from the Athabasca and Peace rivers to the south and thus destroy forever the richest biological resources of the entire Mackenzie system and hence the traditional life style of many native peoples. We may even send the waters of the Yukon and Mackenzie to the deserts of the American southwest."

This little book deserves a wide reading public. At a time when "progress" is taking on a new and deeper meaning, the pressure of many people's convictions just might slow down the further development of our natural resources into unnatural spoilage. The illustrations, chosen with imagination, add to the interest of this small but excellent publication.

Paul Nanton

BIBLIOGRAPHY OF BOOKS ON ALASKA

In form and content this book is a sumptuous gift to the serious student, to the literary and historical amateur and to bibliophiles of all sorts. The editor furnishes a catalogue of all works relating to Alaska published from its discovery to its cession by Russia to the United States two and a quarter centuries later. Rather than omit anything which relates to his theme he includes books, whose connection with Alaska are very tenuous indeed (Gmelin's Reise durch Sibirien contains nothing more pertinent to Alaska than the preparations for Bering's trans-Pacific voyage); in consequence we have a book-list which sheds a broad light not only on early Alaska but on eastern Siberia and the exploration of North Pacific islands and the northwestern coasts of America. In all 161 titles are included of works dealing with voyages, atlases, and the findings of the scientists who from the first were enlisted in all government-sponsored voyages of exploration. Russian and German titles predominate, publications in French and English are also numerous.

Material is presented in the most lucid and painstaking manner. The title is given (and translated if in Russian), followed by pagination, description of illustrations, references with comments sometimes on printing and quality of the text. Different editions are collated and discrepancies noted. We have here no mere compilation. The editor supplies notes which advise the serious student as to the nature and reliability of content, and with lesser known voyagers and others expands them into biographical and historical précis which the general reader will find both instructive and charming. Without intending to write a panegyric Mr. Lada-Mocarski pays superb tribute to the memory of the army of scientists, German and French, who promoted and shared in the Russian eighteenth century "drive to the east", adding immensely to its fruitfulness in all fields of science. The three DeLisles, Mueller, Pallas, Staehlin and the luckless Steller deserve to be more than names. Here their merits are displayed, inadequately, of course, but in a most accessible form. The scale of the printing is so lavish and the different sections of each critique are so clearly marked off that the casual reader will not have the least trouble in picking out what engages his interest.

This bibliography illustrates the keen interest of the eighteenth century man in geography and other sciences and the lack of scruple sometimes exercised for his gratification. A major work in one language would speedily be reproduced in others; we learn here of a German publisher who used black-market sources to bring out an account of Cook's third voyage years before the official and authoritative narrative appeared. When it did come out it was sold out in a matter of days.

The most attractive of the editor's notes relate to what might be called the small change of travel and discovery: the reminiscences of ordinary seamen, their sufferings from shipwreck and among savage tribes, and of junior officers such as Lieutenants Khvostov and Davydov who, after "toils incredible" in many seas, suffered the paradoxical fate of drowning when they tried to vault over a river on their way home from a (presumably cocktail) party. Some of these memoirs, if in a language more generally known than Russian, appear worthy of a re-print. The noble work of Russian missionaries receives here handsome appreciation. The format of the book is superb. Each item is illustrated by a reproduction of the title-page of the first edition.

The text is not wholly free from defects. We are told that H.M.S. Sulphur was detached from survey work to take part in the search for Franklin's ships at a date when Sir John Franklin was stationed in the Antipodes as governor of Tasmania. And surely #147 must relate to Kellett's Herald, the unidentified "young naval officer" being the mate Bedford Pim. And it is strange that
the editor omits to include James Burney's "Chronological History" of northern voyages and Franklin's "Narrative" of his second journey which took him along the Alaskan north shore past a shallow indentation on the coast which he names Prudhoe Bay. And the reference in the introductory "Historical Reflections" to the massacres perpetrated by the natives of Siberia and North America on their European conquerors is by implication unjust to the persecuted aborigines of those regions as well as being at variance with the fashionable, and surely juster, judgement of modern history.

The editor, not by vocation a research historian but an international financier, has done his task with a thoroughness and breadth of knowledge which the professed scholar might envy. In addition he presents his material with a charm to which few scholars attain. It is a pity that a publication of this kind does not circulate widely. It could vastly augment popular interest in its theme.

L. H. Neatby


Those who have kept in touch with information available upon the changing fortunes of the population of barren-ground caribou in Arctic Canada east of the Mackenzie River and west of Hudson Bay will be aware that the low point in the population curve was reached in the winter of 1955-56 when the number approximated 200,000. Following "rumour data" in 1966 that a population explosion was in progress, the Canadian Wildlife Service undertook a thorough reassessment by aerial survey in 1967. The published data from this reached an estimate of 322,500 caribou which, with a subsequent adjustment, gave an official estimate of 385,500.

The purpose of the paper now reviewed is to compare the estimates of 1955 with those of 1967 in statistically equivalent terms. The result reveals that there is no basis whatever for concluding that an increase has taken place in the intervening twelve years. Indeed the population estimates are now shown to be identical when the same techniques are used to transfer the original field data into the corrected estimates of the two surveys twelve years apart.

This brief paper not only makes this vital comparison but in Table III it clearly shows the size of the adjustments to the raw data that had been imposed in arriving at final estimates. One seldom criticizes an author for brevity but, to me, the present paper would have been improved by slightly more interpretation of Table III. In view of the large size of the corrections to the original data it would have been helpful to have been able to make direct comparison of those data. The details given in Table III are presented in a way which makes this most difficult to do. I have attempted to extract these figures and I emerge with unrefined estimates of 257,000 for 1955 and 251,470 for 1967. Again the inference seems clear that there were no grounds for the suggestion that there had been a substantial population increase.

On the basis of the data presented it is unfortunate that the barren-ground caribou herd has been reopened to hunting and it is to be hoped that those responsible for the administration of the use made of this population will take the steps necessary to safeguard its integrity until such time as there is evidence of a reversal in trend.

This paper reveals the problems involved in manipulating animal numbers under circumstances where field census, carefully done by trained people, is as difficult as it is with an arctic caribou population. Figures acquire an unwarranted concreteness and, inasmuch as administrators depend upon such figures as the basis of action, grave strategic errors can occur.

I. McT. Cowan

Published for the Arctic Institute of North America by McGill-Queen's University Press, Montreal

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Indexed in the Canadian Periodical Index

Authorized as Third Class — Book Rate Canada Post Office

Printed in Canada