Natural History of Saskatchewan

Thirty-five Million Years Ago

Bruce McCorquodale

Removing a Titanothere skull, encased in a plaster jacket.—Bard Photo

DURING the summer of 1951 the staff of the Provincial Museum of Natural History gained a further insight into the faunal life of Saskatchewan 35,000,000 years ago. We undertook to collect fossil bones and teeth buried by the sandy deposits of a mighty river of the Oligocene period. The material collected on the last expedition has substantially added to and filled in many gaps in the collection made during the previous year. Collectively these expeditions have yielded a valuable representation of the fossils of the only fossil-bearing formation of Oligocene age in Canada, the Cypress Hills of Saskatchewan.

The specimens recovered have unfolded an amazing revelation of the great variety and abundance of animals in this country many millions of years before the advent of man, although the dinosaurs, those huge reptiles, had been extinct for approximately thirty-five million years when the Cypress Hills formation was deposited. Many of the mammals of this deposit, although easily recognized as early ancestors of our present types, possessed many primitive characteristics not found in their modern relatives.

One of the interesting discoveries of the last expedition was that of the teeth of Mesohippus, a tiny three-toed horse, ancestor to its modern counterpart, represented by four upper molars and three lower of different individuals. Search for this type of specimen had yielded no results on previous expeditions.

Perhaps one of the most valuable finds of the year was that of the lower jaws and nearby, an incomplete skull of an Entelodon, a primitive ancestor of the modern pig. Further preparation and removal of the matrix from these specimens will yield more information as to the generic affinities and value of these fossils. This has increased by two, the number of incomplete Entelodon skulls recovered by the Provincial Museum and not represented in the

collections of other museums excavating in the Cypress Hills during previous years.

Another important discovery was that of an incomplete skull of a Hyracodon or consorial Rhinocerous which was a small hornless and primitive member of the Rhinocerous group possessing limb characteristics adapting it to swift running.

One of the most impressive or at least fascinating fossils recovered was the skull of an adult Titanothere of the Megacerops genera. Its great size and non-mamal-like appearance gives it distinction as an intriguing specimen. The Titanothere (meaning great beast) was the dominant animal at the time the Cypress Hills were formed. This is evidenced by the recovery of dozens of teeth and lower jaws, proving that this animal had occupied the dominant role, much as the buffalo did during the pre-settlement days. This huge extinct mammal is distantly related to the tapir, horse and Rhinoceros and possessed a thick powerful body and an unusual characteristic in having bony horns paired laterally on the end of its nose.

Among the less impressive specimens in appearance but not in importance were the large numbers of small teeth collected on the last expedition. Over 600 complete and incomplete teeth of small animals were recovered, representing primitive members and several species of the following families—small hornless deer, rodents, insectivores, pigs, ancestors of the sabre-toothed tiger, small members of canine family oredonts and reptiles.

Most of the specimens recovered in the summer of 1951 were excavated from a site located in 1950 adjacent to the Hazel Hunter Quarry which had been worked by parties from the Royal Ontario Museum in previous years. This new site has proved to contain a great amount of fossil material, although sandstone has made removal of many specimens very difficult.

In addition to the expedition from the Provincial Museum, a party from the National Museum at Ottawa headed by Dr. Russell conducted extensive exploration and excavations in that region, which is located geographically approximately 12 miles northwest of Eastend, Sask. Although this formation has yielded a wealth of information as to life in the Oligocene period, it will continue to reveal its secrets for years to come as there is much yet to be told about those fascinating mammals of the past.

The Retreat of the Ice Front

Allan J. Hudson, Mortlach

THE natural drainage system of an area is from high to low ground, that is, across the contour lines. But in Southern Saskatchewan we have a succession of magnificent valleys, old drainage channels where little water now runs, which lie athwart the natural drainage and along the contour of the area. For these the Ice Age was responsible.

Except in the extreme southwest of the area the land slopes to the Hudson's Bay region. The dominant contour trend is from northwest to southeast and that, too, is in the main, the pattern of its temperature contours or isotherms, and its soil zones. Judging from the moraines left by the ice, it was roughly the pattern of retreat of the ice-front from its furthest extension in Southern Alberta. All the tremendous release of water represented by the wastage at the ice-front—wastage of Rocky Mountain glaciers together with natural run-off—cut a succession of wide and deep channels in front of the ice during the long halting retreat of the front, outletting to the Gulf of Mexico.

While this channel system was being formed, a natural drainage system across contour lines was taking shape on land freed from the ice, represented by streams like the Swift Current Creek and Wood River, but such drainage would only extend on the normal plan till trapped by the glacial drainage system. Those captures are indicated by acute bends of the rivers which do not always run the same way as the meltwater formerly did. That is true of even the South Saskatchewan which was forming at the same time,

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though that river was able, for one reason or another to escape from the glacial drainage system.

Such was the retreat of the ice-front that often in its initial escape southeastward a flow of meltwater would encounter high ground and glacial lakes formed. Wherever the meltwater, loaded to capacity with material, lost velocity, deposits were laid; here gravel, there sand, another place lake clays and silts. Or even where two streams joined, deposits could form. So that besides the material directly left in sites by the ice we have an intricate pattern of water-laid deposits besides.

Life will not be denied. It invades every inhabitable vacancy. The invasion of the land vacated by the ice would have been fascinating to watch. In spite of the patchwork pattern of soils, each type of deposit has an assemblage of plants suited to the conditions. . In some of the great valleys are beautiful lakes and a lush growth. In others, dreary saline flats, resulting from too much local marine bedrock influence, but still with a plant growth.

How, too, did the birds adapt their habits to the newly opened territory? There is evidence that the mammoth was still in existence and invaded the area. An excavation for a dug-out near Maukata about two years ago by a local contractor brought up a mammoth tusk which is now in the possession of Kenneth Jones.

Man himself now enters the picture and leaves his artifacts. With apologies to Goldsmith one can affirm:

"Yet still, even here, interest can spread a charm,
Redress the clime, and all its rage disarm."

Fisher and Marten

Maurice G. Street, Nipawin

ON December 19th, 1951, J. P. Neufeld, Codette, Sask., and myself were driving in the heavily timbered area some miles north of Grassy Lake Fire Rangers tower (northeast of Love, Sask.) when we chanced to see our first wild Fisher. It had just come from a deep, heavily wooded ravine, and was about to cross the trail to a thick spruce bluff as we rounded a bend. Hearing and seeing us, it made a dash for cover, scrambling up a steep wall of brush and debris that had been bulldozed off the trail, then quickly disappearing into the heavy timber. It was really a beautiful animal, very large in comparison to ranch-bred Fisher that I had seen. It was probably an old male as its fur was rather brown with a tinge of gray. Fur buyers tell us that the females average much darker and their pelts are much more valuable.

On the hard-packed road it was a thing of grace, but off the trail in the deep snow it appeared rather clumsy, no doubt due to its very short legs.

MOOSE AND MICE

C. Stuart Francis,
Spruce Dale Farm, Torch River

MOOSE are steadily increasing in this area. One neighbor of mine stated he saw seven of these, as well as four Elk, in one day. Only yesterday, February 2nd, another man just a mile north of my farm saw three on his field together. It is indeed heartening to observe how conservation practices can quickly restore our wildlife resources, which at times, mostly due to mismanagement, become completely or almost extinct.

During the last twelve months we have had the opportunity of studying one of our least known members of Saskatchewan mammals, namely, the Boreal Lemming Mouse. During the early spring of last year, my son Stanley discovered one specimen under a decayed body of a dead Goshawk, and on February 1st of this year, Stanley also caught one in a trap set for weasel.

They are quite unusual in appearance: in form, resembling the tiny Shrew mouse. However, this species is about three to four times the size of the tiny shrew. In color this species is of a dark mahogany above, fairly light grey underneath with the division of color from the back to the underneath being divided very clearly by a line of separation. The back fur is very soft and thick; the feet are of a light brown or reddish color and the 1¼ to 1½-inch tail is quite dark. We are sending the latest specimen to Mr. Fred Bard in the hope it will be fit to add to the collection in our Provincial Museum.