General Diary & Observation
Book.
H.M.B.C.M.

George K. Dawson

Sunday June 1. 1873.

Arrived at Dufferin, Manitoba per Steamer "Selkirk" about 1 P.M. & landed on the muddy bank of Red River amidst torrents of rain. Great confusion during landing of baggage, during which missed three out of my nine packages. Introduced to members of Boundary commission. Got room 5s 5d.

Monday June 2.

Got baggage unpacked & other arrangements made.

State of river. The river has been in very high flood this spring, & though now much reduced is still very large. Told that only 8 ft to spare from level of ground on which the barrack built. The banks of the river are thickly covered with a deposit of

fine mud or loess left by the water. This shows distinct water line terraces on a small scale. Wherever the water has lain vegetation has been much retarded, & the water level may be read on the trees & bushes by the absence of leaves below it.
This flood though high is not so great as some recorded, the water in some cases having, I am told, gone 10 to 15 ft higher.
The main cause of the floods appears to be the S to N course of the river. The upper parts of which are gorged with water from melting snow before the ice in the lower or Northern part has given way. There may also be something in the theory that the river becomes slowly silted up giving rise year by year to higher & higher floods. till finally one of great volume scours the river bed & thus prevents floods for some years afterwards.

The flooding of the river renders travel in the prairie country in its neighbourhood to be very difficult. The water is thrown back into the coulees, which are long rather steep sided winding valleys with small brooks at the bottom. These it becomes impossible to cross, & they can only be avoided by making very long detours round their heads.

June 3. 73.

Morning collecting plants. Afternoon went out to lake or pond W of this, with Ashe. Object duck-shooting. Got no ducks though saw & fired at a few. Got a Crimson headed woodpecker. Saw many rare & beautiful birds but did not shoot them as I have not yet got the services of Sapper Duckworth, who is to act as my assistant in taxidermy &c. The lake is narrow but long in a N.S. direction & winding. It looks

like a portion of an old river bed, or blocked up coulee. The East Shore fringed all along with the Roseau, or reed grass. The W. Shore bare & showing beautiful green turf. Mosquitoes after a time become perfectly awful, & we were obliged to beat a retreat.

<u>Appearance of Country round Dufferin</u>

The banks of the river are pt high, & the river does not here run in a flat valley. The prairie stretches away from the top of the bank in every direction. Near the river it is generally thick & shrubby, but a short distance back it becomes bare, & stretches away level as a cricket field, save where broken by an occasional coulé or clump of trees & bushes.

<u>Vegetation</u> is now in the first fresh luxuriance of Summer. I could detect no change in advance of season in coming so far N from Moorhead.

The whole Red River country seeming to start in spring at one time. Three species of Viola (at least) now in flower. I think Cucullata, pubescens, & pedata? Also strawberry, the plants of which are very numerous; wild currant, plum, la poire, common thorn, choke-cherry, tassel-flower, small purple vetch, many grasses & sedges, besides flowers not so common as those mentioned above. The soil to all appearance is exceedingly fertile, & dries up wonderfully fast after heavy rain or flood. Work has been going on at the farm of the Commission & some grain is already up.

Got one of missing boxes down by Sgt. Selkirk from Garry today.

June 4.

Morning drying plants etc.
Afternoon got an Ambulance wagon & team & started for American Camp with Clake & Cook after one of my boys which I had heard was there. Found that he had been stupidly put on board the "Selkirk" on her way to Morehead. The town of Pembina is a poor looking place, though owning several bars & a billiard room! It seems to be rather diminishing than increasing in size. ~~Many~~ Several houses bear elk, or other antlers as a decoration for the gable of roof, as is common in most western towns. The Pembina River is still so full of water that the bridge is scarcely above its level. Walked some part of way & collected a number of plants.

June 5. Sapper Duckworth reported himself this morning, having been freed from his duties in the store, & ready to

Got to work preparing Nat. Hist. specimens &c.
The steamer "International" called going down today, & left a mail. Got a survey chronometer safe by post. Went out to the small lake with Duckworth & B. This assistant to shoot, & collect. Got a number of plants, & shot a red headed woodpecker, a small duck with lavender, white, & green wings &c.
Afternoon drying plants, Got Duckworth at work skinning birds.
Buffalo. Told by Mr Watt of H.B. fort Pembina that buffalo not at all wild when captured young & brought up like Cattle. Also that they breed with Common Cattle & give rise to hybrid. Buffalo bull & Common cow. Calf by reason of hump, & size generally not calved properly but Cow dies during pains. Common bull & buffalo Cow however is all right.

An indian having been drowned in a Coule, while under the influence of drink, I am told that much excitement exists among the other indians of this part of the country, & that they propose sending a deputation to the Governor to say that they cannot resist the temptation to drink firewater, but asking that white be not allowed to give it to them under severe penalties!

Found at the lake today many Limnaea like L. stagnalis. Also a species of planorbis, & lying on the ground, a dried up specimen of amphibian.

Found also a Helianthus shooting up but not in flower. Discovered accidentally while collecting stuff for a "sunnage" that it has a tuberous root resembling that of the jerusalem artichoke, & about 1½ inch long. The root tastes sweet & good. The plant seems to come nearest to Helianthus strumosus. Told by Watt that it is called Buffalo turnip &c

that the indians make of it a kind of flour.
The trees & shrubbery fringing the river & Sinale lakes consists principally of species of Ulmus, Quercus, Salix, Populus, Carpinus, Rosaceæ.
The first, third & fourth have been over flowering for some time. The second, & fifth just coming into bloom, & the latter not so far advanced.
Birds are very numerous in this county both as to species & individuals. They no doubt get abundant food from the seeds of grasses & insects of the open prairie & along the rivers & ponds find good shelter, & thickets for building.

June 6

Morning collecting plants with Dr B. Changing paper of those previously collected. Afternoon pressing plants. Evening attempted to shoot a night hawk, but

wasted 4 charges on him as he was too high. Think I struck him last shot, but he fell into woods.
Collected the Columbine (Aquilegia Canadensis) in bloom today for first time. Also the first blossoms of Anemonia, & Dogwood.
The indian turnip (A. triphyllum) very abundant in woods about here, & just coming into flower.
The helianthus? collected yesterday I am told by Hallet is not the Buffalo turnip, but the indian potato (called by the indians. The root at present is about 2 or 2½ inches long & shaped like that of the jerusalem artichoke. It would seem to be worthy of attention as a possible esculent.
The first thunder storm that has visited Dufferin this season passed over us this evening. The clouds forming a heavy bank in the E. till late at night continued to be illuminated by the most vivid lightning almost continuously.

The focus of the display was very definite & persistent, & lay behind a heavy rounded mass of cloud. From this & in its neighbourhood lightning played continually, sometimes shooting outward & sometimes passing in. The flashes were peculiar. Very vivid, forked, but often branching out in a root like manner. The most curious feature of the display was the total absence of thunder. It seemed probable that the atmosphere was too highly charged to allow the electricity to accumulate to the tension sufficient for an ordinary air displacing flash, but that the tension before becoming very great was relieved by a number of sparks somewhat parallel in direction & each passing from one drop of water to the next.

Had a long talk with Hallet the commander of the half breed escort.

Told that only one common snake, the garter snake, which sometimes 5 feet long

a small green snake sometimes seen & used by the indians as "medicine".
The rattle snake never seen so far north.
The bull frog said not to occur about here.
The fish in Red river said to be. Pike, Cat-fish, Gold-eyes, suckers, sturgeon, & a variety of fish which I take to be the lepidosteus.
Half-breeds speak with regret of the old days "before the war" when whisky used to be 20¢ per gallon at St Paul. Hallet thinks however that drunkenness has increased since drink less common.

June 7. Saturday.
Severe thunder storm about 5. A.M.
Capt Featherstone & King got off with party this morning.
Collected a few plants.
Afternoon went over in Ambulance to American fort. Saw. Dr Coues &c.

stayed for dinner at the fort & returned here about dark.

Called at H.B. post to see some stones reported to have been found in a field when being ploughed this spring. They consisted of several fragments of L. Superior native copper in traps, & might have given rise to some speculation had not Lent given of the American party been present & explained that they were specimens brought by himself from L. Superior & left on his camping ground last Autumn. A good illustration of the scarcity of stones in this lower prairie country. The indians & others employ stones of about two pound weight for net sinkers, those which I have seen are Laurentian, & were probably brought from the Eastward as from Boulder clay exposures which I believe exist near Garry. These net sinkers would

be apt to be found here & there & might also give rise to speculation.
Saw at the American fort bricks made from clay from the Red river bank. They were very good & of a uniform cream colour. An experienced brick maker made them some years ago. He reported certain layers of the clay very good for the purpose, while other layers were too "warly".
No sand was used.
Wells are said to be very uncertain here, sometimes no water is obtained, while at other times a fissure or joint of some kind? in the clay is struck & an abundant flow results. Some of the water so obtained is said to be impregnated with "Sulphur" to a small extent.
Mosquitoes in perfect clouds today. a much larger breed seems suddenly to have sprung out.

June 8.
Capt A. read service to a small congregation under an awning & the protection of a "Smudge."
Capt. Cameron sent up a valve of unio from the river bank which had been covered with water some 4 days ago; which had on its concave side a layer of attached fish spawn. Each ovum about 1/16" in diameter, the eyes & embryonic fish clearly visible through the shell. Put in water the young fry began to come out immediately with yolk bags attached. Took a walk & found a few new plants. Steamer from Garry tonight but no trace of black valise which Spear is lost.

Monday June 9. 73.
Morning changing paper in plant-dryers 52.
Afternoon walked down to H.B. post with 32 B, & back again. Shot a plover,

robin, flycatcher, small sparrow, & Bohemian waxwings from a large flock.

Got my last box of apparatus back from Moorehead per steamer "Selkirk" today.

June 10. Skinning, & changing plant paper. Wrote out a memorandum to be given to the various parties, concerning obs. to be made in Nat Hist. & fed.

Afternoon walked out to small lake with Drs B. & M. Found several new plants, some large planarians a few insects. Two Bobolinks & a red shouldered blackbird were shot.

A good many ducks are to be seen round the lake & are evidently resting among the reeds there.

Evening tried fishing in the River but unsuccessfully. A large white & black winged crane, or Heron was brought in from the Marais River today but rather far gone from lying in the sun. Treated him with Carbolic acid & placed in a clean barrel for the night.

June 11. Capt. Anderson with a good many waggons & the corps of mounted rangers started West. Just before the start a pair of horses in a Whitewater waggon ran away, smashing up a spring cart, & a small carriage belonging to Hallet, & narrowly escaping killing some of the half-breeds horses which were tied up in a group. Went to the Corral & chose a pony for riding. Set to work with Duckworth & took the skin off the heron, a very disagreeable job till we got the body disposed of. The skin seems good however, & a chance of getting so fine a specimen may not occur again.
Pressed yesterday's plants. Tidied & packed a few shells &c.

with its blossom. This was markedly the case with the common anemony.
Yesterday too for the first time large dragon flies appeared, & they did so in swarms & all flying gently up against the wind from bush to bush. Today scarcely any are to be seen.

The "Dakota" from Moosehead today with tents & stores of various kinds necessary for the parties now about to start out. The ~~Sch~~ "Selkirk" from Garry about 11 P.M. Can hear nothing of my lost Valise.

Thursday June 12. 73.

Collecting plants & pressing. &c.
Afternoon walked down the R. with Dr B. Shot a wood pigeon & several small birds. The pigeon in falling struck a branch & skinned her back in such a way as to be useless for stuffing. Got a specimen of 1 tailed Amphibian from Capt. Cameron. Asked when necessary I go to L of Woods. & told that he (Capt C.) want to be there by the the reeds there.

Evening tried fishing in the River but unsuccessfully. A large white & black winged Crane, or Heron was brought in from the Marais River today but rather far gone from lying in the Sun. Treated him with Carbolic acid & placed in a clean barrel for the night.

and of July & wishes me whatever excursions I make to be back in time to start about July 1.

June 13.

Collecting plants with Dr. B. Pressing plants & arranging insects.

Got today specimens of Cypripedium pubescens, Trillium cernuum, a bush honeysuckle in flower, & a small hexandrous grass like plant with yellow star flower, which I do not know.

The time of flowering of plants, & coming to maturity of Animals is wonderfully uniform in this prairie region. Everything conforms to uniformity of conditions. One day a given plant will in every case be in bud. The next the prairie will be covered with its blossom. This was markedly the case with the common anemony.

Yesterday too for the first time large dragon flies appeared, & they did so in swarms & all flying gently up against the wind from bush to bush. Today scarcely any are to be seen.

Examined some of the shallow pools about here. Found what I take to be a small species of limnæa. Also a very curious phyllopod crustacean, about $1\frac{1}{2}$" long. The carapace looking much like that of a limulus & reflexed in front & below in the same way, but of such a shape that if flattened it would not be far from circular with the exception of the posterior edge which is notched, & pinched up in the median line to allow the passage of the tail. The latter is many jointed & mostly covered by the backward extension of the carapace. It bears at its end a median spatulate piece, & has two long lateral diverging bristles.
Altogether it reminds one much of the palaeozoic phyllopods such as pelltocaris.
It lives in shallow ponds with muddy bottom & moves quickly along partly by swimming, but also touching its legs on the mud as it goes.
Found also an ostracod with cultria like valves & about as large as half a small pea.

afternoon walked out on prairie with gun. Shot a small striped marmot with its cheek pouches full of oats stolen from the cattle enclosure. Shot a good specimen of the golden shafted woodpecker, & a black owbite bird bigger than a sparrow & brown below the wings. Shot also several birds which on account of the thickness of the undergrowth it was impossible to find. Mosquitoes awful & of several kinds & sizes.

Saturday June 14. 73.

Morning changed paper in plant-dryers & pressed new plants. Set out some insects. Reading Dr.

Afternoon walked out with Dr B. got a few insects & plants but driven back by mosquitoes. The painted lady butterfly very common on the prairie today, but being windy could not get good specimens. Making arrangements for start on Monday but find that transport allotted (one cart & pony, two pack-ponies, & one riding horse) not sufficient for apparatus

& personal luggage (say 200 lbs) Luggage of servant, Duckworth, & two Teamsters (70 lbs each) & rations & tents. Sent in requisition for one more Red River Cart which will be ample.

June 15.

Morning reading &c. Afternoon took a walk through the thickets, & hunted for land snails. Got 3 genera Succinea, Helix (very small & resembling one common at Montreal) & a Bulimus. The latter appears to be quite rare as I only got two specimens & those dead.

Wrote to W.

June 16.

Arranging specimens & reading. Had an interview with Capt Cameron & decided to go to Lake of Woods before going west. Go by steamer to Farry. Thence hire conveyance to N.W. Angle. There get canoe & indians, & join Casto's party now engaged in surveying the S.W. part of lake. Take some provisions from here & then trust to E's commissariat arrangements.

Intend in first instance to go on a flying trip to place some 13 miles E of here on the line where limestone is burned, & solid rock send to occur. Engaged looking over things & packing.

Examined a small reedy pond in the bushes near here & got just a number of shells. Was first attracted by numbers of dead bleached shells lying on the ground near it. Found that an area more or less covered with these dead shells surrounded the pond at a little distance from the edge of the water at present. A space on which few shells were to be found existing between the pond as it is now & the shell bearing area. At first difficult to account for, but finally found that the shells had been killed round the edges of the pond by a prairie fire extending in among the reeds at a time when the pond was slightly larger than at present.

The shells were limnaea, physa, at least two species of planorbis & some succineas.

Duckworth brought in a branch of blighted plums. Apparently belonging to the common plum of the country. Says there is a whole tree similarly affected. The plums are abnormally large (already 1" in length & broad in proportion) quite green, & like little bladders of air. The inner surface of each being woolly. I could detect no full insect-larvae.

~~Monday June 16.73~~ Tuesday June 17.

Making preparations to start E along the line to a supposed limestone exposure some 13 miles from here. Found considerable difficulty of one sort or another. No cooking utensils in store, harness for cart-pony not fitted &c. &c. About 1.30 a severe storm of rain & hail came on. Some thunder, but not very close. Storm lasted about ~~half~~ quarter of an hour. Some hail over ½" diameter fell.

As the storm rendered roads bad, & everything very wet & as the sky appeared to threaten another put off starting for to day.

The weather has been extremely warm & oppressive today (Thermom max =)
& was only cooled down temporarily during the fall of rain.
Mosquitoes this evening very bad. The horses in the yard suffering very much & crowding up to stand in smoke of smudge built for their use. Horses in stable also exceedingly restless & the whole place swarming with myriads of mosquitoes, like a hive of bees.
Kirg sent in today a very good twin crystal of selenite from Pembina Mountain, about 3 inches long. Sa
Ashe contributed an insect caught in camp.
Told by Mr — that near St Joe limestone like that of Gary quarried & burned.

Wednesday June 18.
Morning getting cart packed & making preparations to start. Various difficulties present themselves as to crossing the river &c. After lunch a severe storm of rain, with thunder. After waiting some time for weather to clear up, though the sky still threatening got cart in motion & down to River bank. Scows too high above water to get cart on board & no gangway for the purpose. Decided to swim horses over & float cart. Got one of large boats, men to row. Unloaded cart into boat tied cart to boat & floated it over. Landing place very muddy & just as arrived there began to rain hard. Got things out & cart hauled up the bank after some trouble & sent boat back for horses. Horses swam over all right one lead on each side of boat with rope. My white mare got up bank well, but cart-pony mired & only extricated after some trouble. Heavy rain. Went through bushes with &c

Burgess to find way out to prairie for cart, & chose a camping place. Got cart out to camping place which on W. side small could; with ½ load, then sent back for other half load. Camped at 6 o'c & had supper. The evening beautifully fine after all the thunder-storms of the day. The prairie covered with green luxuriant grass & vetches more than knee deep, & looking as if almost ready to cut for hay. Found several new species of grass. Picketed out horses, & lit a "smudge" for their benefit, the mosquitoes being bad. Pressed new plants.

Thursday June 19.

Up before 4 A.M. while breakfast preparing sent Duckworth off on white mare to look for Joe R. road which runs S. a few miles to the line. He returned soon but dismounted & the horse followed him into camp. Got to Joe R but found deep. Tried to swim horse over as the road supposed to be on other bank, but horse turned & brought him back to same

side. Saddle then turned & horse got away. Came back with loss of one stirrup & leather. Strike camp at 5. & start through thickets of spiræa, roses, willows, thorns, &c about S-E. to strike line. Got to Joe R just about the boundary line. Crossed with white horse & found just above the girth. The river quite narrow, only 30 or 40 feet but in a large coulée. Drove the cart in & would have got across easily but horse baulked at the bank. Threw most of things ashore from cart, got out horse & then pulled cart ashore with rope.

Just on E bank of Joe R. the 4 mile flag stands, being 4 miles from the Red R. along the boundary. Found several new plants. Walked on with Dr B. The morning very fine & cool, with wind enough to prevent mosquitos troubling.

The boundary line marked by pickets every 1000 ft & small posts at 500 ft.

At about 33,000' from Red R. the prairie assumes a swampy character. Long swales of swamp

with reeds seperated by dry ridges & hummocks generally longest in a N.S. direction. Going E along line swamp becomes worse & worse & only ends at 51,000' picket. After getting a little way into this swamp the horse drawing the cart mired. Got it out, unloaded the cart & hauled it out high ground. Sent Spearman on ahead on white mare to reconnoitre, & meanwhile lay down on grass for a rest. Spearman reported swamp very bad in front & no chance of getting through with haulky horse. Swamps worse to S. Sent him off to make detour to N, & then he found former track. Had some lunch & then started N. Went about 2 miles N of line & got a pretty good way, coming back to line at 10 mile flag. Very fatiguing walking through long grass & swamps often ankle deep. Prairie here covered in patches with curious purple headed plant, apparently Rhinanthus & marked in Catalogue Z. 15.
From 10 mile flag followed line trail E.

found a large sledge abandoned on track with load of lime, evidently from kilns of which in Search. Met with first boulders (Laurentian) near 60,000' picked. The ridge, or edge of second prairie level clothed with bushes had been prominent object some time. Rise begins at 61,000' very gradually. The ridge not being at all well defined when closely examined. As gained the ridge boulders of limestone, & laurentian & gravel become common & quite a few new plants appeared, probably owing to change of soil to light & calcareous from the clayey prairie soil. Of these Z.11. & Z.12. most conspicuous.
Sent Spearman on ahead on horse to look for good camping ground with wood & water. At 65,000' the road leaves the line & bends S. Spearman found good high knoll for camp. Arrived there just in time to see two Indians leave. They had halted & cook some prairie chickens, & went off E one riding, the other driving a Red R cart; & both wrapped in

long blankets & with cloth twisted round their heads for covering.
Could not find good water but dug a small well in a swampy hollow & soon got a plentiful supply. Had supper Pressed plants, Read a little & then to bed.
Found on arrival that Spearmans bag, one of waterproof ground sheets for tents, & a strap for my bedding had fallen from Cart. Sent Paul, the teamster, back for these on the cart pony. While at supper the white mare broke away from picket & disappeared. Paul came back with strap & ground-sheet. White mare could nowhere be found.
The prairie passed over today between Red R. & Joe R is somewhat varied by bushes & small trees. After crossing the Joe a vast level stretch to the ridge. Only here & there a clump of bushes, & with the exception of the swamps seems all splendid land for cultivation.
The flowers & plants of the prairie seem to be curiously arranged in patches or colonies.

& sometimes a certain flower will be found abundant within a space of a few yards, & very scarce or absent elsewhere. This too when there seems no special reason for the restriction. Duckworth shoots a small tomcat out.

Friday June 20.

Men looking for lost horse from early hour. Left word after breakfast, that Paul when he returns should go in towards Dufferin & not return if he finds the animal safe on W. bank of Red R. Went up down the ridge to S. with Dr B. collected many new plants. Found a few lunnias & physa in dried swamps. Prairie chickens common & often rise as we walk along. They are now sitting & when rising from the nest have the habit of pretending to be wounded or lame. Their crops at present are full of the green seed vessels of the Sisyrinchium & blue-eyed grass. Found some very large boulders of gneiss & limestone, of one of which I made a rough sketch. On returning to camp found the lime kiln. No solid rock

but boulders of limestone picked from Sod & turned. Looked over considerable pile of stone & found some good fossils. Carried fossils back to camp. Very bad & mosquitoes very bad. Had to light smudge under protection of which we might collect fossils. Also to smudge while sketching the boulder. Read a while during heat of day. Then walked to N a short distance. Paul came back with horse about dark, having caught it at Joe R first. Then horse got away again swam Joe. Paul followed & after some hours chase got her & brought her in. Pressed plants, packed fossils, arranged insects & made all preparations to start very early for Dufferin so as to avoid the heat of the day.

Saturday June 21. 73.

Awakened at an early hour by heavy rain & thunder, the former continuing till nearly 6 & preventing our early start. Got breakfast over by 8 o'c. Walked to 10 m flag. Then having on short boots, got on horse &

rode along the line through the swamps. Dr B. wading alongside in tall stockings. Cart took old detour route to N. The rope stirrups substituted for that lost did not conduce to comfortable riding.
Rode up & found Joe R road but finally decided to take our old way. Turned the white mare into a ferry over the Joe by riding across on her one by one & then drawing her back with a rope. Cart unloaded when nearly over as we could not pull it up the bank. Soon after cart mired in a coulé & had to unload again. Got to Red R & found that Spearman who had gone on on the white mare had signalled & got over the boat. Floated cart over & swam horses as before, & got to barracks about 8 o'c.
Dr Cones & Woodruff from the American fort came up this evening & Dr B. request to assist in an operation on a man. The operation however did not prove to be necessary & he Larvey got relief without.

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Our little expedition on the whole very successful
Got quite a number of new plants, a few
insects & birds. Collected some fossils &
investigated the nature of the country to E, &
first prairie ridge.

Sunday June 22.

Start in ambulance with Burges, Boswell
& Cones for ~~Brandon~~ Custom House, where Dr B
wished to pay a visit, & American Commission
Camp to which Dr C. wished to return.
Went on with Boswell & Dr C. to Camp.
persuaded to stay for lunch there, then went
to see 150 Cavalry just arrived as escort
for American party on Commission.
Rough looking specimens, have been last in
Southern States, & formerly had much indian
fighting in W. Introduced to officers.
On return found 4 stray horses belonging to
Sergt Kay's party. The horses often have a
habit of straying from outlying parties back to
Dufferin. They stampede or are driven nearly
wild from mosquitoes. Pressed plants
remaining from yesterday. Reading.

Holes in the prairie. The prairie here & there is excavated into little holes 3 or 4 feet deep & perhaps as many yards across with now runnels leading to them nor outlets. Told that caused by fire spreading into ground from roots of some dry husks & burning away in peaty soil.

Monday June 23.
Arranging & cataloguing specimens. Changing paper in plant dryers &c.
Went out with gun in afternoon & shot a few small birds. Often very difficult to find after shooting on account of the high grass & bush. Many lost in this way. Officers from Armical Cavalry (two troops of 7th reg) over at lunch.
Capt Anderson returned about dark from his
June 24. trip to Turtle Mt. where he located a dept.
Specimens. geol notes of trip &c.
Another party of Am. Officers over today. Afternoon & evening heavy rain showers & thunder. Evening reading & talking over arrangements for L of Woods

trip. At Pembina & elsewhere a rumour prevails that our parties West have been driven in by indians. Quite without foundation. Anderson has a letter from McLeod at Lake of Woods dated June 13 in which he says indians very troublesome & have collected to number of 300 at Fort Francis to meet Mr S.J. Dawson & get a "treaty".
Decide to start for N.W. angle with carts from here & not depend on government conveyance from Garry.

June 25. Making preparations for start. Calculating rations needed &c. Changing paper in plant presses & arranging & cataloguing specimens. Took a walk on prairie.
Day very hot & sultry with thunder storms passing round but not over this spot. Thermometer above 80° all day & 83° at 10 o'c P.M. Mosquitoes in myriads all night allowing no

one to sleep in comfort, or in fact to get any sleep worth mentioning.
Told by E. C. Wennie of Largo Who is up here with Cattle to sell to Commission & who was Superintendent on the N.P.R.R. that their exploring party immediately after crossing the Missouri was driven in by indians though protected by 35 infantry. A great force of Cavalry out in the country & large number of indians have collected to oppose them. Not improbable that if beaten the indians will cross the line.
Also told by same gentleman that the boring at Largo was superintended by D. C. Linsey now of Burlington Vt. Wrote to him asking particulars of section. The prairie here now has a good many grasshoppers on it of good size & different from the stray ones collected a few days ago.
(Marked D.267 & 268)

June 26. Getting preparations for start completed, & arrangements made. Stowing away specimens &c. Wrote home. M. intend to leave for Gary & Lake of Woods tomorrow after breakfast.

1873

Catalogue of Specimens.
B.N.A. B.C.
Dufferin June 1873.

Each Specimen, or Series of similar specimens, to bear a Label denoting the Locality; & a number by which reference may be made to this book for Situation or habitat, date of collection, & general remarks.

Key to Initial letters & marks denoting Locality.

D. Vicinity of Dufferin Barracks Manitoba.

Z. 49th parallel between E Bank of Red River & first ridge 13 miles E.

Y. From Dufferin to Garry along W bank Red River.

X. Garry to Lake of Woods June 30. July 1, 2, 3, 4, 5, 1873 -

W. Lake of Woods.

R. Roseau River

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Catalogue of Specimens

Collected June 2. 1873.

D. 1.	Bushes & thicket	
" 2	"	"
" 3	"	"
" 4	"	"
" 5	"	"
" 6	"	"
" 7	"	"
" 8	"	"
" 9	"	"
" 10	"	"
" 11	"	"
" 12	"	"
" 13	"	"
" 14	"	"
" 15	"	"
" 16	"	"

June 3.

D. 17. open prairie. (probably stunted.)
D. 18. " "
" 19. " "
" 20 " " damp situations.
" 21 " "
" 22 " " perfumed.
" 23 Thicket
" 24 "
" 25 "
" 26 open prairie. (damp.)
" 27 " " "
" 28 " " "
" 29. " "
" 30 " "
" 31 Thicket.
" 32. a small tree.
" 33 " " "

June 4.

D 34. open prairie.
" 35. " "

D. 36. Thicket.
D. 37. Prairie & thicket. (Very common.)
D. 38. " " " "
D. 39. " " " "
D. 40. Prairie.
D. 41. "
D. 42. " (damp.)
D. 43. Thicket.
D. 44. Open Prairie.
D. 45.
D. 46. Marsh pond.

June 5.
D. 47. Open prairie.
" 48.
" 49. Open prairie
" 50. " "
" 51. " "
" 52. Damp prairie.
" 53. " "
" 54. Prairie. (damp)
" 55 " Swamp.
" 56. Weed for diatoms. Marshy lake.

June 6

D. 57.	Thicket.	(first blossoms)
" 58.	"	(" ")
" 59.	"	
" 60.	"	
" 61	"	
" 62	"	
" 63	"	(first blossoms)
" 64	"	river banks
" 65	"	" "
" 66	"	
" 67	"	
" 68	"	
" 69.		
" 70.	near cultivated land.	
" 71.	Thicket	
" 72	"	
" 73	"	

June 5 & 6. 1878.

D. 74. Duck or Teal. Male.
L = Length from Bill to tail = 16"
W = From tip to tip of wings = 23"
G = Girth of body under wings = 9"

D. 75. Red headed woodpecker. M.
L = 9"
W = 15"
G = 5½"

D. 76. Sandpiper? M.
L = 9"
W = 18"
G = 6"

D. 77. Yellow headed blackbird. M.
L = 9½"
W = 14½"
G = 5"

D. 78. Carmine breasted bullfinch
L = 7"
B = 12"
G = 4½"

June 7.

D. 79. near. Cultivated field.
" 80. Thicket
" 81. "
" 82. Woods.
" 83. "
" 84.
" 85. damp situations.
" 86. " "

D. 87. Golden oriole ♂
L = 7"
W. = 10"
G = 4"

D. 88. Teal ♂
L = 15"
W = 22½"
G = 8"

D. 89. Teal ♀. Mate of D 88.
L = 15¼
W = 23"
G = 8¼

D. 90. Duck ♂
L = 19"
W = 30"
G = 9½"

D. 91. Eggs of Teal. Taken from oviduct of No 89. Just ready to be laid & therefore probably presenting normal appearance. (Lost)

D. 92. Yellow shrike ♂. Eyes black. Yellow headed blackbird.

D. 93. Purple grackle. ♂. (Large blackbird). Eyes white.
L = 11½"
W = 16"
G = 5¼

D. 94. Eggs (4) of Purple grackle. The nest large, formed of straw & lined with horsehair. 4 eggs originally in nest.

D. 95. Small olive fly-catcher ♂
Eyes black.
L = 5 1/4"
W = 8 1/2"
q = 3"

D. 96. Small olive fly catcher ?
Eyes black.
L = 5"
W = 7 1/2
q = 3

D. 97. Golden oriole ♂

June 9. 73.
D. 98. Open prairie
D. 99. " "
D. 100 " "

June 6.
D. 101. Catbird.

June 10.
D. 102. open prairie.
" 103 " "

D. 104. River banks recently emerged from flood
" 105 " " " " " "
" 106 open prairie.
" 107 " "
" 108 " "
" 109 Thicket.
" 110. Prairie.
" 111. open prairie.
" 112. " "
" 113. " "
" 114. Wd. thicket.

D 115. Plan. Small ponds on prairie.
D 116. Lumm. " " " "
D 117. " " - - - - -
D 118. Plan. " - - - - -

D. 119. Thicket near lake.
D. 120. " " "
D. 121. " " "

D. 122. Red River
" 123 " "
" 124 " "
" 125 " "

June 12.

D. 126. Thicket.

D. 127. "

" 128. Damp situations.

" 129. " "

" 130.

" 131.

" 132. Thicket.

" 133. "

" 134. Damp thicket. (Fumaria?) Calyptra eucalypterum present.

D 135.

D 136.

June 10, 11, 12. 93.

D. 137. Blue winged Teal ♂
Eyes red.

D. 138. Waxwing. ♂. Eyes black.
L = 7"
W = 10½"
G = 4"

D. 139. King flycatcher. ♀
Eyes black.
Length = 8"
Width = 12½"
Girth = 4½"

D. 140. Robin. ♀. Eyes black.

L = 9 1/4"

W = 15"

G = 5"

D. 141. Sandpiper ♀
Eyes black.

D. 142. Waxwing. ♀. Eyes black.

L = 7"

W = 10"

G = 4"

D. 143. Golden shafted woodpecker ♂.

L. = 11 1/2"

W. = 18"

G. = 6 1/2".

D. 144. Red Shouldered blackbird ♂
Eyes black.

L. = 8 3/4"

W = 14"

G = 5 1/2"

D. 145. Bob-o-link. ♂. Eyes black.

L = 7"

W = 11 1/2"

G = 4"

D. 146. Night Hawk. ♂.

Eyes Black.

L = 10"

W = 23"

G = 6"

D. 147. Tawny Thrush ♂.

Eyes black.

L = 6½"

W = 12½"

G = 4½"

June 13. 73.

D. 148. Damp situations

D. 149. " "

" . 150. Thicket

" 151. "

" 152. "

" 153. "

" 154. Thicket

" 155. Damp meadow

D. 156.

D. 157.

D. 159.

D. 160.

D. 161.

D. 162.

D. 163.

D. 164.

D. 165.

D. 166. ~~Stipendia~~ Elaphus argentea a Western form.

D. 167. Open prairie.

D. 168. Wet thicket.

June 14. 73.

D. 169 Thicket

D. 170 Open prairie.

" . 171 Damp ground.

D. 172. On a flower

D. 173.

D. 174. Quite a number on the prairie.

June 13 & 14. 173

D. 175. King Flycatcher. ♀.

Eyes black.

L = 8"

W = 12½"

G = 4½"

D. 176. Common Grackle. male.

E. Black.

L = 7 1/2"

W = 14"

S = 4 1/2"

D. 177. Small Red & Black Flycatcher. ♂.

E. Black.

L = 4 3/4"

W = 7"

S = 3".

D. 178. Small Drab Flycatcher ♀

E. Black.

L = 5"

W = 7"

S = 2 3/4"

D. 179. Carmine breasted Bullfinch ♂ ♀.

E. Black.

L = 7 1/2"

D. 180. Pied Grackle? . ♂.

E. Red.

L = 7 3/4"

W = 13"

S. = 14"

D. 181. Golden-Shafted Woodpecker.

E black.

L. = 11½"

W = 18"

G = 6¼"

D. 182. Striped marmot.

Length 11½". When shot had two cheek pouches as large as marbles filled with oats from the cattle yard.

D. 183. Small Yellow-bird. ♂

E. Black.

L = 4¼"

W = 7"

G = 3.'

D. 184. Golden Oriole. ♀.

E. black.

L = 6½"

W = 11"

G = 4½"

D. 185. Sparrow. (Brown Linnet). ♂.

E. black.

L = 5½"

W = 10"

G = 4"

D. 186. Golden oriole egg. Nest in a poplar 12' from ground. Composed of silky decayed grass, thistle down, & horse hair. hanging over water.

D. 187. Carmine-breasted Bullfinch 4. eggs. Nest 8' from ground. over water. openly built of small clean dead stalks. No grass or hair. 3" in diameter.

D. 188. 3 eggs. Bird unknown. Nest about 8' from ground. over water. Nest of rough grass 4" diameter. plastered within with mud.

D. 189.
Hooded Duck. April. 73.

D. 190. Grey-headed duck. April. 73.
D. 191. Grebe, or diver. " 73.
D. 192. Pied woodpecker. Jan. 73.
D. 193. " " " "
D. 194 " ".

June 16.

D 195.

" 196.

" 197.

" 198.

" 199.

" 200

" 201.

D 202. Succinea, Two species Helix, Bulimus from thickets round Dufferin.

D. 203. Eggs (5). of Small yellow-bird same as D. 183. The nest 6' from ground of fine grass & thistle down 2" diameter.

D. 204. Eggs found in nest of ~~Small tawny flycatcher~~ Tawny thrush No. D. 147. Two deep blue-green eggs probably the thrushes. One speckled egg belonging perhaps to the butcher-bird. Nest coarsely built of rotten leaves & grass 2½" diameter. ~~feet from~~ on the ground.

D. 205. Eggs (4 originally 5) of long tailed brown bird unknown to me (The pair belonging to this nest were shot & are numbered D. 206 & D. 207.
Nest coarsely built 3¼" diameter 4' feet from ground.

D. 206. Brown lery tail. ♀ Eyes yellow

L = 10 11/12

W = 12 1/2

S = 6

D. 207. " " " ♂ Eyes yellow

D. 208. Sizes same as female.

D. 208. Caught near St Joseph. Pembina R.

D. 209. Shells from margin of reedy pool in wood or underbrush. Killed by last autumns prairie fire extending into the reeds. (See Note book).

D. 210.

D. 211.

D. 212.

D. 213

D. 214. Swamp.

" 215 "

" 216 "

" 217. "

" 218. "

" 219. "

June 17.

D. 220. open prairie.

D. 221. Prairie W. of Lee. ~~Escaped from cultivation.~~

June 16.

D. 222. Female of Small yellow bird.

L = 4½" (Male D. 183.)

W = 7"

S = 3"

June 18, 19, 20, 21.

Z. 1.

Z. 2,

" 3, open prairie.

" 4. " "

" 5. " "

" 6 " " E of low level prairie.

" 7 " " " " " "

" 8 " "

" 9 " "

" 10 prairie marsh.

" 11 rising ground E of low level prairie.

" 12 " " " " "

" 13 open prairie.

" 14 " "

Z. 15. open prairie. (damp)
Z. 16. " "
Z. 17 " "
". 18. " "
". 19. " "
". 20. " " (Swampy.
" 21 " " "
" 22 " "
" 23 " "
" 24 open swamp.
" 25 open prairie.
" 26. brush on river bank.
" 27. open prairie.
" 28. Forming thicket.
" 29.
". 30. Rising ground & of low level prairie.
". 31 Swamp on rising ground & of low level
". 32. open prairie.
" 33. thicket on rising ground.
" 34. Swampy open.
" 35. Thicket on rising ground.
" 36.
" 37.
" 38.
" 39. Swampy prairie.

Z. 40.
" 41.
" 42. Open prairie. Rising ground & low level.
" 43. " " " " " " "
" 44.
" 45. Rising ground & of low level prairie.
" 46. Thicket. ~~prairie~~
" 47. Open prairie.
" 48. Open prairie. (lamp)
" 49. Thicket on R. River bank.
" 50 " " " "
" 51. " " " "
" 52. " " " "
" 53. " " " "

June 22. 73.

D. 223. Thicket. ~~prairie~~
D. 224. "
D. 225 "
D. 226 "
D. 227. "
" 228. "
" 229. "

June 21

Z. 54. Lime Kiln Lat 49°. 13 m E of Dufferin.

Z. 55. " " " " . . . .

Z. 56 to Z 86. the same.

Z. 95 " . . . . . .

Z. 87. to 94. Samples of Laurentian boulders from "ridge" on Lat 49. 13 miles E of Duffern

June 20, & 21,

Z. 95. Eggs of King flycatcher, one of commonest birds on prairie.

Z. 96. Eggs of ground sparrow?

Z. 97. Eggs of prairie chicken. Contained foetus nearly ready for hatching.

Z. 98. Sand from ridge 13 M. East.

Z. 99. Last years pods of ground plum, or astragalus caryocarpus. Dry soil on 13 mile ridge. Would seem useful as a vegetable if cultivated.

Z. 100. Stills Joe R.

June 22.

D. 230. Red River.

June 18. 19. 20. 21.

Z. 101.

Z. 102. Z. 103. Z. 104.

Z. 105 Male. }
Z. 106. Female. }

Z. 107. Z. 108. Z. 109 Z. 110. Z 112. Z 113.

Z. 114. Z. 115 Z. 116. Z. 117. Z. 118. Z. 119.

June 17.

D 231. Lent in Asie from near Pentuna Mt.

D 232. D 233. D. 234. ~~D. 235.~~ D. 236.

June 18. 19. 20. 21.

Z. 120. Z. 121. Z. 122. Z 123.

Z. 124. Z. 125. Z. 126 Z. 127.

June ~~24.~~ 18 et autres

D. 233. Martin. ♂.

G. black.

L = 5"

W = 11 1/2"

G = 4"

D. 234. House Wren ♀. E. Black.

L = 4"

W = 6"

G = 2 3/4"

D. 235. Pigeon. ♂. E. red.

L = 15"

W = 22"

G = 8"

D. 236. E. brown ♂

L = 7"

W = 11½"

G = 4½"

D. 237 Female of last

L = 6½"

W = 11½"

G = 4½"

D. 238. ♂. E. Red.

L = 7¾"

W = 13"

G = 4"

D. 239. Goldfinch. ♂. E. black.

L = 4½"

W = 7"

G = 3¼".

Z. 128. Small horned owl ♂. E. yellow.

L = ~~7~~"

W = 16"

S = 5"

Z. 129. Small shrike ♂. E. black

L = 8"

W = 11½"

S = 4½"

Z. 130. Prairie hen ♀. E. black.

L = 16"

W = 24"

S = 10"

Z. 131. Bob o'link. ♂. E. black

L = 7"

W = 11½"

S = 4"

Z. 132. Curlew ♂. E. black

L = 11"

W = 20"

S = 6"

June 23. 73

D. 240. Curlew ♂. E. brown.

L = 11

W = 13½

S = 5½

D. 241. Robin. ♂. E. Black.

L = 9 1/2"

B = 13 1/2"

S = 5 1/2

D. 242. Sparrow ♀. E. Black.

L = 6"

W = 12"

G = 4 1/2. ?

D. 243. Goldfinch ♂. E. Black.

L = 4 1/2

W = 7

S = 3 1/4

D. 244. Common Grackle (Cow bird)

♀. E. Black.

L = 16"

W = 24"

G = 10"

D. 245. Pigeon ♀. E. red.

L = 15"

B = 22"

G = 8"

June 25.

D. 246. Same as Z. D. but in flower.

D. 247. Thicket edge.
" 248. " "
" 249 " "

June 21 - 26 /73.

D. 250. D. 251. D. 252. D. 253. D. 254.
D. 255. D. 256. D. 257. D. 258. D. 259.
D. 260. D. 261. D. 262. D. 263. D. 264.
D. 265.
D. 266. } Common on the prairie just now.
D. 267. }
D. 268.
D. 269. Bottle containing in alcohol.
An amphibian (toad) Bufo. Foetal Prairie Chickens from 13 mile ridge. June 21. Phyllopod from pools round here. Also Lymnea Physas. Succinea. &c.
2 Foetal Sandpipers from 270.

D. 270. Eggs (4) Small Sandpiper or snipe.

Dufferin to Garry. June 27, 28, 29. 1873.

G. 1	prairie.
G. 2	"
G. 3	"
G. 4	water.
" 5.	"
" 6.	prairie
" 7	"
" 8	"
" 9	"
" 10	"
" 11	"
" 12	Open swamp.
" 13	
" 14	
" 15	prairie
" 17	
" 18.	swamp.
" 19	"
" 20	
" 21	

4. 22. Thicket
4. 23.
4. 24
~~4. 25~~

July 2, 3, 4, 5

Gary to Lake of Woods.

X. 1. ~~prairie~~.
X. 2. prairie
X. 3. "
X. 4. "
X. 5. "
X. 6. wood.
X. 7. "
X. 8.
X. 9
X. 10 damp situations
X. 11. " "
X. 12 wood.
X. 13
X. 14
X. 15.
X. 16. swamp.
X. 17. swamp.
X. 18. dry sandy
X. 19. " "
X. 20

X. 21.
X. 22.
X. 23.
X. 24. Dry Sandy.
X. 25
X. 26 wood
X. 27.
X. 28. Swamp.
X. 29. thicket
X. 30 Swamp.
X. 31. water.
X. 32. Swamp.
X. 33.
X. 34.
X. 35.
X. 36. water.
X. 37 "
X. 38.
X. 39.
X. 40.
X. 41.
X. 42.

X. 43. Swamp.
X. 44. "
X. 45.
X. 46. Swamp
X. 47.
X. 48. thicket.
X. 49.
X. 50.
X. 51.
X. 52.
X. 53. Swamp.
X. 54.
X. 55. dry sandy
X. 56.
X. 57.
X. 58.
X. 59.
X. 60. thicket.
X. 61. Swamp.
X. 62.
X. 63
X. 64 thick wood
X. 65 " "

X. 66. thick wood

X. 67. " "

X. 68 water

X. 69.

X. 70.

X. 71. Swamp

X. 72 "

X. 73.

X. 74. Swamp

X. 75. shells from stream W. of Pl. du Chene. (mentioned in diary)

X. 76.

~~X. 77.~~ Red R.

~~X. 79.~~ "

~~X. 80~~ "

~~X. 81. X. 82. 83 84. 85. 86~~

Should be numbered in previous list. Y.

X. 90 Granite from E of Birch Creek Station.

Lake of Woods.

July 7.

W. 1. Reedy shallows N.W. angle.

July 8.

W. 2. Water N.W.a.

W. 3. " "

W. 4. " "

W. 5. " "

W. 6. Thicket

W. 7 "

W. 8. "

W. 9 "

W. 10.

July 10.

W. 11. Peninsula S of N.W.a.

" 12.

" 13.

W. 14 Point on Peninsula marked (7) on map.

W. 15 Intrusive veins in last.

W. 16 Point marked (8).

W. 17. " " (10).

W. 18. Limestone boulders from near Red R on map marked (O)

W. 19. 20. 21. 22. 23. 24. 25. 26. 27. Same.

W. 29. Boulder clay? from same place.

W. 30 Fossils from limestone boulders near Red R. marked O on map.

W. 31. 32. 33. 34. 35. 36. 37. Same.

W. 38. Land shells

Plants July 6 & 17. 98.

W. 39 water. N.W.C.

" 40

" 41 Rocky

" 42 "

" 43. dry rocky. McKays Isl.

" 44. " " "

" 45. Sandy shore.

" 46. "

" 47. Low shrub. McKays Isl.

" 48 Sandy shore

" 49 " "

" 50 Water

" 51.

" 52

" 53 dry sandy shore.

" 54. Sandy swamp.

" 55. shore.

W. 56. Sandy shore.
" 57. "
" 58. Wet shore.
" 59. Rundur moss. dry rocks.
" 60. Wet boggy shore.
" 61. " " "
" 62. Shore of sand & rotten wood.
" 63. dry sandy.
" 64. Swamp
" 65.
" 66. woods.
" 67
" 68
" 69
" 70
" 71
" 72. Wood.
" 73 Swampy wood.
" 74
" 75
" 76
" 77
" 78
" 79
" A

W. 81
" 82
" 83.
" 84. Swamp.
" 85.
" 86 Wood
" 87 "
" 88
" 89.
" 90. Sandy ridge.
" 91. Shore.
" 92 Sandy shore.
" 93 " "
" 94. " "
" 95. Wood (c. Calt flower)
" 96 Submerged bay
" 97 " "
" 98 " "
" 99. Sandy Shore. Flower pale lavender, more than one row ligulate.

W. 100, Astoria & marsh. July 18.

W. 101. Shells from marsh, Buffalo Pt.

W. 102. Sample of Green weed covering the water seems to be of two kinds. One linear the other nearly globular. Both rather irregular in outline (See Notes).

W. 103. Dragon fly Larvae Causing tracks on Sand. See notes July 20.

W. 104. (16) on maps.

W. 105. Intrusive in last.

W. 106. Vein in drift boulder mica schist at (16)

W. 107. Fine stone of full Rock. (17).

W. 108. Small vein in last.

W. 109. Clay from Shore S.E. of (19).

W. 110. "Crow duck" Eggs. from small rocky islet N.E. of Muskey Bay. July 20. '73.

W. 111. Pt marked (19).

" 112. " " (20).

" 113. " " (20) boulder.

" 114. " " (23)

" 115. " " (24) boulder

" 116 " " (26)

" 117 " " (31)

W. 118. Pl-on map (36) vein.
W. 119. " " (63)
W. 120. " " (60).
W. 121 " " (61).
W. 122. " " "
W. 123 " " (69).
W. 124. " " (73).
W. 125 " " (66).
W. 126. " " (65).
W. 127. " " (28).
W. 128 Rocks from Huronian? region
" 129 " . . . .
" 130 . . . . . .
W. 131. Sample of Quartz felspar veins common in Laurentian series. Buckeli Island.

Plants July 18 to 31.

W. 131. Marsh.
W. 132.
W. 133. rocky island.

W. 134. Marsh.
" 135 Rocks near water.
136 Rocks.
137.
138. Sandy knolls
139.
140
141.
142. Wood. Rainy R.
143 " "
144 " "
145 " "
146 Rainy R.
147. Wood Rainy R.
148 " " "
150. " " "
151. Grassy marsh. Rainy R.
152 Wood. Rainy R.
153. " " "
154 Grassy Swamps. Rainy R.
155
156.
157.

W. 158.
159
160
161
162.
1 163
164. Rocks.
165. Dry rocky
166 Clay Stal
167. dry rocky
168. Swamp.
169
170.
171.
172.
173. dry rocky.
174
175
176
177
178.
179.

W. 180 N.W. Angle.
181 " "
182 " "
183. " "
184 " " water
185. " " water
186 " " water
187. " " "
188. " " "
189. " " "
190. " "
191. " " Sevenups
192 " "
193 " "

Unios W. 194. Large Islands Centre of Lake
" 195 " " "
" 196 " " "

Aug. 2. W. 197. Sand shells N.W. Angle
W. 198. " " " "
Also some Succineas in alcohol.

W. 199. Shells from near Rainy R.
W. 200 Rock from near reference monument. N.W.a

W. 201. Point on map. (80)
W. 202. " " " (82)
" 203 " " " (84).
204 (85)
205. (88)
W. 206. On rustes, limpet-like.
W. 207. 208. Fordiatoms. Aug 10. 73.

W. 208. On map. (91)
~~W. 209. " " (94)~~
" ~~210 " " (94)~~.
~~211 (96)~~
W. 209 " " (94)
" 210 " " (94) intrusive in last.
211 (96).
212 (99)
213 (100)
214 (101)

W. 215	on maps	204
216	" "	105
217.	" "	106 Ka-Ka-Ke-wabec.
218.		107
219.		108
220		109
221		110
222		112
223		113 Chlorit-magma of Quartzite Conglom.
224		114
225		118
226.		119
227.		121
228.		122. Huronian.
229		122. Laurentian in contact
230.		123 Greenstone at Portage.
231		124. Falls of Winnipeg.
232		128
233		129
234		131
235		136
236		136
237		137 porphyritic Greenstone dyke.

W. 238. "Greenstone conglomerate", or breccia volcanic? La Crosse Rd.

W. 239. on map (139) piece of dolomite boulder 1'6" long.

" 240 on map (140)

241 " " (142).

242 " " (144) altered rock

243 " " " intrusive in last.

244 " " (150).

245 151

246 152 Intrusive.

247 153

248. 154 dyke.

249 (161)

W. 250 164

251 166

252 167 Grey quartzite.

253 167 intrusive in last

Holding scales of molybdenite, or graphite.

254. 168. Int. Syenite.

255 169.

256 176

257. 178.

258 180.

Plants Aug 1 to 7. 73.

W 259. wood.
W 260.
W 261 water
W 262 "
W 263 "
W 264 "
" 265 Swamp. "
266.
267. " "
268. Marsh date uncertain.
269. " in Muskeg bay
270
271
272. Albino of common Epilobium.
273

Aug 7 to 18. 73.

W. 274.
275 Wild rice. Rat Portage.
275.
276.
277

W. 278.
" 279. Nth Reed R.
280.
281. Reed R.
282 "
283

W. 284 Mise. in alcohol.
W. 285 " " "
W. 286 Insects " "
W. 287. " " "
W. 288. 9 frag. bladder like algae from near Rainy River SE.

June 23

~~Three~~ Three birds collected at Dufferin about last week June with no numbers affixed.

Golden Oriole female S. black
L = 7
W = 10
G = 4 1/2

Small fly-catcher ♂ S. bl.
L. 5
W. 7
G 2 3/4

Pigeon ♂ S. red
L = 15
W = 22
G = 8

This part of the Catalogue refers to Specimens of birds marked with number but no initial letter.
~~with duckworth numbers~~
~~Marked in pencil~~.

1. Prairie Lark ♂ Scratching R. E. H.
L = 9 1/2

2 Flycatcher. ♂ E. H. Broken Head R.
L = 7
W = 11
T = 4 1/2

3. Small Sandpiper ♂ E. H.
Lake of Woods July 6
L = 6 1/2
W = 10 1/2
T = 4 1/2

4. Sow-wheat ♂ E. Brown
L = 6 1/4 L of W.
W = 8
T = 4 3/4

5. Sparrow. ♂ E. bl. L. g. w.
L = 5 1/2
W = 10
g = 4

6. Bittern ♀ E. yellow L. g. w.
L = 22
W = 36
g = 9

7. Small sandpiper ♂
E. black. L. g. w.
L = 6 1/2
W = 10 1/2
g = 4 1/2

8. White sandpiper ♂ E. bl
L. g. W.

9. " " ♂
10 " " ♀

Roseau River Aug 20 to 28. 73

R. 1. Muskeg portage in swamp.
2 " " "
3 " " "
4.
5 Wood-
6 Muskeg portage. in swamp.
7 River banks.
8. " "
9. Woods. damp.
10. parasitic on various herbs.
11. Higher prairie level.
12. " " "
13 " " "
14.
15. higher prairie level-
16. " " "
17 " " "
18 " " " Spady damp near banks
R. 19 Fossil wood from sand bluff deposits of Roseau. 30' from surface.
R. 20. Sand bluff deposits

R. 21. Carb. Sand in connection with fossil wood. (R 19)
R. 22. Limestone bebble with chert.
R. 22½ Sand from Sand bluffs.
R. 23.
R. 24.
R. 25.
R. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40.
R. 41. 42. 43. 44. 45. 46. 47 48
R. 49. 50.
R. 51. Roseau R for diaterus.

D. 271
" 272
" 273

11. Kingfisher ♂ L.g.w
E.bl
L = 12
W = 17½
G = 7

12. Small brown bunting ♂ E.bl
L = 4½ L.g.w

13. Rose grosbeak ♀ E.bl.
L = 7½
W = 12
G = 5

14. Red breasted grosbeak ♂ E.bl
L = 7¼
W = 12 L.g.w.
G = 5

15. King Flycatcher ♂ E.bl.
L = 8
W = 12½
G = 4½

16. King flycatcher ♂ E.bl
Measurements as last
L. JW.

17. Small Sandpiper E.bl
L = 6
W = 10 L.o.JW
S = 4

18. Large Sandpiper ♂ E.M
L = 12
W = 22 L.o.JW.
S = 7

19. Sparrow ♂ E.bl
L = 6
W = 7 L.o.JW.
S = $3\frac{3}{4}$

20. Flycatcher ♂ S. U.
L = 7
W = 11 Left W
G = 4 1/2

21. Sparrow ♀ S. bl.
L = 6
W = 8 L of W.
G = 3 1/2

22. Duck ♀ S. pale yellow
L = 17 1/2
W = 27 Left W.
G = 11

23. Sandpiper ♂ S. U
L = 7 1/2
W = 12
G = 4 1/2

24. Sandpiper ♂ S. black
L = 13
W = 25
G = 7 1/2

25. Hawk ♂ E. bl
L = 10 1/2
W = 22 Lopw
T = 7 1/2

26. Sandpiper ♀ E. bl.
L = 9 1/2
W = 19 Lopw
T = 5 1/2

27. Tree Swallow ♂
L = 5 1/2 E. purple
W = 11
T = 3 3/4 Lopw.

28. Garry Chicken Hawk ♀
E. yellow
L = 20
W = 39
T = 19

29. Common Snipe ♂ E. black.
L = 11 Gazzy
W = 16
G = 5

30. Common Snipe ♀ E. bl
L = 11
W = 16 Gazzy.
G = 5

31. Chicken Hawk ♂ E. yellow
Aug 20 L = 20
W = 42
G = 9½ D

32. Chicken Hawk ♂ E. yellow
L = 18
W = 39 D
G = 8 3/4

33. Chipmunk ♂ E. blue.
L = 11
G = 4 1/8 D

34. Thrush ♂ L. yellow
L = 10 1/2
W = 12 1/2 D
S = 6

35. duck ♀ L. brown
L = 22
W = 33 D
S = 14

36. bittern ♀ L. yellow
L = 22 D
W = 36
S = 9

37 Duck — L. yellow
L = 21
W = 34 D
S = 8 1/2

38. Small shrike L. black
L = 8
W = 11 1/2 D
S = 4 1/2

39. Hawk ♀ E. purple
L = 12
W = 23 D
G = 7½

40. Cuckoo ♀ E. purple
L = 11½
W = 15 D
G = 4¼

41. Cuckoo ♂. E. purple
L = 11½
W = 15
G = 4¼

42. Chicken Hawk ♂
E. yellow
L = 18
W = 36 D
G = 8

43. Duck ♀ E. light-brown
L = 20
W = 28 D
G = 11

44. Duck ♂ E. light brown.
L = 18
W = 26 D
G = 9½

45. Duck E. light brown
L = 18½
W = 27 D
G = 9

46. Hawk E. pale yellow
L = 23
W = 48 D
G = 15

47. Teal blue winged. E.
L = 16
W = 22 D
G = 8

48. Yellow headed marsh bird ♀
L = 10 E. black
W = 14
G = 5 D

49. Small Hawk ♂ E. pale yellow
L = 11
W = 19
Q = 5 1/2 D.

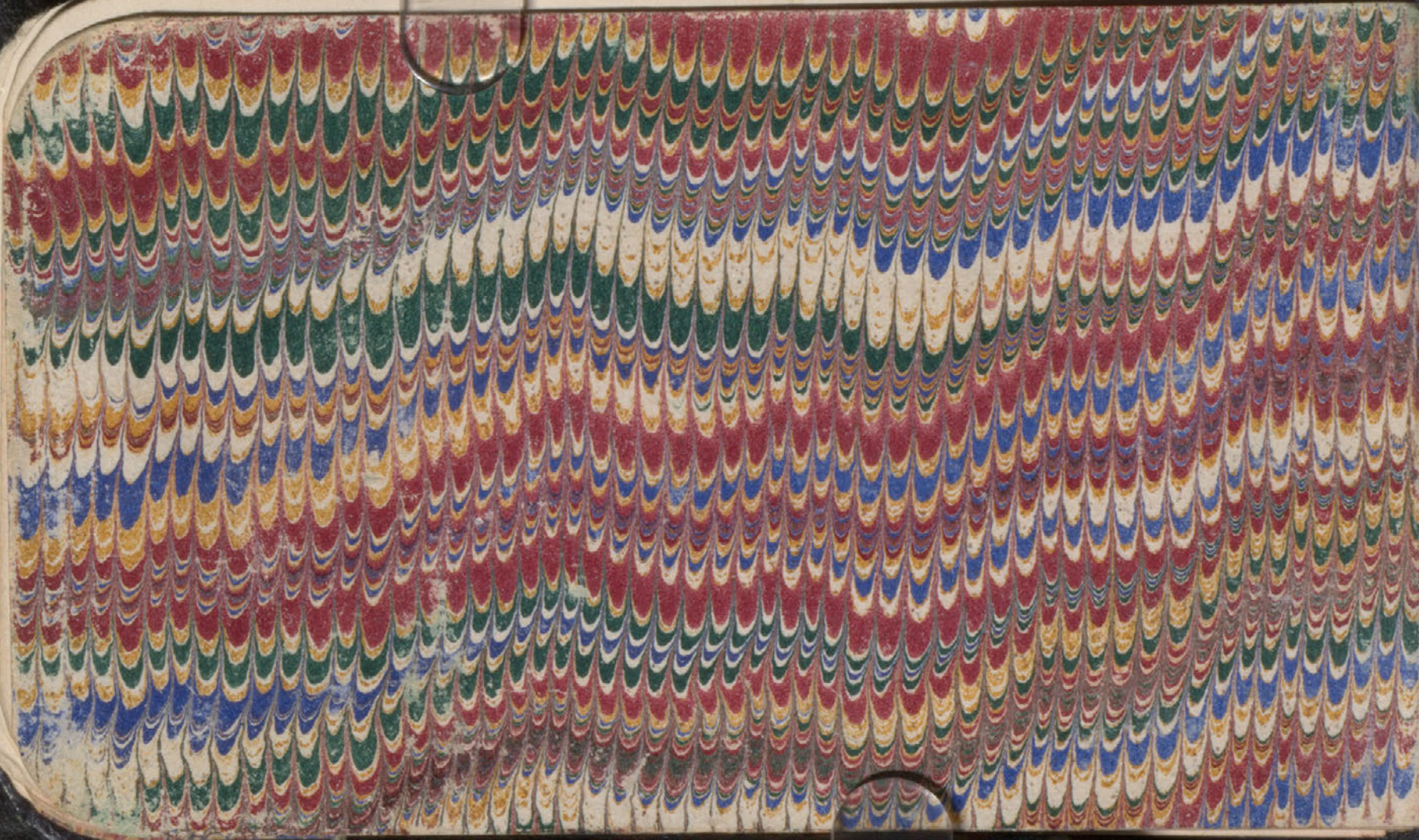
50. Whip-poor-will ♀ E. slate colour
L = 8 1/2
W = 16
Q = 4 D.

51. Mouse ♂ E. black
L = 5 3/4
Q = 3 D.

52. Sparrow Hawk ♂
L = 11 E. pale yellow
W = 19
Q = 5 1/2 D.

~~64~~
~~54~~
~~52~~
~~180~~

About 177 in all



Pump. Sent to
Bdry. Commission.

18 Oct; By Express
to A.C. Ward Pembina.
First Sent to Ottawa.

Hodgson Murphy &
Sumner. 347 St Paul.
Nelson & Wood St Peter
Holland.

Lauries Map
of N.W.
By D Codd Ottawa.

At Hopes.

Bisset
See Hudson Bay.
Flint & Steel.
Ammunition
? Needles. ? axes.
Knives £100.

Morland & Walsan
387. St Paul.
Indian goods
Pump. all about
Write Bigsby.

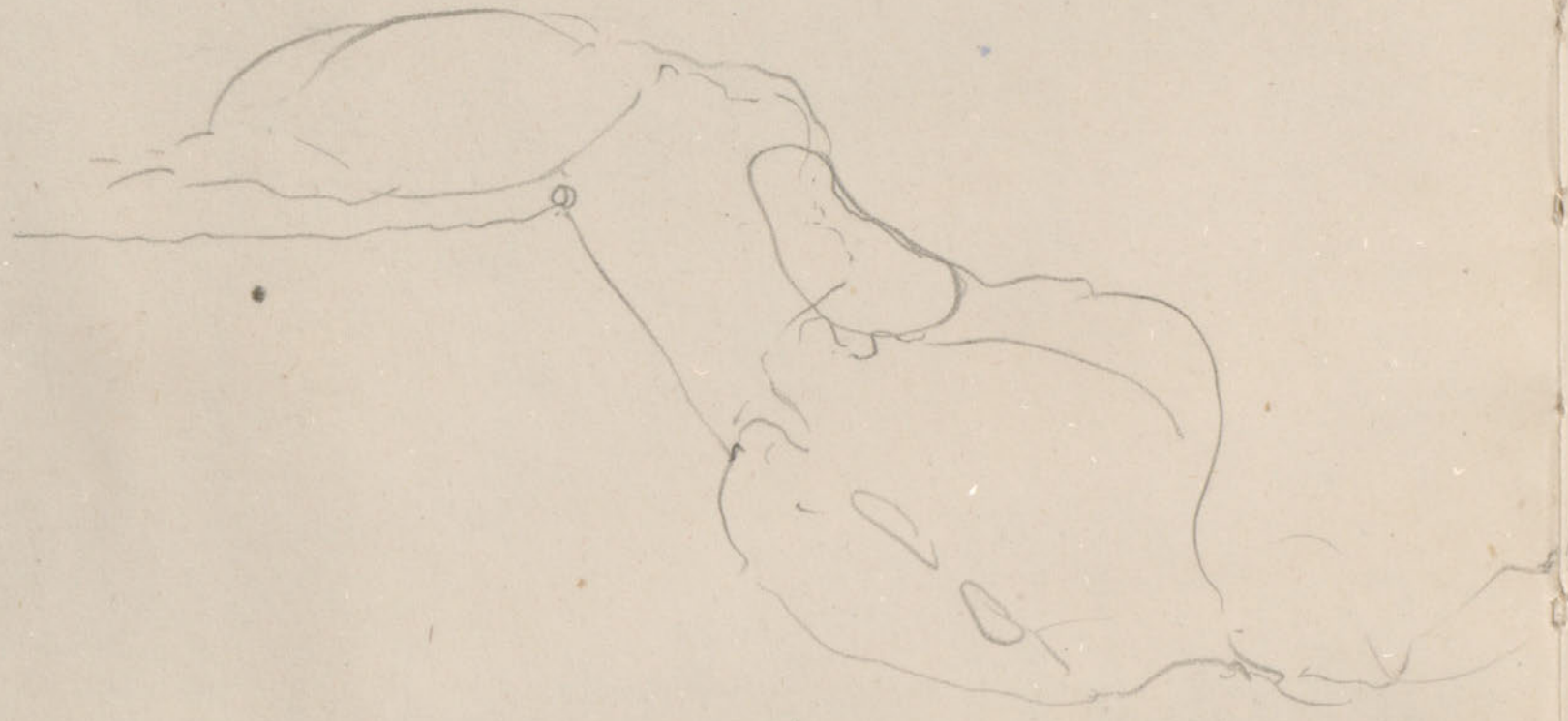
Books for N.W.

Grey
Oliver
Sawa Univ of Geol.
Winchell.
Rolleston
Herschel.
Hind.
Shakespeare

Leather Gloves.
Necktie.
Moccasins.
Boots.
~~Gaiters~~.
Clothes.
~~Trousers~~
~~Blouse~~
~~Hats~~.
~~Watch & glasses~~.
Light Hammer.
Wire for Bird prep.
Shot Pb oz.
Medicine
Protractor?
~~Swift~~
~~Parker~~
~~Phillips~~.

Survey Pubs. Abstract
Test Micrometer
Obs. Lat
~~Hats~~.
Gun
~~Gun powder~~
Insect Net.
ammunition revolver
Insect pins.
Shaving soap.
Paint Box.

Lake Sup. Ry
Model. Toronto
Beaties Line
Sarnia.
Vermont Central.
St Albans



Pullman	2.00
Tickets to Duluth	35.00
Cab	.50
Extra baggage to Toronto	.95
Breakfast	.50
PPC	~~.25~~
Telegram to Collingwood	.25
Cab.	1.00
Express on baggage	.30
Extra on "	.90
Extra luggage to "Chicora"	.50
Hotel Collingwood	8.50
On Luggage	.25
Minerals	~~.75~~
To Ft. William	~~.50~~
Fishing tackle	~~.25~~
Book	~~.35~~
Minerals	~~1.00~~
Fishing tackle	~~.40~~
Hotel for 1 week at P.A.I.	10.50

Ticket	12.90
Luggage	1.75
Extra & Moorehead	3.00
Breakfast	0.75
Supper	0.75
Photo's	~~1.25~~
Match Box	~~0.10~~
Telegram	~~0.50~~
Hotel	~~2.30~~
Ticket to Manitou	5.25
Meals	8.00
	3.50

Aske	Ticket	12.90
	Luggage	.25
	Breakfst & Supper	2.50
		15.65

Monday May 5. 73

Leave Montreal for Toronto with R. by 8 P.M. Train.

Trip.

6 Toronto on time 11.30 & W. at Station. Went with him Saw University college & observatory in afternoon. Telegraphed to Collingwood for time of starting of steamer. Got no answer.

7. Left Wilsons at 6 A.M. Got luggage transferred to N.R. Station. Left 5.70 train. Collingwood 12.30. Afternoon walked round. Saw sawing, turning & catching perch.

Chicora not to go till
Saturday. S.S. Algoma
& Cumberland all here.
Description Collingwood.

8. Wet miserable day
with high wind & cold.
Walk in morning.
Reading &c. Wrote memo. of
Iron Deposits, & to P.W.
& A & posted. Got Telegram
from Lane saying that Dr
Bepbys Answer received &
duplicate mailed.

9. Cold & Windy but dry.
Walk. Got luggage from
Station to Boat. Reading.
Afternoon went along

shore to E. a mile or two.
Collected some fossils.
Rocks apparently argil. &
cherty limestone. ~~Clay~~
Utica according to Geol
Survey maps. Exposed
nearly all along shore &
lying quite horizontal.
All the small gravel of
beach derived from these
beds. Numerous large
boulders all apparently
Laurentian & very various.
Many garnetiferous.
Numerous fragments of
large Trilobites in limestones
but all broken up.

10. Read. Packed & sent things on board Chicora. Wrote M. afternoon & evening waiting about ~~fall~~ boat sails. S. J. Dawson with about 150 men for Red R. Road arrived by morning train. Watched them coming on board & selecting baggage. Rough looking lot. Considerable trouble in distributing blankets to them just before starting.
Ashe & another of Cameron's party King. going by this boat. Col Forrest not

till next. Got off
finally about 11 PM
& steamed slowly out
on perfectly calm lake.
11. Awoke about 3 by
steamer stopping &
continued bumping noise
Ascertained that passing
through band of ice:
Some quantities of pack
ice all the morning forming
quiet floes along the S shore
of Georgian Bay. Passed
through several projecting
streams. Large blocks
but mostly honeycombed.
Passed Bergeron &

Flower pot Islands
after rounding Cabot Hd.
all bold cliffy land
of Niagara Limestone.
Flower pot Isd named
from two remarkable
isolated pillars of rock
on shore. A good deal
of snow still lying in
shady hollows of woods,
steamer passing outside
Manatoulin Isd to the
Sault, on account of
ice. Temp air 8 PM 37° Wind
about S.W.
12 At Daylight entered
Sault River. Banks
at first comparatively

flat slow, about
Nebish? rapid very
contracted & tortuous.
Banks & numerous islands
all <u>mountain</u> very perfect.
Seems water cannot
have been long low enough
to act on them as it
does now, or their shape
would have been destroyed.
Called at Bruce Mines
where first Boat for
season. Great excitement
among populace
Called at several places
amongst others at Jardine

River where village &
good many Indians
settled. Water of Garden R
at present very muddy
& does not mix thoroughly
with Sault water for long
time. Sault river in
upper reaches has broad
level & sandy tracts at
base of hills & forming islands
Called at N. Sault - St
Marie stayed about an
hour. Went ashore.
Then to S Sault where we
are to stay all night. Went
ashore. Examined rocks &c
Canal being widened

large granite gravel &
boulders, also sand &
clayey gravel thrown out.
Boulders mostly Hurronian
& St Peters Sandstone.
Upper part canal excavated
in St P Sandstone. Red
or purple with white layers
& characteristic white spots &
streaks. Very finely strat.
in places. Sometimes well
ripple-marked;
Saw indians in canoes
at foot of rapids catching
white-fish. Net like
landing net, but 4 a 5 feet

across & with long pole.
Canoe poled up against
raped by man in stern.
Then allowed to sweep down
a piece man in front w/
holding net, which white-fish
went in ascending.

13 Got through Sault
Canal about 6 a.m.
during a flurry of snow.
Called at Pt Aux Pins.
After leaving began to feel
sea rolling in with
strong N.W. wind. Also
passed a good deal of
loose ice. On coming
out to mouth of Bay found

ice packed on both shores
& long stream stretching
from White-fish Pt to Pt on
N side of Lake. Ran through
this pack with considerable
risk as ice very heavy &
hanging close together. All
oars got out to fend off
larger lumps. Ship plunged
about under the heavy sea
among the rolling cakes
in a way to make one fear
for the thin plates of an
old Blocade runner, as
well as for the paddles.
Water to leeward of ice
only moving with long

gentle swell. After
getting into the ice & especially
when nearly through. Waves
smooth on surface but
very steep & high. A peculiar
clinking noise from grinding
together of the blocks. Ice hard
& scarcely at all honeycombed.
Steamed on through heavy
& strong cold wind & Sea all day. Tables-not
now crowded. Saw no
more ice. Atmosphere
remarkably clear & cloudless.
Sun went down on shoreless
horizon to N.W. & left behind
an appearance resembling
the zodiacal light.

14 Called at Mitchepecotan Isd about 1 A.M. to land lighthouse keeper McIntyre. Slight but rapid moving Aurora about this time. Boat returned, & we got off about 1.30. Went to bed. Told that Indians used to frequent the Isd in spring to make sugar, crossing on the ice before it broke up. One spring 30 or 40? years ago a party of over 100 were carried away on the ice & lost & island has not been resorted to since. Two or three fishermen besides the

lighthouse keeper now live
here. Mails in winter
brought as far as Nitchipicotan
River by snow shoes & dog
sledges by indians, from
Penatanguishine. This
furthest west P.O. on lake.
Mails get to Thunder Bay
via Duluth. From Duluth
to Pigeon R by American
carries with dog sledge.
From Pigeon R by Canadian
carrier. Fortnightly.

Morning steaming out
of sight of land.
Got to Silver Islet
about 6 P.M. & stopped
at Silver Islet village

which lies opposite
it on the main land &
seems a lazy little place,
with a good Wharf.
About 4 in the afternoon
saw Str Manitoban on
her way back to Sarnia having
called at Thunder Bay.
Entered Thunder bay
about Dusk & pushed
with great difficulty & danger
to paddles through several
miles of unbroken but
rotten ice. Splendid
evening & Thunder Cape
looking magnificent in
light of setting Sun.

made some sketches.
Got to Prince Arthurs
Landing about 10 P.M.
running in cautiously &
a fine new wharf built
during last winter. Inhabit-
ants all waiting & together
with the workmen on
board for the Dawson road
celebrated arrival of boat
with great cheering. Men
got off with all their baggage
& left boat quiet. They
have on the whole behaved
very well, & beguiled the
time with Gaelic & French
Songs.

15 Str City of Montreal arrived this morning. Took a walk over the town which looks thriving & has 150 to 200 buildings all told. Uncertainty as to time of starting of Steamer kept on board nearly all day. Got all things off & wood on board very slowly. Bought some minerals. Off about 4.30. Got through ice without difficulty & found lake calm as a mirror.

Steamed on at good rate all night. Wrote letter to Mr. to post at Duluth.
The mining fever seems very strong about Thunder bay. Great deal of prospecting going on & hearing constantly of discovery of mines, especially of Silver. Seems no doubt but a great deal of mineral bearing country in neighbourhood.

16 About 6 this morning when some 35 miles from Duluth, stopped by an

impenetrable field of
solid ice. Standing
high out of water &
sometimes appearing
10 ft thick. For about
15 miles before coming
to this had been steaming
through a thin sheet
of ice ($\frac{1}{4}$ to $\frac{1}{2}$ inch)
formed during the
night. The whole end
of the lake as far as
seen being filled with
the solid ice obliged to turn

after having steamed
15 hours from Thunder
Bay & return there.
Met "City of Montreal"
about 9 on her way to
Duluth. Some passengers
wished to get on board her
& try again but Capt of
"City" would not take
them. Shore of Minnesota
by which passing all day
quite wild. Preponderance
of deciduous trees, Rough
& hilly but not mountainous
Day beautifully fine & calm

Pushed through a good deal of ice in Thunder Bay & reached P.A. Landing at 9 P.M. Left letters for M & A in Capt's box to post at Collingwood. Got out Baggage &c. & went ashore to wait for Algoma & try for Duluth again in Lor Put up at Flaherty's Hotel. Very comfortable considering. A good many of our disappointed passengers clubbed together & camped out.

17 After Breakfast
went down to "Dock"
& waited for Sailing of
Tug for Ft William, about
6 miles from here & on
Left Bank Kamanistiquia
River. The Tug is owned
by an Indian named
"Ambrose" who uses her
mostly as an exploring
steamer, for Gang in quest
of Mines & Mineral location.
He has made a good deal
out of discovery & Sale
of properties & is one of
best of men in place.

Seems intelligent. Not dissipated. Dresses well but in queer taste. Wears gold chain of large size with some ponderous ornaments on it. Has two indians; a man called Mr Donald & an Engineer as crew of boat. Engineer gets 46 dollars per month.

Mr Donald keeps an assay office here but is generally hard up. Does painting &c &c. now employed as a hand on the boat.

making her fast to the wharf. Cleaning lamps &c. Talked with him. Has studied 5 years at Freiberg & been in charge of mines in Norway & elsewhere. Is very intelligent quite a gentleman apparently & really knows a great deal about Mineralogy &c. Gathered a good deal of useful information about this place & its mines. He does not consider the Silver deposits to have the character of true lodes.

They seem superficially rich. Last Summer he went as Prof Nicholson's assistant on a geological excursion. This summer he is going out with Ambrose to explore with him. Seems to be a very shallow bar at mouth of Kamanistiquia R. Fort William consists of one large stone building over 100 years old, & a good many neat painted wooden houses. Two small cannon at gate yenclosure

Went up on Luy about
a mile further to Mission
of Jesuits, where stopped
to wood, & then returned
to H.W. & P.A. Landing.
A good many houses
of Indians &c on Kam-
anistyua R & some
clearing & farming. Land
appears excellent. Water
of R very brown. Made
rough sketch of River &
McKays Mountain.
After dinner went
with Capt. King on visit
to Shumiah Shewena mine

about 3 miles N of
this. Road all up hill
good but sandy.
Rock where visible
apparently highly altered
Sandstones & Slates. All
mountain. About a mile
from shore well striated
Strike N 85° W. Nearly
a mile further on & near
top of ridge N 70° W.
When got to summer hut
Saturday men had left
work at 4. Found a
man who took us down,

man who took us round,

rightwards looked over
rubbish piles for specimens.
Three shafts but though
prospects silver good at
surface seems hardly any
below. Filling of vein
which is very considerable
width Calc Spar with
some Quartz & Fluor.
Iron pyrites & small
quantities of Galena.
Course of lode about E.W.
Weather very hot inland.
Got back to Hotel about
7 P.M.

18 To Church.
afternoon walked with
King to Singleton mining
location. Have been
carrying on preliminary
explorations, small shafts
& trenching, without as
yet any great success.
Evening walked down, to
see "Chicora"-friends in
camp.
19 Afternoon to Little
Current River which is
about 2 miles E of here
with King to fish. Fished
on off till 6 P.M. no luck.
The River of some size

& rushing impetuously down into lake over two sets of rapids. The upper being the finest. Rocks at lowest Rapid. Hard altered black shale about S 20° E ∠ 5°. Shale or slate nearly horizontal at top of falls. Water comes down as if over succession of badly formed steps.

Found a newly made indian grave near the shore a little W. of mouth of R. Posts driven in at the 4 corners & two at the head. One of these tale

& having remains of
piece of calico print as
a flag. On the other some
threads & porcelain buttons.
Laid on the ground near
the head, ordinary pipe,
glass bottle. Also lying
over the grave a wooden
scoop or dipper covered
with rosin & as if used
for gumming canoe, & a
small badly chipped imitation
of a jasper arrowhead.
Superstitious lingering of
"Stone age". The indian
was not a convert, or he
would have been buried in

Consecrated ground. Told that at first there was a plug of tobacco as well as a pipe left at the grave, but that it had been removed by some miners in want of a smoke. Also that the glass bottle probably added by some white man.

The Boulders along shore & elsewhere are mostly of slaty altered & volcanic rocks of neighbourhood, but some Laurentian blocks & a good many of St Peter sandstone.

20 Went to Little
Current R. Followed it
up about 2 miles & then
struck W through fearful
burned woods & swamps
to Stevens mine road & &
returned by it.
All the country for miles
around here has been quite
recently burned over & is
one forest of Rampikes.
Sold population P.A. Landing
about 500.
Mosquitoes abroad
since last few days.
No sign of "Algoma"
wait becoming tedious.

21 Afternoon Started for little West R. with King & —, to fish. Went up Dawson Road half a mile or so & struck W into woods. The R. was much further W than we were had to expect. Toiled through burnt windfalls & soft mossy swamps till getting late we turned homeward through ditto ditto by compass & sun. Arrived about 6.30. Bought some minerals. About dark

Str "Francis Smith" came in. Heard that "Algoma" struck ground & detained. Expected here ~~this~~ warning. uncertain whether either Str goes on to Duluth at once.

<u>22</u> Reading Co. & went on fishing excursion up Mc Vicker's Creek. Got a few small trout.

Found an Indian arrow head of jasper, & well shaped in the earth of the street today. Associated with chips of similar stone & so undoubtedly in place.

Lt was in front street

not far from O' Hagherty's & near the edge of the bank. "Frances Smith" left for Collingwood this afternoon. "Algoma" arrived this evening.

23. Read, played chess & walked about the town. Packed. Got luggage down & on board "Algoma" by dark. Algoma started out for Silver islet before 1. About half inhabitants P.A. Landing seem habitually drunk. Place now filling up with surveyors &c. mostly in Government employ. Told that R.R. Road now open to Trunk Portage, & will be open

through as soon as men
pushed up & steam launches
put in order, as ice has gone
out of lakes several days ago.
Saw a family of Indians from
up country, father, mother, boy
of 9 or 10 & infant, waiting
about wharf. On way to bury
some relative at Ft William
mission. Seemed to be pure
breed & very dark. Father had
an extremely broad face, differing
from usual cast of countenance,
& was stupidly drunk.
Mother not altogether bad looking
as any woman might be
expected to under the circumstances,
careworn. Boy seemed frightened
at seeing so many people.
Infant strapped to board

cradle with hoop &c. exactly as drawn in Frontispiece of Dr Wilsons book.
Have stayed in Hotel here waiting for boat to Duluth just one week. Had determined yesterday to go by Dawson Route but found as above that not yet open. Trees begin from a distance to show a faint tinge of green. blue violets V. Selkirki? & small white ditto. in flower in good exposures since arrival.
24 Saturday. At Silver Islet - taking on freight &c till about Noon. Then steamed off for Duluth. Weather beautifully fine & water as calm as glass

Silver Islet mine said to be doing very well. Told that about 900 barrels of ore to show for this winters work averaging 500 to $700 each. They have been employing a diver & apparatus & getting lumps of rose ore in lake bottom round the islet. Told that two barrels of splendid ore in one lump got out a few days ago.

Being the Queen's birth day some passengers fired a salute with guns & revolvers at noon & finished with three cheers. In the evening songs ending with God Save the Queen.

Sunday May 25. 1873
After Breakfast came up
with a great body of ice
which though fortunately
rotton stretched from shore
to shore of lake, & where we
first met it was about
15 miles from Duluth.
Ran in keeping pretty
close along N Shore &
trusting to weak places &
lanes of water. Got on
very well for a time though
with much heavy bumping
& grinding but about
noon got firmly jaced.
Ice closed up in front
& behind & we could

not move in either direction. Large pieces broken from the paddles strew the ice around. Steam let down & must be content to wait for change. The "Algoma" being very old some say 37 years, & her engines at any rate bear date 1841 one might fear for her safety at such work, but fortunately she seems to hang together pretty well, though the engines jump about a good deal when the paddles are climbing over ice.
The ice is white prismatic

& quite rotten above water but below is often blue & pretty solid. In some places over 10 feet but mostly seperated into cakes. It appears for the most past to be composed of much thinner ice pushed together into great wrealtes & piles & resolidified by regelation. The unusual prevalance of N E winds & calms this spring has driven it all into Duluth bay. The same occurred in 1868 & the recurrence of the phenomena must very much damage Duluth

prospects as a shipping place.
We are stopped about 8 or 10 miles in a straight line from Duluth, & about a mile from the shore, just opposite a small isolated clearing which is surrounded by tall birch & spruce

~~26~~ Hard & fast this morning. Russel. McIntyre (Freight agent R S M L) & a man tried to reach the shore by planks over the mushy ice. Used two planks standing on one & placing the other in

advance by means of ropes at the end. After getting some few hundred yards from the boat the ice became so rotten & treacherous that they were obliged to return. Heavy rain came on & softened the ice a good deal. After dinner steamer "Manitoba" hove in sight coming up through the ice bravely. This rousing our Captain's ire, he ordered steam to be got up & after some ado & running the steamer back & butting her into the ice at least a

dozen times got free &
went along slowly. Kept
close along the N.W. shore
where the ice rotton. Got along
pretty well at times then
got into heavy piled though
rotton ice which filled up
our channel behind & seemed
like bringing us to a dead stop
again. After a time the Str
Manitoba got fast & we
overhauled & passed her.
Kept very close along the
shore lead going all the time.
Got nearly into Duluth
harbour about dark. Fog
came on. Kept poking in

& sounding till at length
saw lights of town. Whistled
& by aid of lights placed at
piers &c crept round the
breakwater & into the harbour.
Ice fills the bay to the very
bottom & is so piled together
that the mass 15 miles
long through which we have
passed must represent an
immense area.
Received at Duluth with cheers
being the second boat of the
season. "City of Montreal"
arrived last Saturday after
being 8 days in the ice &
getting out of fuel.

27. Got up at 3 local time having intended to get up at 4 but being awakened & mistake on Canadian time, Custom house officer promised to come down at 5. Turned up about 6. Got Baggage passed without any difficulty on account of "Transit" procured in Montreal. Train for Moorhead aught to leave at 7 A.M. Got luggage over & checked. Told that on account heavy rain track obstructed by slides about 20 miles from here. Went

up town & had breakfast
Walked up & down to
station to know when train
to go off. Found Telegraph
office & telegraphed to Lapa
$2.30. Train got off at
last after 1 P.M. Duluth
seems to be combination
swamp & rock. Half the
town built on low swampy
spot. The other & better
portion climbing up the
very steep side of a hill
of almost solid rock.
Everything of course very new
& rough but two fine cut
stone blocks in progress.

The rock seen at Duluth very peculiar apparently greenstone trap. Very coarse in crystallization & holding two colours (pale green & pink) felspar. Surface of country covered with red tenacious though gravely clay. Railway runs nearly level to near Fond du Lac. There the trap is replaced by a purple red sandstone which seems not much altered & in massive beds. Is quarried near river for building.
Past Fond du Lac Railway begins a rapid ascent

winding round very rapid curves along high side cuttings at it follows the windings of the river. We had a train in front & another behind us & now met a fourth coming in the opposite direction. This obliged our train & the three others to back to Fond du Lac.
Made a rough sketch.
Got on again & passed over deep side valleys on curved trussle work of immense height. Speed always being reduced according to notice to 4 miles per hour.

many exposures of the red sandstone which appears to dip down the river at low angles. About Thompson junction where the sudden rise stops, passed suddenly to much altered hard grey fissile slate like Huronian rocks & apparently unconformable below the red sandstones. Scenery on the river splendid. A wild rapid of brown water nearly all the way up, & where crossed by the bridge a tumultuous fall. After leaving Thompson got into level country

showing no exposures
of rock & for the most pard
swampy & barren. Blueberry
& Tamerac swamps with
sandy bottom & many
small lakes & Frog-ponds.
Good land for cultivation
scarce & in isolated hillocks.
This style of country, perfectly
wild continued till a short
distance E of Brainard
where it began to improve.
Brainard about 9. Had
supper at Head Quarters
Hotel. Brainard 3 years
ago non existant now
quite a little settlement

mostly of people connected
with the Northern Pacific RR.
Streets absolutely cut out
of pine woods. Had pointed
out in square a pine on
which two indians lynched
by hanging last September,
for some murder.
Just W of Town cross
Mississippi River. Quite a
small river but deep &
said to flow 4 miles an
hour. Navigable for small
steamboats.
From this over flat
country, at first wooded
but long before reaching

Red River assuming the true prairie character. The prairie as seen here seemed flatter than I had expected, in fact as flat as land well could be, & though possessing no features hardly possible to realise without having seen. Track straight as an arrow mile after mile & perfectly level with regular ditches at the sides seemingly of interminable length, Night beautifully clear with slight Aurora & quite chilly. The vegitation at Duluth seems say a week in advance

of Thunder Bay & is
evidently kept back by the
immense quantity of ice in
the lake & N.E. winds off it.
Going west the trees continue
to be more fully in leaf
& at Red River than anywhere
yet seen; being beautiful in
fresh green of early summer.
28 Got to Morehead a little
before 5 A.M. Remained
in train & crossed over
Red River into Dacotah to
town of Fargo where there
is a good hotel the "Head
Quarters"
Have since morning
crossed from head waters

of St Laurence System to those of Mississippi running to Gulf of Mexico & then to those of Red River reaching finally Arctic Ocean.

The great swampy region through which we have passed is the birthplace of these great rivers. The whole within 12 hours, (when the train is on time)!

Find that the Str. "Selkirk" is due today & is to leave Thursday evening. The American party of the Boundary Commission has however chartered nearly

all the accomodation for
their transport to Pembina
& it seems doubtful
whether we will get off.
Fargo & Moorhead on the
opposite banks of Red River
are almost one. Streets
very wide, & expanses of
black mud. Stores scattered
along one side of the usual
square front style. Many
Saloons &c. Population
rough, nearly entirely masculine
& have no children at all.
Little or no cultivation of
the prairie has as yet been
attempted, though some
scattering houses built on it

r herds of cattle grazing.
The Dakota side of the River
is at present an indian
reservation but the village of
Fargo seems to have sprung
up without reference to
their rights. Moorhead has
a not bad looking weekly
paper. An indian camp
a little to N of Fargo but
did not visit it.
The Red River was very heavily
flooded this spring. It is
still high but was nearly
30 feet above its present
level, rising over the
surrounding prairie.
A gully has washed out
feet S of the Railway
Bridge which shows a

very good section of the prairie. About 2 or 3 feet of rich black vegetable soil. Then several feet of somewhat imperfectly stratified yellow, fine sandy & earthy clay. Below this becomes more & more perfectly stratified in thin whitish & yellow layers as far down as seen. The top of section is about 30 or 40 feet above the river. The lower & more finely stratified portion of the clay contains many small flattened yellow & not very hard nodules. No fossils or impressions of any kind seen.

Wrote M

29 Waiting for boat, & looking after luggage.
Walking about Fargo & Moorehead.
The line of the Northern Pacific Railway has now reached within a few miles of the Missouri, & is said to be pushing on at the rate of 2 miles a day.
In the section of bank seen near the bridge it seems probable that the finely stratified sediment at base represents the time during which this low level prairie country was a

lake. The more imperfect
stratified upper portion
being deposited under
estuarine conditions, or by
the annual overflow of the
river when in a flooded &
turbid condition, & bearing
coarser materials.
Nearly opposite Head Quarters
hotel Largo is planning with
which artesian boring has been
carried on. Told that hole in
search of self raising water
& about 200 feet deep. Also
that near bottom some
hard stuff met with by
which tubing broken, & as

no appearance of good water
head undertaking abandoned
Well tried by N.P.R.R.Co.
(Find out what section was)
Got on board steamer
about 8'o'c P.M. A great
crowd of people, emigrants
&c — besides the U.S. Bdry.
Survey. Captain of boat
did not know how to
accomodate & was going to
leave behind, but finally
got barge alongside & loaded
her up with baggage &c. Then
put up an awning, &
spread sacs of oats on the
trunks on which the people
might sleep.

Russel Kinaway some of
American party was so
fortunate as to get a berth,
which he very kindly offered
to share with me. It was
down on the floor & very low
in the roof, but better than
camping out in a blanket
as you are not necessitated
to get up so early in the morn
Stz. got away before 12.
30. Steamed on in a
slow & interrupted manner
all night. The turns in
the river so numerous &
sharp in this upper part
that every 5 or 10 minutes

it is necessary to stop the boat & back her to prevent running into shore. As it is we constantly rush sideways up among the bushes, & bound off again into the stream.
Steaming all day down this tortuous valley. The river perhaps 200 feet wide in a valley from ½ to ¼ mile bounded by the edge of the prairie level which shows up against the sky. The valley full of elm trees as a rule. Sometimes scattered & sometimes in thick groves. Along the

edges of the water. willow
bushes & trees, which owing
to the long continued high
water have in places put out
fringes of little red rootlets
below the surface of the river.
The elms where sheltered
beautifully green & luxuriant,
but on exposed points much
dead wood & broken trees.
The flood this spring judging
from drift wood has been
over the edge of the prairie
all along, & the prairie
must have been flooded over a
great area. The ice during
the flood is evidently the
principal agent in destroying

the elm trees on the points;
bark being scored off in
great patches high up the
trunks. At 9.30 AM
arrived at Searyetown a
Hudson Bay post on the
Right bank. It is only some
16 miles from Moorhead in
a straight line but far more
by this river. Town consists
of a store, so called hotel
& a few houses. Relays of
horses kept here for the stage.
A ferry across the river
being a scow & fixed rope.
Some oxen were put on
board here, & the operation
took a long time, & much

Cruel treatment, as the beasts had been almost wild on the prairie, & became quite stuped from fright. Say down & had to be pulled on board with ropes. One was nearly drowned by falling in alongside, & then rushed at & nearly succeeded in impaling the Captain who directed the operations.
Great flights of wild pigeons passing North all day, & apparently following the wooded belt of the river.
Stopped in the afternoon at a place on the Left bank wood, where a man has a house

& small farm. Told that nothing been raised for two years for grasshoppers.
From top of bank saw long train of waggons going N along the road. Mosquitoes here very abundant & large.
These Red River boats are strange craft. They draw very little water, being quite flat but carry a large load piled on deck & everywhere.
Huge stern wheel behind. Engines aft. Boilers near the front. Engines high pressure & steam turned after use, up the smoke stacks, giving a sound much like that of a

locomotive & sending out great showers of sparks, to the great detriment of clothes, & danger to the canvas covering over piled up goods, which are obliged to be kept wet.
Saw several hawks. A catfish about 10 inches long caught during our stoppage today.

31.
Stopped at Grand Forks about 11.30. Here the Red Lake river joins the Red river. The former perhaps having more right to the name of Red River than

the latter. The river is here doubled at a stroke. Found a very pretty violet on shore V. Pedata probably. Quite a scattering little village here.
The Banks of the Red river near Morehead close to the stream & high more begin to open out more, seem lower, & the river is not so sinuous.
As we continue below this same obtains more & more; & a broader belt of trees, though

very generally on the
Dakota side much injured
by fires. The "cottonwood"
becoming very common.
The bushes show a very
distinct flood line. All
below being leafless, those
portions above, well advanced.
This would show the long
continuance of the high
water at a certain level.
A Pelican was shot
from the boat this morning.
Saw a fine pair of White
headed eagles on the
left bank, hovering

round their nest which was very large, in a high nearly dead tree & composed of loose looking sticks.

Temp. of water at 8 A.M. 62°
" " " at 8 PM & after junction of R. L. River = 64°.

June 1. Sunday. 1863.

Morning wet & overcast. Arrived at Fort Pembina about 8 A.M. American party disembarked & put up tents under pelting rain. River bank here mass of

tenacious mud.
The "Fort" includes some
neat looking white painted
buildings, where a few
companies of U.S. troops
are stationed. Stopped
again at Pentina village
a small & poor looking
place on the Left bank.
Stopped at Custom house
& took on officer.
Stopped at Dufferin &
got off amid heavy
rain & great confusion.
Got some baggage

mislaid whether still
under heaps on the boat
or left { mistake at
Penshina I dont' know.
Went Capt. Cameron &
the rest of the Party & was
conducted up to ring
Quarters { Ward.
Got a bed rigged up &
things put more or less
to rights.

1000 saddle needle 4·50

2000 common 100 2·00.

10 lbs vermilion 1·20 12·00

1 tin common 1·20

3 doz flat files 1·40

3 doz corners 1·10

1 doz drawknives. 8.0.

2 doz 4·50 9·00

2 doz 3 6

2 doz clasp 2·20 4·40

2 doz clasp 2·00 4·00

5 guns at $5.50 27.50

2 gross powder at 2.25 57.00

4 doz bullet mould 1.60 6.40

15000 caps at 80 12.00

shot 200 at 8c 16.00

4 doz jaw worms

1 gross clasp knives 2 52.50.

1 gross sheath " 36.80.

4 doz 80c

4 doz 90 11.20

4 doz 1.10

1 doz axe 8.00

1 doz axe 9.00

10 doz opy wh topleat
35 doz 3.50

10 doz assorted 3.50

Large opy necklace. 4.00
opy wh oblue.

2 gr glass at 35c doz

1 gr 35

1 gr 30

1 gr 30

~~4 gross bugle at 4.20~~

~~50 Lbs at 30c 15.00~~

10 lbs opaque blue at
30c 3-00

4½ at 20c .90

4½ dark blue 20c .90

4 black bugle 30c 1.20

Large transp glass
8 amber drops 4.00

10 opq seed white 30 3.00

6 lbs white bugle 30 1.80

16 lbs assorted large 35 3.50

½ Gross mirrors	1.50
½ " "	2.10
1 Gross paper earrings	4.80
1 job lot do	3.00
6 doz glass charms at 30 doz.	
6 doz bead neck lacs at 35 c	
6 bunches rings at 30 c	
6 doz brooches at 22 c	
6 doz charms at 10 c	
1 Gross buttons	1.40.
1 " glass	2.00

~~½ gross ribbons 4.20~~

10 ribbons 9.14

4 gr. medals at 60c

1 gr crosses 1.60

1 gr glass rings 1.25

1 box rings 130

1 gr red earrings 3.60

2 doz tapoy brooch 1.60

~~6~~ 2 doz combs 24c

6 doz horn combs 23c

6 ~~doz~~ side combs 1.00

2 doz neck chains 4.00