

American Herring Gulls



Newfoundland



Niagara

Olav Jonsson

American Herring Gulls at Niagara Falls and Newfoundland

Differences in wing tip patterns suggest
two distinct populations

Lars Jonsson and Bruce Mactavish

In the summer of 1986, the late Peter Grant (pers. comm.) noted that a large number of the adult Herring Gulls *Larus argentatus smithsonianus* in a cove in Newfoundland were with reduced black on the wing tip, very reminiscent of the sorts of patterns one gets on some "thayeri-type" *L. a. argentatus* as described in Grant (1986). The Newfoundland birds had less black in the wingtip pattern than the Herring Gulls he had studied at the Niagara River. Grant was one of the first to suggest that these two populations of Herring Gull might represent separate subspecies. The purpose of this note is to reinforce this idea and alert birders to differences in the adults.

The AOU Checklist Sixth Edition (1983) lists *smithsonianus* as the only subspecies of Herring Gull breeding in North America. Geographical variation has been suggested by several ornithologists. Dwight (1925) brought attention to a possible difference between western and eastern *smithsonianus* in a note in his classic "The Gulls (Laridae) of the World" (Dwight 1925): "I am informed by Dr L. B. Bishop that specimens from the Pacific Coast never have but one mirror, and I have several specimens from the Pacific Coast that support this contention. It is noted however, that these birds are somewhat backward, or they may represent a constant variation."

A quick glance in the standard field guide literature shows *smithsonianus* with two white mirrors on the outer two primaries, and no variation in this character is discussed. The extralimital taxa *vegae*, in extreme northwest Alaska, and *argentatus/argenteus*, as a vagrant along the northeastern seaboard, are also covered in current literature (Sibley 2000).

Both authors had the good fortune to attend the Birders Journal North American Gull Conference held at Niagara Falls, Ontario from November 24-26th, 2000. This was the first opportunity for Mactavish to study winter Herring Gulls outside his home province of Newfoundland. He was struck by the large amount of black and small amount of white exhibited in the wing tips of the majority of adult Niagara Herring Gulls. Jonsson independently noted similar differences between the Niagara birds and winter Herring

Gulls that he had studied in Massachusetts. While at the Niagara River the authors began sharing thoughts and notes on the Niagara Herring Gulls.

The hordes of wintering Herring Gulls at Niagara showed a great deal of variation, and some birds certainly matched the birds seen at coastal Atlantic sites. The observed differences however call for closer study at various breeding sites to more fully understand the geographical variation within the area occupied by *smithsonianus*. The following material has been extracted from field notes as well as examination of photographs taken by the authors in Niagara in November 2000 (designated the Niagara population or birds) and Newfoundland (designated the Newfoundland population or birds) respectively. In all, 100 adult birds from the wintering population of Newfoundland were examined and 62 from the Niagara population. In the field, it is usually very difficult and time consuming to find out if P9 shows any trace of white, therefore many birds of the Niagara sample observed in the field were excluded from the discussion. Also, sometimes the material (photos or field notes) does not allow us to specify the size or extent of a mirror on P9.

STRUCTURE

Birds at Niagara Falls were generally smaller-looking, with shorter legs, less sturdy bills, and more rounded heads. The general differences in structure or jizz were difficult to verify by any method of measurement and are based on field impression. Many birds observed at Niagara Falls appeared quite petite, similar in fact to several of the Iceland Gulls *L. glaucoides kumlienii* that were also present. The differences in field impression to some extent match those between *argenteus* in western Europe and *argentatus* from northern Scandinavia.

WING TIP

In general, the Niagara birds had more black in the six to seven outermost primaries, with the outermost two showing less white. None of the birds at Niagara Falls exposed a pure white tip or broken subterminal bar to P10 compared to 61% in Newfoundland (figure 1). Most striking however were the differences in the pattern of P9: 90 % of the Niagara birds lacked a white mirror on P9, compared to 7% of the Newfoundland birds (figure 2).

Black on P4 was found on 34 % of the birds at Niagara Falls while only 2% of the Newfoundland birds showed some dark pigment on P4 (figure 3). A solid or complete black subterminal band across P5 was present on 96% of the Niagara birds but in only 65% of Newfoundland birds (figure 4).

The Niagara birds were more extensively black on the inner webs of the six outermost primaries. This created the impression of a full black wing tip above and below. Newfoundland birds tend to have long tongues of gray on the inner webs, extending deep into the black, creating a more hollowed-out black wing tip. This is more obvious on the under side because the gray inner webs are more fully exposed, leaving a remnant blackish leading and trailing edge to the wingtip in the shape of an upside down "7". At rest, the gray tongue on the underside of P10 is not usually visible on Niagara birds, while on many Newfoundland birds the gray tongue is visible during rest, and frequently the gray tongue of P9, and occasionally P10, breaks through the black barrier to reach the white mirror.

P10 Pattern of adult Herring Gulls from Niagara River and Newfoundland

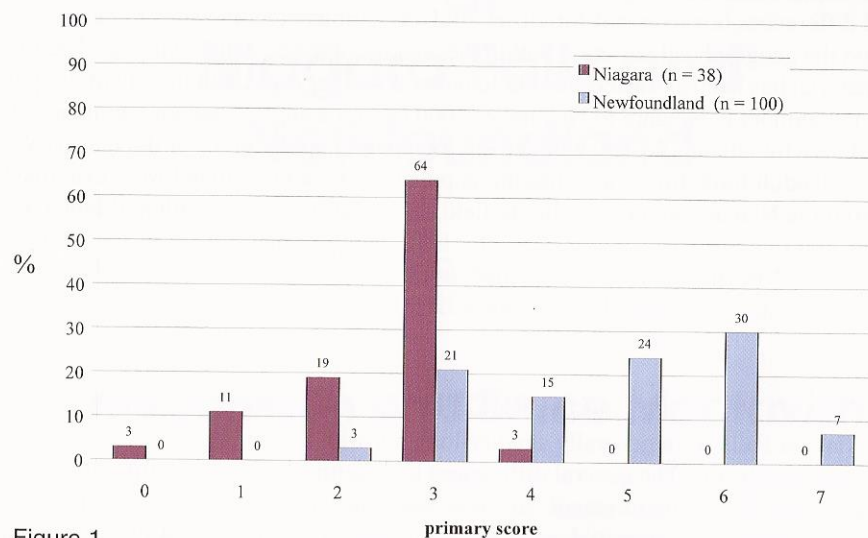


Figure 1

P9 Pattern of Adult Herring Gulls from Niagara River and Newfoundland

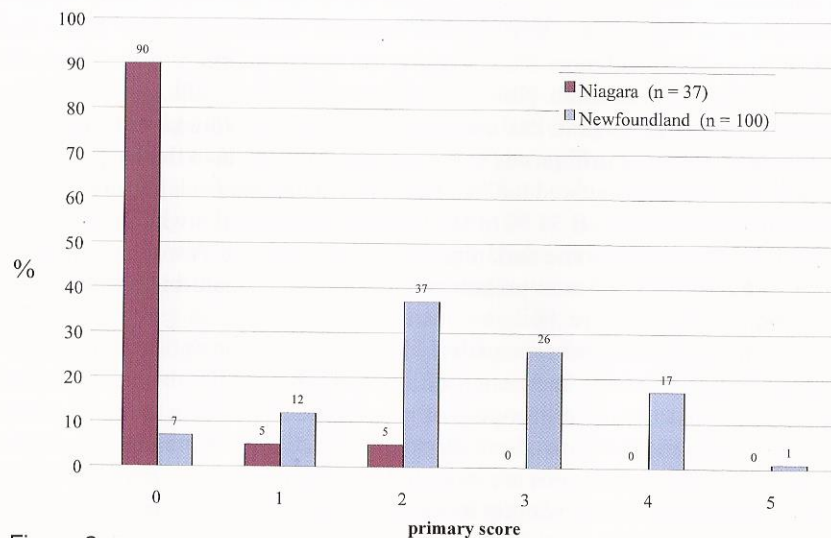


Figure 2

P4 Pattern of adult Herring Gulls from Niagara and Newfoundland

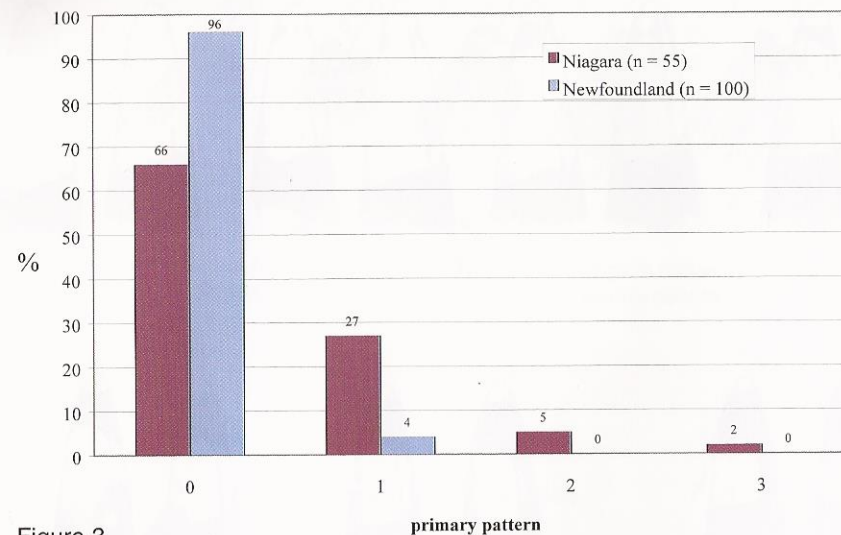


Figure 3

P5 Pattern of adult Herring Gulls from Niagara River and Newfoundland

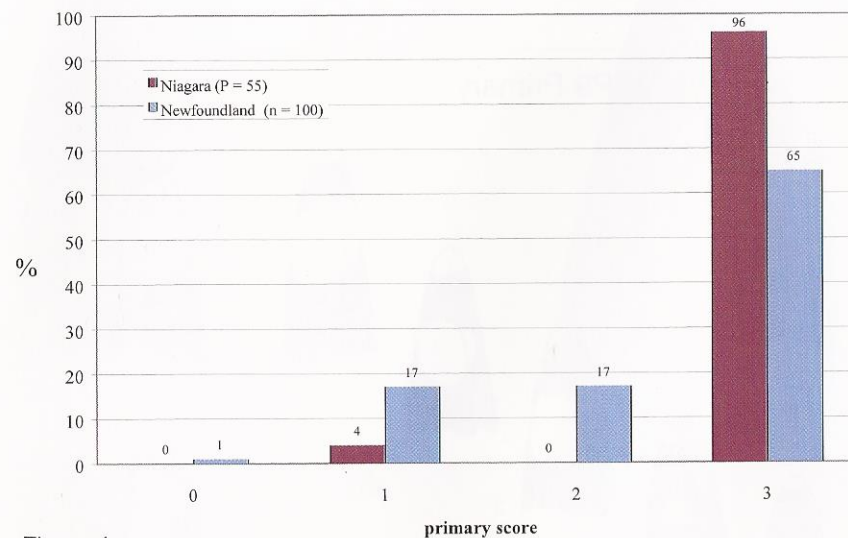
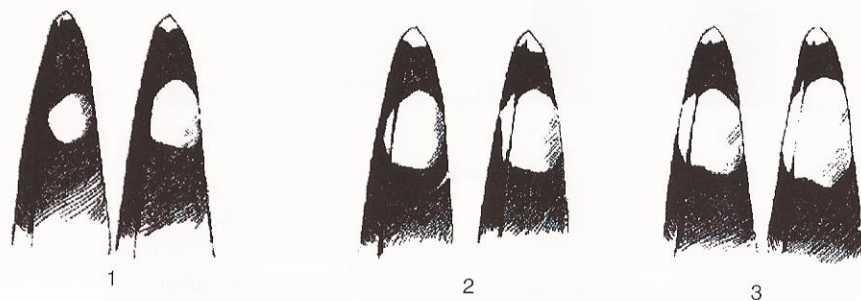
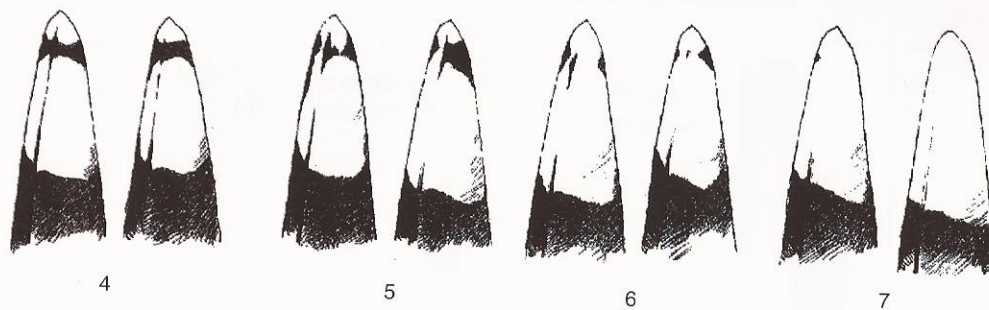


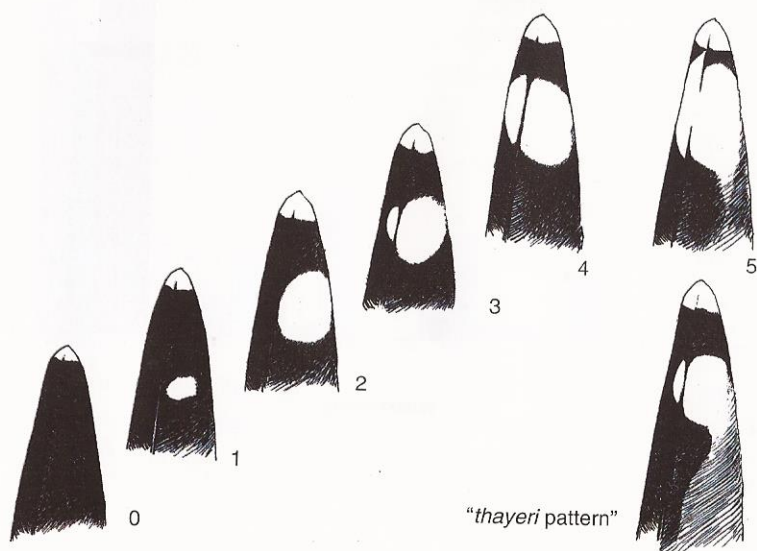
Figure 4

The following illustrations show primary codes referenced in the photo captions

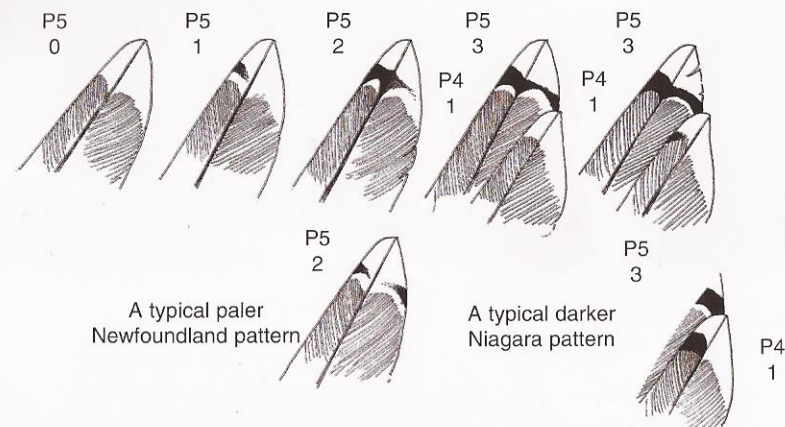
P10 Primary Pattern



P9 Primary Pattern



P5 and P4 Primary Patterns



Typical wing tip examples



Niagara



Newfoundland



Photo 1. Adult Herring Gull, February 25, 2001, St. John's, Newfoundland (Bruce Mactavish).
Primary Codes P10 = 6; P9 = 2; P5 = 2; P4 = 0. A common wing tip pattern for Newfoundland *smithsonianus*.
Note that the long gray tongues on the inner webs of P8 and P7 are nearly the same length.



Photo 2. Adult Herring Gull, December 10, 2000, St. John's, Newfoundland (Bruce Mactavish).
Primary Codes P10 = 4; P9 = 2; P5 = 3; P4 = 0. Another fairly common wing tip pattern of Newfoundland *smithsonianus*. A substantial subterminal bar on P10 approaching a score of 3 and the thick bar on P5 are approaching the characteristics of Niagara *smithsonianus*. Note the long gray tongues of P9-P7.



Photo 3. Adult Herring Gull, February 25, 2001, St. John's, Newfoundland (Bruce Mactavish).
Primary Codes P10 = 6; P9 = 4; P5 = 3; P4 = 0. Note the large mirror on P9 breaking through to the leading edge of the feather. On the right wing, P9 is out of place, revealing the inner web and the gray tongue joining the mirror. This is sometimes referred to as the "thayeri pattern". Difficult to determine in the field, the "thayeri pattern" occurs on 5-10% of Newfoundland birds in winter. The "thayeri pattern" often occurs on birds with a pure white tip to P10 and a narrow or incomplete bar on P5. However, as can be seen in this photograph, the pattern can occur with a complete subterminal bar on P10 and a thick bar on P5.



Photo 4. Adult Herring Gull, February 25, 2001, St. John's, Newfoundland (Bruce Mactavish).
Primary Codes P10 = 7; P9 = 3; P5 = 1; P4 = 0. Note the pure white tip to P10 and black on the outer web of P5 only (inner web damaged).



Photo 5. Adult Herring Gull, February 25, 2001, St. John's, Newfoundland (*Bruce Mactavish*). Primary Codes P10 = 6; P9 = 4; P5 = 1; P4 = 0. Tiny black marks near the tip of P10 are visible on the right wing. A tiny mark on P5 is visible in the original photograph but it would look unmarked in the field. Although not visible in the photograph, the gray tongue reached the mirror on P9.



Photo 6. Adult Herring Gull, February 25, 2001, St. John's, Newfoundland (*Bruce Mactavish*). Primary Codes P10 = 5; P9 = 3; P5 = 1; P4 = 0. Note on the underside of the right wing that the gray tongue on the inner web of P10 nearly joins the mirror. On some Newfoundland *smithsonianus* this barrier is breached, creating a "thayeri pattern" on P10 as well as P9. Note the long gray tongue extension on the inner webs of P9, P8, and P7.



Photo 7. Adult Herring Gull, January 24, 2001, St. John's, Newfoundland (*Bruce Mactavish*). Primary Codes P10 = 4; P9 = 4; P5 = 1; P4 = 0. Note the overall pattern of black on the upper surface. The relatively narrow black leading edge and thin trailing edge to the wing tip area create a hollowed-out hand or upside down number "7" because of the limited black on the inner webs of P9 and P8 and the outer webs of P7 and P6.



Photo 8. Adult Herring Gull, January 24, 2001, St. John's, Newfoundland (*Bruce Mactavish*). The upside down "7" image is more pronounced on the underside because the extensively gray inner webs obstruct views of the black on the leading webs of P5-P9. On P10, note the black barrier between the gray tongue and the mirror is the nearly the same length as the mirror. It is more common for the mirror to be longer than the black bar separating the mirror from the gray tongue.



Photo 9. Adult Herring Gull, February 25, 2001, St. John's, Newfoundland (Bruce Mactavish). Note that the underside of P10 on this Newfoundland *smithsonianus* shows the gray tongue narrowly penetrating the black barrier to reach the mirror. A small percentage of Newfoundland birds show this characteristic.

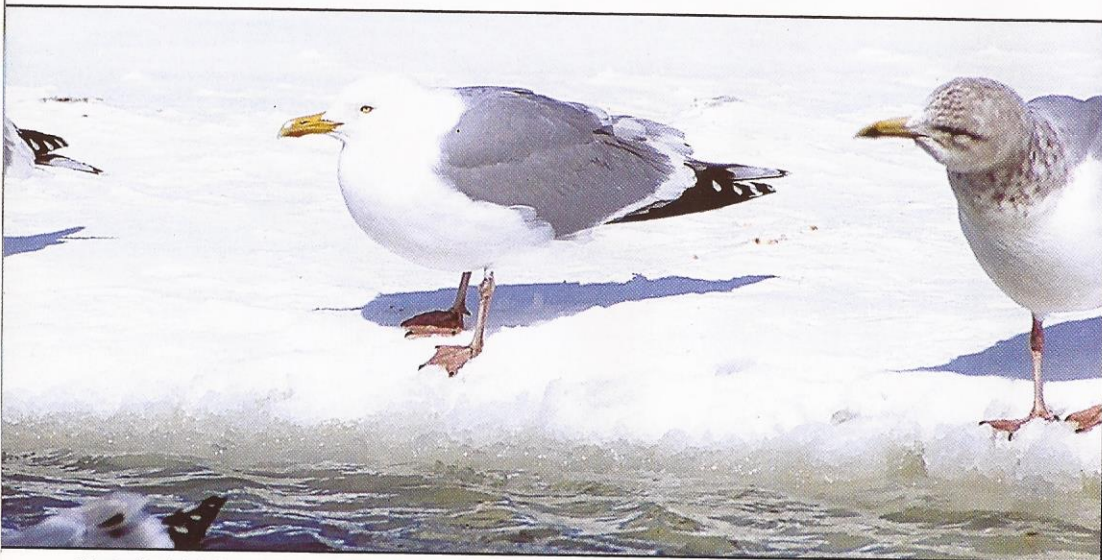


Photo 10. Adult Herring Gull, March 14, 2001, St. John's, Newfoundland (Bruce Mactavish). A typical adult Newfoundland *smithsonianus* at rest with the underside of P10 showing a large white tip with a thin broken subterminal bar and a glimpse of the gray tongue on the inner web.



Photo 11. Adult Herring Gull, January 10, 2000, St. John's, Newfoundland (Bruce Mactavish). Primary Codes P10 = 6; P9 = 3; P5 = 1; P4 = ?. A typical adult Newfoundland *smithsonianus* preening. Note that the largely white tip to P10 is longer than the blackish barrier separating it from the gray tongue of the inner web. When viewed from the underside, the translucent white tip allows a diffuse image of the subterminal bar of P9 to come through. This should not be confused with the black tick marks of P10, similar in size above and below.



Photo 12. Adult Herring Gull, February 5, 2001, St. John's, Newfoundland (Bruce Mactavish). A typical fourth-winter or adult Newfoundland *smithsonianus* with a largely white tip to P10 and no view of the gray tongue of the inner web.



Photo 13. Adult Herring Gull, late November, 2000, Niagara River, Ontario (Lars Jonsson). Primary Codes P10 = 3; P9 = 0; P5 = 1; P4 = 0. The wing tip is dominated by black: the small mirror on P10 is separated from the small white tip by a broad black band, and there is no mirror on P9. Notably, black extends farther up the outer and inner webs of P7-P9 than on a typical Newfoundland *smithsonianus*. The gray tongues of P8-P6 are separated from the black subterminal marks by a narrow white crescent, typically much broader on Newfoundland *smithsonianus*. The white tips of P10-P5 are somewhat smaller than on Newfoundland *smithsonianus*.



Photo 14. Adult Herring Gull, November 24, 2000, Niagara River, Ontario (Bruce Mactavish). The mirror is completely dominated by the extent of black on both the upper and under surface of the wing. This effect is produced by the relatively small P10 mirror, no P9 mirror, and the extensive black on the inner webs of P10-P7. Particularly noteworthy is the extent of black on the inner web of P8: the black extends well up from the tip and then cuts diagonally across the feather, continuing over P9 and P10 on the same angle, creating a black wedge. On a typical Newfoundland *smithsonianus* the gray tongues on the inner webs of P8-P6 dip deep into the black leaving a hollowed-out wing tip. Note that this bird had not completely regrown P10.



Photo 15. Adult Herring Gull, November 24, 2000, Niagara River, Ontario (Bruce Mactavish). As on the previous bird, note the black wedge created by P10-P8 and the outer web of P7. There is a single small mirror with a wide subterminal bar, and the wing tip is nearly as dark on the underside as above. In typical Newfoundland *smithsonianus*, the underside is slightly grayer than the black above.



Photo 16. Adult Herring Gull, November 24, 2000, Niagara River, Ontario (Bruce Mactavish). This photo, like the previous two, shows the extensive black on the underside of the wing tip. This is caused by more black on the inner webs of the outer four primaries, particularly P9 and P8. The black on the inner web of P10 is more than twice the length of the mirror. On Newfoundland *smithsonianus*, the black on the inner web of P10 is highly variable, but commonly closer to being the same length as the mirror.



Photo 17. Adult Herring Gull, late November, 2000, Niagara River, Ontario (Lars Jonsson). Primary Codes P10 = 2; P9 = 0; P5 = 1; P4 = ?. Note that P10 is still undergoing moult. The inner webs of the primaries are more fully exposed on the underside of the wing, revealing the extensive black on the P10-P7 webs creating a fuller black wing tip than on typical Newfoundland birds.



Photo 18. Adult Herring Gull, late November, 2000, Niagara River, Ontario (Lars Jonsson). A petite Niagara Herring Gull with a small rounded head, short bill, slim neck, and shallow chest. On average, Niagara Herring Gulls gave the impression of being more delicately built than Newfoundland birds. A small mirror is visible on the not yet fully moulted P10.

Although a number of Niagara birds would fit into the variation of the *smithsonianus* Herring Gulls found along the coast of northeastern North America, it is obvious that the population of wintering Herring Gulls around Niagara Falls consists largely of birds from a different population. It is possible that most of interior Canada including the Great Lakes is inhabited by the "Niagara" phenotype and that the "Newfoundland" phenotype is typical of coastal populations along the Atlantic seaboard. It is also possible that the wintering gulls around the Niagara River are of a distinct northern origin. Banding returns show that there is some mixing of Great Lakes and Newfoundland populations during winter and migration.

At this point we do not know much about the origin of the Niagara birds or where a possible split between the phenotypes can be found, nor if the described differences are clinal. It is however quite obvious that *smithsonianus* consists of at least these two distinct phenotypes, with most likely different geographical origins.

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