

Natural History Studies in Canada.¹

(1) A REVISED edition of Mr. Ernest Thompson Seton's "Arctic Prairies" (first published in 1911) is very welcome. It is a well-told story of a canoe journey of 2000 miles in search

life (in 1907) in the Far North-west of America. "I have lived in the mighty boreal forest, with its Red-men, its Buffalo, its Moose, and its Wolves; I have seen the Great Lone Land with its endless plains and prairies that do not know the face of man or the crack of a rifle; I have been with its countless lakes that re-echo nothing but the wail and yodel of the Loons, or the mournful music of the Arctic Wolf. I have wandered on the plains of the Musk-ox, the home of the Snowbird and the Caribou."

The author has fine things to tell us of—such as the love-song of Richardson's owl, sung on the wing, "like the slow tolling of a soft but high-pitched bell"; a herd of wild buffalo amid a great bed of spring anemones; a troop of caribou, about 500 strong, charging at full trot through the taint of man; and the wealth of flowers in the so-called "Barren Grounds." There are grim pictures too—of the malignancy of the mosquitoes which for two and a half months make a hell of a land which for half the year might be an earthly paradise; of the epidemics that periodically wipe out the all too prolific rabbits (billions in the Mackenzie River valley in 1903-4, and none to be seen in 1907); of the Canadian lynx that "lives on rabbits, follows the rabbits, thinks rabbits, tastes like rabbits, increases with them, and on their failure dies of starvation in the unrabbitted woods"; of the aged dwarf spruces which testify to the rigour of the environmental conditions, for one which was at least 300 years old was only 8 ft. high and 12 in. through. Mr. Seton's skill as a descriptive naturalist needs no praising, and his narrative is full of human interest as well. The book is generously illustrated with pen-and-ink drawings and photographs. The reference in the preface to the scientific



FIG. 1.—The sandhill crane. From "Wild Life in Canada."

of the caribou (a kind of reindeer), and it discloses a cheerful picture of the abundance of wild

appendices might have been judiciously omitted, for appendices there are none.

¹ (1) "The Arctic Prairies: A Canoe Journey of 2000 Miles in Search of the Caribou. Being the Account of a Voyage to the Region North of Aylmer Lake." By Ernest Thompson Seton. Pp. xii+308. (London: Constable and Co., Ltd., 1920.) Price 8s. 6d. net.
(2) "Wild Life in Canada." By Capt. A. Buchanan. Pp. xx+264. London: J. Murray, 1920. Price 15s. net.

(2) Capt. Buchanan tells of his wanderings in "the great unpeopled North, which even to-day comprises more than half of the large Dominion of Canada." He explored the country between

the Saskatchewan River and the Arctic "Barren Grounds," and his collection of birds from the area drained by the Churchill River was the first to be made from that remote region. Of this collection a list is given at the end of the book, and birds predominate throughout the pages of what is really a naturalist's journal—unvarnished, graphic, and with a strong personal note. A chapter is given to the rare sandhill crane, which he saw and heard and stalked. He found the nest and saw the eggs through the field-glass, but, having waited overnight in the hope of the parents return-

ward migration, so it is leisurely; moreover, many of the does are with young. The southward movement of great herds in the fall is largely conditioned by the absence of trees, for an icy crust, difficult to break, forms over the snow. "As the thermometer drops in the Far North and food and shelter become difficult to find, the animals will band together and grow restive, and pause from time to time to sniff the wind from the south with question on their countenance. And one day, with proud heads up and anxious eyes, they will commence their long travel through sheltering

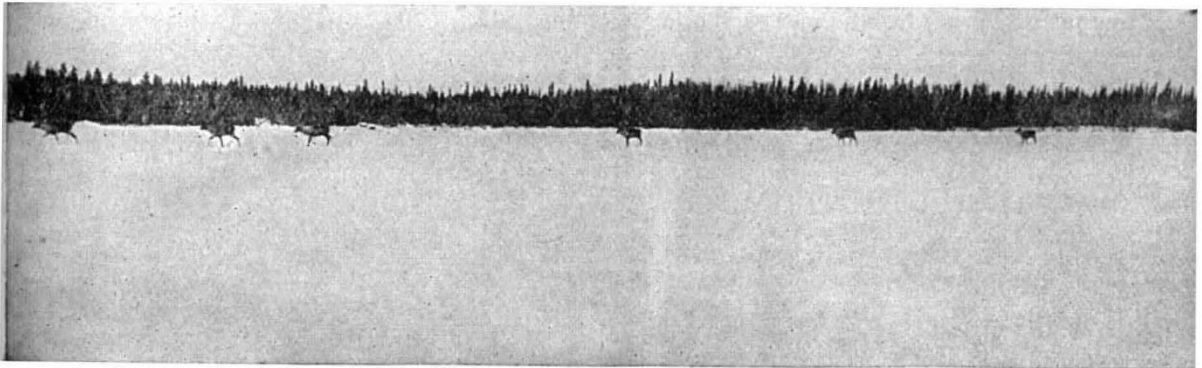


FIG. 2.—Caribou travelling in typical Indian file. From "Wild Life in Canada."

ing, he was baulked in the end, for the nest was empty in the morning.

A fine picture is given of Reindeer Lake, a vast sheet of water stretching 140 miles north and south, and 40 miles across at its widest. Its shores form the favoured winter-haunt of the barren-ground caribou (*Rangifer arcticus*), which digs through the snow to get at the white moss and marsh grass. Early in the year the does and yearling fawns begin to move northward, and the bucks follow later.

There is no weather-change urging the north-

forests where snows are soft and food is plentiful beneath its yielding surface."

The picture that the author gives of the caribou is a fine piece of work. Another chapter deals with the admirable sled-dogs, which will gamely do their best, for two or three days on end, in bitter weather and without food, to save an anxious situation. Very good reading, too, is Capt. Buchanan's appreciation of the Cree and Chipewyan Indians, "quaintly friendly and unselfish in their hospitality," "resourceful, magnificent fellow-travellers on the trail."

Tidal Power.

THE idea of utilising the rise and fall of the tides for power purposes has long been a favourite one. Up to the present, however, no power development of this kind, of any appreciable size, has been carried out. The comparatively recent arousing of interest in water-power development in general, and the great advance in the cost of fuel, have been accompanied by a corresponding interest in tidal-power schemes, and their commercial possibility is at the moment the subject of serious investigation in this country and in France.

The power which may be developed from a tidal basin of given area depends on the square of the tidal range, and since the cost per horse-power of the necessary turbines and generating machinery increases rapidly as the working head is diminished, the cost per horse-power of a tidal-power installation, other things being equal, will

be smallest where the tidal range is greatest. It is for this reason that the western, and especially the south-western, coasts of Great Britain, and the western coast of France, are particularly well adapted for such developments, since the tidal range here is greater than in any other part of the world, with the possible exception of the Bay of Fundy, Hudson's Bay, and Port Gallelos, in Patagonia.

In Great Britain the highest tides are found in the estuary of the Severn, the mean range of the spring tides at Chepstow being 42 ft., and of the neap tides 21 ft. In France the maximum range occurs at St. Malo, where it amounts to 42.5 ft. at spring tides, and about 18 ft. at neap tides. The tidal range in the Dee is 26 ft. at springs, and 12 ft. at neaps, while the mean range of spring tides around the coast of Great Britain is 16.4 ft., and of neap tides 8.6 ft.