

Multiple Occurrences of Dark-bellied Brant (*Branta [bernicla] bernicla*) in North America

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ABSTRACT

The first two North American sight records for *Branta bernicla bernicla* (known in Europe as "Dark-bellied Brent Goose"), from New York and Virginia, and the first two North American specimens, from New Jersey and Canada, are recorded. The two field observations were made in the winter of 1999–2000, whereas the skins date to 1846 and 1907, respectively. Recent additional reports are also at hand from Bathurst Island (Canada) and Massachusetts; the taxon has occurred at least once in Greenland and is now annual in increasing numbers in Iceland, with most individuals there found in flocks of westward-migrating *hrota*. It seems likely that nominate *bernicla* has been overlooked in North America for some time, at least in part owing to poor information on its separation from other brant taxa, especially in first-winter plumages. With recent order-of-magnitude increases in the European population, its occurrence in North America is likely to become more frequent.

INTRODUCTION

The taxonomy of the various brant/brent geese (hereafter "brant," the North American name for this group of geese) has had a checkered history and is still in flux. The American Ornithologists' Union's (A.O.U.) *Check-list of North American Birds* through its fifth edition (1957) treated the two North American forms *nigricans* and *hrota* as separate species ("Black Brant" and "Brant," respectively), but by the sixth edition (1983) all the world's brant were lumped in a single species, Brant *Branta bernicla*. Europeans had generally applied separate names to their two common and readily identifiable taxa of "Brent Goose": nominate *bernicla* ("dark-bellied form") and *hrota* ("pale-bellied form"). They sometimes recognized *nigricans* as a sepa-

rate species, using the North American name "Black Brant," but eventually they too adopted the A.O.U.'s view of only a single Holarctic species of brant.

With the recent popularity of the so-called "Phylogenetic Species Concept" (or "PSC"; cf. McKittrick and Zink 1988) advocated strongly by a number of Dutch researchers and impelled by the increasing recognition of populations deemed "diagnosable" by molecular techniques (especially using mitochondrial [mt] DNA), a split of the brant into three species has been proposed: Pale-bellied Brent Goose (*B. hrota*), Dark-bellied Brent Goose (*B. bernicla*), and Black Brant (*sic: B. nigricans*, Sangster et al. 1997).

Not yet ready to accept the PSC unreservedly at this stage of development, the British Ornithologists' Union (B.O.U.) and the A.O.U. have retained the traditional approach to defining species known as the Biological Species Concept (or "BSC"). Historically, application of the BSC has involved the recognition of geographical subspecies, most of which are almost automatically elevated to species under the PSC. Although we generally agree with use of the BSC in avian taxonomy, and while some recent biological work on the world's brant populations is beginning to suggest that there are actually several biological species of brant, this is not the place for such a discussion.

The fifth edition of the A.O.U.'s *Check-list*, the last to treat subspecies in detail recorded only *hrota* and *nigricans* from North America; no subsequent reviews of brant in North America (e.g., Palmer 1976 Reed et al. 1998) have changed that status.

With the sinking of Black Brant as a separate species by the A.O.U., interest in field identification of the various brant "types" waned in North America, although it remained strong in Europe. This unfortu-

nately led to a drop in reports of extralimital *hrota* on the West Coast south to California and Black Brant in eastern North America (both groups had previously been tracked reasonably well), and to an almost complete lack of interest in (or even awareness of) the European "dark-bellied" form (nominate *bernicla*). Most European field guides (e.g., Peterson et al. 1954) did not depict its various age classes or expend much effort on separating it from the rest of the world's brant until Millington's (1997) paper and Mullarney et al.'s (1999) fine guide. Consequently, few in North America were looking for it or expecting it.

In January 1986, at Jacob Riis Park in Queens, New York City, New York, PAB found a dark adult brant feeding on a golf course with several thousand *hrota*. It was strikingly different from them but was also clearly not *nigricans*. Reference to the available but identification-weak literature (especially Delacour and Scott 1954) strongly suggested nominate *bernicla*, but the bird could not be photographed and was never relocated; PAB eventually left it formally unidentified. At the time, this was the first hint that *bernicla* might be occurring in North America.

RECENT NORTH AMERICAN BERNICLA OBSERVATIONS

In the late fall and winter of 1999–2000, two different sets of observers, in Nassau County, Long Island, New York and at Cape Charles, Northampton County, Virginia, each found oddly plumaged brant (First Basic [=HY] in New York, adult [=ASY] in Virginia) that after some research were identified as nominate *bernicla*. At the time, we believed these represented the first firm reports of this taxon from North America.

- **NEW YORK**—The first was found by PAB and SSM at Zach's Bay, Jones Beach State Park, Nassau County, Long Island, New York on 23 November 1999. It was only seen swimming but was studied for 15+ minutes as close as 75–100 m. Detected independently by each observer, it was easily relocated several times without optics and studied through telescopes under diffusely overcast sky with mid-day side-lighting. Field notes taken at the time by the observers were later expanded. It was immediately picked out with binoculars while on the water as a curiously "all-dark HY brant" whose juvenal dorsal white markings were restricted to only two covert bars and whose flanks were devoid of white markings of any kind. Even though an HY bird, it did not associate with any adult *hrota*. At the time, the



Figure 1. Ventral views of adult nominate *bernicla* (Dark-bellied) Brant, from left to right as follows: unsexed, August 1907, Carey Islands, Davis Straits, Nunavut, Canada (MCZ 576365); female, 9 February 1922, UK (AMNH 730855); female, 18 March 1847, Egg Harbor, New Jersey (AMNH 45893); and female, 10 March 1910, Tring, United Kingdom (AMNH 730861). Photograph by P. A. Buckley.

observers thought it might be a first-winter *nigricans*.

Especially at a distance, it looked uniformly brownish-gray. Its smoky hue and uniformly dark flanks rendered it unique within its *hrota* flock. It was slightly smaller than the accompanying *hrota*, with the same neck and body proportions and a faint trace of a broken neck-ring, visible only through telescopes. Compared to accompanying *hrota*, it was slightly darker and grayer dorsally and considerably darker and browner ventrally.

Thus, the contrast between the back and the flanks was much less striking than in any first-winter *hrota* in the same flock, with only a barely perceptible difference in hue between the two areas. This impression of uniformity was reinforced by the complete absence of light spotting on the scapulars and of white crescents on the flanks. A few young *hrota* in the flock did have somewhat dark (juvenal) flanks, but each without exception showed at least some distinctly contrasting and easily visible vertical white crescents. The blackish head and upper breast showed a discernible change to the lighter coloration of the lower breast and belly, but unlike the condition in adjacent *hrota*, this line was not obvious to the unaided eye. Unlike virtually all *nigricans*, though, the line was easily visible through scopes. The belly (seen well once, when the bird reared back and flapped) was uniformly dark and concolorous with the flanks, the darkness extending at least to the mid/lower belly, beyond

which it was obscured by the water.

This bird was strikingly different from every *hrota* there, and while there were not very many young (perhaps 50 in a flock of 500), all showed paler and browner backs with more extensive white feather edging, distinct breast/belly color differences obvious to the unaided eye, and prominent white crescents on their flanks. Apart from appearing smaller, the bird showed no striking differences in shape, posture, or carriage. [After this was written, composite good matches to the New York first-winter bird were depicted in *Birding World* 13: 3 (2000) on two *bernicla*: one immediately to the left (even though depicting four rows of white edging) and one to the right (three rows of white edging) of the Red-breasted Goose (*Branta ruficollis*). In turn, body color and tone are well matched by an adult in *Birding World* 10: 14 (Plate 8) 1997.]

PAB and SSM were unable to photograph it but at the time were not overly concerned, as a brant flock was usually in this location on higher tides. Unfortunately, it was not appreciated then that many different, small subsets of the 10,000+ brant wintering in adjacent saltmarshes were periodically coming into Zach's Bay to preen and rest. Despite intensive searching by many people, this HY *bernicla* was never relocated, so it may have still been on southward migration.

- **VIRGINIA**—On 22 March 2000 from 1730–1745, ESB studied an adult *bernicla*



Figure 2. Dorsal views of same individuals in Figure 1. Photograph by P. A. Buckley.

among a flock of 11 *hrota* just off the beach at Cape Charles, Northampton County, Virginia at a distance of 50 m in good cross-light. A small flock had been present there 21 March but contained only *hrota*; subsequent searches for this bird were not successful, as the *hrota* in the southern Delmarva had by this time largely departed.

This *bernicla* was similar in size and shape to *hrota* but was generally darker brown above and had a dark belly and sides; the rearmost flanks were markedly paler but not whitish. Vent and all tail coverts appeared to be white, with black rectrices. Upperwing coverts lacked pale edges, and there was a typical adult partial white neck collar; these neck markings did not meet on the throat (*contra* Black Brant, for which ESB had been searching). It was dark below—including the entire breast and uppermost sides—through the center of the belly to past the legs (it stood for a good while on the sandbar with the *hrota*, so it was easy to study the underparts). The sides of the body were a somewhat lighter wood-brown than the center of the belly but not the milky pale brown of *hrota*. The scapulars and upperwing coverts appeared fresh and unworn, giving no indication of pale edges recently abraded off. Compared to *hrota*, it seemed smaller overall but longer in the neck and gave the impression of a different distribution of bulk in the body—a bit less even, and heavier looking toward the breast. Bill proportions looked about the same as the accompanying *hrota*. Juvenile *hrota* below are typically fairly pale ventrally past the black neck/breast, having only a bit of

sooty brown in the sides or flanks, but in this *bernicla* the opposite was true—the only significant paleness seemed to be in the bases of the flank feathers. There was none of the flank contrast typical of Black Brant, just some subtle scalloping.

Plumage details of both Virginia and New York individuals rule out even aberrant *hrota*, but other taxa or populations are not so quickly dismissed, especially using the currently available brant identification literature. The Virginia adult could be confused with a worn post-breeding adult *nigricans* (or perhaps a one-year-old bird) lacking any white flank blaze, but such individuals are not only rare, they should carry such a plumage only in early to mid-summer, not winter. Several are shown in Figure 3 in Reed et al. (1998); note their striking, full neck rings.

Identification of young *bernicla* is a bit less straightforward. Juvenile and first-winter *nigricans* are rarely depicted (and not always accurately), but examination of specimens at the American Museum of Natural History (AMNH), the Museum of Comparative Zoology (MCZ), and the Canadian Museum of Nature, Hull (CMN) confirms that they almost always show a striking white flank blaze, that dorsal color (sooty black) is concolorous with belly color, and that there is usually little or no demarcation between black neck stocking and breast. *Nigricans* still bearing juvenal contour feathers (mostly replaced before beginning migration) are rare on the wintering grounds but typically show at least traces of white flanks, have a strong neck ring (even if incomplete), and are strikingly blackish in color ventrally and dor-

sally, never smoky grayish brown. Lastly, *nigricans* is typically thick-necked and “chesty,” even on the water, while the New York bird was even slighter than (but still proportioned like) *hrota*.

A generally unrecognized identification contender is the little-known “Gray-bellied Brant” that nests in the Western Canadian High Arctic only on the Parry Islands (Melville, Prince Patrick, and Borden) and which winter nearly exclusively in certain portions of Puget Sound (“Western High-Arctic Brant” in Figure 2 of Reed et al. 1998). This small population—at present lacking taxonomic recognition—can in some respects be viewed as morphologically intermediate between *nigricans* and *hrota*. It was profiled in European birding journals after vagrant individuals were detected several times in Ireland (Garner 1998, Garner and Millington 2001), and recently three adult geese on western Long Island, New York that also appeared to be Gray-bellied were photographed and described by Buckley and Mitra (2002).

Adult Gray-bellied Brant seem to be somewhat variable, with some tending toward *hrota* while others approach *nigricans* in darkness (hence its description by many authors as an “intermediate” population). But such light birds may actually be *hrota*, whereas the darkest individuals are generally separable from *nigricans*. Until Garner and Millington (2001), first-winter Gray-bellied Brant had not been described or illustrated. However, reference to photographs in that paper and to unpublished photographs taken on the Parry Islands indicate that both adult and first-winter Gray-bellied Brant nearly always show a conspicuous white flank patch—not as strong as in *nigricans* and actually more like *hrota*. In this respect, they are qualitatively different from *bernicla*. Even fresh juvenile Gray-bellied Brant (lacking any first-winter flank feathers) differ from *bernicla* at least with respect to the absolute color tone of the upperparts: dark brown in the former and smoky grayish brown in the latter. Thus, Gray-bellied Brant can also be safely excluded from identification consideration in both the New York and Virginia individuals.

Scrutiny of any flock of *hrota* usually reveals more individual variation than field guides indicate. Some of this variation relates to age—e.g., juvenal plumage is varied and is routinely retained, especially ventrally, as late as May of juveniles' second year—and some is seasonal: juvenile neck rings are slight or lacking on arrival on winter grounds but molt in during the winter, whereas adults become uniformly darker as their plumage wears, and worn birds can appear quite barred ventrally and

appear suspiciously dark-bellied at a distance. There is also individual variation in plumage, which is generally less pronounced than variation related to age and season.

NORTH AMERICAN SPECIMENS OF *BERNICLA*

Subsequent to these observations, PAB examined the large series of brant at the American Museum of Natural History in New York and the Museum of Comparative Zoology in Massachusetts. In the process, he uncovered two previously misidentified brant from North America referable to *bernicla*. PAB and SSM subsequently compared and photographed both side-by-side with European *bernicla* skins at the AMNH. Given that they antedate the sight records above, they become the first records for this taxon in North America. For different reasons, both are also of historical interest.

(1) The first was an adult (AMNH 45893) collected at Egg Harbor, New Jersey on 18 March (Figures 1–3, second bird from right). No year is indicated on the label, but Delacour and Zimmer (1952) gave it as 1847. It is one of two specimens from the G. N. Lawrence collection taken in 1846–1847 at Egg Harbor, the first of which (January 1846), an adult male, was described by Lawrence in 1846 as *nigricans*; it is now AMNH 3211 and in the AMNH Type Collection (Figure 4).

A paper by Delacour and Zimmer (1952) entitled “The identity of *Anser nigricans* Lawrence 1846” correctly pointed out that Lawrence’s type differs significantly from what we today know as “*nigricans*”—what most authorities call Black Brant. They suggested that Lawrence’s type was referable to an “almost extinct subspecies nesting farther south than” other brant, although they were unable to adduce any firm evidence in support of this contention. [The possible identity of Lawrence’s type was discussed in Buckley and Mitra (2002), where we agree with Delacour and Zimmer that it is *not* referable to the brant widely known today as *nigricans*.]

In their paper, Delacour and Zimmer examined the other “Lawrence’s *nigricans*,” also from Egg Harbor, New Jersey, but taken in 1847. They wrote:

“We found that the type of *nigricans* and the second specimen differ from the Pacific Black Brants. They are generally browner; their underparts are medium gray, resembling closely in that feature the Eurasian *B. b. bernicla*, from which they are, however, distinguishable by having the white-spotted collar extending to the foreneck, and by the

broader white borders of the feathers of the sides and flanks. They resemble in these two characteristics the Pacific Black Brants, but they differ from them in decidedly lighter gray color of the lower breast and abdomen. This contrasts distinctly with the black upper part of the breast, while the two areas are almost concolorous, but yet different in shade, in the majority of adult Pacific birds, and completely so in a few adults, and in immatures.”

On reading the above, one might imagine the two Egg Harbor birds to be peas in a pod, yet nothing could be further from the truth; we are at a loss to explain how Delacour and Zimmer arrived at that conclusion. Figures 1–3 (second from right) and Figure 4 contrast both Egg Harbor birds, and it is clear they are different—strikingly so, given the relative uniformity within brant taxa. Lawrence’s type (Figure 4) is in several respects intermediate between *hrota* and Pacific Black Brant, while the other Egg Harbor bird (Figures 1–3) resembles in all respects an adult *bernicla*: upperparts paler than in Black Brant and showing *bernicla*’s distinctive smoky-pink bloom, which is absent in Pale-bellied and Gray-bellied Brant; ventral pigmentation both uniform (generally lacking contrasting dark scaling—unlike both Pale-bellied and Gray-bellied Brant) and extensive (reaching beyond the legs—unlike Pale-bellied Brant); flanks generally uniform-looking, owing to fine alternation of whitish and brownish bars, and not producing a conspicuous and contrasting whitish patch as seen in adult plumages of all other brant taxa. This specimen is perceptibly browner than some *bernicla*, a dif-

ference that might be attributable to foxing or leaching of fats from the skin (after all, the specimen is almost 160 years old). It nevertheless still shows the diagnostic smoky plumage tones, as well as other characters, of *bernicla*, and we regard it as referable to that taxon. There is some possibility that another dusky-bellied brant, from Virginia in 1888 and also mentioned by Delacour and Zimmer, could have been confused with the Egg Harbor *bernicla*, but owing to the poor condition of the Virginia skin as described by them, that seems most unlikely. In any event, that skin is no longer extant, possibly having been discarded because of condition.

(2) The second North American *bernicla* specimen was also an adult, found by PAB in a *hrota* tray in the MCZ. Assuming it was just a European *bernicla* in the wrong drawer, he was startled to read on its label (MCZ 57365) “August 1907, Carey Islands, Davis Straits.”

It is a typical fresh-plumaged adult *bernicla* in all respects, with a strong neck-ring on the sides but only weakly complete ventrally (Figures 1–3, left-hand bird; second from left and right-hand birds are *bernicla* winter-taken in the United Kingdom for comparison). It bears two field labels that each say “Carey Islands” and “Davis Straits.” However, on one of them there is the undated pencilled notation “*about intermediate*. JLP.” This is a notation by James Lee Peters, although he does not state what it is “intermediate” between: presumably *hrota* and *nigricans*. There is yet another label attached, from the California Academy of Sciences (whose name is lined out),



Figure 3. Lateral views of same individuals in Figure 1. Photograph by P. A. Buckley.



Figure 4. Type of "Lawrence's *nigricans*": adult male, January 1846, Egg Harbor, New Jersey (AMNH 3211, now in Type Collection). Photograph by P. A. Buckley.

and on which the MCZ accession number appears. It is handwritten on both sides by James Moffitt, the renowned goose expert. On the front is says "Branta bernicla bernicla typical James Moffitt Jan. 12, 1940" and on the back are the following additional comments: "*Note: This spec. is not in the plumage of an August bird, but is like Jan. or Feb. collected skins. Therefore, data appear questionable to me. Perhaps it is a British Isles winter collected skin.—J. Moffitt.*"

Examination of the specimen reveals it to be an adult in fresh plumage, so presumably it had recently molted at one of the Arctic goose molt-migration sites and may have been returning, perhaps with a flock of *hrota*, to winter in the British Isles. Dement'ev and Gladkov (1952: 370) note that nominate *bernicla* in Russia sometimes complete their entire body molt before migrating to their wintering area. This specimen is clearly *bernicla*, and given Dement'ev and Gladkov's comments, there is no longer any reason to be suspicious of its provenance. (It may also be one of the two *hrota-nigricans* "intergrades" that Griscom and Snyder [1955: 40] mentioned having examined, exasperatingly failing to give any details, presumably in the MCZ, Griscom's home institution.)

The Carey Islands (73° 00' W, 76° 30' N) are indeed in Davis Straits but are not a breeding ground for brant of any type; they support mostly murres and some gulls (Hugh Boyd, pers. comm.). They straddle the international border between Canada and Greenland, so it is a moot point to which country this particular bird should be assigned. We have chosen Canada over

Greenland to accentuate the zoogeographic importance of this specimen, but both are included in the A.O.U.'s definition of North America.

BERNICLA IN GREENLAND AND ICELAND

It is probably unappreciated that *bernicla* is by no means unknown in either of these locations, notwithstanding their relative paucity of observers. Boertmann (1994) gives one Greenland record, 23–25 June 1976, a date coincident with wandering failed breeders; no more recent information

is available. However, for Iceland, Yann Kolbeinsson (pers. comm.) writes: "Up to and including 1997, 25 Dark-bellied Brent Geese had been recorded in Iceland (some of these may have been the same birds returning to the same place spring after spring). *Bernicla* was first recorded in 1986, but since 1989 it has been seen annually (apart from 1996) and from 1992, 3–6 birds have been seen annually. Most if not all records are from spring (cf. Figure 5), with most *bernicla* being seen with migrating *hrota* moving west toward Greenland. Others have been seen in the north and east, where *hrota* is rare." The year in which the first probable *bernicla* was seen—1986—was a year of Holarctic brant breeding failure, and this was also the year of the Bathurst Island bird (see next).

ADDITIONAL BERNICLA FROM NORTH AMERICA

Bathurst Island, Nunavut, Canada: The summer of 1986 was abnormally cold, and in general, goose breeding success in the High Arctic was nearly nil (O'Briain et al. 1998). Several workers were examining the postbreeding molting behavior and ecology of Arctic Geese on Bathurst Island. Geese were moving about to a much greater degree than in normal years, and in late July 1986 (exact date unavailable), O'Briain, Reed, and MacDonald studied an all-dark brant in a close flock of *hrota* that they tentatively identified as an adult *bernicla* (Austin Reed, pers. comm.). Unfortunately, they were unable to photograph it.

Newburyport, Essex County, Massachusetts: On 4–5 May 2001, an adult brant in



Figure 5. Adult nominate *bernicla* (right) with *hrota*, Álfanes, southwestern Iceland, 26 April 2003. Photograph by Daniel Bergmann.

a flock of *hrota* on flats along the Merrimack River was identified as *bernicla* by its finders (Perkins 2001). Remarkably, on 25–26 April 2002 (and possibly later), presumably the same bird was found in the same location (Perkins 2002). No photographs were taken either year, but detailed descriptions of both leave no doubt they were adult *bernicla* and will appear elsewhere (R. Heil, pers. comm.).

CONCLUSION

Populations of *bernicla* wintering in western Europe have rebuilt to a recent high of 300,000 in the 1990s, from their nadir of 30,000 in the 1950s (Czajkowski and Schricke 1999), so it should hardly be surprising that it is now annual in Iceland, with at least one recent Greenland record. In turn, it is not unexpected that some would find their way to North America (Bathurst Island; Massachusetts; New York; and Virginia), but the existence of two quite old North American specimens (Davis Straits and New Jersey) makes one wonder how long *bernicla* has been occurring undetected in North America. In any case, North American observers should anticipate increasingly more, especially now that field guides are beginning to depict adults and first-winter individuals accurately.

Acknowledgments

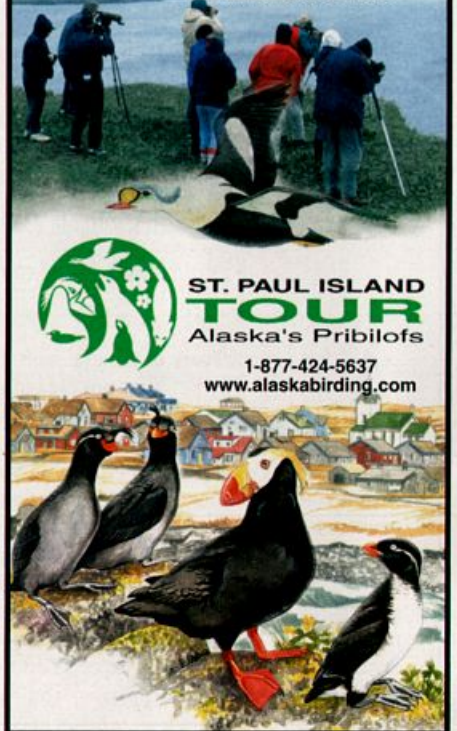
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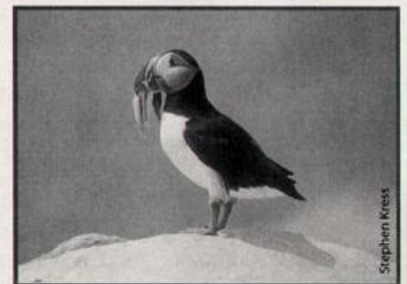
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