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## Taxonomic Notes on the Bean Geese, *Anser fabalis* Lath.

by

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Geographical variation in Bean Geese offers a complicated problem, and it has long confused ornithologists. Only recently has it been practically solved by H. JOHANSEN, who has studied them for many years in Russia and Siberia; also R. A. H. COOMBES has studied them on their inter grounds in western Europe. A great deal more accurate data, however, are needed for a complete understanding of the variation of these geese, but we now know that there are two groups of populations:

A. The Forest Bean Geese, which breed in the northern forest zone, from Scandinavia to eastern Siberia. They are elongate in shape, with a fairly long neck and a long, slender bill, the lower mandible almost straight and the nail at the tip of the upper mandible rounded;

B. The Tundra Bean Geese, which breed from Greenland to eastern Siberia in the treeless tundra, penetrating the wooded tundra a short distance, of the far north along the ocean. They are stockier in shape, with a shorter bill, higher near the base, the lower mandible deep and distinctly curved outward and the nail oval and tapering. In both groups, sizes increase from west to east in a continuous cline,

but so gradually in most areas that it is inadvisable to name more than a few subspecies sufficiently well characterized and constant over a large range.

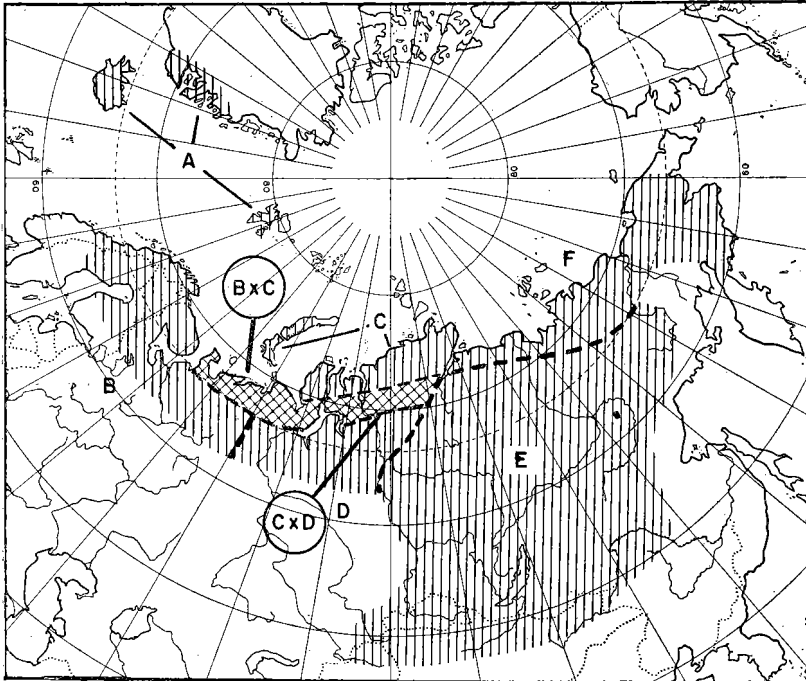
In the two extreme parts of the range of the species, Forest and Tundra Bean Geese are always keeping quite distinct, but they mingle in northern Russia, between the Kanin Peninsula and the Urals, and further east up to the Khatanga River in Siberia, where mixed populations occur.

To add to difficulties, many Forest Geese move north into the tundra during the summer to molt, particularly in Nova Zembla, and they have easily been mistaken for local breeding birds.

During migration and on their wintering grounds, various populations of both groups are frequently found together, although they usually keep in separate flocks according to their ecological preferences, and, as it happens to many species of migratory geese, stragglers are likely to be found in gaggles of other forms far away from their normal range.

Another source of confusion is the variation in the color of the bill and legs. The westernmost, and very sharply characterized subspecies of Tundra Goose, *brachyrhynchus*, has pink legs and feet, and a pink band on the bill, while all the other forms have them orange yellow. But aberrant specimens are not uncommon. Birds similar in shape and size to *fabalis* or *rossicus*, or intermediate, but with pink bill ring and legs, are found migrating in various places, from eastern Europe to the far east; particularly they pass through the Ufa district of Russia and winter in Hungary in some numbers. They have been called *Anser neglectus* by SUSHKIN. Specimens have been recorded from Nova Zembla and a few other localities, which resemble the western Tundra Geese *rossicus*, but have a pink ring to the bill, while the legs and feet remain orange yellow; they have been called *carneirostris* Buturlin. In Denmark, H. JOHANSEN has found, 2 December, 1948, at Mariager Fjord, N. Jutland, a small Tundra Goose similar to *rossicus*, but with a short pink bill like *brachyrhynchus* and young male, 24 October, 1948, a typical *brachyrhynchus* except for its yellow legs. On 28 October, 1950, PETER SCOTT, banding a flock of *brachyrhynchus* in southern Scotland, captured 377, among which one aberrant immature with bright orange bill ring and legs. JOHANSEN, who first was inclined to consider birds of the "neglectus" type as a valuable subspecies, the breeding grounds of which are yet undiscovered, but might be found on the northern border of the Urals, now believes (in litt. 1951) that it is merely a color phase

of the mixed population *fabalis*  $\times$  *rossicus* breeding in northern Russia. His opinion is substantiated by the study of five specimens in the American Museum: two resemble Forest Geese in the shape of the bill, and two, Tundra Geese; all four were collected in Hungary; another one from Seistan is of the *rossicus* type. The fact that so called "Sushkin's Geese" have cropped up in widely separated localities, including western



General breeding distribution of the Bean Geese (*Anser fabalis*).

A. *Anser fabalis brachyrhynchus*. B. *Anser fabalis fabalis*. B  $\times$  C. Mixed population *fabalis*  $\times$  *rossicus*. C. *Anser fabalis rossicus*. C  $\times$  D. Mixed population *rossicus*  $\times$  *johanseni*. D. *Anser fabalis johanseni*. E. *Anser fabalis middendorfi*. F. *Anser fabalis serrirostris*.

Europe and far eastern Asia, supports also this view. About the origin of birds with aberrantly colored legs and bill, JOHANSEN writes (in litt. 1951): "The pink footed and the yellow legged Bean Geese have not had common breeding areas in recent times, and I suppose that the transitional population therefore arose through occasional interbreeding during the warm postglacial Litorine time, when both forms presumably bred further north in common areas in Nova Zembla and Franz Joseph Islands."

It is natural that, as long as facts about the breeding distribution of the various Bean Geese remained so poorly known, such confusion existed in the mind of ornithologists that sound authors like HARTERT, WITHERBY, DEMENTIEV (Alauda 1936, pp. 167-193) and TUGERINOV (Faune de l'URSS 1, No. 4, 1941, pp. 143-155), have denied the separability of the Forest and Tundra Bean Geese in the western part of their range. On the contrary, JOHANSEN (Dansk Orn. For. Tidsskr. 39, 1945, pp. 106-127, and in litt. 1951) and COOMBES (Xth Int. Orn. Congress, Uppsala, 1950, and in litt., 1951), adopting the earlier opinion of NAUMANN, BUTURLIN and ALPHERAKY, have recently shown that two forms exist and are perfectly distinct. As their conclusions are supported by the study of the series that have been available to me and the observation of wild birds, I fully agree with them. But that the situation is exceptionally complicated is apparent when JOHANSEN states (in litt. 25 January, 1951):

"I am now of the opinion that the entire tundra zone of the mainland of European Russia is inhabited by mixed populations, for that area contains no real arctic tundra which is the true abode of the Tundra Geese. That explains why Russian ornithologists were not able to distinguish between *fabalis* and *rossicus*. They are barely familiar with the real forest *fabalis* which migrates to western Europe. Only two skins have ever been collected at breeding time in the forest areas of European Russia to my knowledge.

"I believe that the mingling of the European Tundra Geese occurred in the following way: after the glacial period, the tundra was populated with geese of the *serrirostris* type. The forest zone of the south and southwest, however, was populated with Bean Geese of the *fabalis* type. In the warm period that followed, forests covered the tundra zone, and the Forest Geese which came along crossed with the original Tundra Geese, so that the present mixed product was developed.

"BUTURLIN considered this mixed type from the tundra of European Russia as *rossicus*, but he said that it is also found in western Siberia as far as Taymyr and the Khatanga. So he did not distinguish them from the pure Tundra Geese which appear further north."

In the present still sketchy state of our knowledge, and until much more is learned on the subject, I recognize six subspecies of Bean Geese. But it is possible that others have to be admitted when the characteristics of various breeding populations, and their stability are better known.

## A. Forest Bean Geese:

1. *Anser fabalis fabalis*

*Anas fabalis* Latham, Gen. Syn. Suppl., 1, 1787, p. 297: Great Britain.

Breeds in the wooded parts of Norway, Sweden, Finland, and Russia, between 62° and 70° Lat. N. about. Interbreeds with *rossicus* in the wooded tundra of northern Russia and on Kolguev Island. Winters in Great Britain, Europe south to the Mediterranean and Black Seas. Rare or accidental occurrence elsewhere to the east (one specimen from the Tian Shan).

Wing: ♂ 450-498, ♀ 410-450; culmen: ♂ 58-67, ♀ 51-60; visible depth of lower mandible: 6-9 mm.

COOMBES (Ibis, 1942, pp. 272-275) has endeavored to show that the term *fabalis* could not be used for the species, being a composite name based on characters applying partly to the Bean, partly to the Pink foot, others to both. He concluded to its rejection and to the adoption of the next available name, *arvensis*.

According to Opinion 88 of the International Rules of Zoological Nomenclature: "The name of a species is not disqualified merely because the author included in his conception bodily parts of more than one species", *fabalis* must be used, and I formally designate the form of yellow legged Forest Bean Goose normally wintering in England, for which the name has been generally used, as representing the bird named by LATHAM.

2. *Anser fabalis johanseni* new subspecies.

Similar to *fabalis*, but larger, with a longer bill showing more black and less yellow, the entire basal part of the upper mandible entirely black, while it is yellow on the sides in the majority of *fabalis* specimens. Slightly smaller than *middendorfi*, with a much smaller and shorter bill. Type in the American Museum of Natural History, No. 73075, collected by OWSTON's Japanese collectors, Tai-pai-Shan, Tsinling Mountains, NW. China, November 14, 1905.

Wing: 476; tarsus: 82; culmen: 67; visible depth of lower mandible: 8 mm. Six males examined; Wing: 454-487; culmen: 63-72; ten females; Wing: 425-458; culmen: 61:70; visible depth of lower mandible: 7-10 mm. The type and five other birds have a narrow white band on the forehead; the others have none or only faint traces of it.

Breeds in the forested region of western Siberia, east to the Khatanga River, south to 61°-62° Lat. N., pairs occasionally nesting in the forested

steppe where many lakes exist (JOHANSEN). Interbreeding with *rossicus* in the north of the wooded tundra, and intergrading with *fabalis* and *middendorfi*.

Winters in Persia, Turkestan and western China. With the 16 specimens collected at Tai-pai-Shan, one bird of the *rossicus* type was obtained at the same time. This intermediate Forest Bean Goose had so far remained without a valid name. I am well aware that it would have been preferable to select for the type a specimen collected on the breeding grounds, but none has been at my disposal.

### 3. *Anser fabalis middendorfi*

*Anser middendorfi* Severtzov, Vertikalnoë i gorizontaalnoë rasprostranenie tarkest. zhiyotnikh, 1872 (1873), p. 149: Sibérie Orientale (Oudskoi Ostrog). New name for *Anser grandis* Middendorff nec Gmelin.

*Melanonyx arvensis sibiricus* Alpheraky, Geese of Europe and Asia, 1905, p. 104: East Siberia.

Breeds in the forest zone of eastern Siberia, from the Khatanga to the Kolyma area south to the Altai (where a special subspecies may occur), Sayan, Alatau-Kuznezki and N. Mongolia. Migrates through Kamchatka and Sakhalin to Japan and eastern China; straggler in Pribilof Islands.

Wing: 440-462; culmen: 64-87; visible depth of lower mandible: 7-10 mm.

A large bird, with comparatively very long bill and neck.

The name *middendorfi* cannot be used for the intermediate Forest Geese of W. Siberia. According to DEMENTIEV (Alauda 1936, pp. 181-189), SEVERTZOV has expressly indicated that *middendorfi* is a new name for *A. grandis* Middendorff, antedated by *Anser grandis* Gmelin, which applies to the domestic breed of *A. cygnoides*. That SEVERTZOV confused it with the smaller birds wintering in Turkestan does not matter, according to the rules of nomenclature. There is no doubt that DEMENTIEV is right in using *middendorfi* for the large far eastern subspecies, and that ALPHERAKY was wrong in renaming it *sibiricus*, which is but a synonym.

## B. Tundra Geese

### 4. *Anser fabalis serrirostris*

*Anser segetum* var. *serrirostris* Swinhoe, Proc. Zool. Soc. London, 1871, p. 417: Ningpo, China.

*Anser menialis* Oates, Man. Game Birds of India, 2, 1899, p. 77: Yokohama.

*Melanonyx segetum anadyrensis* Buturlin, Nasha Okhota, 1908, Nov., p. 26: Anadyr.

*Anser oatesi* Rickett, Bull. Br. Orn. Cl., XI, 1901, p. 46: Foochow.

*Anser fabalis curtus* Lönnberg, Fauna och Flora, 1923, p. 277: Shansi.

Breeds in the tundra zone from the Khatanga to Anadyr and the

Tchuktchi Peninsula, east to 180° E. long. Winters in Japan and China.

Wing: 420-525; culmen: 65-76; visible depth of lower mandible: 8-13 mm.

Birds with very heavy bills are mostly found in the far eastern part of the range, but individual differences are considerable everywhere, and as JOHANSEN agrees that 50% of the specimens are indistinguishable throughout the breeding area, no subspecific name can be given to them. *A. mentalis* was given by OATES to a bird from Yokohama, but as *serrirostris* was named from a wintering specimen from Ningpo, Fokhien, on the coast of eastern China, it probably also applies to a migrant from eastern Siberia, so that *mentalis* is a straight synonym. If it were proven that the populations nesting between the Khatanga and the Lena Rivers were constantly smaller, they should be called *A. f. curtus* Lönnerberg.

#### 5. *Anser fabalis rossicus*

*Anser serrirostris rossicus* Buturlin, Oprelitel promyslovikh ptiz. (d.h. Best, Buch der jagdbaren Vögel), 1933, p. 60: West Siberian Tundra — Locality restricted by Dementiev, Alauda, 1936, p. 190 to Beluchia Guba, Jamal, Taymyr (type ♂ ad., 2-VI-1908, Zhitkov. leg., Mus. Univ. Moscow).

Breeds in the tundra of Nova Zembla, Yamal, Gyda and Taymyr peninsulas. The birds breeding on the wooded tundra of northern Russia, from the Kanin Peninsula to the Ural Mountains, are a mixed population *fabalis*  $\leq$  *rossicus*. From the mouth of the Khatanga, a zone of mingling, JOHANSEN examined 8 *rossicus*, 22 intermediate birds resembling small *serrirostris* (*curtus* of LÖNNBERG) and 7 approaching the Forest Geese. Winters west to Belgium, Germany, Italy, south central Europe, Russia, western Siberia, Turkestan and China.

Wing: 405-470; culmen: 51-66; visible depth of mandible: 7-10 mm.

#### 6. *Anser fabalis brachyrhynchus*

*Anser brachyrhynchus* Baillon, Mém. Soc. R. Abbeville, 1833, p. 74: Abbeville, France.

Breeds in the middle part of eastern Greenland, Iceland and southern Spitzbergen. Very slight differences may exist among these populations. Winters in Great Britain, northern France (rare), Belgium, Holland, Germany. Accidental as far as Russia and northeastern America, migrating through Jan Mayen, Baer Island, the Faroes and Scandinavia.

Wing: 400-460; culmen: 37-54; visible depth of lower mandible: 4.5-7 mm.

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