The Emperor Goose:
An Annotated Bibliography

by
Robert F. Rockwell
Margaret R. Petersen
Joel A. Schmutz
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by
Robert F. Rockwell
Ornithology Department
American Museum of Natural History
Central Park West at 79th Street
New York, New York 10024

Margaret R. Petersen
Alaska Science Center
National Biological Service
1011 East Tudor Road
Anchorage, Alaska 99503

Joel A. Schmutz
Alaska Science Center
National Biological Service
1011 East Tudor Road
Anchorage, Alaska 99503
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Abstract

This bibliography contains more than 500 published and unpublished references relevant to the emperor goose (Chen canagica). The referenced works date from the early exploration of Beringia and Alaska through the formal description of the species in 1802 to 1993.

Key Words: emperor goose, Chen canagica, Alaska, Beringia, distribution, population dynamics.

The emperor goose (Chen canagica) is a uniquely Beringian species. Except for scattered occurrences in the lower 48 of the United States, the species breeds, stages, and winters in western Alaska and eastern Russia. Although this white-crowned, blue-gray goose with orange legs may have first been seen by Europeans in the mid 1700's, it was not formally named and described until 1802 by Sewastianoff. In the mid to late 1800's, the numbers of emperor geese were so high that Dall and Bannister (1869:296) remarked "This magnificent bird abounds in profusion in the Kusilvak Slough, or mouth of the Yukon, to the exclusion of all the other species". In the twentieth century, however, the species has not been as successful (Raveling 1984; King and Derksen 1986).

The quantitatively documented decline that began in the 1960's may have only recently waned (U.S. Fish and Wildlife Service unpublished data). Although average population growth rate from 1983-1993 was near 1.0, it is not stable (Butler 1992). We undertook this literature review in part to identify factors that might be related to those historical changes in population size and growth rate and that might influence population dynamics of the species in general. A second but related objective was to identify surveys that would allow us to compare current and historical geographic distributions of emperor geese.

These objectives required examining much of the earliest literature on the species and the exploration of Beringia. Because documenting the historical distribution was one aim, evidence of absence of emperor geese was as important as evidence of their presence. Because the former is not as reliable as the latter, we included citations to reliable early works and diaries of explorations whose authors reported neither emperor geese nor anything resembling them. Reliability is based on the author's attention to detail and consistency with other published works. We noted the presence or absence of emperor geese in the annotation of each relevant reference. We also indicated the extent of descriptive detail on other species in our annotations because we think that these early works, many of which are foreign and/or obscure, will be useful to researchers studying other species.

Chen canagica has been known as the beach goose, painted goose, Aleutian goose, Caesar's goose and by several native names that mean goose with a white hood. Its most common name, emperor goose, resulted from confusion. According to Collins et al. (1945), the Aleuts often referred to the species with the Russian word "tsiesarka" (guinea hen). This was misunderstood by earlier explorers to be "tsarskia" (imperial) and they dubbed the species the emperor goose. There has also been confusion associated with the scientific name for this species (Appendix A). Although originally named Anas canagica by Sewastianoff (1802), the species was at one time considered a member of almost every genera of goose (Salvadori 1895). It shares with Ross' goose (Chen rossi) the distinction among North American geese of having had its own separate genus erected (Philacte Bannister). Perhaps most interestingly, it was included with kelp and upland geese (Chloephaga) especially by early explorers who reached Beringia via Tierra del Fuego (Salvadori 1895).
We used several types of resources in compiling this bibliography. The first is a class of systematics books generally referred to as catalogs. Along with geographical information, they provide lists of alternate names used for the species (synonomies) and give citations to papers using those names. In the older catalogs, many of the cited papers are original descriptions of the species, its historical distribution and its natural history. While we include and annotate all of those relevant to the emperor goose below, the most important one for bibliographical work on any bird species is the *Catalogue of Birds* from the British Museum. This multivolume set, published in the late 1800's, was authored by various individuals, depending on the bird families included in a particular volume. The relevant one for waterfowl is volume 27 by Salvadori (1895).

As a second source, we used diaries, narratives, autobiographies and biographies of early explorers of the region. We found these by searching the Alaska, Siberia, Russia and Beringia geographical and exploration sections of card catalogs of both the main and rare book libraries of the American Museum of Natural History. Once we found the books, we searched their indices and tables of contents for entries corresponding to birds, waterfowl, ducks (which geese were originally called), geese and the various common and scientific names for emperor geese (Appendix A). Because many of these works were foreign, we had to translate our search terms into several languages (Danish, Dutch, French, German, Latin, Russian and Swedish).

As a third source, we used the common and scientific names for emperor geese, as well as key historical citations from the catalogs and explorers' works as entry points for several standard reference systems (e.g., Bioabstracts, Science Citation Index). We made similar use of several avian bibliographies, including those by Phillips (1926) and Kuroda (1946). Particularly useful were Volumes 1 and 3 of Coues' *American Ornithological Bibliography* (1871, 1879). Although not exhaustive, the latter provide geographic and taxonomic cross-references to much of the early literature on North American ornithology. They also provide enjoyable, pithy commentary on many of those works.

We also included unpublished reports to state and federal agencies because they provide valuable details on distribution, productivity, and survival. We located many of these using the U.S. Fish and Wildlife Service computer index to unpublished internal reports. We found the remainder of them as citations from those in the computer index and through conversations with regional state and federal waterfowl biologists.

We excluded recent field guides and general references unless they provided unique information on emperor geese. We have no doubt inadvertently omitted some important references and we apologize to those authors.

Our annotations differ somewhat from recent ones (Campbell and Comely 1992). Rather than giving all references detailed treatment, we concentrated more on those that are difficult to access; especially those publications that can be found only in the stacks or rare book rooms of major libraries and those publications that are not in English. In all cases, our attempt is to convey the type of information available in the reference rather than providing exact detail. For example, we state that the reference provides morphometrics but we do not iterate the morphological values. When several references by a single author provide a series of updates, we summarized them in a single annotation under the earliest reference. All of the published works cited can be found in the library of the American Museum of Natural History. All of the unpublished and many of the published works can be found in the library of Region 7, U.S. Fish and Wildlife Service.

The spellings of several words and locations changed during the timespan covered in this bibliography. We preserved the author's original spellings in title citations and direct quotes as etymological benchmarks. Finally, our annotations preserve the exact spellings of the genus and species designations of each citation.
Acknowledgments

We thank D.V. Derksen who correctly thought that this would be a fruitful endeavor and that we were the ones who could do it. The staff of the Alaska Science Center has been most cooperative and patient. Mary LeCroy (Ornithology Department, American Museum of Natural History) taught us the use and value of several important systematic indices. Stephen Bach translated Sewastianoff's initial description of the emperor goose from period French. Irina Kharitonova, Sergei Kharitonov, and Vladimir Ovtsharenko translated several old Russian papers. Jackie Beckett (Photography Studio, American Museum of Natural History) pains-takingly photographed the print from Sewastianoff (1802). Finally, Debra Colchamiro and Sarah Granato (Library Services, American Museum of Natural History) patiently taught us to find, properly use, and appreciate many rare and priceless books. James Bartonek and James Sedinger reviewed this bibliography.

Cited Literature


Annotated Bibliography

   Adams describes a white-headed goose that he concludes must be *Chloephaga canagica*.

   They provide a summary of banding and aerial surveys for waterfowl conducted throughout Alaska in 1952.

   They review literature on diets for 70 species of birds, including geese, that use the northeast Pacific Ocean and Bering Sea. Trophic relations among species are discussed based on these diet characterizations.

   See No. 379.

   See No. 379.

   Four *Philacte canagica* were collected at Novo Marinsk.

   The name is also spelled Alferaki. Alpheraky refers to emperor geese as *Philacte canagicus*. He details Sewastianoff's original description of *Anser canagicus* (sic) and then relates a story of how 20 years later, Sewastianoff "renamed" the same species *Anas canadicus*. The latter was based on a reference to a "white-headed" goose in Krasheninnikov's (1818) *Opisani Kamchatka ii*, p. 473. (See Krasheninnikov 1755.) Alpheraky includes basic natural history of emperor geese nesting in Siberia.

This proposal reports peak population numbers of emperor geese and other goose species for eight years at Izembek Lagoon.


They note that emperor geese are rare winter visitors to Puget Sound.


They report on a study on the effects of arctic fox (Alopex lagopus) removal on the nesting success of emperor geese, cackling Canada goose, and greater white-fronted geese. See No. 12.


See No. 12.


This is the first in a series of progress reports from a multi-year study. Subsequent reports include: No. 10 and 11.


The first edition refers to emperor geese as Philacte canagica. This was retained through Edition 5 in 1957. It was changed to Chen canagica with no stated reason in Edition 6, 1983.


Arnold includes data on reproductive success for Chen canagica.


Audubon makes no mention of emperor geese.

Avilova presents a detailed comparative study of the nail on the bills of geese.


Bailey presents data on arrival and nesting dates for emperor geese at Cape Prince of Wales. He also summarizes the basic natural history of the species.


Bailey reports that emperor geese breed on St. Lawrence Island and near Kotzebue.


Bailey presents summaries of arrival and nesting dates for emperor geese at Cape Prince of Wales. He summarizes the basic natural history of the species.


Bailey provides details on the arrival and nesting dates and reproductive success of emperor geese north of Cape Wales in 1922.


They indicate that emperor geese are present but rare in the Point Barrow region.


See No. 252. There is a subsequent report by the same author for 1973 (26 pages).


Baird refers to emperor geese as *Chloephaga canagica* Bonap., the painted goose.


They refer to emperor geese as *Chloephaga canagica* Bonap. They provide general information on ecology of the species.

They refer to emperor geese as *Philacte canagica*.


They report that *Anser canagica* is similar to all other *Anser* geese. None of them differ substantially from *Branta*, however.


Bannister erects the genus *Philacte* and places it in the same "section" as the *Taenidiestes*, both genera being characterized by having a "skull with well marked rough supraorbital depressions. Tarsus as short as or shorter than the middle toe with its claw. Habits littoral." Refers to emperor geese as *Philacte canagica*.


Barrett-Hamilton provides details of both observations and collections. No emperor geese were included.


Barry provides a narrative account of the breeding biology of emperor geese. He summarizes the sources of mortality for emperor geese with particular reference to the Yukon-Kuskokwim Delta.


They provide a detailed species list of the area along with habitat descriptions.


They present numerous species-specific maps that indicate the location and size of breeding colonies or aggregations for alcids, gulls, geese, and some other marine birds.

They provide an objective, thorough, and interesting overview of the potential problems for wildlife that will result from development of various natural resources.

Bayer provides a chronological summary of fall and winter sightings of emperor geese in Oregon.

This is a thorough and annotated collection of journals from the third voyage, including those of the officers such as Anderson, King and Clerke. Although there are numerous references to "flocks of geese" during the travels through the Aleutians, the Bering Sea islands, and coastal Alaska, few are described in detail. Contrary to Stressmann's (1949) assertion, there is no specific reference to snow geese. There are unmistakable descriptions of Canada and brant geese. Most importantly, there is Clerke's October 1778 description from Samfoonoodha (Resolution or English Bay) Unalaska: "The grey Goose, is smaller than ours, the Head and upper part of the Neck are white, the Body grey, the Extremeties of the Feathers tip'd with black, the Wings grey striped with black; I believe it to be the same they call the grey & speckled goose of Kamtschatka". Although Clerke did not recognize this as new species, he provided an accurate description of the emperor goose 24 years before it was formally named and described by Sewastianoff. Unfortunately, he does not provide any reference to the "they" or the "grey & speckled goose of Kamtschatka". Dement'ev and Gladkov (1967) note that grey goose is an ancient Russian name for the greylag goose (Anser anser) which historically occurred in Kamtschatka. Latham's (1824) great goose (Anas grandis) also occurred there and could be considered speckled. According to Salvadori (1895), however, this was most likely a race of the bean goose (Anser fabalis). Finally, the white-fronted goose (Anser albifrons) has long been known as the speckled or speckle-bellied goose and did occur in Kamtschatka. Although he did not recognize it and name it as a new species, Commander Charles Clerke provided the first clear written description of the species in 1778.

Bean was an accomplished and thorough collector. He lists 77 species with specific collecting (and observing) locations but includes no emperor geese. He provides details on distribution and ecology for many of the species.

This is one of a series of casual sightings of emperor geese along the Pacific Coast.

Bellrose provides a detailed account of the biology and taxonomy of emperor geese.
38. Bent, A.C. 1912. Notes on birds observed during a brief visit to the Aleutian Islands and Bering Sea in 1911. Smithsonian Miscellaneous Collections 56:1-29.
   The trip was made during June and no emperor geese were observed.

   Bent provides a detailed account of all facets of the biology of emperor geese with many quotes from the early literature.

   Bent provides a detailed account of all facets of the biology of emperor geese with many quotes from the early literature. Reprinting of No. 42.

   This is essentially an abstract of a lunch presentation, communicated by N.B. Nassanov (a member of the Academie), that outlined the findings of Bianchi's evaluation of a collection made by Sokolnikoff on the Commander Islands in the mid-1900's. (See Hartert 1920). No specifics are given except that there are now 155 species, up from the 144 reported by Stejneger (1887). The full article and species list is to appear elsewhere but the location is not given. In Russian but includes the French translation of the title.

   Bianchi reports on numerous species of birds found in Kamtschatka. The list includes several ducks, a swan (Cygnus cygnus), and two geese - Anser albifrons and Melanonyx serrirostris. There is no mention of the emperor goose. In Russian but includes the French translation of the title.

   Blaauw provides a detailed narrative on rearing captive emperor geese. He includes descriptions of plumage and molt of goslings.

   The British Museum has one alcoholic specimen of Anser canagica.

   Blurton Jones provides evidence that non-breeding emperor geese from the Yukon-Kuskokwim Delta perform a northern molt migration, likely to St. Lawrence Island.

Bolle provides a narrative summary of von Kittlitz' expedition to Beringea. There is no specific reference to emperor geese in this summary.


Bonaparte does not mention the absence of emperor geese in Wilson's work even though the date of Wilson's folio is 24 years after Sewastianoff's (1802) paper.


In a large table Bonaparte refers to emperor geese as *Chloephaga canagica* Sewart. (*picta, Pall. nec Forst*). "Sewart." is likely a misspelling of the abbreviation for Sewastianoff since there are no prior references or citations to a "Stewart" in the literature. The mistake changed to Stewart (no period) in Gray 1871 and was retained in that form by Boucard (1876). Pallas referred to the species as *Anser pictus*. The nec Forst. indicates that *picta* had been previously assigned to another species by Forster.


This volume contains countless black and white wood-cut and copper plate prints of most fanciful birds. This was one of the definitive works of the time. Many species of geese (=ducks) are there and recognizable, although artistic liberties were taken. Both "*Magellanica*" (pl. 29) and "*Antarctica*" (pl. 30) were included, listed, and recognizable as Upland and Kelp geese, respectively. There is nothing, other than those two members of *Chloephaga*, that resembles the emperor goose even though the specimen Sewastianoff's description was based on was in Europe at the time this volume was produced. There are no page numbers.


Specimen 1549 is referred to as *Chloephaga canagica*, Stewart, Aleutians. This is likely a perpetuation of Gray's (1871) errors. See No. 50.


Bower provides a list of birds, including emperor geese, seen on the Pribilof Islands by Dr. G. Dallas Hanna. Specimens were deposited at the U.S. National Museum.
Brandt includes a brief narrative on the natural history of emperor geese.

This is the full paper describing the confusion between Pallas and Latham over the incorrect use by the former of the latter's description and designation Anser pictus. It is in Latin and there are six pages of prose that include measurements. It has six beautiful plates, the first of which is modeled after Pallas' emperor goose and is labeled Anser pictus. See Latham (1824), Pallas (1831), and von Brandt (1836b).

von Brandt refers to emperor geese as Anser canagicus. This paper sorts out Pallas' mistake in labeling his painting of an emperor goose as Anser pictus after Latham (see Latham 1824) and erects the name Anser canagicus Nob. as a combined form from Pallas and Sewastianoff's Anas canagica.

This is cited in Coues (1880) from Baird who took it from Baer and Helmerson, who are said to state that it contains a list of the birds of Russian America by von Brandt.

von Brandt provides a list of birds from Alaska that were in Kuprianoff's collection. Anser canagica was among them.

Bretherton reports that no emperor geese winter on Kodiak Island. Subsequent reports are found in The Oregon Naturalist 3:61-63, 3:77-79, 3:100-102.

Brooks provides a nice overview of the problems confronting several species of waterfowl. He includes a copy of one of his paintings of Philacte canagica in mixed goose company.
Brooks observed nesting emperor geese in June 1913 in Providence Bay in Siberia and found them numerous along the coast of St. Lawrence Island.

This is one in a series of casual observations of emperor geese along the Pacific Coast.

This is one in a series of casual observations of emperor geese along the Pacific Coast.

Burke provides a brief narrative on the natural history of emperor geese.

See No. 65.

See No. 65.

This is the first in a series of analytical syntheses of breeding ground surveys on the Yukon-Kuskokwim Delta, Alaska. Subsequent related reports include: Nos. 63, 64, 68, and 70.

See No. 67.

This is the first of what became annual fall surveys of emperor goose productivity based on a series of oblique photographs of goose flocks along the north coast of the Alaska Peninsula. Subsequent related reports include: Nos. 66 and 69.


See No. 65.


See No. 67.


See No. 65.


Byrd provides a summarization of nesting ecology information on geese nesting along the coastal zone of the Yukon-Kuskokwim Delta, Alaska. Information was gathered from multiple field camps located in disparate areas of goose concentration. This is one in a series of annual reports.


See No. 73.


Byrd provides a summary of three winters of observations of emperor geese at Shemya, Adak, and Amchitka. He includes flock composition and size, marked birds observed, and timing of arrival and departure.


Emperor geese are present except during the summer.

They provide clutch sizes, numbers of nests, and goose species composition from random plots.


They provide arrival and departure dates for 124 species with additional distributional comments for many of them. They note that emperor geese (Philacte canagica) generally leave by mid-May but that stragglers are seen in June.


This is one of several reports detailing nesting chronology, nesting success and nesting ecology at one or more of the study sites on the Yukon-Kuskokwim Delta in Alaska. Subsequent reports with similar information include: Nos. 139, 140, 171, 172, 174, 175, 240, 397, and 476.


They report on monthly surveys of geese at Adak, Amchitka, and Shemya Islands and include observations of marked geese over several years. Some oiled birds were seen.


Cade records Philacte canagica in June on Sledge Island.


Cahn provides a species list with some behavioral and ecological notes.


Campbell provides details on the movement of emperor geese through the Togiak area, including arrival and departure dates and numbers of individuals. Subsequent reports include: Nos. 427.
They provide details on arrival and departure dates and numbers of emperor geese in Nanvak Bay. They include a 12 page attachment of data sheets.

This is one of a series of casual observations of emperor geese along the Pacific Coast.

Emperor geese occur rarely in the winter.

See No. 86.

This is the first of several reports on results of reobservations of marked individuals during spring (No. 85) and fall (No. 87) migration. Also see reports by Schmutz (No. 404) and Schmutz et al. (Nos. 405-407).

See No. 86.

Emperor geese were observed during winter on St. George Island.

Cassin catalogues the collections and observations of the Expedition lead by Charles Wilkes during the period 1838-1842. No mention is made of emperor geese. Magellan (Upland) geese from Tierra del Fuego are mentioned and referred to as Bernicla magellanica.
90. Cassin, J. 1862. Catalogue of birds collected by the United States North Pacific
surveying and exploring expedition in the command of Captain John Rogers, United
States Navy, with notes and descriptions of new species. Proceedings of the Academy
Natural Sciences of Philadelphia 14:312-328.
Cassin catalogues the extensive collections made during the exploration led by John
Rogers to west coast Alaska and the Bering Straits. No emperor geese were seen or
obtained.

77:351-386.
Christoleit groups the emperor goose with other members of the genus Anser based on
morphology and basic biology.

92. Clark, A.H. 1910. The birds collected and observed during the cruise of the U.S.
Fisheries Steamer Albatross in the North Pacific Ocean, and in the Bering, Okhotsk,
Japan, and Eastern Seas from April to December, 1906. Proceedings of the U.S.
Several species of ducks and many Branta canadensis hutchinsii were seen and
collected. No emperor geese reported.

93. Clapp, R.B., V.M. Kleen, and D.L. Olson. 1969. First records of emperor geese from
the northwestern Hawaiian Islands. Elepaio 30:51-52.
This is one in a series of casual extralimital observations of emperor geese.

Based on band recovery data through 1982, the oldest emperor goose was age 6 years
and 3 months when it died.

l'enumeration de quelques especes d'insectes (Coleopteres) des Aleoutiennes et du
Coinde reports that there were no emperor geese on Isle St. Paul in 1857.

96. Collins, H., A. Clarke, and E Walker. 1945. The Aleutian Islands: Their People and
They discuss the origin of the name emperor goose from confusion between Russian
words. The Aleuts used the Russian word "tsiesarka" (guinea hen) for emperor geese.
According to the authors, early explorers misunderstood this to be "tsarskia" which
means imperial and they dubbed the bird the emperor goose. This is Part 21 of the
War Background Series.

This is the 36th survey in this series that provides extensive aerial survey coverage of Alaska and the Yukon. See No. 261.


This is one of a series of annual reports summarizing productivity data of geese and other birds throughout Alaska.


Conover provides the first full description and pictures of downy young. He notes that he did not notice the strong, rank odor mentioned by many authors.


This volume details the first and second voyage that do not reach Beringia. There is no specific mention of a "painted duck" allegedly seen on the first voyage and described by Latham as the Painted Goose from a painting owned by Sir Joseph Banks. Consulting Lysaght (1959) and Beaglehole's (1961) volumes that chronicle Cook's first and second voyages and are annotated from the journals of his officers, it is clear that on the first voyage the only possible candidate is the yellow-billed or Chilean teal (Anas flavirostris) which was collected in Tierra del Fuego, painted by Parkinson and described by Solander. According to Lysaght, this was the only Anatidae collected and was eventually named Anas antarctica. The bird and Latham's description of the Painted Goose do not match. On the second voyage, many ducks and geese were reported, thoroughly described and painted, although not named binomially. Included from Statenland were paintings by Georg Forster of both the kelp goose (Chloephaga hybrida) and the upland goose (Chloephaga picta). According to Lysaght, the latter was the basis of Latham's account of the Painted Goose, later named Anas picta by Gmelin. (The painting is actually the type specimen for this species!) She claims the painting of C. hybrida was likely the basis of Latham's description of the Magellanic Goose. However, from a careful reading of Latham (1790), it clearly fits his description of the Antarctic goose. Curiously, this species was initially named Anas antarctica, an overlap from above that could have led to confusion over which voyage led to Cook's observation. de Montlezun asserts that the upland goose is indeed Cook's painted duck.


This is an early publication of Cook's journals from the third voyage. There are references to flocks of geese but no details. See Beaglehole (1967).

This is an analysis of subsistence harvest survey data collected on the Yukon-Kuskokwim Delta from 1980-1984. See No. 104.


See No. 104.


This is one of a series of reports of subsistence harvest of ducks, geese, and other birds. Estimates are based on a sample of households in selected villages on the Yukon-Kuskokwim Delta. Subsequent related reports include: Nos. 102, 103, and a summary report by Wentworth (No. 480).


See No. 104.


They provide a detailed analysis of the stomach contents of more than 30 emperor geese. Plant material is most common.


Coues reports *Chloephaga canagica* is so numerous in the Yukon River mouth, other species excluded. This is likely an unattributed reference to Dall and Banister (1869).


Coues refers to emperor geese as *Philacte canagica*.


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Coues refers to emperor geese as *Philacte canagica*. 
Coues refers to emperor geese as *Chloephaga canagica*. He mentions that local natives call themselves Kanagiamoot.

Coues refers to emperor geese as *Philacte canagica*. He states that the supraorbital depression found in emperor geese is missing in all other North American geese.

Coues refers to emperor geese as *Philacte canagicus*.

Dall provides a detailed summary on ecology and natural history of *Chloephaga canagica*.

This is an enjoyable essay about northern Alaska - which Dall refers to as the Yukon.

Dall refers to emperor geese as *Chloephaga canagica*. He asserts that it is not found here and that the natives are unaware of it.

Dall refers to emperor geese as *Philacte canagica*. He claims it rarely winters on Unalashka and not at all to the westward. He reports that a Mr. Thompson, an otter hunter, claims they occur in great numbers on Sannakh Island. This is an extract printed in advance from the Proceedings of the California Academy of Natural Sciences.

They refer to emperor geese as *Chloephaga canagica* and provide basic information on morphology, breeding, and ecology. They note "This magnificent bird abounds in profusion in the Kusilvak Slough, or mouth of the Yukon, to the exclusion of all the other species". Both authors comment on flavor: "The raw flesh and skin have an intolerable odor of garlic, which rendered it a very disagreeable task to skin them; but when cooked this passes away, and the flesh is tender and good eating" - Dall.

This work is part of the Harriman Alaska Expedition. It summarizes faunistic inventories and includes emperor geese among the birds.


See No. 261. There are subsequent reports by Dau with the same title from 1982 (22 pages), 1983 (21 pages), and 1984 (31 pages).


One of an annual series of family group counts and age ratios from Izembek National Wildlife Refuge.


Dau reports on 32 species, including emperor geese, observed during the summer and fall.


See No. 261. Subsequent report by the same authors with the same title published in 1986 (25 pages).


This is one of many extralimital observations of emperor geese along the Pacific Coast.


They provide a detailed review of use of the Gulf of Alaska by marine birds. They note that while a small number of emperor geese winter on Kodiak Island, this species is a minor contributor to geese using the larger region.


They refer to emperor geese as Bernicla canagica (see p.492) and claim that Gray (1844:607) tome iii, shifted the species into Bernicla.

Delacour provides standard details on morphology, ecology, and distribution. He also summarizes captive breeding of the species.


They provide detailed discussion on all aspects of Philacte canadica which is known commonly as the blue goose and the white-throat. They also note that grey goose is an ancient Russian term for Anser anser, a point relevant to comments under Beaglehole (1967). The use of "canadica" is likely related to Sewastianoff's renaming of the species in the mid-1800's (Alpheraky 1905).


Dick provides arrival, activity, and feeding notes on emperor geese and 37 other species of sea birds.


This is Dixon's account of the voyage made with Portlock. Chronological and geographical details are summarized under Portlock (1789). The general account in this volume is similar in content but differs in style from Portlock's. This is a series of letters written by an individual identified only by the initials W.B. to his wife or girlfriend, Hamlen, who is in England. There is a natural history appendix that includes plates and descriptions attributed to Latham of several bird species. None of them are waterfowl. As in Portlock's account, there are references to geese and shooting geese, but no specific descriptions are given. The only prose actually initialed by Dixon is a brief introduction that gives no clue as to W.B.'s identity.


Dixon noted that while there were many emperor geese near St. Lawrence Island, few, if any, nested there.


Dresser refers to emperor geese as Chen canagica.

Federal investigators, with the assistance of local natives, captured emperor geese and other goose species, some of which were preserved and others banded and released. Species accounts and dates of spring arrival are also noted.


Dufresne presents short plumage and range descriptions for all Alaska goose species. Emperor geese are noted as "Alaska's most beautiful goose."


Dunagan describes a new species of trematode obtained from an emperor goose collected near Nome.


The mean mass of emperor geese was 2743 grams.


There is a subsequent report by the same authors for the March survey (24 pages). See No. 312.


See No. 313.


See No. 77.


See No. 77.

Cites Eisenhauer and Kirkpatrick (1977) that nest parasitism occurs in emperor geese.


Einarsen provides some details on emperor geese in comparison to brant, especially with regard to use of marine habitat.


See No. 145.


See No. 145.


This is the definitive early ecological study of the species. Related citations from this study include: Nos. 144, 146, and 239.


This is the first in a series of annual reports from field work conducted from 1971-1973 on emperor geese and associated waterbirds at Kokechik Bay, Alaska. See No. 145.


This is one of several surveys for molting (flightless) emperor geese. This is the only area in North America where non- and railed nesting emperor geese congregate to molt.

See No. 181.


This is one of many Federal Aid Reports that provides miscellaneous observations on nesting emperor geese and survey results.


Elliot refers to emperor geese as *Chloephaga canagica* but also lists them as *Bernicla picta* Pall., the Aleutian goose. Plate 45 is beautiful.


Elliot refers to emperor geese as *Philacte canagica*.


This is cited in Coues (1879) Bibliography and is said to refer to emperor geese as *Philacte canagica*. His results are summarized by Turner (1886), Nelson (1887), and Townsend (1887).


Elliot refers to emperor geese as *Philacte canagica*. He comments on the "...intolerable odor of garlic, which renders it a very disagreeable task to skin them, but when cooked this entirely passes away, and the flesh is tender and good eating".


See No. 382.


See No. 382.

156. Eyerdam, W.J. 1936. Notes on birds collected or observed during the summer of 1932 in the eastern Aleutian Islands, Alaska. Murrelet 17:48-52.

Eyerdam collected *Philacte canagica*: one on Unalaska 5/4/32 and one on Unimak 8/7/32.

This is one of the rarest volumes on systematics of migratory waterfowl. Referring to it, Baird (1858) wrote: "The genus Chloephaga was separated by Eyton, Mon. Anat. in 1838, from Bernicla, to accommodate species with a shorter bill and more convex culmen, the legs robust, the membranes of the toes scalloped out, the colors different from Bernicla". See Eyton (1869).


In the Preface, Eyton refers to this volume as the second edition of his 1838 monograph. He creates the genus Chloephaga as: "Feet robust, posterior toes moderate, armed with a curved claw, with the membranes between the toes scalloped out in front. Tarsi large and strong. Bill robust with culmen slightly arched, armed with a large nail. Nostrils linear, placed in the middle of the bill. Lamellae small, obliterated anteriorly" Chloephaga nobis. Type specimen is Chloephaga magellanica.


Fannin refers to emperor geese as Philacte canagica and notes they occur rarely during the winter in British Columbia.


Fay provides details on nesting emperor geese, including estimates of numbers and distribution of nests. Fay also reports seeing large numbers of emperor geese that are likely molt migrants.


They provide numbers and distribution of breeding emperor geese as well as large molt-migrant flocks. (See Blurton Jones 1972.)


Felix provides details on captive nesting emperor geese.


Fienup-Riordan provides a discussion of how failure to understand the native traditional view of the relation of man and animal can lead to conflicts in management programs.

Finsch refers to emperor geese as *Anser canagicus* and states that there is a figure of this species in Brandt 1836 that is labeled *Anser pictus*. Indeed there is.


Fisher provides a summary of winter records. This is one of several records of extralimital observations of emperor geese.


They provide details on local density and distribution of emperor geese as well as other sea birds wintering in the Kodiak area.


They provide detailed accounts of both female and male behavior during the period from nest initiation through fledging.


Friedmann reported on emperor geese collected on St. Lawrence Island in 1930.


Friedmann found emperor goose bones among the ruins on St. Lawrence Island.


Friedmann reported that bones from *Anser canagica* were found at archeological sites on Kodiak Island.


This is a short summary of a presentation concerning management problems facing waterfowl in Alaska in 1950.


They provide a detailed account of the history, distribution, and ecology of emperor geese.

This is another of several publications describing extralimital observations along the Pacific Coast.


See No. 77.


See No. 77.


*Chloephaga* sp. is included among the Anseres that were examined. It is not clear whether this was a South American form or *Chloephaga cangica*. All Anseres have the same classification of thigh muscles under Garrod's scheme.


Giebel refers to emperor geese as *Anser canagicus*.


Gill provides a brief narrative on the natural history of emperor geese.


See No. 181.


Reports on observation by Paul M. Gundersen of Nelson Lagoon on timing and weather conditions associated with birds freezing into the ice.

This is the first of what developed into annual systematic surveys of emperor geese and other water birds during the fall migration from the coast of the Yukon-Kuskokwim Delta, along the north side of the Alaska Peninsula to Umiak Pass, and along the south side of the Alaska Peninsula. Subsequent related surveys include: Nos. 179, 183, 269, 270, and 271.


They describe a successful attack on a juvenile emperor goose and an unsuccessful one by six eagles on an adult. They make the point that eagle predation on emperor geese may be more common than thought and is likely more successful with young and/or weak birds.


See No. 181.


See No. 186.


See No. 186.


They provide details on fall arrival and spring departure times, as well as winter distribution across habitat types. Related reports include: Nos. 184 and 185.


Gillham provides a complete inventory of animals and plants encountered in the Chevak and Hooper Bay region during the summer of 1941.


Gillham adds spring and early summer observations to his 1941 inventory of waterfowl in the Hooper Bay region.

This presents a series of abstracts summarizing the potential effects of aircraft noise on wildlife. Work at Izembek Lagoon on emperor geese is included.


Godfrey summarizes information on Canadian distribution of emperor geese.


This volume contains annotated translations of the journals of Bering's first and second voyages, the journal of Gvozdev's voyage in 1732 and the journals, diaries, and letters of the senior officers involved in all of them. The annotations are by Golder who also cites comments by Pallas and Stejneger. Bering's first voyage left the Russian side of the Bering Strait (East Cape) and headed north east. They did not reach mainland Alaska and returned to East Cape via the Diomedes and, possibly, St. Lawrence Islands. There is reference to "game for the table" but no specifics. Gvozdev traveled east from East Cape to islands and a mainland, allegedly occupied by the Chukchi. They note shooting deer but make no mention of ducks or geese. Bering's second voyage took him south of the Aleutians to Kayak (St. Elias) Island. The return trip was more coastal and through the Aleutians. In the log, there are many notations of "shore-ducks of various sizes" (as well as descriptions or references to many other birds). There is also a reference to many "white-backed ducks" encountered when they ran aground on Adak Island. There are no mentions in these journals to geese or anything resembling emperor geese. More details on ducks (e.g., red-billed ducks) are found in the report of Waxel and the journal and report of Chirikov. There are, however, no specific references to geese, emperor-like or not.


This volume includes Stejneger's translation of Steller's journal of the sea voyage from Kamchatka to America and return on the second expedition 1741-1742. It includes notations made both by Stejneger and Pallas in addition to Golder's own. This complements the journals in Golder's Volume 1, adding natural history to the navigational and geographic information. There are descriptions of numerous birds including several ducks (e.g., harlequin duck). There are also descriptions and comments on various alcids and cormorants - including the now extinct form found on Bering Island. It is worth speculating on the lack of any mention of geese in Steller's journal or the ships journal (Golder, Volume 1). It is possible that some of the "shore-ducks" were really geese. The term "duck" was historically used in a taxonomic sense to include both geese and ducks (Pennant 1781). Sewastianoff (1802) named the
emperor goose "Anas canagica" and referred to it as "canard" (duck) in his description. It is also possible that the timing of the voyage minimized potential encounters with geese and especially emperor geese. Bering's ship (the St. Peter) did not reach land (St. Elias Island) until mid-July. It departed soon after, touching shore at several spots along the Gulf of Alaska, the Kodiak Island region and the Shumagins. They continued west and cleared the Andreanofs by late September. The timing and general track of the other ship (St. Paul under Chirikov) was similar.

   This is one of several extralimital observations of emperor geese along the Pacific Coast.

   This is Gray's revision of the genera of birds. For the Anserinae, he accepts:
   Chloephaga Eyton over Anas, Bernicla, Chenalopex for type C. magellanica; Bernicla Briss. over Anas, Branta, Anser for type B. branta; Anser Briss. over Anas for type A. ferus; Chen Boie over Anas, Anser for type C. hyperborea.

   There are no changes in Anserinae from Gray (1840).

   There are no changes in Anserinae from Gray (1841).

   This is Gray's revision of the genera of birds. He sinks the genus Chloephaga without explanation. He retains for genera in the Anserinae: Cereopsis, Nettupus, Anser, and Bernicla. Species included in Bernicla are: anartica, anticola, branta, canadensis, canagicus, grandis, hutchinsii, indica, inornata, jabuta, leucopareia, leucopsis, magellanica, melanoptera, ruficollus, sandwichensis.

   Gray refers to emperor geese as Chloephaga canagica. More specifically, the listing for specimen 10592 on page 77 is Chloephaga (Eyton 1838) canagica, Stewart, N. Act. St. Petersb. XIII, t. 10; Schl. De Dier fig p. 278; Elliot BNA pl 45. pictus, Pall. Zoogr t. 67. As mentioned under Bonaparte (1856), "Stewart" is a further mistake from what should have likely been Sewast. in the Bonaparte reference. The citation after Stewart is the plate from the Sewastianoff reference. There is no mention of a Stewart in that text or on the plate.


201. Grinnell, J. 1931. Further occurrences of emperor geese in California. Condor 33:38. This is one of several extralimital observations of emperor geese along the Pacific Coast.

202. Grinnell, J. and A.W. Miller. 1944. Distributional list of the birds of California. Pacific Coast Avifauna 27:1-608. They provide a detailed summary of extralimital winter records of emperor geese in California. They note that most are in association with fresh water and other geese.

203. Grinnell, J., H.C. Bryant, and T.I. Storer. 1918. Game Birds of California. University of California Press, Sacramento. 642 pp. They provide a thorough description of distribution and biology of the emperor goose. They note that only a few individuals winter in California each year and that, curiously for a marine species, most of the records are inland.


Hanson presents a comparative study of incubation patches in several species of geese including *Anser canagica*.

Harris provides detailed censuses of birds, including emperor geese, from trips on the Kashunuk River.

Hartert refers to emperor geese as *Anser canagicus*. He provides detailed descriptions of adult plumage and includes morphometric data from specimens.

Hartert reviews all works on the Commander Islands through 1920 as well as his own work based on the second collection made by Sokolnikoff in the 1900's for the Petrograd Museum. The first collection was evaluated by Bianchi (1909). The latter collection, of more than 860 skins, was sold to Lord Rothchilds when it could not be sent to the Museum. Among the geese are: *Anser fabilis serrirostris, Anser albifrons, Anser caerulescens, Branta canadensis hutchinsii, Branta canadensis minima, Branta bernicla nigricans*, and *Anser canagicas*. The emperor goose specimens (all from Bering Island) included adults collected in October, November, January, February, and April. Young of the year were collected in December.

Harting provides summaries of the collection notes from Barrow. Localities and measurements are included for emperor goose specimens.

They note that although emperor geese should be seen rarely at Pacific Rim National Park, none had been as of 1978.

See No. 215.
Headley provides data on arrival and nesting dates, reproductive success, and habitat use by emperor geese in the Hooper Bay region during 1965 and 1966. He also summarizes wintering ground feeding and habitat use observations at Izembek Lagoon. Related reports include: No. 214.

They refer to emperor geese as *Chloephaga canagica* (Sewart.), based on one male specimen from Unalaschka. "Sewart." is likely a perpetuation of the misspelling in Bonaparte (1856).

They provide detailed synonymies and distributional information on emperor geese.

Henshaw reports on four emperor geese seen on 12/12/1903 in Hawaii.

Hersey provides a list of the birds, including emperor geese, observed in Alaska and northeastern Siberia.

Hersey reports on observing several species of geese and although no emperor geese were identified, he assumes they must be present.

Herter provides detailed historical distribution of all species of geese in Alaska. The commentary on early declines in emperor geese are particularly illuminating and well-documented.

Hicks provides estimates of gosling mortality and suggests that mortality is mainly due to gull and fox predation.

Hinkley provides faunistic and floristic accounts for the Sushitna and Kuskokwim Rivers.


This is one of many Federal Aid in Wildlife Restoration Reports that provide some information on emperor geese.


They conclude that the density of emperor goose nesting is low. This was one of several periodic surveys of St. Lawrence Island.


Two observers traversed Kokechik Bay, Scammon Bay, and the Askinuk Mountains. Eighty-seven bird species were recorded; no specific data on the biology of emperor geese were provided.


They provide brief accounts of 88 species of birds including emperor geese that use or pass through the area.


Hooper noticed large flocks of emperor geese near St. Lawrence Island.


Hooper provides fall survey data on emperor geese from Izembek Bay.


Hopkinson includes records of captive breeding emperor geese.

In this annual refuge report, Hout summarizes migration data, phenology, and productivity data for 1951, 1954, 1961, 1963, and 1964. Also, he provides a narration on collecting eggs for aviculturists and raising the goslings. He reports on the results of the spring survey from Port Moller to Quinhagak in which 139,000 emperor geese were counted.


They provide data and estimates on conductance, pore size, and metabolism for *Anser canagica* eggs.


Hudson reports that nesting emperor geese were observed in Kotzebue sound during the summer of 1956. He notes that one adult and two downy young were collected.


They note evidence of atherosclerosis in emperor geese.


There are subsequent papers that, together, provide the entire list on observations made at Bristol Bay. Emperor geese are not recorded. The others are: Murrelet 12:34-42 (1931); Murrelet 12:71-75 (1931); Murrelet 13:16-21 (1932); Murrelet 13:38-40 (1932).


The temperature of emperor geese declines 2.2 degrees centigrade at night.


*Philacte canagica* were not recorded in Anaktuvuk or Old Crow. One emaciated emperor goose was found at Kobuk.


General descriptions of habitats, narrative of the timing of migration for various taxa, and an annotated list of species are given.

This is the first quantitative plant ecology study of the coastal tundra in the Yukon-Kuskokwim Delta. It was conducted in conjunction with a study on the nesting ecology of emperor geese (No. 145).


See No. 77.


Jaques reports seeing small numbers of emperor geese (*Philacte canagica*) on St. Lawrence Island and at Teller in 1928. Curiously, he reports on several birds from the Shumagins with short necks and white on the back of the head and concludes they are *Phalacrocorax auritus cincinatus*, the double-crested cormorant.


Several papers in this symposium proceedings refer to emperor geese.


The narrative provides details on the harvest and use of geese by members of a coastal Eskimo community. There are several pictures of a fall round-up and harvest.


This is one of several reports of extralimital observations of emperor geese along the Pacific Coast.


Johansen refers to emperor geese as *Philacte canagica*. He claims they do not breed on the Commander Islands but occur regularly as small flocks along the coast from October to April.


Johnsgard reports that captive emperor geese hybridize with Ross', snow, white-fronted, and brant geese.
Johnsgard provides a brief description of emperor goose courtship and mating behavior.

Johnson reports on movements and abundance of over 65 species at Northeast Cape, St. Lawrence Island in the late spring of 1973. Emperor geese were seen both in the field and in the possession of native hunters.

The Anseriformes all have a large bilobed gland. *Anser canagica* was one of several species examined.

Information from this quarterly report is included in the annual report for the refuge. See No. 252.

Jones includes 13 pages of data on emperor geese and other waterbirds at lagoons from Shemya to Ugashik Bay. See No. 261.

In this and similar reports, information on emperor geese generally includes the percent young in the population, family size, and migration dates. There are subsequent reports by the same author from 1967 (68 pages), 1968 (76 pages), 1969 (39 pages), 1970 (63 pages), 1971 (30 pages). Additional reports include: Nos. 22, 253.

See No. 252.
Kalchreuter summarizes references that specifically address the impact of hunting on goose populations.

Kear provides a brief narrative on the natural history of emperor geese.

Kennard records a specimen of emperor goose from Bristol Bay.

Kenyon provides a detailed summary of wintering emperor geese on Amchitka Island.

Kessel provides a summary of nesting ecology and migration information for emperor geese on the Seward Peninsula and elsewhere in Alaska.

This monograph reports no additional information from that presented in Gabrielson and Lincoln (1956).

They provide details on abundance of breeding emperor geese on the Kolomak River.

This is the first of what was to become annual surveys of emperor geese and other waterbirds staging along the Alaska Peninsula during spring migration. Subsequent surveys occurred in 1964 (Jones 1964) and from 1981 to present (Dau 1981-1984; Dau and King 1985-1986; King and Dau 1987-present). See Nos. 120, 123, 251, and 272.

Here King presents general information on the use of Nanvak and Chagyan bays and adjacent areas by staging emperor geese.

King provides a nice historical overview, especially with respect to Cook's early visits. He documents the presence of emperor geese from fall through spring.


This is one of a series of annual surveys and reports that began in 1956. They have involved King, Conant, and a variety of coauthors.


Species accounts and population numbers in North America and Bering Sea habitats are given for 30 species or subspecies of waterfowl. Various Bering Sea habitats are also described.


They provide details on the decline of emperor geese and note that much of it is related to harvest on nesting grounds and during molt. They discuss various management options.


They describe habitats in different regions of Alaska. Aerial survey, banding, and recovery data are given in a series of tables.


They report that over 250,000 emperor geese were present in Bristol Bay on April 22-23, 1968.


See No. 181.
See No. 181.

See No. 181.

See No. 262. There are subsequent reports with the same title by the same authors from 1989 (18 pages, including 1988 data), 1990 (14 pages), and 1991 (13 pages).

See No. 181.

See No. 181.

See No. 181.

They provide data showing that the population of molt-migrating emperor geese has declined substantially since the 1960's.

See No. 181.

See No. 181.


Kingsley refers to emperor geese as Philacte canagica and summarizes the basic ecological and natural history information available for the species.


Kistchinski provides a wide array of biological information on emperor geese with special attention to those nesting in Siberia.


Kistchinski summarizes data on all aspects of emperor goose nesting on the Chukotski peninsula.


This article provides information on the migration of emperor geese. The book is in Russian with translated titles.


These diaries cover exploration of the entire Beringia region, especially the Siberian side. Palmen's note that there is a reference to emperor geese in Kamtschatka on page 384 volume ii is correct and they are referred to as Anser pictus. However, Stejneger (1888) asserts that von Kittlitz incorrectly identified the specimen and that it is really Branta hutchinsii.


von Kittlitz gives some highlights from his two volume description of his exploration of Beringea. See von Kittlitz (1858a).

Klein provides a detailed accounting of seasonal waterfowl harvest by various native communities of the Yukon-Kuskokwim Delta.


Kortwright provides a readable summary of the basic biology and ecology of the emperor goose.


An 1818 translation of this work is referred to by Alpheraky, who states that there is a reference to a white-headed goose from Kamchatka that was really an emperor. In the 1755 original version, there is a list of seven species of geese including the white-necked goose which could well be an emperor goose. Krasheninnikov makes a passing attribution to Steller, who explored the region at the same time and whose treatise on birds was lost (Stejneger 1936). If the "white-necked" goose is indeed the emperor, then the first non-native, written reference to the species occurred 47 years before its description.


They provide details of incubation activity, nest temperatures, and hatching success of emperor geese.


Contains descriptions of basic reproductive biology and habitat use of emperor geese on the Chukotka Peninsula. Observers found nesting densities of three pairs per 40 km².


Kuroda provides details on the record of an emperor goose near Sendai City, Japan, during the winter of 1964-1965.


See No. 293.

See No. 293.


This thesis presents information on habitat, food selection, behavior, and body composition of emperor geese nesting on the Yukon-Kuskokwim Delta. Progress reports include Nos. 291 and 292. A publication from the thesis includes No. 294.


See No. 293.


This is the Latin precursor of his series, A General History of Birds. It includes all the South American geese. He describes a Painted Goose (later named Anas picta) which is clearly the kelp goose, Chloephaga picta. He states it is from Statenlandia (the old name of the main island off the coast of Tierra del Fuego). He lists several geese from the area appropriate for emperor geese (including citations to specimens from Siberia), but nothing sounding like an emperor. He does list an Anas beringii that sounds like a Steller's eider and a curious Anser grandis that weighs in at 25 or 30 Russian pounds and has a large, feathered throat pouch.


The multivolume series is an English language update of the original (1790). This volume masterfully covers the accumulated knowledge on migratory waterfowl through the late 1700's. Pallas (1831) associated the name Anser pictus with his painting by reference to Latham's description of the Painted Goose. Pallas' bird is clearly an emperor goose, and Latham's descriptions in this and the original (1790) Latin edition are not. See further comments on this point under Cook (1842), von Brandt (1836a,b), Latham (1790), and Lysaght (1959).


This edition is a translation of Bering's journals from the Danish by J.E. Olson. It is supplemented by translations from the journals and diaries of his officers. See Golder (1922).

   They provide a nice, basic summary of the biology of the emperor goose.

   Lichtenstein refers to emperor geese as Bernicla canagica. There are several species of Chloephaga mentioned, but all are South American.

   In reference to arctic nesting geese, the authors provide generic descriptions of migration routes used by emperor geese and sympatrically nesting cackling Canada geese.

   This is another of several incidental observations of emperor geese along the Pacific Coast.

   Lysaght provides a complete accounting of the published and unpublished paintings and prints in Bank's collection. That collection included basically everything from Cook's three voyages, as well as the early explorations of Newfoundland and Labrador. Since many of the specimens were lost or deteriorated before they could be studied, these paintings were the basis for the descriptions of most of the species collected on those voyages. In many cases the paintings themselves are the type specimen for the species. Each reference to a painting or print is annotated with reference to the accounts of Latham (1790) and the binomial originally assigned by Gmelin. She includes detailed lists of the specimens collected on Cook's first voyage (even date, latitude, and longitude).

   They include data an Chen canagica in their analyses of nest parasitism, nest location, and eggshell strength.


308. McKnight, D.E. 1970. Report of survey and inventory activities part III - waterfowl and small game (Project W-17-2). Unpublished Federal Aid in Wildlife Restoration Report. Alaska Department of Fish and Game, Juneau, Alaska. 33 pp. This is one of several Federal Aid Reports that provide reports of observations of emperor geese. These generally include clutch size, brood size, migration dates, and general spring conditions. There are subsequent reports from 1971 (76 pages) and 1973 (64 pages).


311. Meares, J. 1790. Voyages Made in the Years 1788 and 1789 from China to the North West Coast of America. Logographical Press, London. 372 pp. There is a 50-page appended Introduction that describes Meares initial trip in 1786-1787 on the Nootka. They stopped at several islands in the Aleutians in June and gradually made their way to the Shumagins, Kodiak Island, and Cook Inlet. From there they went to Snug Corner Cove in western Prince William Sound in early fall. The weather worsened and they remained there for the winter. Much of the crew was lost during the winter and they were found in the spring by Captain Portlock (see Portlock 1789). There are references to ducks and geese in both the fall and spring at Snug Corner Cove but they are general and provide no clues as to species. The
remainder of the book chronicles voyages by the ships Iphigenia and Felice during 1788-1789. The Felice sailed directly from the Sandwich Islands to Nootka. There are passing references to ducks throughout, but no details. Chapter XXII is titled "Various Kinds of Birds - Aquatic Fowls" and deals with the area surrounding Nootka, south of the Queen Charlotte Islands. It provides little information short of there being "... sea gulls and shags; many kinds of ducks and divers; the sea parrot and many others, of which we knew not the names". The Iphigenia sailed an initially more northerly route and made many stops along the Shumagins, the Alaska Peninsula, Cook Inlet, Prince William Sound, and along the coast to Nootka. While there are a few references to ducks and geese, there are no details. As with Meares' initial voyage and the exploration by Steller (see Golder 1925), the timing of the voyage (June through July) minimized the chance of encountering emperor geese in this part of Alaska.


This is one of a series of reports of numbers and age composition of emperor goose flocks, as well as observations of oil spotted geese observed in winter 1992-1993 at Amchitka Island. See No. 137.


This is one of a series of reports of numbers and age composition of emperor goose flocks, as well as observations of oil-spotted geese observed in winter 1992-1993 at Shemya Island. See No. 138.


Mickelson includes information on nesting ecology of emperor geese.


Although oriented primarily at terrestrial adaptations of the Hawaiian goose, this is a detailed comparative morphological study of North American geese. Miller focuses on hind limb muscle anatomy but includes fore limb muscles and the entire skeleton. He examines Nesochen sandvicensis, Branta canadensis minima, Branta nigricans, Philacte canagica, Anser albifrons, and Chen hyperborea for all characters and includes skeletal examinations of Chloephaga leucoptera. In making comparisons Miller strives to discriminate products of common adaptation from those of recent common descent. Of relevance to emperor geese, he concludes that although they share some traits almost exclusively with Chloephaga, those traits are likely the result
of convergent evolution rather than recent ancestry. He concludes that *Philacte* is closest to *Anser* and *Chen*.


De Montlezun refers to emperor geese as *Bernicla canagica* and provides an accurate description. He claims (incorrectly) that Verreaux moved the species from *Chloephaga* to *Bernicla*. His paper includes descriptions and prints of *Bernicla antarctica* (recognizable as *Chloephaga hybrida*, the kelp goose), and *Bernicla magellanica* (recognizable as *Chloephaga picta*, the upland goose). De Montlezun asserts that this is Cook's painted duck from Staten Land.


Munt displayed a nest and five eggs of an emperor goose at a club meeting held at Pagani's Restaurant, Portland Street, London.


Refers to emperor geese as *Philacte canagica*. None were seen but a skin was obtained as a gift from Lt. F. Schwatka on St. Michaels Island.


Murdoch chides Nelson for haste and sloppiness in the Corwin paper. Emperor geese are not mentioned.


Murie reports on general observations of emperor geese.


Murie reports on collections made during the thirties. Emperor goose bones were found.


Murie provides a wide-ranging discussion on the distribution and biology of the emperor goose.

Murie provides a brief narrative on emperor geese.


This author lists emperor geese as rare on the Black River.


This is a record of what was probably an emperor goose that was probably banded on the Chukotsk Peninsula. The bander was killed in the war and all records lost.


Nelson refers to emperor geese as *Philacte canagica* on p. 95. He notes that Nordenskiold had seen several at East Cape (Siberia) and lists several other sites in the Bering Sea and the Aleutians where they have been observed. He quotes from Sewastianoff's original description and notes that "a miserable wood-cut accompanies the description".

327. Nelson, E.W. 1885. Counter - "notes on some species of birds attributed to Point Barrow, Alaska". Auk 11:239-244.

Nelson counters the criticism of Murdoch (1885b). See No. 319.


Nelson states: "Among the various species of birds more or less peculiar to Alaska this goose is perhaps the most noteworthy." He refers to emperor geese as *Philacte canagica* and summarizes distributional reports made through the mid-1880's. He states that Sewastianoff's specimen was provided by Billings, who visited the Aleutians in 1790 and claims the species was described by Sauer, who noted the species arrived on Unalaska August 31 and departed the following April. He provides some information on nesting and measurements of 15 specimens.


Nelson provides a general summary of the biology of emperor geese.

Nelson provides a basic summary of distribution and biology of emperor geese in an easy-reading, delightful essay.

   One of many Federal Aid in Wildlife Restoration Reports that provide some information on emperor geese.

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   One of many Federal Aid in Wildlife Restoration Reports that provide some information on emperor geese.

   Newton refers to emperor geese as *Chen canagica*.

   *Anser canagica* is included in this early synthesis of information addressing the general problem of timing and nesting success. While we have accumulated more details, many of Newton's generalizations remain valid. This is a classic paper on the topic.

   They note the extreme decline in three species of geese breeding in Alaska (49% decrease in *Chen canagica* between 1964 and 1984) and discuss some of the problems associated with attempting to halt the decline.

   These diaries (translated by A. Leslie) provide details of exploration of Beringia, including visits to the Seward Peninsula, St. Lawrence Island, the Diomede Islands, and the coast of Chukotski, where he reports seeing *Anser pictus* (Volume 2, page 42).

They report that five emperor geese were seen during the winter on Middleton Island.


Ogilvie provides a detailed account of the biology of the species in a comparative context with other northern-hemisphere geese.


This is one of many Federal Aid in Wildlife Restoration Reports that provide some information on emperor geese.


This is one of many extralimital observations of emperor geese on the Pacific coast.


This lists emperor goose status as a rare straggler with only one record. See Kuroda (1968).


Osgood reports on one bird collected by C.L. McKay in 1882 on the Nushagak River, two at Ugashik in 1881, and eleven in Bristol Bay in 1881. The specimens were sent to the National Museum.


They report that emperor geese commonly nest in the Yukon River region.


This is a government reprint from the Bulletin of the Bureau of Fisheries, Volume XXXIV, 1914. They note that Philacte canagica is present in the Pribilofs, but that the numbers are low.


Owen provides a summary of the biology of the species including comparisons to captive birds at Slimbridge.

This plan reviews the current knowledge of emperor geese and provides recommendations for management of this species.


Pallas incorrectly uses the name Anser pictus for what is clearly an emperor goose on pl. lxvii. He apparently chose this name after misreading Latham's (1790) description of Anser plectus. See Latham (1790), von Brandt (1836a, b). The three-volume set by Pallas was originally printed in 1811 by the Academie, but only in limited numbers. It was reprinted in 1831 and more widely distributed. We have compared an 1811 edition of Volume 1 to an 1831 edition and they are identical. We assume the same is true for Volume 2 cited here, but since we were not able to examine an 1811 version we cite it as 1831 with the notation of an 1831 edition.


This is cited in Coues American Ornithological bibliography. It is said to refer to emperor geese as Anser pictus. This is a paper resulting from the Voyage of the Vega.


This Swedish book is an account of Nordenskiold's expedition (1878-1879) on the Vega. Palmen refers to emperor geese as Anser (Philacte) canagicus (Sevast.) Brandt. He gives a detailed description of encounters with them during the Vega Voyage (pages 421-425). A detailed table of distribution of birds by degree block is also included.


Palmer provides a detailed summary of all aspects of the biology of the emperor goose.


Palmer provides details on the history of ornithological studies on the islands as well as summarizing the actual work. There is a short summary of emperor geese. There is a major summation on Alcids.

Pamplin summarizes the problems associated with harvest and declines of goose populations on the Yukon-Kuskokwim Delta. He discusses possible solutions.


This work defines the genera of birds as they were understood at the time. There were two divisions: land birds and water birds. Coincident with this there were nine orders, of which the waterbirds comprised the last three. They were: VII - Cloven-footed or waders, comprised of genera 59-75; VIII - Pinnated-feet, comprised of genera 76-78; IX - web-footed, comprised of genera 79-95. Among these are the albatrosses, auks, divers, gulls, mergansers, ducks, "pinguins", and pelicans. The diagnosis of a duck (Anas) is: Bill - strong, broad, flat or depressed; and commonly furnished at the end with a nail. Edges marked with sharp lamellae. Nostrils - small, oval. Tongue - broad, edges near the base fringed. Feet - middle toe the longest. The emperor goose would have met these and been called Anas, just as Sewastianoff did.


Provides a complete description of the species of birds recognized to occur in the arctic at that time. In accord with Pennant 1781, the geese are designated as Anas. Included as species are: Canada, bean, greyleg, blue-winged (caerulescens), white-fronted, snow, brent (both hrota and bircila), barnacle, great, Chinese (cygnoides), and red-breasted. There is no mention of emperor geese nor a description that comes close.


This is the first of five reports of field work conducted primarily on emperor and cackling Canada geese at Camp Lake, Kokechik Bay, Alaska. Annual reports include 1983 (48 pages), 1984 (28 pages), and 1985 (16 pages). The final report was completed in 1987 (51 pages) and summarizes the data from 1982-1986. Publications from these data include: Nos. 360, 361, 362, 363, and 364.


The number of emperor geese and other water birds estimated at staging areas along the Alaska Peninsula are presented in this report.


Petersen provides details on feeding activity in relation to tide cycle.

Petersen provides a basic summary of the biology of the species and discusses its current and future population prospects.


Emperor and cackling Canada geese differ in nest-site selection.


This is the definitive work on reproductive ecology of the species. Publications from this dissertation include Nos. 360, 362, 363, and 364.


Petersen documents variation in egg shape among individuals and discusses its use in evaluating intraspecific nest parasitism.


Petersen provides a detailed analysis of reproductive performance in the species.


Petersen provides estimates of survival using a Kaplan-Meier analysis. She also evaluates the relation of survival and reproductive performance.


They provide a detailed evaluation of population density and productivity between 1964 and 1981.


They provide a summary of published and unpublished observations of spring and fall migration through Nanvak and Chagvan bays and summarizes information on emperor geese seen in the region.


They provide an enjoyable account of the species and the people working with them in one of the main study areas.

They provide information on emperor geese collected by natives and anecdotal information on nesting and molting geese.


Pitelka reports that the emperor goose is a straggler in this region.


They provide numerical and geographical summaries of waterbirds, including emperor geese, nesting in the Yukon Delta of Alaska.


Ploeger claims that Anser canagica likely used the Beringial refuge during the last glaciation.


They report information on staging emperor geese, timing of subsistence hunting in spring, and numbers of birds taken by hunters.


This is a translation from the original Russian. Portenko provides a detailed biological and ecological discussion, especially summarizing observations made on the species in Siberia. He notes that early Russian settlers called it "Caesar's goose" and that the Chukchian natives used a word that meant "white-headed". We were unable to find and verify several of the numerous citations to Russian works that may be important to those interested in Eastern Siberia. This reference should be consulted for summaries of and citations to those works.


Captain Portlock was the Commander of a two-vessel expedition, charged primarily with establishing a fur trade with natives along the northwest coast of America. He was also Captain of the ship King George. Captain Dixon was in command of the
smaller ship, the Queen Charlotte. They arrived at Cook Inlet on July 19, 1786, explored the inlet and then sailed along the coast to Prince William Sound. They headed southeast toward King Georges Sound in September, but failed to find it and sailed to the Sandwich Islands for the winter. There are notations that geese and swans were sighted along coastal Alaska, but no details are given. They returned to Prince William sound on April 17, 1787. They saw many geese and ducks that were so shy they could not get off a shot. Again, they provide no details on the birds. They encountered Captain John Meares of the Nootka, who had sailed there the previous year from the orient, had spent the winter and had buried many of his men who died from scurvy. There is a description of natives from the area of Portlock Harbor (north of Herbert Graves Island) rounding up and clubbing flightless geese during early August. He departed for the orient on September 16, 1787.


They record the emperor goose as a regular spring and fall visitor to the Pribilof Islands. They provide details on early collections of the species.


They provide data from rflp analyses of mtDNA on relations among brant, Canada, emperor, and Hawaiian geese.


Rankin provides a brief narrative on the natural history of emperor geese.


See No. 380.


Raveling summarizes population status of all goose species from the Yukon-Kuskokwim Delta and discusses the relation of declines to native harvest.


This is the first of a series of annual reports by various authors of goose productivity at the Old Chevak Camp, Kashunuk River, Alaska. Data for emperor geese are contained in these reports. Analytical emphasis has been on cackling Canada and
white-fronted geese. Reports from studies at Old Chevak include: Nos. 4, 5, 154, 155, 378, and 475.


They suggest that satellite imagery should be used in goose management.


The authors review the use of satellite imagery of ice and snow cover to assist with predicting variation in productivity of geese in arctic habitats.


Reichenbach refers to emperor geese as *Bernicla canagica*.


Ridgway refers to emperor geese as *Philacte canagica*.


Ridgway refers to emperor geese as *Philacte canagica*. He diagnoses the genus primarily on position of nasal fossae and attributes of the mandible.


Emperor geese are listed as a potential prey species.


There is no relation between egg mass and clutch size in emperor geese. As in other geese, clutch size declines with laying date. They claim that unlike other geese, intraclutch variation in egg mass increases with clutch size. It is likely, however, that this result stems from their failure to exclude parasitic eggs from the analyses. Data for emperor geese are from Eisenhauer's study (No. 144) at Kokechik Bay, Alaska.


The authors discuss conspecific nest parasitism and cite Eisenhauer and Kirkpatrick (1977) for its occurrence by emperor geese.
   This is one of many extralimital observations of emperor geese in the Pacific Northwest.

   Rue provides a brief narrative on the natural history of emperor geese.

   They conclude that the flight speed of emperor geese is more rapid than most geese.

   Ryser reports that emperor geese have only been reported from Malheur National Wildlife Refuge in Oregon.

   This is the key starting point for the systematic literature of migratory waterfowl (members of the Chenomorphae) prior to 1895. Salvadori also includes some descriptive and distributional information on emperor geese.

   This is one of many annual narrative reports for the Izembek National Wildlife Refuge. Information on staging emperor geese is generally provided each year. There is a subsequent report by the same author from 1980 (30 pages).

   Sauer commented on large numbers of emperor geese on St. Lawrence Island.

   Saunders refers to emperor geese as Bernicla canagica and reports that specimens were exhibited.

   See No. 77.
Schalows reviews von Brandt's contributions and summarizes all birds in the region.
He provides a short basic summary of Anser canagicus Nob.

399. Schiller, E.L. 1951. Studies on the helminth fauna of Alaska VI: the parasites of the
emperor goose (Philacte canagica, L.) with a description of Hymenolypsis canagica
Sixteen emperor geese collected on St. Lawrence Island were heavily infected with
helminth parasites.

in young anseriformes on the Yukon Delta nesting grounds. Transactions of the
American Microscopical Society 73:194-201.
All of the emperor geese collected at Igiak Bay (Kokechik Bay) were infected with
helminth parasites. Except in one male whose gut was perforated, the parasites
appeared to do no serious damage. Schiller concludes that the heavy infestation does
not increase mortality per se but might make individuals more susceptible to other
stresses.

401. Schlegel, H. 1866. Anseres. Pages 1-122 in Revue Methodique et Critique des
Collections Desposees dans cet Etablissement. Vol. VI. (Monograph 31) Museum
D'Histoire Naturelle, Pays-Bas.
Schlegel refers to emperor geese as Anser canagicus and provides a brief description.
With the exception of Ceropsis (Cape Barren Goose), all geese are lumped under the
genus Anser. No explanation is provided.

402. Schmutz, J.A. 1992. Survival and migration ecology of emperor geese along the
Alaska Peninsula. Unpublished report. U.S. Fish and Wildlife Service, Anchorage,
Alaska. 17 pp.
See No. 405.

Condor 95:222-225.
Schmutz demonstrates that survival from fledging through the early fall depends on
body mass.

Schmutz provides data on feeding relative to tide cycles, habitat type, and the age
composition of flocks. He also examines feeding rates of adults and juveniles.

ecology of emperor geese along the Alaska peninsula. Unpublished report. U.S. Fish
This is one of a series of annual reports providing information on staging ecology and migration of emperor geese and an estimate of annual survival. Subsequent reports include: Nos. 402, 406, and 407. Publications from this study include: Nos. 403, 404, and 409.


See No. 405.


See No. 405.


This is a preliminary report on the status of a population modeling study using reproductive parameters and survival estimates of emperor geese.


This is a thorough analysis of seasonal and annual survival of emperor geese based on reobservations of marked geese at spring and fall staging areas. See No. 405.


They report that emperor geese are a rare migrant in lower Cook Inlet.

411. Sclater, P.L. 1880. List of the certainly known species of Anatidae, with notes on such as have been introduced into the zoological gardens of Europe, and remarks on their distribution. Proceedings of the Zoological Society of London:496-536.

Sclater refers to emperor geese as Anser canagicus and notes that as of that date none had been introduced in European zoos and parks.


This is one of many reports of extralimital observations of emperor geese along the Pacific Northwest.
Scott provides basic reproductive information on emperor geese, especially on captive rearing.

This is one of a series of annual reports from the Tutakoke River study area, Yukon-Kuskokwim River Delta, Alaska, on basic nesting parameters of geese. The primary study is on black brant; however, the reports also include data collected on emperor geese. Subsequent reports that include data on emperor geese: Nos. 415 and 416.

See No. 414.

See No. 414.

This memorandum also reports fall concentrations of emperor geese in 1968, 1969, 1970, 1975, and 1976.

This is the initial description of the species as Anas canagica. It is based on a specimen collected by a Captain Billings near the Island of Canaga or Kyktak in the Aleutians (see Turner 1886). Sewastianoff found the specimen among the bird collection of Catherine II. He recognized it as unique and described it in detail. He included both measurements and a beautiful print as Table X (reproduced on the cover of this publication). Steve Bach translated the period French for us and the following descriptive snippet is taken from that translation. "This duck has the face, the top of the head and the nape covered by white feathers, which enwrap the posterior part of the neck descending and narrowing down to the back. The throat, the sides and the middle of the neck are black, marked with white points, which become rays on the feathers which cover the top or beginnings of the breast, covering up to the beginning of the belly the feathers of a color of bright gray bordered by black and white. But as these feathers are situated very close to one another and overlap each other, the bright gray color which forms the base of each feather is not readily apparant". Sewastianoff
comments that the species may have been domesticated although this more likely reflects on his interpretation of stories of the manner in which natives of the region herd molting birds into traps for harvest. The translation of the period French by Bach is available from the authors.

They provide a summarization of extralimital observations of emperor geese in Orange County, California.

There are subsequent reports from 1962 (4 pages) and 1963 (3 pages) by this author. The 1963 report describes the effects of flood tides on the nesting success of ducks and geese on the lower Kashunuk River study area.

They describe an eagle catching an adult emperor and carrying it to a sea stack.

See No. 424.

See No. 424.

They describe formation of F1 and F2 hybrids between the species and discusses the chromosomal homologies. While the hybrid F1 birds were fertile, there was high embryonic mortality. Interestingly, the color phenotypes of the hybrids are very similar to those of heterozygous blue geese (Anser caerulescens). Similar publications include: Nos. 422 and 423.

See No. 81.

They discuss the importance of the Yukon-Kuskokwim Delta as one of the important northern watersheds for production of migratory waterfowl.


The authors report where emperor geese were observed during seabird colony surveys.


Spencer summarizes the results of aerial surveys, ground counts, and banding of waterfowl, including emperor geese, on the Yukon-Kuskokwim Delta.


They highlight the importance of the Yukon-Kuskokwim Delta to migratory waterfowl.


This is the first of a series of annual reports on data collected from a series of randomly-located 0.324-square-kilometer plots selected on the Yukon-Kuskokwim Delta and searched during goose incubation. The 1986 data are reported by Stehn (12 pages). Subsequent reports from this study include: Nos. 432, 434, 435, 436, 437, and 477.


Preliminary analysis suggests that 19.5% of the emperor geese nesting in the area do so on Native land inholdings on the Yukon-Kuskokwim Delta.


See No. 430.

This report is a summarization of data on nesting geese at South Nelson Island, Yukon-Kuskokwim Delta, Alaska.


See No. 430.


See No. 430.


See No. 439.


See No. 430.


The expedition to the Commander Islands and Kamtschatka was in 1882-1883. Bean, white-front, Canada, and brant geese were collected. Snow geese were mentioned by the natives. No emperor geese were seen or collected. On page 318 Stejneger asserts that von Kittlitz' (1858) record of Anser pictus was likely Branta canadensis hutchinsii.


Stejneger refers to emperor geese as Philacte canagica. He collected two specimens on 6 April 1885 on Bering Island. He notes that they and those collected by Nordenskiold on the Tschatka Peninsula are the only "old world" records for the species. Measurements for Stejneger's birds 1, 2 (in mm) are: wing: 386, 402; Tail
feathers: 125, 130; Exposed Culmen: 37, 41; Tarsus: 69, 73; Mid toe with claw: 71, 76.


Stejneger provides a review of Palmen's book on the Voyage of the Vega. Much of the paper deals with shorebird taxonomy, but the closing paragraph asserts that Palmen's claim that authors have overlooked von Kittlitz' (1858) statement regarding emperor geese in Kamtschatka is incorrect. Stejneger notes that the bird in question was really Branta hutchinsii.


Stejneger summarizes avifauna of the Kuril Islands from his own collections as well as the work and diaries of others. The only geese mentioned are Anser segetum middendorffi, Anser albifrons gambeli, Branta canadensis hutchinsii, and Branta nigricans. No emperor geese are reported.


This is an amazingly detailed and well-written account of Steller and especially his explorations as the naturalist on Bering's Second Expedition. This work is based not just on Steller's journal (see Golder 1925) but on all of his available letters, diaries, and papers, which are referenced. The bulk of the translations are by Stejneger. There are annotated accounts of descriptions of the numerous plants, mammals, fish, and birds found and reported by Steller. The only reference to a goose is Branta canadensis hutchinsii.


This is one of several records of extralimital observations of emperor geese in the Pacific Northwest.


Strang provides some details of emperor goose goslings as prey for this species.


Stresemann provides details on the route of Cook's third voyage including likely names of Alaskan sites. He notes that they saw both blue and white phase snow geese in the Vancouver Island area. Given the scarcity of blue phase snow geese on the west coast and the fact that the observation was in the spring, the blue geese could have been emperor geese. However, Stresemann's claim is specifically refuted by Beaglehole (1967), and we found no reference to snow or blue geese in any of the journals.
associated with Cook's voyage. The closest is Vancouver's (1798) reference to white and brown geese north of Vancouver Island.

They note that emperor geese are very common on Attu.

Swarth provides details on collected individuals.

Taber provides details on fall arrival and spring departure, distributions of wintering flocks, and daily activity of emperor geese on Adak.

His list of geese includes: Anser rubrirostris, Anser grandis, Anser segetum, Anser albifrons, Anser minutus, Eulabeia indica, Cygnopsis cygnoides, Chen hyperboreus, Bernicla leucopsis, Bernicla brenta, and Bernicla ruficollis. He synonymizes these to Latham (1824) and Pallas (1831). None of these (e.g., A. grandis) fit the description of emperor geese.

Taczanowski refers to emperor geese as Philacte canagica. He provides some ecological details.

This is one of several records of extralimital observations of emperor geese in the Pacific Northwest.

This report provides data from a survey for emperor geese on the Alaska Peninsula.

He reports observations of natural history of nesting emperor geese on the Seward Peninsula. Other waterfowl species accounts include: brant, mallard, pintail, greater
scaup, oldsquaw, Pacific eider, and red-breasted merganser. Thayer also discusses the effect of predation and native harvest.


They note that emperor geese are rare along the north coast of the Chukchi Peninsula.


Thompson observed a single possibly nesting emperor goose.


This thesis is from a study on the incubation behavior of emperor geese at Kokechik Bay, Alaska. Publications from the thesis include: Nos. 457 and 458.


They provide a detailed evaluation of incubation behavior of emperor geese. See No. 456.


They provide detailed information on incubation behavior and insulation quality of nest material. See No. 456.


This is one of many Federal Aid in Wildlife Restoration Reports that provide some information on emperor geese.


This is another report of an extralimital observation of emperor geese along the Pacific Northwest.


Tougarinov provides a summary of taxonomy and natural history for the species breeding in Russia.
One emperor goose was shot in Humboldt Bay in 1885. This is an early extralimital record of an emperor goose in the Pacific Northwest.

Townsend refers to emperor geese as *Philacte canagica*. One was shot by Mr. Fiebig of Eureka in winter of 1884.

Emperor geese are not mentioned.

"St. Michaels is a famous place for geese in the fall. Natives brought them on board by the dozen, the assortment consisting of white fronts, canadas and emperors." AMNH specimen #61602 is one of these. Emperor geese are rare on St. Paul Island.

From surveys of Kowak River, Kotzebue Sound, white-fronted geese were most common and both hutchinson and cackling Canada geese were reported. No emperor geese were seen. He says they often roasted fledgling geese stuffed with potatoes and wild onions.

Turner refers to emperor geese as *Philacte canagica*.

Turner refers to emperor geese as *Philacte canagica* and provides numerous details on the history, distribution, ecology, and hunting of the species. He notes the confusion of the Russian words for guinea hen and tsar (see Collins et al. 1945). He also points out that in the Aleutians the Russian name for this goose is Lidenna (beach), while on St. Michaels the same term is applied to the white-cheeked goose, *Branta canadensis hutchinsii*. The latter is called the Tundrina goose in the Aleutians, a name used on St. Michaels for the white-fronted goose, *Anser albifrons*. Turner resolves the confusion over the place of origin of Sewastianoff’s specimen, noted there as Canaga or Kyktak.
The island Kanaga is too far west to have been "...sitere derriere la cap Aliazka", an additional descriptor in the original paper. Turner explains that this is likely the island Kadiak whose Inuit names were Kaniag or Kanaguk. He also notes that Kyktak is simply one of the many spellings of the Inuit word Kikhtuk or island. There is a detailed accounting of native harvest and use of this species throughout the year. He provides a palatability review and ranking of geese occurring in the area and concludes that Philacte canagica is "scarcely to be thought of as food".


This is a brief summarization of the zoogeographic and taxonomic relationships of marine birds from north and northwestern North America.


Vancouver went up the coast from Nootka to Cook Inlet. He explored that as far as Turnagain Arm and then sailed south past Kodiak and left the region. The descriptions of natural history and birds for the region are not extensive and are vague. For example, he notes seeing white and brown geese at Nootka.


This is a two-volume series that addresses the "new" birds of North America and includes gorgeous plates. Unfortunately, it follows the systematic order of the period which places water birds last. Like several of these treatments, the author died before he reached the ducks and geese.


Verreaux makes a passing reference to Gray (1849) who reassigned several species, but no specific reference to emperor geese.


This is one of several extralimital records of observations of emperor geese in the Pacific Northwest.


Walkinshaw found Philacte canagica nesting at Chevak.


See No. 380.
See No. 77.

See No. 430.

Wentworth provides a seasonal summary of harvest. There is an earlier preliminary version of this report dated 1991.

They provide details on all unusual sightings of emperor geese in the Pacific coast states.

The authors present information on the abundance, age composition, and behavior of emperor geese staging in fall at Cinder Lagoon, Alaska. Subsequent reports include: No. 481.

See No. 480.

Emperor geese are recorded.

This is one of several records of extralimital observations of emperor geese along the Pacific Coast.


The authors present information on bird populations in the Cape Thompson region, Alaska, during spring and summer 1959-1961.


Wilson does not mention emperor geese.


Wilson does not mention emperor geese.


Wilson notes that this normal winter resident leaves for the summer.


The authors present observations of several species including emperor geese they encountered at Kokechik Bay, Alaska, in spring and early summer.


The author provides basic habitat descriptions of nesting birds, including emperor geese, and basic habitat descriptions of areas preferred by reindeer.


They provide behavioral details on families of captive emperor geese whose exact lineages are known.


Anser canagica is included in a comparative analysis that shows a negative relationship between annual clutch size and longevity. The effect is more pronounced when body mass is removed as a covariate.


This is one of several extralimital observations of emperor geese in the Pacific Northwest.

Zwiefelhofer reports on numbers of emperor geese recorded on 11 January 1990 at Sitkinak Island and Sukhoi Lagoon on Kodiak Island. He also references numbers seen on similar counts in January 1988 and 1989.
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### Appendix A. Scientific nomenclature used for emperor geese.

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1Scientific designations that are currently in use.