P.10 - Manual notes copied out on cards.
North Dakota Stump Lake, June 12-17

A great glacial trough or false basin formed by recurrent cold beds. Small lake at commencement dry here but Glacial boulders abundant above small & especially in some tops of the many hills & ridges. The lake in deep & strong & salt & alkaline. No fish except minnows & sticklebacks listen it now but up to about 89° pleasant were abundant in it. They all disappeared as they did for Devil's Tolge evidently for lack of spawning grounds. The lake has been about 25 feet in 30 years & pods so perfectly borders by fresh water connections. Still it has much aquatic vegetation as the game & hundreds of white water serpents & other eels which filled over the prairies or in hollow trees.

Aspens grow on cold slopes or low wet places.
The prairie is high and rolling with many sloughs and colbies, glacial drift with little erosion. In times past, String's lake drained into the Beaver river and Devils lake into it. Plowing the land has evidently taken the water and lowered the lakes.
June 17, Took a train to Devils Lake, then to St. John for Thursp out to the hatchery at what they call Fish Lake, went Birchwood P.O. Worked here to the 22nd, and drove over to Carpenter Lake the 21st.

June 22, to Grand Forks.

June 24, Grand Forks to Courtenay, then Wheeler Junction, back to Fargo, Valley City. Stopped overnight to see Mrs. Marjor Johnson & catch morning train for Linton.

Shepherdia argentea, common along banks
Rhus aromatica, common on barren slopes.
Pennisetum densum, common on bare south slope.
Arctium candel, common on barren flats.

Artemisia ludoviciana, abundant, very white.
Pachystemon, abundant, in bogs.

Datura, common spec.

Lythrum pubescens, a few, in bogs.

Potentilla drummondii

Convolvulus arvensis, in bogs.

Oenothera biennis, yellow

Oenothera, pink
Crops show the approach to several years by considerable advance over those of the state north read. Corn is a foot high; against 4 inches last year. The grain, flax, potatoes are correspondingly advanced. Several patches of early potatoes are in blossom, while farther east they are not half as large or advanced. Garden vegetables are correspondingly advanced. This is excellent farming country, largely cultivated - the town is growing rapidly. Very little fruit or trees have been started.

After leaving town not a tree or bush was seen all day until on the lake banks near McPherson we found a row of wild cottonwoods, apparently native. We came up steadily for about half the day, then gained the prairie level and continued over rolling, glaciated prairie with boulders and good farms. The settlers largely Hindus.
Just near reaching Nopolson we crossed a wide lake which extended to the north and south extend for miles. The great lakes or lake swamps, famous breeding & hunting grounds for waterfowl. There were lots of ducks in sight in the open water and lots were in the tubes. We counted 7 species of ducks. Most intod are fierce.
June 28. Did not sleep a wink all night but fought mosquitos which were in a dense swarm and wildly bloodthirsty. They covered my mosquito netting so I could not see through it and crawled under and even through the seam of my sleeping bag and enough got inside to bite and constantly insinuate all I could do. They crawled down in the bag 8 bit my feet the whole length of my feet. There were crowds of dead mosquitos in my bed in the morning. The light shining in the east was very welcome. Eastgate slept in the tent but with no better success. The horses went wild & broke loose from their picket ropes but were caught. Their skins were thick & swollen in the morning and ours were sore enough so we could sympathize with them.

Caught 2 Peromastus posticus, 80, Proxemus & Uncus.

Started early thru Hopelock & across the rolling prairie & struck to camped on a hill just north of town. Not a thing in bush but deep except in tress. and a few very small ones of rabbits generally not any.
June 29. Caught Quarrons & Prasspeus only. Continued north over wide sandy prairies to Medina, then W.T.O Chase Lake & about 3 miles N.E. to a niece Clear Lake just beyond a big black lake slough & camped.

All rolling prairies with many numbers of sloughs & lakes. A few cottonwoods along old lake margin near our slights camp are the first native trees seen since the fall at Hotton. Also chokecherry bushes at one sandy lake. Elaeagnus bushes first seen near Medina, a small patch 2 miles south of town & others further north & abundant at Chase Lake & our camping lake. A few new plants noted near Medina, the first lily & hairfol.

Chase Lake is a shallow, striking, barren, sodded alkali slough with 4 small flat islands & 2 long points. It is so nasty & shallow & muddy it mean that it has been left for the pelicans. We could see a few young pelicans on the island & one man said they were 2000. Old birds & another pair of 100 old & young.

Neither seemed to know much about it as they had never been on the island & there are no boats in the country. We saw only 3 old pelicans, flying south from the lake.
Lake Refuge

A few miles N.E. of the lake were the first big
lake sloughs that offer ideal breeding grounds
for water birds, but the mosquitoes would
kill anyone who attempted to go near one
of these sloughs. But on the prairie they
are harmless unless a strong wind is blowing,
but across marsh they are unendurable.

Found the first moldy ducks & have eaten
gibes of the tail in the wheat camp.
Chicago Lake to Haukeaut Point.

June 30. Started 6 a.m. on road near Martintomov, then north along the old Indian road for 3/4 mile, then to the Haukeaut Point, about 2 miles to the top and camped on almost the highest point of the battle, overlooking Cassingval 8 miles to the N.E., about 25 miles. Not much of the way was over rather rough prairies, with numerous sloughs and lakes and thick marshes, ridges partly stony, but mostly of good soil & abundant grass & prairie vegetation. The country is thinly settled much of the way & woods are few & do not allays prevent between sandhills. We crossed some of the way over prairies, but without any trouble. Large sabers have filled all the sloughs & water holes & mosquitoes are swarming over the whole country. A few scrubby little cottonwoods & some willows & chokecherry bushes were found along the borders of sloughs about midway of the distance, but otherwise Eleagnus is the only conspicuous shrub of the prairies, except the dwarf rose & a few woody based Amorpha & the abundant Artemisia frigida.
Hawksnest Butte is a great glacial pile probably 300 feet above the prairies, evidently a relic of earlier glacial sheets which the last one placed around only accentuated. Its N. & E. faces are full of deep gulleys with springs & brush & timber, but mainly the Butte is an uplifted mass of the prairie with all the prairie characteristics of sloughs, vides, boulders, grass & prairie plants. On the high points are at least 12 old Indian mounds, usually 40 or 50 feet across & 40 or 50 feet high, old & flattened so several have been dug into.

The timber of the gulleys is mainly brood, boxelder & green ash, but with a dense newlly growth of chokecherry, wild rose, currant, gooseberry, red raspberry & cowberry. Cottonwoods, maples, flycatchers & yellow warblers are conspicuous, but only fisheries were caught in our traps & a cottontail was shot. Star-tailed grases are common & a pair of Butte sparrows seem to love a nest here.
July 1. Came down the east slope of Howleswelt Butte and out across the valley to Carrington and across the Sheyenne River to Grace City and a few miles beyond to camp. Avoided on top of Butte and 2170 ft., in valley at east base 1570 ft. and the same at Carrington 13 miles N.E. of the peak. The peak stands 600 ft. above the valley but I could not learn the alt. of Carrington to get its actual height. The Sheyenne Valley is broad and rather level, very rich soil and largely under cultivation. Wheat, barley, oats and flax are the principal crops but potatoes and vegetables as well and corn is quite extensively raised. Golden durst and Northwestern are said to be the best. Minnesota 13 is also a good variety here. Came about 30 miles and camped near Big Marshes where mosquitoes are numerous.
July 2 Broke camp and continued east a few miles to W. Henry, then north to near Haver, then east to Tolna and across the Skunk River and north to Eastgate's place on Stump Lake, where we arrived at 3 P.M. Took a long team back to Tolna and got my baggage to drive to Wibaux and where I stayed before, at west end of lake. Came 40 miles to Eastgate's 10 more to the ranch, the last part in a heavy rain. This completes a 200 mile trip in 6 days, over prairie country all the way, good roads, good farms & good crops. There is practically no waste land & much of it is under cultivation. The cultivation could be greatly improved but good crops come readily.

The weather has been called hot for the old trip but a strong S.E. wind blew steadily & at 10 am was the heat unbearable. But for the mosquitoes the trip would have been very pleasant.
July 8. Drove about 10 miles south of Silver to Basswood Lake and then 2 miles south of that to a timbered slope on west side of Red Willow Lake, then around a great rounding lakes and sloughs and thus reaches back to Stump Lake.

Basswood Lake is a small, tree-bordered body of good fresh water, deep and full of fish, in a basin surrounded by hills led on the west bordered by a fine body of timber, 40 acres of more than wood. Basswood is common, also eagle, grape, aspen, etc. But west of the timber is tall, old, elm, ash, hickory, horn, plum, chokecherry, with spots of aspen and balsam poplar. Big springs come out along the sides of the bluffs and the bottoms are wet, cool and full of interesting plants.

The woods west of Red Willow Lake are similar, with vast extensive spruce with bottoms full of aspens, balsam poplars and many hardstem plants as well as eastern. There is a little Basswood, lots of eagle, curran, grape and such low plants as thistle, daisies, yellow dead-maid flow, dewberry.
Royal Islands

The spring water is icy cold and the best trapping ground I have found for wolves and boreal mammals is in these spring snow-covered bottoms or quicks in the timber. At Stump Lake near the eastern and also similar, spring boys and cold willow quicks where Canadian, green willows, poplars, windmill poplars, aspen, willows, and such plants grow. There are as typical Royal Islands as are the sphagnum quicks of the west and they account in large measure for the apparent mixture of grains and overlapping.

Aspens grow commonly in cold glades on slopes where snow drifts unusually deep, on flat spots where spring water comes close to the surface and stay streams a mixture of spring water, around quicks, Stumps, Backwater, and Red Willow lakes and further south. So do Redwood poplars, and many other Canadian species.

The temperature of the spring water at Stump Lake is 40° in winter, 42° in summer.
Cidrena duglasi. - White-winged seagulls are common on Devils Lake as they are in Stump Lake. A few pairs have been seen in every section of the lakes whenever we went to the shores. At a rough estimate I should say they were several hundred in Stump Lake, and judging by the great size of the great size and those seen on a few places in Devils Lake, a few thousand in it.

These are the only places in Nebraska where I ever saw them or heard of them and as they are the only salt lakes I know of, it is significant that these sea ducks should live in such numbers.

They are said to breed out on the prairie and I have seen one or sometimes a pair aloft over the prairie and one pair in a little rain pool on the prairie. Eastgate says they do not nest until about the first of July.

July 9. Leave from Stump Lake and went to Devils Lake and examined its vertical ends of the old Mission at edge of the timber. But trees in the woods & along all through. The prairie is generally through ad hilly, especially near the lakes, where series of bays or ridges probably mark the old subdivisions. Some wide stretches of prairie are rather level or flat. There are generally under cultivation and much of the rolling country is also. A considerable part of the Indian Reservation is unbroken prairie, although the land was allotted years ago and is largely owned by white men now. It is good land but rather rough in places. The timber along the lake shores is the same low dense woods of Elm, Oak, Ash, Hickory, Alder, Willow, Popples, Thorns, Wild Cherry, grapes, mulberries, blackberry, and of July as is found at most of the lakes over this part of the state.
July 10. Rode camps & by 8 AM were on the road. Caught early Edangs, Whistlers & Prawnpies.

Half way to the Mission we drove through an Indian camp in a beautiful spot on the prairies overlooking a lake. The Devil's Heart Butte & Edgy's Hill at the end of rolling prairies. The white tippees glistened in the sun. The picturesque Sioux standing or squatting on the ground. Other tippees were seen near the little houses of the Indians, putting up for summer use, just as the gray squirrels build summer nests in the trees to get rid of the flies that swarm in their winter houses.

The old Mission stands in the woods on the south side of the lake but is not a very attractive spot. Sunrise classroom & ill kept. The woods are brashing and the houses or buildings very common. The church might be of any little country town & the school would pass for a little wayside hotel.
Crossed the Narrows of Devils Febe, then the Military Wool Reserve, to the Chautauqua Grounds & Biological laboratory. Here we met Jack Brown & I saw Dr. Passick of Grand Forks.

The Wool Reserve & Chautauqua Groves occupy the Peninsula, a wooded strip running nearly across the lake and including 1100 acres of woods. This is untouched forest of old, old elms and oaks, mixed with groves of Aspens growing in spruce openings. This forest is the only one I have seen that has not been cut or burnt. The trees are old & larger, but not very high. Elms up to 60 ft are 12 to 15 ft in diameter. A tangle of grape, Ampelopsis, Celestia & chestnuts on the shores makes a very dense undergrowth. The place would make a fine deer & elk park if fenced & could be used for the purpose as it is now held as a Militle reserve.

Sully Hill is also a park g
probably 50 or so trees (Eastgate thinks) on the south side of the lake in the big forest of that slope. It is a great sandhill with forest except on the top where there is some prairie.

Springs of cold glacial water occurred in its slopes. It also should be a game place and well packed.

Dear, Ed. These prairie were included buffalo & antelope and to do well all the year around.

Crook's Devil's Head Butte is just S. E. of Sulky Hill, a steep, bare, grassy butte of a conical form.

It is merely a steep hill of the normal series bordering the lake.

Continued from the Biological station to Devil's Lake town. Then north to the west end of Southwater Lakes and camped on a limbed ridge nearest the large bodies of water joining this series of lakes.
Sweetwater Lakes

Bison - Abundant, old bones & horns are numerous in the woods & around the shores of the lakes.

Cirisus canadensis - An old elk antler was found near our camp in the timber by the lake.

Cutilus franklinii - Abundant in the sandy places around the lakes.

Cutilus crassus - One seen on the prairies but none in the timber.

Cutilus richardsoni - Abundant over all the prairie, day and night. An injury to cut the heading grain out of a field, pulled down considerable.

Pescarias - Abundant but rare taken.

Zapus carolinus - One seen and think cut grass piles are common in edge of woods and brush.

Micsites deanhardi - Abundant, only 2 taken, but runways & cuttings seen all over prairies & in edge of sloughs.

Fiber 3, canadensis - Common by the lakes.

Numerous locusts run out into the banks.

Horngus tallipes - Common both on prairie & in woods & meadows.

Zapus pumilus - Cattails are numerous - in the woods & brush. Eastgate says they reached Sacramento in 1890.

One specimen and.

Sweetwater Lakes

July 11 - Caught Bleeding-Willets

Saw 12 stumps & signs of cottontails & muskrats & traces of badgers.

Eastgate saw a gopher & picked off an old elk bone. Cottontails are common & there may be varying vains in the thistles. Porcupines have eaten the cockleburs all over the sandy prairies.

Buffalo bones are numerous in the woods on the lake shore. Franklinia grandiflora is everywhere in the bushes. One but was seen near camp.

Sweetwater Lakes have gone down till they are now disconnected and we camped in the middle between 4 miles from a wooded point. Most of the banks are bordered down to the ice banks, then a sloping back of sandy or muddy ground. Thin trees spread in wide bordered out into the hollow margins. The Sweetwater lake, it which we encamped on the NW corner, is shallow and with plants come to the surface over a foot. Buds & quills are numerous over this most of the lakes.

Some of the lakes are more open with prairie around but in all the ropes, and little or no plant life and these have fewer birds. Others are heavily bordered with sloughs.
American prairie - Canoas very prairie.

Coral wireless - Eastgate thinks they are near the thirteenth of August.

They are some 150 miles from Lake Superior.

Coral radio - Coyote tracks seem along lake shore.

Coral tracks - Becker holds course.

Wally's hunting - Skunks and bears were seen.

Wally's hunting - Some bears were seen.

I saw 12 brown bears near camp, mostly loafing. They were in tables and along shore, probably fishing great schools of eggs and small fish. Eastgate thinks these fellows by their movements are due to skunks.

I doubt if they are due to skunks. Eastgate in some yard to be so — about these

I was told by Eastgate on a bending knee.

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B. A. B. - Two were caught with grass in their mouths in a dry marsh, in winter.