Thayer's Gull

A Checkered History Near Its End?

The science and politics behind a proposal to treat the Thayer's Gull as part of the Iceland Gull complex

In its latest batch of proposals, the AOU North and Middle American Classification Committee is squaring off with what has proven to be one of the most controversial taxonomic disputes known to the ABA Area. The proposal—as I'm sure you've heard by now—calls for Thayer's Gull (*Larus thayeri*) to be lumped with Iceland Gull (*Larus glaucoides*).

Many authorities consider this lump imminent and long overdue, while others remain doubtful and have strong reservations. Why this disagreement on the taxonomy of Thayer's Gull, you ask? The explanation is a bizarre and perhaps disturbing bit of bird lore.

The proposal (2017-C-7) to treat Thayer's Gull as a subspecies of Iceland Gull is noteworthy for two reasons: First, it's one of only a handful of proposed "lumps" in recent years and, second, there isn't any new research *per se* to bolster the proposal. Naturally, some birders are a bit perplexed by all of this. To appreciate the argument being made for lumping these high-Arctic breeders, a historic overview of the Thayer's Gull is in order.

Current Classifications

At this writing, the AOU recognizes Thayer's Gull (*Larus thayeri*) and Iceland Gull (*L. glaucoides*) as separate species. Thayer's breeds in far north-central Canada, mostly above the Arctic Circle, from Banks Island east to Baffin Bay. It generally winters along the northeast Pacific Coast, with small numbers in the interior and east to the Great Lakes. Iceland Gull consists of two subspecies, *kumlieni* and nominate *glaucoides*. The nominate subspecies breeds in southern and western Greenland and generally winters east to Iceland and northern Europe. The Canadian subspecies, *kumlieni* (Kumlien's Iceland Gull), is said to breed on Baffin Island and winters in Newfoundland, the Canadian Maritime provinces, and west to the Great Lakes.

Historical Overview

The type specimen of Thayer's Gull was collected by W. S. Brooks on Ellesmere Island (82° north) in 1915. Soon thereafter, the pioneering gull ornithologist Jonathan Dwight (1917) treated Thayer's as a subspecies of Herring Gull, *Larus argentatus*. Dwight's classification was provisional, as several authorities were unconvinced and challenged the relationship between Thayer's and Herring gulls (see Brooks 1937). Despite growing uncertainty, the American Ornithologists' Union (AOU, now the American Ornithological Society [AOS], but referred to in this article as the AOU) adopted Dwight's classification and for 40+ years (1931–1973) treated Thayer's as a subspecies of Herring.

commentary by

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For several decades, the Thayer's Gull, *Larus thayeri*, has held a certain spell over ABA members. It is one of the defining ID challenges of our age, alternately delighting and vexing us. Part of the bird's mystique is that we're not really even sure what it is! In this commentary, we review the strange scientific history of the Thayer's Gull—and we learn that the story is still a work in progress. Note: The small head and small bill on this winter adult suggest a female. *Half Moon Bay, California; January. Photo by © Amar Ayyash.*

A. H. Macpherson (1961) provided the groundbreaking study that was pivotal in freeing Thayer's Gull from the Herring Gull complex. His fieldwork showed that interbreeding between Thayer's and Herring gulls is nonexistent, and that, moreover, several "isolating mechanisms" prevent mating and therefore gene flow.

Macpherson and others gave traction to what was emerging as an unavoidable and unpopular hypothesis: Thayer's Gull appeared to be a dark, high-Arctic population of Iceland Gull (Salomonsen 1951, Manning 1956, Macpherson 1961). Macpherson's recommendation (1961) was to treat Thayer's as a subspecies of Iceland Gull, noting the similarities in cliff-nesting habits, purplish eye rings, and an apparent gradation of wingtip patterns.

As more and more ornithologists pondered the stark morphologic and eco-geographic similarities among Thayer's, Kumlien's, and nominate Iceland gulls, the emphasis shifted. The question was no longer: "Is Thayer's Gull a Herring Gull?" It had become: "Is Thayer's Gull an Iceland Gull?"

By 1961 the AOU was coming to terms with its need to revise the placement of Thayer's Gull, but it wasn't entirely sure how to move forward. Thayer's remained a subspecies of Herring Gull in the interim while its relation to (Kumlien's) Iceland Gull was being investigated. Enter Neal Smith.

The Neal Smith Scandal

Neal Smith—inspired by the work of Macpherson—conducted several studies on Baffin Island and in northwestern Hudson Bay in the breeding seasons of 1959–1961. He hoped to clarify the phylogeny of the large gulls in the eastern and central Canadian Arctic.

Smith's primary objective was to evaluate which factors contribute to what he called "species discrimination" (reproductive isolating mechanisms) in Thayer's, Kumlien's, Herring, and Glaucous gulls. In particular, he was interested in the roles of eye rings and eye color in large gulls. Smith carried out impressive experiments that included sedating hun-

A proposal under consideration by the American Ornithologists' Union would treat the Thayer's Gull (left, rear) and Kumlien's Gull (right, front) as subspecies within the Iceland Gull. The amount of pigmentation on the outer primaries is helpful in separating Thayer's and Kumlien's gulls on the wintering grounds, but more study is needed to determine the relatedness between the two taxa. *Toronto, Ontario; January. Photo by © Jean Iron.*





Thayer's or Kumlien's? This bird was identified as both by different observers in the field. The dark gray pigment in the wingtips is shown by both taxa. *Winthrop Harbor, Illinois; February. Photo by © Maarten van Kleinwee.*



Two species? Actually, these are probably both assignable to Kumlien's Gull, a North American subspecies of the Iceland Gull. One of the most variable gull taxa on Earth, Kumlien's can show all-white wingtips (front) similar to the European subspecies (glaucoides) or gray–black wingtips (rear) like Thayer's. *St. John's, Newfoundland and Labrador; March. Photo by © Dave Brown.*

dreds of nesting adults and altering their eye-ring colors by oil-painting them. He also spray-painted the upperparts and wingtips of adult gulls and documented the before-and-after results caused by these alterations (Smith 1961).

Smith reported that "in all cases where the female's eye-ring was altered to that of another species, the pair broke up." In another part of the study, he altered the color surrounding the eyes of Thayer's and Glaucous gulls, and reported 55 cases of "induced hybridization" between unmated Thayer's males and Glaucous females. Of note is that no other worker had previously recorded interbreeding between Thayer's Gull and Glaucous Gull.

With respect to Thayer's and Kumlien's gulls, Smith found few colonies where the two were sympatric on the east coast of Baffin Island. He concluded that where the two did overlap, they were reproductively isolated.

Consequently, Smith's study voided the belief that Thayer's is a subspecies of Iceland Gull. All bets were off. The AOU published Smith's monographs and subsequently relied on his conclusions (along with Macpherson's) to elevate Thayer's Gull to a species, *Larus thayeri*.

At the time, Smith's monographs were an impressive set of studies that fascinated the science community in what were truly innovative experiments. But three major delinquencies in Smith's studies later came to light:

- Workers who followed up on Smith's research and visited some of these same colonies found widespread "random interbreeding" between Thayer's and Kumlien's phenotypes on Baffin Island and at Home Bay (Pittaway 1999).
- Segments of the day-to-day timelines in Smith's itineraries were dubious. The timelines implied that he was often at two distant locations at once, simultaneously monitoring multiple colonies. This is especially troubling considering the taxing terrain of Baffin Island—an island larger than California. After being questioned about these timelines, and asked for an explanation of how it was logistically possible to conduct all this work in such a short window, Smith admitted that there were some inaccuracies in his logbooks (Sutton 1968, Snell 1991).
- No biologist or ornithologist has ever been able to duplicate his results (Snell 1988, 1991).

Smith's studies on isolating mechanisms have since been discredited by most authorities. Ultimately even his thesis advisor, Charles Sibley, reverted to the position that Thayer's Gull should be treated as a subspecies of Iceland Gull (Sibley and Monroe 1990).

Author's Thoughts

The authors of the recent AOU proposal maintain that if Smith had thoroughly documented random (non-assorta-



The pioneering ornithologist Jonathan Dwight treated the Thayer's Gull (front) as a subspecies of the Herring Gull (rear), a position that was adopted by the AOU for nearly half the 20th century. *Libertyville, Illinois; December. Photo by © Amar Ayyash.*



Like their adult counterparts, first-cycle Thayer's Gulls are variable. Some, like this individual, are relatively dark, inviting comparison with Herring Gull. Others are much whiter. *Michigan City, Indiana; January. Photo by © Amar Ayyash.*

tive) interbreeding between Thayer's and Kumlien's gulls, the AOU would have enthusiastically accepted Thayer's as a subspecies of Iceland Gull. Now it may be an oversimplification to say that such a decision would have hinged on only one study. Nonetheless, it is the historic narrative of why the AOU never classified Thayer's Gull as a subspecies of Iceland Gull. The recent proposal brings this to light.

Lost in much of this debate, in my opinion, are the painstaking efforts of the Canadian ornithologists who have labored in researching these high-Arctic "white-winged" gulls. For starters, Richard Snell and colleagues have documented non-assortative breeding between Thayer's and Kumlien's on Baffin Island and at Home Bay, where dark-winged and pale-winged birds regularly pair up. He has also analyzed hundreds of museum specimens of adults that were collected throughout the breeding ranges of these taxa, and his findings suggest "continuous phenotypic variation" from darkest to lightest extremes in the plumages of these birds (Snell 1991, Pittaway 1999).

In an analysis presented at the 1991 AOU meeting, Snell and W. Earl Godfrey asserted that all three taxa—*thayeri*, *kumlieni,* and *glaucoides*—vary clinally and display broad overlap in their field characters. The variation is so great that there is no evidence the three are morphologically discrete (Pittaway 1999). The updated *Birds of North America* account (*BNA* no. 699) of these taxa, authored by Snell, concludes that all three essentially behave as one species.

I note that several international bodies do indeed classify the Thayer's Gull as a subspecies within the Iceland Gull complex: Ontario Field Ornithologists, British Ornithologists' Union, and others. Also worthy of mention is the Alaska Checklist Committee's longstanding conviction that Thayer's Gull is the darkest subspecies of Iceland Gull. Thus, the Alaska committee excludes Thayer's Gull from its state checklist. Classifying Thayer's a subspecies of Iceland Gull is not without precedent, having been employed by various workers and committees around the world for quite some time.

Concluding Remarks

This complex of large white-winged taxa remains among the least studied of North American gulls. To be sure, more work is needed to better understand Thayer's, Kumlien's, and nominate Iceland. There is a large void of genetic sampling from both the breeding colonies and the wintering grounds. The extent of interbreeding is difficult to measure for the simple reason that the characters of Thayer's Gull are not well defined. Howell and Elliott (2001) ask a reasonable question: "At what point do Thayer's become reliably separable from Kumlien's?" Consider, for example, the numerous pale-winged adults found on Ellesmere Island, where it is thought that only Thayer's breeds (Parmelee and MacDonald 1960). The pale wingtips of these birds are what all of us would consider Kumlien's Gulls on the wintering grounds—a mortifying thought, given that no range map shows Kumlien's extending so far north into the Arctic.

With Thayer's Gull given full-species status in 1973, there was little incentive for researchers to invest in studying these high-Arctic cliff nesters. Whether this proposal passes or not remains to be seen, but it does promise to motivate many observations and studies in the upcoming years.



Some first-cycle birds are attributable to either Thayer's Gull or Kumlien's Gull, with the probability of geography playing an undeniable role in the determination. This individual might be called a Thayer's Gull in California but a Kumlien's Gull in New England. *Half Moon Bay, California; December. Photo by © Amar Ayyash.*



Even if we "lose" the Thayer's Gull, the taxon will continue to interest birders. The phenomenon of plumage variation within the Thayer's–Kumlien's complex is eminently observable, and basic questions of field ID and winter distribution remain to be worked out. *Milwaukee, Wisconsin; February. Photo by © Amar Ayyash.*

Note: Readers are encouraged to review the full text of Jon Dunn and Van Remsen's proposal to the AOU, available online at tinyurl.com/AOU-ThGu-2017.

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What do we know about the winter ranges of Thayer's and Iceland gulls? The field ID of extralimital birds is often conjectural, and the taxa may be undergoing range shifts. This adult from Florida exhibits plumage, morphology, and bare parts characters of Thayer's Gull. *Daytona Beach Shores, Florida; January. Photo by © Amar Ayyash.*