters.

Having few *leucopterus* for comparison I have used *hyperboreus* young for comparison. This series, in the color of wing and tail vary from slightly to considerably darker and more solidly patterned than corresponding *hyperboreus*. In color, size, and bill it forms an intergrading series. Some of the birds have been identified by Bishop, Brooks and Taverner (identifications on labels). The lightest birds have been labelled *leucopterus* unanimously, the darkest birds *kumlieni*. But there has been a diversity of opinion as to the identity of the birds in the centre of the series. In the light of present knowledge it seems undesirable to allocate names to these birds.

#### THAYERI

*Larus thayeri* Brooks

Adult summer specimens (about 30) indicate a breeding range from the northwest corner of Hudson Bay, north Baffin Land and Coronation Gulf northward.

Adults differ from *kumlieni* in the larger bill, the increase and darkening of the pattern areas on the pale primaries, and the darker mantle.

Our large series shows considerable variation, apparently correlated with neither geography, sex nor age, but only two specimens from Cornwallis Island and Churchill (mentioned under *kumlieni*) are of doubtful allocation (see above).

The young of *thayeri* are said to be very similar to *smithsonianus* (Dwight, 1925, *l.c.*) but we have two immatures from Banks Island (September), perhaps *thayeri*, that are only slightly darker than east coast, winter *kumlieni*, and a Teslin Lake (Y.T.) specimen (September) and a Departure Bay (B.C.) (January) immature (one identified as *thayeri* by Dwight on label) that stand about halfway between the Banks Island birds and a large series of eastern, first winter, *smithsonianus*. This suggests that the young of *thayeri* may prove to be intermediate in color between *kumlieni* and *smithsonianus*, as are the adults.

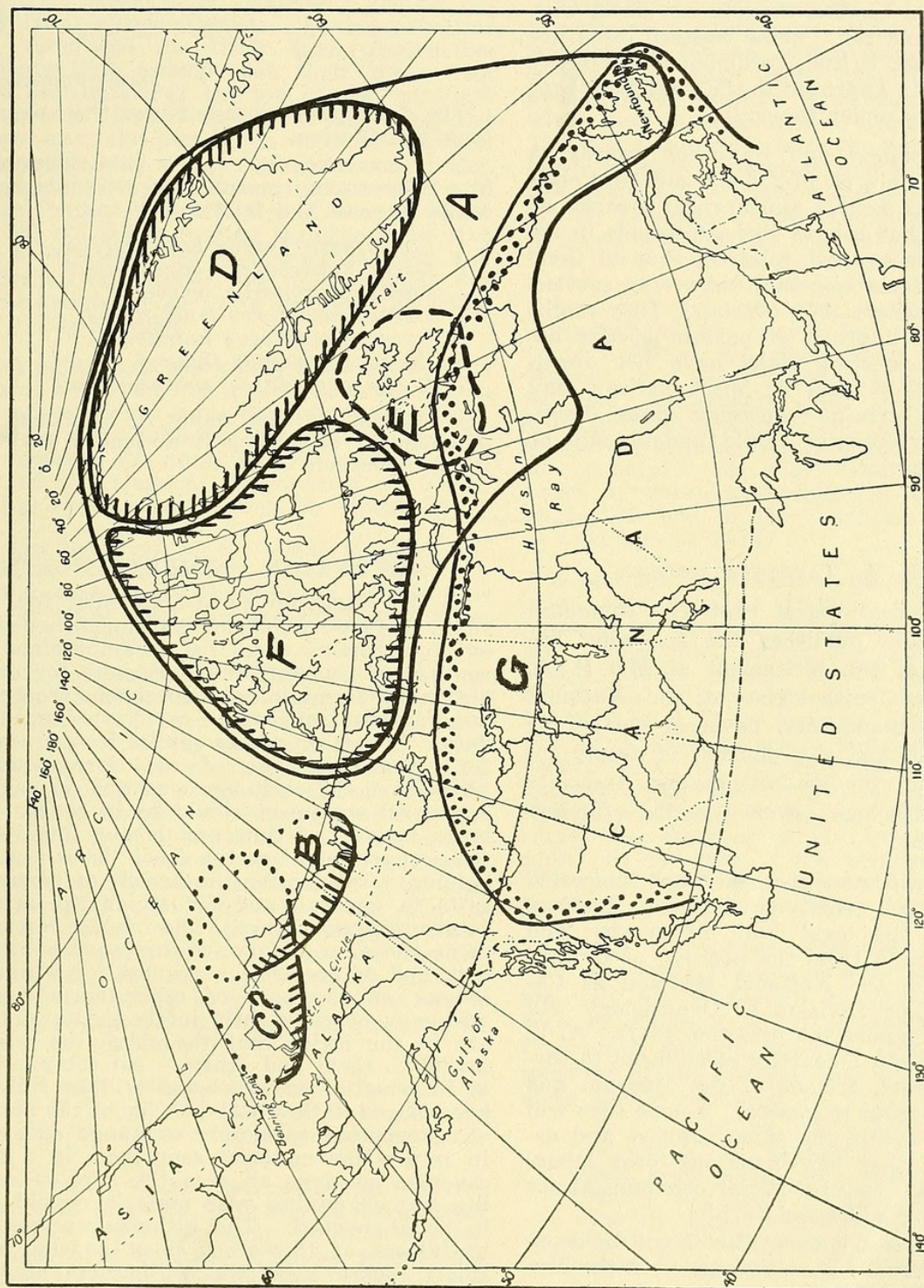
#### SMITHSONIANUS

*Larus smithsonianus* Coues

Breeds north to northern Ungava, southern Baffin Land, northwest Hudson Bay (where it overlaps *thayeri*? judging by summer adult specimens, not definitely known to be breeding, of both forms), the interior of Mackenzie and Yukon territories, and interior British Columbia.

Differs from *thayeri* in the larger bill and the greater extent and increase of pigment in the patterned areas of the wing. Two or three Gulf of St. Lawrence adult birds (one





Outline of breeding ranges of certain gulls (*Larus*) in the Nearctic: A. *hyperboreus*; B. *barrovianus*; C. *nelsoni*; D. *leucopterus*; E. *kumlieni*; F. *thayeri*; G. *smithsonianus*.

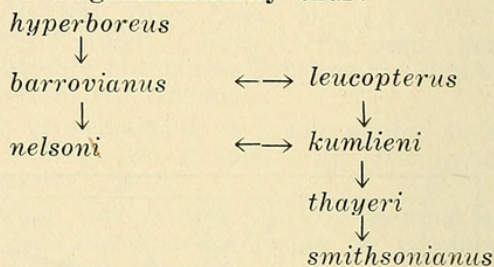


in August) might be called *thayeri* on the basis of primary pattern alone, but they lack the dilution of color and the smaller bill of *thayeri*. It is probable they approach *thayeri* through individual variation rather than represent that form actually.

The undoubted first year young of *smithsonianus* from eastern Canada are dark, with dark wings and tail. Some western birds are paler (Alberta, British Columbia and Yukon) and suggest an approach to the young of *thayeri* (see above under *thayeri*).

"*Larus kumlieni* and its allies" seems to represent a chain of ill-defined, merging entities in fact as well as appearance; a series of populations that behave like subspecies in respect to their nearest relatives, but to their more distant relatives they behave as species, as is shown where they overlap. They might be considered a group of nascent species because the connecting links have not disappeared, as they have in most present day species. If certain connecting links disappeared, the remainder would undoubtedly be considered species.

The relationships of the group can be represented diagrammatically thus:



The accompanying map shows their overlapping distribution.

It is necessary to express this relationship in a conventional nomenclatural system, and I would suggest the following:

1. *Larus hyperboreus hyperboreus*
2. *Larus hyperboreus barrovianus*
3. *Larus leucopterus nelsoni*
4. *Larus leucopterus leucopterus*
5. *Larus leucopterus kumlieni*
6. *Larus argentatus thayeri*
7. *Larus argentatus smithsonianus*.

In preparing this paper I have had the privilege of discussing it at length with Mr. P. A. Taverner.

#### MR. P. A. TAVERNER RETIRES

It is with real regret that *The Canadian Field-Naturalist* publishes the following announcement of the retirement of Mr. P. A. Taverner as Ornithologist of the National Museum of Canada. Mr. Taverner has served long and well and this journal is deeply indebted to him for his services as Associate Editor (Ornithology) over a period of many years.—Editor.

This will announce to those interested that, after thirty-two years, I have reached the legal limit of service and have retired from the position of Ornithologist in the National Museum of Canada. The Division of Ornithology will continue under the direction of Dr. A. L. Rand, whom I heartily recommend to correspondents, friends of the Museum and ornithologists in general. I hope they will extend to him the same support and assistance that has made my past labors pleasant. Future official communications should be addressed to him.

This does not mean that I will be dropping interest in ornithology or in the Museum for I hope to carry on in private capacity much as in the past. I will always be glad to hear from my ornithological and other friends. Until further notice my address will be:—

P. A. TAVERNER,  
45 Leonard Avenue,  
Ottawa, Canada.

#### ATTENTION, HERPETOLOGISTS

In the Canadian Field-Naturalist for February 1942 we published an announcement of our forthcoming check list of amphibians and reptiles of Canada, and a request for distributional information and specimens from various regions from which we have inadequate data. In certain of the replies to our request for specimens some of our correspondents have asked for exchange material, so perhaps a general statement would be in order. The large amount of time and labour involved in the preparation of such a check list is a purely voluntary service for the benefit of herpetologists in general, and for which the authors receive exactly nothing. The request for specimens and data to forward this work is reasonably and of necessity a request for voluntary service on the part of other herpetologists who may be sufficiently interested to co-operate in the belief that the check list will be useful to them and others. All contributions of information or specimens will be fully acknowledged in the check list, but if the authors were expected to supply exchange specimens in return for material sent them in a work covering so large an area the hope of securing and examining such material would have to be abandoned. The ultimate success and usefulness of this work must depend in no small degree upon the willingness of those living in other parts of the North American continent to co-operate voluntarily, since it is manifestly impossible for the authors to visit and collect in all, or any, of the regions from which information or specimens are desired, or to provide material compensation for assistance rendered.

E. B. S. LOGIER and G. C. TONER,  
Royal Ontario Museum of Zoology.





Rand, Austin Loomer. 1942. "Larus kumlien and its Allies." *The Canadian field-naturalist* 56(8-9), 123–126. <https://doi.org/10.5962/p.340405>.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/89066>

**DOI:** <https://doi.org/10.5962/p.340405>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/340405>

#### **Holding Institution**

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

#### **Sponsored by**

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

#### **Copyright & Reuse**

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Ottawa Field-Naturalists' Club

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.