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Catalogue of specimens collected: Vol. I, 1-6684. ca. 1880

[s.l.]: [s.n.], ca. 1880

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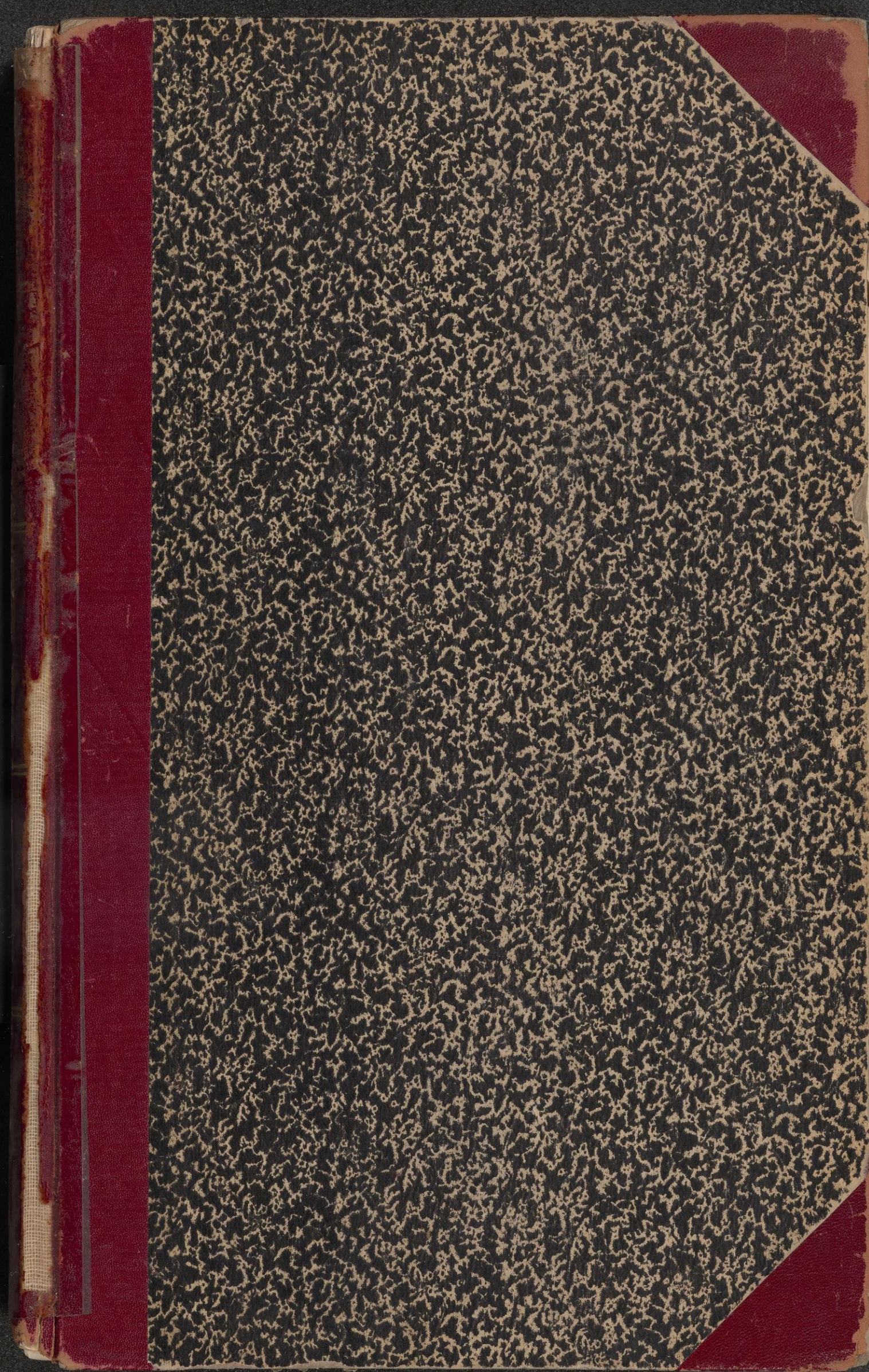
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✓
1-6684

P. C. R. M.

Catalogue of Specimens Collected

1880 - 1 - 2 - 3 - 4

Vol. I

Arrangement of Numbers.

1 - 154	R. M. Kinlay	1880
154 - 499	No specimens taken.	
500 - 999	R. D. Irving.	1880.
1000 - 1048	A. C. Campbell	1880
1049 - 1147	W. M. Chauvenet	1880.
1148 - 1199	No specimens taken.	
1200 - 1271	A. C. Campbell + R. M. Kinlay.	1880
1272 - 1499	No specimens taken.	
1500 - 1799	R. D. Irving	1880
1800 - 1834	A. C. Campbell	1880
1835 - 1981	R. D. Irving	1880
1982 - 2499	No specimens taken.	
2500 - 2619	W. M. Chauvenet	1880.
2620 - 2700	No specimens taken	
2701 - 2722	W. M. Chauvenet	1880
2723 - 2999	No specimens taken.	
3000 - 3094	R. D. Irving	1880.
3095 - 3169	A. N. Chester	1880
3170 - 3190	A. N. Chester	1881
3191 - 3250	Miscellaneous.	
3251 - 3999	No specimens taken.	
4000 - 4067	W. N. Merriam.	1882
4068 - 4088	C. R. Vanhise	1882
4089 - 4099	Miscellaneous	
4100 - 4499	R. D. Irving	1883
4500 - 4553	Miscellaneous	1883
4554 - 4699	Reserved for miscellaneous	1884.
4700 - 4769	W. N. Daniells	1883
4770 - 4867	W. N. Merriam	1884
4868 - 4999	Reserved for miscellaneous	1884-5
5000 - 5193	C. W. Hall	1883.
5194 - 5999	Reserved for C. W. Hall.	1884 +
6000 - 6193	W. M. Chauvenet.	1883
6194 - 6499	Not any specimens. Reserved for R. D. Irving	1884 + 1885
6500 - 6575	R. D. Irving	1883.
6576 - 6718	C. R. Vanhise	1883
	(See end of book No II)	

List of Field Note Books.

1

No.	Month	Year	Observer.	District.
1 ✓	{Sept Oct Nov}	1882	W. N. Merriam	St. Louis, & Mississippi River, Minn.
2 ✓	July	1883	R. D. Irving	Menominee Iron Region, Mich & Wis.
3 ✓	July	1883	R. D. Irving	Marquette Iron Region, Mich.
4 ✓	Aug	1883	R. D. Irving	North shore of Lake Huron, Can.
5 ✓	{Aug Sept}	1883	R. D. Irving.	National boundary from Thunder Bay to Saginaw Lake.
6 ✓	Aug.	1883	C. R. Vanhise	{Original Huronian and Spurr, Mich Saginaw, Champion & Republic.
7 ✓	{Aug Sept}	1883	W. M. Chauvenet.	{Gunflint, Saginaw, Otter Tracks, Knife & Cypress Lakes, Natl Boundary
8 ✓	{Aug Sept}	1883	W. M. Chauvenet	Basewood to Gunflint Lakes on Nat. Boundary.
9 ✓	Sept	1883	W. M. Chauvenet	North Lake to Grand Portage on Nat. Boundary.
10 ✓	Aug	1883	W. N. Daniells	Waukegan, Marathon, Lincoln & Langlade Counties, W.
11 ✓	{Aug Sept}	1883	W. N. Daniells	Wood Co., Wis.
12 ✓	Oct	1883	R. D. Irving.	Quartzites of Southern Minn.
13 ✓	July	1883	C. W. Hall.	Stearns Co., Minn.
14 ✓	July	1883	C. W. Hall.	Stearns Co., Minn.
15 ✓	Aug	1883	C. W. Hall.	Stearns, Morrison, & Todd Cos, Minn.
16 ✓	{Aug Sept}	1883	C. W. Hall.	Nicollet and Renville Cos, Minn.
18 ✓	{Aug Sept}	1884	W. M. Chauvenet	Grand Marais, Rove Lake Trail, Minn.
17 ✓	May June	1884	W. N. Merriam.	Quartzites of south-eastern Dakota.
19 ✓	Sept	1884	W. M. Chauvenet	Cacaquabic Lake.
20 ✓	July	1884	R. D. Irving.	Minnesota Valley.
21 ✓	Aug	1884	R. D. Irving.	Vermilion Lake Dist. & Port Arthur, Can.
22 ✓	July	1884	C. R. Vanhise	Gogebic Iron Range, Mich.
23 ✓	{July Aug}	1884	C. R. Vanhise	Gogebic Iron Range
24 ✓	Aug.	1884	C. R. Vanhise	Gogebic Iron Range.
25 lost	Oct.	1884	R. D. Irving	Keeweenaw Point
26 lost.	Oct	1884	R. D. Irving	K. Pt
27 lost	Oct.	1884	R. D. Irving	K. Pt
28 lost.	Aug. Oct.	"	W. N. Merriam	Vermilion Lake Country
29 ✓	Sept Oct	"	" " "	Vermilion Lake Country
30	July	"	C. W. Hall	Minnesota Valley
31	Aug.	"	C. W. Hall.	Minnesota Valley
32	"	"	C. W. Hall	Minnesota Valley.
33	"	"	C. W. Hall	Minnesota Valley
34	"	"	C. W. Hall	Minnesota Valley

Specimens collected by R. M^c Kinley

	✓1	75 paces N. 1850 W. Sec. 23 T. 50 R. 14 W. Minn.	
J	✓2	100 " " 1400 " " 22 " 50 " 14 "	"
1	✓3	1970 " " 680 " " 28 " 50 " 14 "	"
1	✓4	2000 " " 1300 " " " " " " " "	"
5	✓5	1800 " " 2000 " " " " " " " "	"
5	✓6	1850 " " 1130 " " 33 " " " " " "	"
10	✓7	2000 " " 960 " " " " " " " "	"
10	8	1980 " " 900 " " " " " " " "	"
11	9	1850 " " 400 " " " " " " " "	"
12	✓10	1980 " " 00 " " " " " " " "	"
12	✓11	250 " " 100 " " 22 " " " " " "	"
13	✓12	300 " " 300 " " " " " " " "	"
18	✓13	312 " " 400 " " " " " " " "	"
18	✓14	314 " " 520 " " " " " " " "	"
19	✓15	470 " " 700 " " " " " " " "	"
2	✓16	820 " " 1300 " " " " " " " "	"
2	✓17	900 " " 1400 " " " " " " " "	"
2	✓18	1000 " " 1600 " " " " " " " "	"
2	✓19	1150 " " 2000 " " " " " " " "	"
2	20	450 " " 100 " " 32 " 51 " 13 "	"
3	✓21	2000 " " 1300 " " 33 " 51 " 13 "	"
3	✓22	1300 " " 1400 " " " " " " " "	"
31	23	820 " " 1625 " " " " " " " "	"
32	24	700 " " 1650 " " " " " " " "	"
40	25	650 " " 1825 " " " " " " " "	"
40	26	580 " " 1900 " " " " " " " "	"
40	✓27	540 " " 70 " " 32 " 51 " 13 "	"
41	28	450 " " 1920 " " 33 " 51 " 13 "	"
45	29	270 " " 1925 " " " " " " " "	"
47	✓30	160 " " 1950 " " " " " " " "	"
47	✓31	1950 " " 1970 " " 4 " 50 " 13 "	"
48	✓32	1500 " " 1950 " " " " " " " "	"
50	✓33	1000 " " 1920 " " " " " " " "	"
51	34	700 " " 1950 " " " " " " " "	"
6	✓35	370 " " 100 " " 5 " " " " "	"
6	✓36	100 " " 120 " " " " " " " "	"
6	37		

north shore of Lake Superior July + Aug. 1888

A.A.A.B

Stored in
Box No.

1

Stone
room

Stone
room

1

Stone
room

"

Stone
room

1

38	450	paces	N.	00	W	Sec. 29	T 51	R. 13 W.	Min.	
39	570	"	"	00	"	"	"	"	"	"
40	1700	"	"	00	"	"	"	"	"	"
41										
42										
43										
44	1300	"	"	1800	"	"	6	"	51	"
45	1360	"	"	1800	"	"	"	"	"	"
46	750	"	"	1120	"	"	"	"	"	"
47	700	"	"	1050	"	"	"	"	"	"
48	350	"	"	875	"	"	"	"	"	"
49	140	"	"	820	"	"	"	"	"	"
50	1970	"	"	750	"	"	7	"	"	"
51	1900	"	"	680	"	"	"	"	"	"
52	1740	"	"	550	"	"	"	"	"	"
53	1720	"	"	550	"	"	"	"	"	"
54	1070	"	"	88	"	"	"	"	"	"
55	950	"	"	1900	"	"	4	"	"	"
56	800	"	"	1980	"	"	26	"	53	"
57	740	"	"	1900	"	"	"	"	"	"
58	500	"	"	1850	"	"	"	"	"	"
59	1950	"	"	2000	"	"	35	"	"	"
60	570	"	"	970	"	"	3	"	53	"
61	770	"	"	870	"	"	"	"	"	"
62	320	"	"	860	"	"	"	"	"	"
63	900	"	"	300	"	"	10	"	53	"
64	1870	"	"	300	"	"	10	"	53	"
65	1780	"	"	220	"	"	"	"	"	"
66	1750	"	"	170	"	"	"	"	"	"
67	1720	"	"	140	"	"	"	"	"	"
68	1620	"	"	100	"	"	"	"	"	"
69	1520	"	"	00	"	"	"	"	"	"
70	1500	"	"	1970	"	"	11	"	"	"
71	1440	"	"	1920	"	"	"	"	"	"
72	1400	"	"	1800	"	"	"	"	"	"
73	1350	"	"	1680	"	"	"	"	"	"
74	1300	"	"	1600	"	"	"	"	"	"

Stone
room

"

"

Stone
room

Stone
room

Encampment River
Encampment River

"

"

"

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"

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"

"

75	1260	paces N.	1450 W.	Sec. 11	T. 53	R. 10 W.	Minn.
76	1200	"	"	1300	"	"	"
77	1170	"	"	1200	"	"	"
78	600	"	"	1200	35	56	8
79	500	"	"	1200	"	"	"
80	400	"	"	1200	"	"	"
81	350	"	"	1170	"	"	"
82	1970	"	"	1070	2	55	8
83	1940	"	"	1070	"	"	"
84	1900	"	"	1070	"	"	"
85	1800	"	"	1050	"	"	"
86	1670	"	"	1020	"	"	"
87							"
88	450	"	"	1960	1	55	8
89							
90							
91	100	"	"	2000	"	"	"
92	1350	"	"	100	11	"	"
93	1300	"	"	1830	12	"	"
94	1000	"	"	1700	"	"	"
95	875	"	"	1600	"	"	"
96	750	"	"	1530	"	"	"
97							"
98	500	"	"	1350	"	"	"
99	500	"	"	1330	"	"	"
100	400	"	"	1200	"	"	"
101	300	"	"	1150	"	"	"
102	750	"	"	1900	28	46	20
103	750	"	"	1900	"	"	"
104	300	"	"	200	29	"	"
105	1050	"	"	650	32	"	"
106	1050	"	"	650	"	"	"
107	900	"	"	1300	4	45	"
108	900	"	"	1300	"	"	"
109	1500	"	"	700	9	45	20
110	1880	"	"	1000	3	43	20
111	1050	"	"	1050	11	43	20

Collected by R. Mc Kinley Kettle + Snake Rivers, Aug + Sept. 1880

Stored in
Box No.

Encampment River

" "

" "

Falls of Beaver River

" " " "

" " " "

" " " " 60 ft. above river

/

/

/

Kettle River

Interstratified with 102

Kettle River

/

/

/

" "

" " Vein in 10.5

" "

" " Interlaminated with 107

" "

" "

" "

	112	250 paces N.	300 W.	Sec 23 T43 R20W Minn.				
✓	113	800	" " 1050 "	35	"	"	"	"
	114	750	" " 300 "	22	41	20	"	"
	115	600	" " 175 "	"	"	"	"	"
✓	116	450	" " 175 "	"	"	"	"	"
	117	625	" " 650 "	35	"	"	"	"
	118	2000	" " 1050 "	"	"	"	"	"
	119	1150	" " 1100 "	19	40	19	"	"
	120	1150	" " 1100 "	"	"	"	"	"
	121	800	" " 300 "	"	"	"	"	"
	122	1800	" " 900 "	32	"	"	"	"
	123	1600	" " 650 "	"	"	"	"	"
	124	1400	" " 150 "	8	39	19	"	"
✓✓	125	1900	" " 700 "	20	"	"	"	"
	126	1950	" " 800 "	29	"	"	"	"
	127	500	" " 550 "	36	39	20	"	"
	128	500	" " 550 "	"	"	"	"	"
	129	420	" " 1500 "	"	"	"	"	"
	130	1600	" " 1700 "	29	"	"	"	"
	131	425	" " 400 "	24	"	21	"	"
	132	200	" " 1040 "	"	"	"	"	"
	133	200	" " 1040 "	"	"	"	"	"
	134	100	" " 1120 "	"	"	"	"	"
	135	1020	" " 1900 "	26	"	"	"	"
<u>Collected by R. McKinley; "South Mineral Range" of Michigan. Sept + Oct. 1880</u>								
✓	136	1040	" " 00 "	1	49	36	Mich.	
✓	137	400	" " 00 "	1	"	"	"	"
✓	138	300	" " 00 "	"	"	"	"	"
✓	139	00	" " 800 "	"	"	"	"	"
✓	140	700	" " 1500 "	1	46	39	"	"
✓	141	300	" " 1400 "	"	"	"	"	"
✓	142	00	" " 70 "	"	"	"	"	"
✓	143	2000	" " 1800 "	16	"	"	"	"
✓	144	1900	" " 1320 "	13	46	41	"	"
	145	1570	" " 1550 "	"	"	"	"	"
✓	146	1550	" " 1650 "	"	"	"	"	"
✓	147	1500	" " 1700 "	"	"	"	"	"
✓	148	150	" " 25 "	11	"	"	"	"

Kettle River

" "

" "

" "

" "

" "

" "

" "

" " Vein in 119

" "

" "

" "

" "

St. Croix River

" "

Snake River

" " Underlies 127

" "

" "

" "

" "

" " Vein in 132

" "

" "

Silver Mt.

" "

" "

" "

Ontonagon River

" "

186

/

/

/

- ✓ "149 1670 paces N. 1700 W. Sec. 11, T. 46 R. 41 W. Mich.
 "150 1500 " " 800 " 10 " " "
 "151 1600 " " 1950 " " " " "
 "152 2000 " " 1900 " 9 " " "
 "153 1900 " " 800 " 7(?) " " "
 "154 500 " " 1900 " 3 46 42 "

15-155-500 Vacant.

Collected by R. D. Irving north shore of

500

"501 S.W. corner Sec. 27, T. 50, R. 14 W. Minn.

"502 Red veins in 501 "

503

504 S.W. $\frac{1}{4}$ Sec. 27, T. 50, R. 14 W. "

"505 Weathered shell of 504 "

506 S "

507 S.W. $\frac{1}{4}$ Sec. 27 T. 50 R. 14 W. "

"508 " " " " "

"509 " " " " "

510 Weathered 509 "

"511 S.W. $\frac{1}{4}$ Sec. 27, T. 50 R. 14 W. "

✓ 512 " " " " " "

513 " " " " " "

514 100 yds. N.E. of 513 "

515 Short distance N.E. of 514 "

516 " " " " " "

✓ "517 S.W. of N.W. $\frac{1}{4}$ of Sec. 27, T. 50, R. 14 W. "

"518 " " " " " " "

"519 " " " " " " "

"520 Near center of " " " "

"521 " " " " " " "

"522 At depot, Duluth "

"523 Sec. 23, T. 50, R. 14 W. "

524 " " " "

"525 " " " "

526 " " " "

527 " " " "

✓ "528 Sec. 24 T 50 R. 14 W. "

Lake Superior July + Aug. 1880

Quarry at depot, Duluth

Top of hill 100 yds. N.E. of 508

100 yds. N. E. of 510

20 rds. W. of 511, high point

Top of hill 5th Av.

Duluth hill above Catholic church

2^d Av. 20 rds. " " "

10 " " " "

Front of Clark House, Duluth

" " " " "

Lake shore

" "

" " 20 rds. N.E. of 524

" " 100 paces " " 525

" " at mouth of stream

" " quarry

529	Sec. 24, T. 50, R. 14 W.	Minn.
✓ 530	" " "	"
✓ 531	Sec. 18, T. 50, R. 13 W.	"
532	S. E. $\frac{1}{4}$ of Sec. 5, T. 50, R. 13 W.	"
✓ 533	" " " " " "	"
✓ 534	" " " Sec 4 " "	"
✓ 535	S. E. $\frac{1}{4}$ of S. W. $\frac{1}{4}$ Sec. 4, T. 50, R. 13 W.	"
536	Veins in 535	"
✓ 537	N. W. $\frac{1}{4}$ of S. E. $\frac{1}{4}$ " " "	"
✓ 538	" " " " " "	"
✓ 539	" " " " " "	"
✓ 540	S. W. $\frac{1}{4}$ of N. E. $\frac{1}{4}$ " " "	"
✓ 541	" " " " " "	"
542	" " " " " "	"
543	" " " " " "	"
544	" " " " " "	"
545	S. $\frac{1}{2}$ " " " " "	"
✓ 546	" " " " " "	"
✓ 547	N. E. $\frac{1}{4}$ of N. E. $\frac{1}{4}$ " " "	"
548	" " " " " "	"
✓ 549	" " " " " "	"
✓ 550	Sec. 34, T. 51, R. 13 W.	"
551	" " " "	"
✓ 552	" " " "	"
✓ 553	" " " "	"
554	" " " "	"
555	Sec. 35, T. 51, R. 13 W.,	"
✓ 556	Under 555	"
✓ 557	Underlies 556	"
558	Near mouth of Palmage River	"
✓ 559	" " " " "	"
560	" " " " "	"
561	" " " " "	"
✓ 562	Old mine dump on French River	"
✓ 563	N. W. $\frac{1}{4}$ Sec. 17, T. 51, R. 12 W.	"
✓ 564	Sec. 16, T. 51, R. 12 W.	"
✓ 565	" " " "	"

Chem. Analysis Stored in
Book Page Box No.

Lake shore, quarry

" " "

" " "

" " mouth of Lester River

" " 20 rds. N.E. of 532

" "

" "

"

" "

" "

" "

" "

" "

" "

" "

" "

" "

" "

" "

" "

" "

" "

" " Overlies 550

" " Sandstone seams in diabase

" "

" "

" "

" "

" "

" "

Falls of French River, near old mine
Lake shore

" "

	566	Sec. 16, T. 51, R. 12 W.					Minn
	567	" " "					"
	568	S.E. $\frac{1}{4}$ Sec. 9, T. 51, R. 12 W.					"
	569	Overlies 568					"
✓	570	" "					"
✓	571	Patch in 571					"
✓	572	Continuation of 568					"
	573	50 paces N. of 568					"
	574	" " along shore below 573					"
✓	575	100 " " " 574					"
	576	34 " " " 575					"
✓	577	N.W. $\frac{1}{4}$ Sec. 10, T. 51 R. 12 W.					"
✓	578	" " " "					"
✓	579	S.E. $\frac{1}{4}$ " 2 " "					"
	580	" " " "					"
	581	Vein in 582					"
✓	582	S.E. $\frac{1}{4}$ " " "					"
✓	583	" " " "					"
✓	584	N.W. $\frac{1}{4}$ of S.W. $\frac{1}{4}$ Sec. 1, T. 51 R. 12 W.					"
	585	" " " " "					"
✓	586	S. $\frac{1}{2}$ N.W. $\frac{1}{4}$ " " "					"
✓	587	N.W. $\frac{1}{4}$ N.E. $\frac{1}{4}$ " " "					"
✓	588	S.E. $\frac{1}{4}$ S.E. $\frac{1}{4}$ Sec. 36 T. 52 R. 12 W.					"
✓	589	S.W. $\frac{1}{4}$ 31 52 11					"
✓	590	" " " "					"
✓	591	S.E. $\frac{1}{4}$ S.W. $\frac{1}{4}$ " " "					"
	592	S.W. $\frac{1}{4}$ S.E. $\frac{1}{4}$ " " "					"
	593	S.E. $\frac{1}{4}$ S.E. $\frac{1}{4}$ 30 " "					"
✓	594	Near S.W. corner 29 52 11					"
	595	S.W. $\frac{1}{4}$ " " "					"
	596	" " " "					"
	597	" " " "					"
✓	598	" " " "					"
✓	599	" " " "					"
	600	N.E. $\frac{1}{4}$ of S.W. $\frac{1}{4}$ " " "					"
	601	" " " "					"
✓	602	" " " "					"

Chem. Analysis Stored in
Book Page Box No.

Lake shore

" " 220 paces N.E. 567

/

/

" " Near mouth Sucker River

" " Sucker River bay

" " East point of Sucker River bay

/

/

" " " " " " " "

" " " " " " " "

" " " " " " " "

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" " " " " " " "

1 7

" "

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" "

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" "

" "

" "

" "

/

/

/

" " Knife River point

" " Below Knife River

" "

/

" "

" " Nest in 595

" " " " "

" "

" "

" "

" "

" "

/

	✓	603	A.E. $\frac{1}{4}$ of S.W. $\frac{1}{4}$	Sec 29 T. 52 R. 11 W	Minn.
		604	" "	" "	"
✓		✓	605	A.E. $\frac{1}{4}$	" "
✓		606	A.E. $\frac{1}{4}$ A.E. $\frac{1}{4}$	" "	"
		607	North line	" "	"
✓		608	S.E. $\frac{1}{4}$ S.E. $\frac{1}{4}$	20 "	"
✓		609	Overlies 608		"
		✓	610	" 609	"
		611	" 610		"
		612	" 611		"
		613	Vein in 612		"
		614	S. $\frac{1}{2}$ A.W. $\frac{1}{4}$	Sec. 21 T. 52 R. 11 W.	"
		615	" "	" "	"
		616	20 paces S.W. of 615		"
		617	A.W. $\frac{1}{2}$	15 "	"
✓		618	Overlies 617		"
		619	Laumontitic 617		"
		620	Same place as 617		"
		621	" " " "		"
		622	A.E. $\frac{1}{4}$	Sec 11 T 52 R 11 W	"
		621 A	From N. line	15 52 "	"
		623	Same place as 622		"
✓		✓	624	Overlies 622	"
✓		625	A.W. $\frac{1}{4}$	Sec. 12 " "	"
		626	Overlies 625		"
		627	" 626		"
✓		✓	628	" 627	"
		629	" 628		"
		630	" 629		"
✓		✓	631	" 630	"
		632	" 631		"
		633	" 632		"
		634	" 633		"
✓		✓	635	" 634	"
✓		636	" 635		"
		637	" 636		"
✓		638	" 637		"

Lake shore

" "

" "

" "

" "

" "

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/

Mouth of creek N. E. side

" " " S. W. "

Near mouth of creek

/

West point of Agate bay

/

/

2

2

2

2

2

✓ 639 Overlies 638

Minn.

✓ 640 " 639

✓ 641 " 640

✓ 642 N.W. $\frac{1}{2}$ Sec. 22 T. 53 R. 10 W.

643 " " "

644 " " "

645 " " "

✓ 646 Overlies 645

647 Near 646

✓ 648 Underlies 647

649 Sandstone in 648

650 " " "

651 " " "

652 = 648

653 S.E. $\frac{1}{4}$ Sec. 21, T. 53, R. 10 W.

654 Overlies 653

✓ 655 N.E. $\frac{1}{2}$ " 22 " "

656 Overlies 655

657 " 656

✓ 658 S.E. $\frac{1}{4}$ of N.W. $\frac{1}{4}$ " " "✓ 659 S.E. $\frac{1}{4}$ 15 " "

✓ 660 Dike in 659

661 Division matter between dike and wall rock

✓ 662 Other wall

✓ 663 N.E. $\frac{1}{4}$ Sec. 15, T. 53, R. 10 W.

✓ 664 " " "

✓ 665 South point of Encampment Island

666 North " " "

667 S.W. $\frac{1}{4}$ of N.E. $\frac{1}{4}$ Sec. 12, T. 53, R. 10 W.

668 Vein in 667

✓ 669 Dike " "

✓ 670 S.W. $\frac{1}{4}$ of N.E. $\frac{1}{4}$ " " "

✓ 671 Underlies 670

672 Overlies "

673 Vein in 672

674 Geodes " "

✓ 675 Near N. line of " " "

676 Amygdulæ in 675

2
2

Material from the fault crack between 643 and 645

Chem. Analysis
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2

1 13 2

Encampment bluff, 75 feet above Lake Superior

Wall rock

2
2

2

Vein matter

" " from vein No. 3.

2
2

2

	677 Red bands in 675			Minn.
	678 Near S. E. corner of Sec. 1, T. 53, R. 10 W.			"
	679 " " " " " " " "			"
	680 Faulted against 678			"
	681 Masses included in 682			"
✓	682 S.W. $\frac{1}{4}$ of S.W. $\frac{1}{4}$ Sec. 6, T. 53, R. 9 W.			"
	683 S. E. $\frac{1}{4}$ " A.W. $\frac{1}{4}$ " 33, " 54 "			"
	684 S.W. $\frac{1}{4}$ " A.W. $\frac{1}{4}$ " " " "			"
	685 N. E. $\frac{1}{4}$ 32 " "			"
	686 " " "			"
	687 " " "			"
	688 N. E. $\frac{1}{4}$ 27 " "			"
	689 21 " "			"
✓	690 Underlies 689 " " "			"
	691 " 690 " " "			"
	692 " " "			"
	693 " " "			"
	694 " " "			"
	695 " " "			"
✓	696 N. E. $\frac{1}{4}$ of N. $\frac{1}{2}$ 23 " "			"
	697 Near South line 14 " "			"
	698 N.W. $\frac{1}{4}$ of S.W. $\frac{1}{4}$ 13 " "			"
	699 South side of Split Rock Island			"
	700 Seams in 699			"
	701 Pebbles in 699			"
	702 North end of Split Rock Id.			"
	703 Geodes in 702			"
	704 Veins in 702			"
	705 Green material in 702			"
	706 Pebbles in 705			"
	707 Agates " "			"
✓	708 S.W. $\frac{1}{4}$ of N.W. $\frac{1}{4}$ Sec. 13, T. 54, R. 9 W.			"
	709 N. E. $\frac{1}{4}$ " S. E. $\frac{1}{4}$ 14 " "			"
	710 " " " " " "			"
	711 S. E. $\frac{1}{4}$ " N.W. $\frac{1}{4}$ 13 " "			"
✓	712 Near E. gr. post 12 " "			"
	713 " " " " " "			"

Under 678

1

8

2

Head of falls of Gooseberry River

Top of upper fall " "

Foot of " " "

River bed between lower and upper falls

Foot of 2^d fall

" " 3^d "

" " 4th "

2

2

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2

714	S.W. $\frac{1}{4}$ of N.W. $\frac{1}{4}$	Sec. 7, T. 54, R. 8 W	Min.
✓ 715	" " "	" " "	"
✓ 716	5 paces N. of 715		"
717	S.W. $\frac{1}{4}$ of N.W. $\frac{1}{4}$	" " "	"
✓ 718	" " "	" " "	"
✓ 719	Underlies 718		"
720	N.E. $\frac{1}{4}$ of N.W. $\frac{1}{4}$	" " "	"
✓ 721	" " "	" " "	"
722	Underlies 721		"
✓ 723	" "		"
724	" "		"
725	Near 722		"
726	Near S. gr. post	Sec. 6, T. 54, R. 8 W.	"
727	S.W. $\frac{1}{4}$ of S.E. $\frac{1}{4}$	" " "	"
✓ 728	S.W. $\frac{1}{4}$	5 " "	"
✓ 729	High point near center of	" " "	"
✓ 730	Against 729		"
730a	N. $\frac{1}{2}$	1 " 9	"
✓ 731	Transition between 730a-732		"
732	Underlying 730a		"
✓ 733	S $\frac{1}{2}$	36 55 "	"
734		1 54 "	"
✓ 735		" " "	"
736		" " "	"
737		" " "	"
738		" " "	"
✓ 739	= 729		"
✓ 740	Matrix in contact with 741		"
741	Masses included in 739		"
742	Part of 739		"
743	" " "		"
744	Vein stuff in 739		"
✓ 745	N.E. $\frac{1}{4}$ of S.W. $\frac{1}{4}$	Sec. 5, T. 54, R. 8 W.	"
✓ 746	" " "	" " "	"
747	" " "	" " "	"
✓ 748	Coarse rock in 749		"
749	N. $\frac{1}{2}$ of S.W. $\frac{1}{4}$	" " "	"
✓ 750	" " "	" " "	"

Chem. Analysis Box No.
Berk Page

2

1 49

East point of Split Rock River

" " " " " "

Split Rock River

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Split Rock River

" " "

High point north side of bay

	751	N. $\frac{1}{2}$ of S.W. $\frac{1}{4}$	Sec. 5, T. 54, R. 8 W.	Minn.
	752	Overlies 751		"
✓	753	S.E. $\frac{1}{4}$ of N.W. $\frac{1}{4}$	" " "	"
✓	754	N.E. $\frac{1}{4}$	" " "	"
✓	755	Patches in 754		"
	756	Near N. line of N.E. $\frac{1}{4}$	" " "	"
J	757	Overlies 756		"
✓	758	= 757		"
	759	N.W. $\frac{1}{4}$ of N.E. $\frac{1}{4}$	" " "	"
✓	760	N. $\frac{1}{2}$ " S.W. $\frac{1}{4}$	33 55 "	"
	761			"
	762	N.E. $\frac{1}{4}$	" " "	"
	763	Overlies 762		"
	764	" 763		"
	765	N.E. $\frac{1}{4}$	" " "	"
	766	"	" " "	"
✓	767	"	" " "	"
	768	"	" " "	"
	769	"	" " "	"
	770	"	" " "	"
	771	N.W. $\frac{1}{4}$	27 " "	"
	772	Near north line of	" " "	"
	773	" east " " N.E. $\frac{1}{4}$	22 " "	"
	774	N.W. $\frac{1}{4}$	23 " "	"
J	775	"	" " "	"
	776	N.E. $\frac{1}{4}$	14 " "	"
	777	N.W. $\frac{1}{4}$ of N.W. $\frac{1}{4}$	13 " "	"
	778	N.W. $\frac{1}{4}$	" " "	"
	779	"	" " "	"
J	780	Near E. line S.W. $\frac{1}{4}$	12 " "	"
	781	E. $\frac{1}{2}$ "	" " "	"
	782	S.E. $\frac{1}{4}$ of S.W. $\frac{1}{4}$	" " "	"
✓	783	S.W. $\frac{1}{4}$ " S.E. $\frac{1}{4}$	" " "	"
	784	S.E. $\frac{1}{4}$ " S.W. $\frac{1}{4}$	" " "	"
	785	S.E. $\frac{1}{4}$ " S.W. $\frac{1}{4}$	" " "	"
	786	" " "	" " "	"
(2)	787	S.W. $\frac{1}{4}$ " S.E. $\frac{1}{4}$	" " "	"

Lake Shore, Red rock on north side of bay

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One mile above Beaver Bay point

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Beaver Bay

2

" " east end of bridge

Bed of Beaver River under bridge

" Mouth of Beaver River

2

" Beaver Bay

Lake Shore South side of Beaver Bay point

" Beaver Bay

Lake Shore South side of Beaver Bay point

✓	788	S.W. $\frac{1}{4}$ of S.E. $\frac{1}{4}$	Sec. 12, T. 55, R. 8 W.	Minn.
	✓ 789	" " "	" " "	"
	✓ 790	" " "	" " "	"
	✓ 791	" " "	" " "	"
	✓ 792	N.E. $\frac{1}{4}$ " S.W. $\frac{1}{4}$	" " "	"
✓	✓ 793	" " "	" " "	"
	✓ 794	" " "	" " "	"
✓	✓ 795	" " "	" " "	"
✓	✓ 796	" " "	" " "	"
	✓ 797	" " "	" " "	"
✓	✓ 798	E. line of N.E. $\frac{1}{4}$ of S.W. $\frac{1}{4}$	" " "	"
	799	" " " " " "	" " "	"
	✓ 800	" " " " " "	" " "	"
	✓ 801			"
	802			"
	✓ 803			"
	804	N.W. $\frac{1}{4}$ of S.E. $\frac{1}{4}$	" " "	"
	✓ 805	" " "	" " "	"
	806	No specimen		"
	807	"		"
	808	"		"
	809	"		"
	810	"		"
	✓ 811	S.W. $\frac{1}{4}$ of S.E. $\frac{1}{4}$	Sec. 12, T. 55, R. 8 W.	"
✓	✓ 812	" " "	" " "	"
✓	813	" " "	" " "	"
	✓ 814	" " "	" " "	"
	✓ 815	" " "	" " "	"
	✓ 816	" " "	" " "	"
✓	✓ 817	" " "	" " "	"
✓	✓ 818	S.W. $\frac{1}{4}$ of N.E. $\frac{1}{4}$	7	" " "
	✓ 819	N.E. $\frac{1}{4}$ " N.W. $\frac{1}{4}$	"	" " "
✓	✓ 820	N.E. $\frac{1}{4}$	"	" " "
	✓ 821	N.W. $\frac{1}{4}$	5	" " "
✓	✓ 822	Near center of S. line N.E. $\frac{1}{4}$	6 55 7	"
	823	Same island as 821		"
✓	824	N.E. $\frac{1}{4}$	Sec. 6, T. 55, R. 7	"

Chem. Analyses
Book Page

Stored in
Box No.

Lake Shore South side of Beaver Bay point

" " " " " "

" Beaver Bay

" " "

" Beaver River

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Lake Shore Beaver Bay

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" "

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Lake Shore Beaver Bay

" "

Lake Shore Islands off Beaver Bay point

" North side of " " " , cuts 813

" " " " " "

2

2

" Island off Beaver Bay point

" South side of Beaver Bay point

" North " " " " "

" " " " " " Cuts 816

2

Island in Beaver Bay

1 22

3

Lake Shore North point of Beaver Bay

Cedar Island

3

Island

Lake Shore

Lake Shore

3

825 No specimens

✓ 826 "

✓ 827 "

✓ 828 "

✓ 829 "

830 "

✓ 831 N.E. $\frac{1}{4}$ Sec. 6 T. 55, R. 7 W. Minn.

832 " " " "

833 " " " "

✓ 834 " 32 56 " "

✓ 835 " " " "

✓ 836 " S.W. $\frac{1}{4}$ 32 56 " "

837 33 " " "

✓ 838 S.W. $\frac{1}{4}$ 28 " " "

✓ 839 " " " "

840 " " " "

841 " " " "

✓ 842 " " " "

843 " " " "

844 " " " "

845 " " " "

846 " " " "

847 " " " "

✓ 848 " " " "

849 " " " "

850 " " " "

851 " " " "

✓ 852 " " " "

✓ 853 " " " "

✓ 854 " " " "

855 " " " "

856 " " " "

857 " " " "

858 " " " "

859 " " " "

860 " " " "

861 " " " "

Chem	Analysis	Stored in
Book	Page	Box No.

Lake Shore

"

"

"

"

"

Island

Lake Shore

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"

" Lower part of same ledge as 851

" " " " " " "

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"

"

"

Lake Shore

" "

" "

1

3

3

1 23

2 3

3

Cuts 856

Vein in 856

Island

862	Sec. 28, T. 56, R. 7W. Minn.			
863	"	"	"	"
864	"	"	"	"
✓ 865	"	"	"	"
866	"	"	"	"
867	"	"	"	"
868	"	"	"	"
869	"	"	"	"
870	"	"	"	"
871	"	"	"	"
872	"	"	"	"
873	"	"	"	"
874	"	"	"	"
✓ 875	"	"	"	"
✓ 876	S.W. $\frac{1}{4}$ of N.E. $\frac{1}{4}$	22	"	"
✓ 877	No specimen			"
✓ 878	S.W. $\frac{1}{4}$ of N.E. $\frac{1}{4}$	22	56	7
879	S.W. $\frac{1}{4}$	"	"	"
880	"	"	"	"
881	"	"	"	"
882	"	"	"	"
883	"	"	"	"
✓ 884	"	"	"	"
885	"	"	"	"
✓ 886	"	"	"	"
✓ 887	"	"	"	"
888	"	"	"	"
✓ 889	"	"	"	"
890	"	"	"	"
891	"	"	"	"
✓ 892	N.E. $\frac{1}{4}$	"	"	"
893	S.E. $\frac{1}{4}$	15	"	"
894	"	"	"	"
895	S.W. $\frac{1}{4}$ of N.W. $\frac{1}{4}$	14	"	"
896	S.E. $\frac{1}{4}$ " N.E. $\frac{1}{4}$	15	"	"
897	" " "	"	"	"
✓ 898	" " "	"	"	"

Chem. Analy. Stored in
Book Page Box No.

Lake Shore

"

"

"

"

"

"

Vein in 867

"

"

Vein in 869

"

"

"

"

Vein in 873

"

3

"

Foot of northern end of Great Palisades

1 43

2 3

"

Foot of northern end of Great Palisade

"

Foot of Palisade cliff

"

S.E. corner Palisade cliff

"

" " " "

"

S. side Palisades

"

Underlies 882

"

" 883

1 41

"

" 884

"

" 885

"

" 886

3

"

" 887

"

" 888

"

" 889

"

" 890

"

Mouth of Palisade Cr.

"

"

"

Mouth of Baptism River

Baptism River

"

3

"

899	S.E. $\frac{1}{4}$ of A.E. $\frac{1}{4}$	Sec. 15, T. 56, R. 7W.	Minn
900	N.W. $\frac{1}{4}$	" 14, " "	"
901	S.W. $\frac{1}{4}$ of A.E. $\frac{1}{4}$	" " "	"
✓ 902	S.E. $\frac{1}{4}$	11 " "	"
✓ 903	"	" " "	"
904	"	" " "	"
905	"	" " "	"
✓ 906	"	" " "	"
✓ 907	"	" " "	"
908	"	" " "	"
909	A.E. $\frac{1}{4}$ of S.E. $\frac{1}{4}$	" " "	"
910	" " "	" " "	"
911	" " "	" " "	"
912	" " "	" " "	"
913	S.E. $\frac{1}{4}$ of A.E. $\frac{1}{4}$	" " "	"
914	A.E. $\frac{1}{4}$ " A.E. $\frac{1}{4}$	" " "	"
✓ 915	West line " A.W. $\frac{1}{4}$	12 " "	"
916	" " " "	" " "	"
✓ 917	" " " "	" " "	"
918	S.W. $\frac{1}{4}$ of S.W. $\frac{1}{4}$	1 " "	"
919	" " "	" " "	"
✓ 920	S.E. $\frac{1}{4}$ " A.E. $\frac{1}{4}$	36 57 7	"
✓ 921	A.E. $\frac{1}{4}$ " S.E. $\frac{1}{4}$	16 " 6	"
922	No specimen		"
✓ 923	A.E. $\frac{1}{4}$ of S.E. $\frac{1}{4}$	16 57 6	"
924	A.W. $\frac{1}{4}$ " A.W. $\frac{1}{4}$	11 " "	"
925	" " "	" " "	"
926	" " "	" " "	"
✓ 927	" " "	" " "	"
✓ 928	A.E. $\frac{1}{4}$	36 58 6	"
929	A.W. $\frac{1}{4}$	31 " 5	"
930	S.E. corner	20 " "	"
931	A.W. $\frac{1}{4}$ of S.W. $\frac{1}{4}$	21 " "	"
✓ 932	" " "	" " "	"
933	No specimen A.W. $\frac{1}{4}$	6 " "	"
934	S.E. $\frac{1}{4}$ of A.E. $\frac{1}{4}$	31 59 4	"
935	" " "	" " "	"

Baptism River
Lake Shore Mouth of Baptism River
" Baptism River point. Overlies 900

1 44

1 33

1 42

1 32

1 34

Overlies 906

Underlies 906

Overlies 909

Cuts 909

Pebble from 909

In contact with 916

In contact with 918

Lake Shore

Near mouth of Manitow River

Fragments included in 924

Overlies 924

Mouth of Manitow River

Pork Bay

Overlies 931

Mouth of Temperance River

" " " " Underlies 936

936	S.E. $\frac{1}{4}$ of A.E. $\frac{1}{4}$	Sec. 31, T. 59, R. 4W.	Minn.
937	" " "	" " "	"
938		28 " "	"
939		22 " "	"
940		14 " "	"
941		12 " "	"
942		" " "	"
943	S.E. $\frac{1}{4}$	33 60 3	"
944		15 58 5	"
945	S.E. $\frac{1}{4}$ A.E. $\frac{1}{4}$	33 60 3	"
946	A.W. $\frac{1}{4}$ of A.W. $\frac{1}{4}$	35 " "	"
947	" " "	" " "	"
948	" " "	" " "	"
949	" " "	" " "	"
950	S.W. $\frac{1}{4}$	19 " 2	"
951	"	" " "	"
952	"	" " "	"
953	"	" " "	"
954	"	" " "	"
955	"	" " "	"
956	"	" " "	"
957	S.W. $\frac{1}{4}$ of S.W. $\frac{1}{4}$	11 " "	"
958	" " "	" " "	"
959	" " "	" " "	"
960	" " "	" " "	"
961	" " "	" " "	"
962	" " "	" " "	"
963	" " "	" " "	"
964	" " "	" " "	"
965	" " "	" " "	"
966	" " "	" " "	"
967	S.W. $\frac{1}{4}$	1 " "	"
968	"	" " "	"
969	A.E. $\frac{1}{4}$ of S.W. $\frac{1}{4}$	" " "	"
970	S.E. $\frac{1}{4}$	32 61 1	"
971	S $\frac{1}{2}$ " A.W. $\frac{1}{4}$	34 " "	"
972	" "	" " "	"

Mouth of Temperance River. Underlies 934
Head of falls at mouth of Temperance River

Lake Shore

"

"

" Mouth of Creek

" Underlies 941

" Beach Pebble

"

" Poplar River point

"

" Overlies 946

" Pebbles in "

" Predominant pebbles of 946

" Mouth False Poplar River

" Overlies 950

" " 951

" " 952

" " 953

" " (not directly) 954

" Amegdula in 955

" Caribou or Black Point

" Bay at Caribou Point

" Underlies 958

" " 959

" " 960

" " 961

" " 962

" " 963

" Same Layer as 963

" Epidotic rock from 958

" Near mouth of Cascade River

" Seam in 967

"

"

" Point at Good Harbor Bay

" Underlies 971

973	A.E. $\frac{1}{4}$ of A.W. $\frac{1}{4}$	Sec. 34, T. 61, R. 1W.	Minn.
974	A.W. $\frac{1}{4}$	24	"
975	"	"	"
976	"	"	"
977	"	"	"
978	S. $\frac{1}{2}$	"	"
979	A. $\frac{1}{2}$	25	"
980	S.E. $\frac{1}{4}$ of S.W. $\frac{1}{4}$	21	R. 1E.
981	A.E. $\frac{1}{4}$ " S.W. $\frac{1}{4}$	"	"
982	" " "	"	"
983	" " "	"	"
984	" " "	"	"
985	" " "	"	"
986	" " "	"	"
987	" " "	"	"
988	Near center of	"	"
989	" " "	"	"
990	" " "	"	"
991	" " "	"	"
992	" " "	"	"
993	" " "	"	"
994	" " "	"	"
995	" " "	"	"
996	A. E. $\frac{1}{2}$	"	"
997	S.E. $\frac{1}{4}$ of A. E. $\frac{1}{4}$	"	"
998	S. W. $\frac{1}{4}$	14	"
999	S. E. $\frac{1}{4}$	"	"
1000	Collected by A. C. Campbell on north shore of Lake Superior July 1880. 1500 paces N. 970 W.	Sec. 27, T. 56, R. 8W.	"
1001	1500 " " 1025 "	"	"
1002	900 " " 1800 "	26	"
1003	850 " " 1700 "	"	"
1004	825 " " 1700 "	"	"
1005	800 " " 1950 "	"	"
1006	800 " " 1950 "	"	"
1007	1950 " " 1920 "	25	"
1008	1000 " " 1930 "	24	"
1009	1150 " " 1700 "	"	"

Lake Shore Good Harbor Bay
Copper from 975
Rosebush River
Seams in 975
Overlies 975

Lake Shore E. end Grand Marais point
"
" In contact with 986. Cuts 986
" 8 feet from junction. Part of 982
" Lies at junction of 982 and 986
" Vertical seam at same place
"
" Vertical seam in 988
"
" Cuts 988
" Continuation of 988
" Thin seam cutting 990
" = 990 near junction with 994
" = 994 " " " 990
" Cuts 990
" Unaltered 994
" Beach pebble
" Dike rock
"
" In contact with 1500

3

3

3

3

	1010	2000	paces N.	980 W.	Sec. 24, T. 56, R. 8 W.	Minn.	
	1011	700	"	"	00 "	13,	"
	✓1012	2000	"	"	180 "	"	"
	1013	2000	"	"	970 "	"	"
	✓1014	650	"	"	1250 "	"	"
	1015	600	"	"	1280 "	11	"
	1016	1600	"	"	00 "	"	"
	1017	200	"	"	00 "	2	"
	✓1018	1500	"	"	00 "	"	"
	1019	2000	"	"	500 "	"	"
✓	1020	2000	"	"	630 "	"	"
	✓1021	2000	"	"	760 "	"	"
	1022	2000	"	"	860 "	"	"
	1023	360	"	"	1050 "	"	"
✓	1024	1200	"	"	900 "	11	"
✓	1025	500	"	"	850 "	"	"
	✓1026	1500	"	"	1500 "	10	7
	1027	1200	"	"	1200 "	"	"
	1028	700	"	"	800 "	"	"
	1029	1800	"	"	400 "	3	"
	1030	100	"	"	100 "	26	57
✓	1031	100	"	"	400 "	"	"
✓	1032	100	"	"	1900 "	"	"
	1033	100	"	"	400 "	27	57 7
	1034	1800	"	"	300 "	20	"
	✓1035	00	"	"	400 "	7	"
	1036	6 1/4	miles N.W.	of N.W. corner		6	"
	1037	1750	paces N.	300 W.		1	59 4
✓	1038	00	"	"	00 "	2	"
	1039	00	"	"	1300 "	3	"
	1040	00	"	"	1400 "	4	"
✓	✓1041	1000	"	"	500 "	18	"
✓	✓1042	800	"	"	500 "	"	"
	1043	500	"	"	500 "	"	"
	✓1044	300	"	"	600 "	"	"
	1045	800	"	"	1400 "	20	"
	1046	1000	"	"	1000 "	"	"

Loose

3

3

3

3

3

✓ 1047	1100 paces N. 900 W. Sec 20, T. 59, R 4 W. Minn.				
1048	1500 " " 500 " " " " " " " " " "				
1049	Collected by R. M. Chaunnet north of Grand Marais, Minn. July + Aug. 1880. About N. $\frac{1}{2}$	26	62	2	"
1050	$\frac{1}{4}$ mile north from 1049				"
✓ 1051	500 yds. up stream from 1049				"
1052	Same place as 1051				"
1053	About the south part of Sec. 10, T. 62, R. 2 W.				"
✓ 1054	Near 1053				"
1055	Unweathered 1054				"
1056	About the south part of Sec. 10, T. 62, R. 2 W.				"
✓ 1057	" " " " " " " " " "				"
1058	" " " " " " " " " "				"
1059	" " " " " " " " " "				"
✓ 1060	" " " " " " " " " "	3	"	"	"
1061	" " " " " " " " " "	34	63	"	"
✓ 1062	N. $\frac{1}{2}$	27	"	"	"
1063	" " " " " " " " " "	"	"	"	"
✓ 1064	" " " " " " " " " "	"	"	"	"
✓ 1065	Near N. Line	"	"	"	"
1066	About	22	"	"	"
✓ 1067	" " " " " " " " " "	"	"	"	"
1068	" " " " " " " " " "	"	"	"	"
✓ 1069	Top of Eagle Mountain	"	"	"	"
1070	N. W. side of Eagle Mountain	"	"	"	"
✓ 1071	Sec. 22, T. 63, R. 2 W.				"
1072	15 " " " " " "	15	"	"	"
✓ 1073	" " " " " " " " " "	"	"	"	"
1074	16 " " " " " "	16	"	"	"
1075	" " " " " " " " " "	"	"	"	"
1076	" " " " " " " " " "	"	"	"	"
1077	" " " " " " " " " "	"	"	"	"
✓ 1078	17 " " " " " "	17	"	"	"
1079	" " " " " " " " " "	"	"	"	"
1080	" " " " " " " " " "	"	"	"	"
1081	" " " " " " " " " "	"	"	"	"
✓ 1082	63 3 " " " " " "	63	3	"	"
1083	" " " " " " " " " "	"	"	"	"

Cascade River (Unsurveyed)

" " "

" "

" " Overlies 1051

" " below falls

" "

" "

" " Foot of falls

" " 500 feet above falls

" " Foot of "Big Falls"

" " Top " " "

" " 3rd fall

" " at Crescent Lake

Eagle Mountain, spur on S. side of

" " " " " " " 22 rds. N. of 1062

" " " " " " " 76 " " "

Cascade River, S. bank at N.E. (V) end of lake,

Eagle Mountain, 110 rds. East from lake

" " 20 " " " 1066

" " Near 1067

Pike Lake

Cascade River, gorge at head of

" " " " " "

" " " " " "

" " " " " "

" " N. wall of last gorge

" " " " 400 feet E. of 1076

Boule Lake, south side

" " 25 feet from 1078

" " S. shore, $\frac{1}{8}$ mi. S.W. of 1079

" " " " " " " 1080

" " N.W. shore

" "

✓	✓	✓	1084		T. 63 R. 3 W.	Minn.
			1085		" "	"
			✓ 1086		" "	"
			✓ 1087			
			1088			
			1089			
			1090			
			1091			
			1092			
			1093			
			1094		Sec. 19, T. 63, R. 1 W.	Minn.
✓			✓ 1095		32, " "	"
			✓ 1096	Devil's Track River 75 yds. from mouth		"
			1097	" " " Vein matter in 1096		"
✓			✓ 1098	" " "		"
			1099	Collected by W. M. Chaumet, 1 1/4 miles from Lake, 2 leagues from St. Louis River Minn. Aug. 1880		"
			1100	450 paces N. 1650 W. Sec. 36, T. 53, R. 14 W.		"
			1101	1450 " " 300 "	" " "	"
			1102	270 " " 1300 "	10, 54, 13	"
			✓ 1103	400 " " 200 "	34, 53, 14	"
✓			✓ 1104	400 " " 1000 "	14, 49, 17	"
			✓ 1105	" " " " "	" , " , "	"
			1106	600 " " 00 "	" " "	"
			1107	450 " " 250 "	" " "	"
	✓		✓ 1108	1150 " " 1350 "	5 48 6	"
			1109	1250 " " 1300 "	" " "	"
✓			✓ 1110	1350 " " 1200 "	" " "	"
			✓ 1111	50 " " 700 "	32 49 16	"
			1112	80 " " 650 "	" " "	"
			✓ 1113	1500 " " 1000 "	8 48 16	"
			1114	" " " " "	" " "	"
			1115	" " " " "	" " "	"
			✓ 1116	" " " " "	" " "	"
			1117	300 " " 1600 "	11 " "	"
✓			✓ 1118	500 " " 1500 "	6 " 15	"
			1119	" " " " "	" " "	"
			1120	750 " " 1500 "	5 " "	"

1121	900 paces N. 1600 W.	Sec. 5 T. 48, R. 15 W.	Minn.
1122	" " " " "	" " "	"
1123	" " " " "	" " "	"
✓ 1124	" " " " "	" " "	"
1125	1050 " " 1750 "	" " "	"
✓ 1126	1125 " " 1725 "	" " "	"
1127	1150 " " 1760 "	" " "	"
✓ 1128	1700 " " 350 "	31 49	"
✓ 1129	1750 " " 250 "	36 " 16	"
1130	1140 " " 650 "	27 " 15	"
✓ 1131	1000 " " 950 "	12 " "	"
✓ 1132	1050 " " 950 "	" " "	"
1133	" " " " "	" " "	"
1134	1250 " " 950 "	" " "	"
1135	1350 " " 970 "	" " "	"
1136	" " " " "	" " "	"
1137	125 " " 1030 "	1 " "	"
✓ 1138	Duluth hills between Duluth and Rice's Point		
1139	" " " " "	" " "	"
1140	" " " " "	" " "	"
1141	" " " " "	" " "	"
1142	" " " " "	" " "	"
1143	" " " " "	" " "	"
1144	" " " " "	" " "	"
1145	" " " " "	" " "	"
1146	" in front of Clark House	" "	"
1147	Rice's Point	" "	"

1148-1199 Vacant.

Specimens collected by A. C. Campbell and

1200	1900 paces N. 100 W.	Sec. 36, T. 51, R. 44 W.	Mich.
1201	1750 " " 00 "	25 " "	"
✓ 1202	1300 " " 850 "	24, " "	"
1203	1800 " " 800 "	26 " "	"
1204	1780 " " 820 "	" " "	"

Mission Creek

" "

" "

" "

" "

" "

" "

" "

" "

3

3

3

3

King's Creek

" "

" " Veins in 1182

" "

" "

" "

" "

3

R. McKinley in the Porcupine Mts, Mich. - Sept. + Oct, 1880.

Lake shore

3

" Pike rock

"

1205	1720	paces N. 850 W.	Sec. 26, T. 51, R. 44 W.	Mick
✓1206	1600	" " 900 "	" " "	"
✓1207	160	" " 1950 "	34 " "	"
1208	420	" " 900 "	2 50 45	"
1209	300	" " 820 "	" " "	"
1210	500	" " 350 "	11 " "	"
1211				
1212	200	" " 1050 "	18 50 44	"
1213	270	" " 1280 "	" " "	"
1214	250	" " 1800 "	" " "	"
✓1215	100	" " 70 "	14 " 45	"
1216	1950	" " 1550 "	" " "	"
✓1217	900	" " 900 "	16 " "	"
1218	300	" " 800 "	19 " "	"
✓1219	1800	" " 250 "	30 " "	"
✓1220	1050	" " 270 "	" " "	"
1221	750	" " 300 "	" " "	"
1222	1360	" " 00 "	33 " "	"
✓1223	1200	" " 1600 "	34 " "	"
1224	1160	" " 1400 "	" " "	"
✓1225	1850	" " 100 "	5 49 " "	"
✓1226	1900	" " 1000 "	9 " "	"
1227	2000	" " 1900 "	15 " "	"
✓1228	1700	" " 1100 "	" " "	"
✓1229	1200	" " 100 "	" " "	"
✓1230	1100	" " 1700 "	30 49 44	"
1231	1000	" " 1600 "	" " "	"
✓1232	100	" " 1200 "	" " "	"
1233	1070	" " 1400 "	5 48 " "	"
✓1234	400	" " 1400 "	" " "	"
1235	1750	" " 2000 "	20 49 44	"
1236	1980	" " 2000 "	" " "	"
1237	600	" " 1000 "	19 " "	"
1238	20	" " 20 "	31 50 44	"
1239	100	" " 00 "	19 " "	"
1240	250	" " 2000 "	7 " "	"
1241	1240	" " 00 "	18 " "	"

Stored in
Box No.

Lake shore

"

Little Carp River

" " "

" " "

" " "

Lake shore

3

3

1242	300	paces N.	00 W.	Sec. 18, T. 50, R. 44 W.	Mich.			
1243	250	"	"	1150 "	17	"	"	"
1244	160	"	"	1000 "	"	"	"	"
✓ 1245	140	"	"	950 "	"	"	"	"
1246	2000	"	"	700 "	20	"	"	"
✓ 1247	1800	"	"	600 "	"	"	"	"
✓ 1248	1700	"	"	250 "	"	"	"	"
✓ 1249	00	"	"	200 "	33	"	"	"
1250	1840	"	"	00 "	34	"	"	"
1251	1970	"	"	460 "	"	"	"	"
1252	1450	"	"	1400 "	26	"	"	"
1253	360	"	"	1540 "	28	"	"	"
1254	450	"	"	750 "	"	"	"	"
1255	570	"	"	00 "	12	"	"	"
✓ 1256	200	"	"	1000 "	11	"	"	"
1257	300	"	"	1700 "	10	"	"	"
1258	100	"	"	100 "	9	"	"	"
✓ 1259	00	"	"	270 "	"	"	"	"
1260	2000	"	"	1200 "	16	"	"	"
✓ 1261	1960	"	"	2000 "	"	"	"	"
✓ 1262	1200	"	"	1900 "	32	51	43	"
✓ 1263	00	"	"	200 "	"	"	"	"
1264	00	"	"	75 "	1	50	44	"
1265	00	"	"	1150 "	3	"	"	"
1266	2000	"	"	200 "	32	51	43	"
1267	1900	"	"	20 "	"	"	"	"
1268	2000	"	"	350 "	33	"	"	"
1269	1400	"	"	950 "	28	"	"	"
1270	1200	"	"	20 "	21	"	"	"
1271	450	"	"	00 "	20	"	"	"
1272-1499 Vacant								

Chem. Analyses Stored in
Book Page Box No.

1 40 3

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✓ 1500	S.E. $\frac{1}{4}$ Sec. 14, T. 61, R. 1 E.				Minn.
✓ 1501		9	61	2 "	"
✓ 1502			61	2 "	"
1503	S.E. $\frac{1}{4}$ of S.W. $\frac{1}{4}$	9	"	"	"
✓ 1504	S.E. $\frac{1}{4}$ " S.E. $\frac{1}{4}$	"	"	"	"
✓ 1505	S.W. $\frac{1}{4}$ " N.W. $\frac{1}{4}$	10	"	"	"
1506	S.W. $\frac{1}{4}$ " N.E. $\frac{1}{4}$	1	"	"	"
✓ 1507	" " "	"	"	"	"
✓ 1508	N.E. $\frac{1}{4}$ " S.W. $\frac{1}{4}$	6	"	3	"
1509	S.W. $\frac{1}{4}$ " N.W. $\frac{1}{4}$	5	"	"	"
1510	N.E. $\frac{1}{4}$ " N.W. $\frac{1}{4}$	"	"	"	"
1511	S.E. $\frac{1}{4}$ " S.E. $\frac{1}{4}$	32	62	"	"
1512	" " "	"	"	"	"
1513	S. part of	38	"	"	"
1514	Near middle of S.W. $\frac{1}{4}$	38	"	"	"
✓ 1515	N.W. $\frac{1}{4}$ of N.E. $\frac{1}{4}$	34	"	"	"
✓ 1516	N.W. $\frac{1}{4}$	29	68	4	"
1517	S.W. side of Horse Shoe Bay				"
1518	$1\frac{1}{2}$ miles below 1517				"
✓ 1519	N.E. side of Big Bay T. 62, R. 4 E.				"
✓ 1520	1 mile N.E. of 1519				"
1521	Near 1520				"
1522	Near S. line of T. 62, R. 4 E.				"
✓ 1523	Between E. line of T. 62, R. 4 E. and Mawskegucawmaw Riv.				"
1524	Mouth of Mawskegucawmaw River				"
1525	$\frac{1}{4}$ mile E. of " "				"
1526	11 mi. S.W. of Grand Portage Bay Island				"
1527	10 " " " " " "				"
✓ 1528	9 " " " " " "				"
1529	7 " " " " " "				"
1530	$7\frac{3}{4}$ " " " " " "				"
1531	$6\frac{1}{2}$ " " " " " "				"
✓ 1532	94 paces N. 70 E. of 1531				"
1533	45 " E 10 S " 1532				"
1534	" " " " " "				"
✓ 1535	E. point Red Rock Bay See p. 54, Note Book IV				"
✓ 1536	Contains 1535				"

Chem. Analyses stored in
Book Page Box No.

Lake shore In contact with 999

" Beach pebble

" Six Mile Island

"

"

"

"

"

"

"

"

"

" Seams in 1511

" From island

"

"

"

"

"

"

"

"

"

"

"

"

"

" From "First Island"

" "Third" "

"

"

" W. side of Red Rock Bay

"

"

"

"

"

1 45 3

3

3

3

3

- ✓ 1537 Red Rock Bay See p. 54, Note Book IV. O. Minn.
- ✓ 1538 " " " " "
- ✓ 1539 6 mi. S.W. Grand Portage Bay Island " "
- ✓ 1540 Near 1539 " "
- ✓ 1541 " 1540 " "
- ✓ 1542 $5\frac{1}{2}$ mi. S.W. Grand Portage Bay Island " "
- 1543 Porphyry at junction with 1542 " "
- 1544 Pebble included in 1542 " "
- 1545 Part of same mass as 1542 " "
- 1546 Porphyry between the two masses of 1542 " "
- ✓ 1547 $5\frac{1}{2}$ mi. S.W. of Portage Island, Cuts porphyry " "
- 1548 " " " " " " " " "
- 1549 5 " " " " " " " " "
- 1550 Porphyry in contact with 1549 on the west " "
- ✓ 1551 50 paces N.E. of 1550 " "
- ✓ 1552 100 " " " 1551 " "
- ✓ 1553 $4\frac{1}{2}$ mi. S.W. of Grand Portage Bay Island " "
- ✓ 1554 4 " " " " " " " " "
- 1555 $2\frac{1}{2}$ " " " " " " " " "
- ✓ 1556 " " " " " " " " "
- ✓ 1557 $1\frac{3}{4}$ " " " " " " " " "
- ✓ 1558 $\frac{1}{4}$ mi S.W. of W. point of Portage Bay " "
- ✓ 1559 50 paces N.E. of 1558 " "
- ✓ 1560 W. point of Grand Portage Bay " "
- ✓ 1561 " " " " " " " " "
- ✓ 1562 Slate bluff back of Grand Portage Bay " "
- ✓ 1563 E. and W. dike in 1562 " "
- 1564 Same as 1563 higher up the hill " "
- ✓ 1565 Cliff on N.E. corner Portage Bay Island " "
- ✓ 1566 Same as 1565; from same cliff " "
- ✓ 1567 Top of same cliff as 1565 " "
- ✓ 1568 W. end of Portage Bay Island " "
- ✓ 1569 Nodules weathering from 1568 " "
- ✓ 1570 E. end of Portage Bay Island " "
- ✓ 1571 Pebbles in 1570 " "
- ✓ 1572 S.E. corner Portage Bay Island " "
- ✓ 1573 S. side " " " " "

Lake Shore

Chem. Analyses Stored in
Book Page Box No.

3

3

3

Cuts 1541

1 31

1 46

3

3

S.W. point of Bay of -

N.E. " " " "

3

3

3

3

3

3

Lowest layers seen on Is.

Overlaid 1571

" 1572

Band 4

- ✓ 1574 S. side of Portage Bay Island. Minn. La.
 1575 " " " " " " " " " " " "
 ✓ 1576 E. end of Hat Point. Portage Bay " "
 ✓ 1577 On hill above 1576 " "
 ✓ 1578 " " " " " " " " " " " "
 ✓ 1579 Patches in 1578 " "
 ✓ 1580 S. $\frac{1}{2}$ A. W. $\frac{1}{4}$ Sec. 11, T. 63 R. 3 E. Hat Point " "
 1581 Uug in 1580 ✓ "
 ✓ 1582 E. side of Hat Point. A. E. $\frac{1}{4}$ Sec. 30, T. 63, R. 6 E. " "
 ✓ 1583 E. point Wausaugoning Bay. S. W. $\frac{1}{4}$ Sec. 31, T. 64, R. 7 E. " "
 ✓ 1584 Slates from same point as 1583 " "
 ✓ 1585 Cld. next to Lucille Cld. T. 63, R. 7 E. " "
 ✓ 1586 Lucille Cld. " " " " " "
 ✓ 1587 Nearst Cargo Cld. to shore T. 63 R. 7 E. " "
 ✓ 1588 S. side of Pigeon Point T. 64, R. 7 E. " "
 ✓ 1589 " " " " " " " " " " " "
 ✓ 1590 " " " " " " " " " " " "
 ✓ 1591 = 1589nd 1590 in contact with each other " "
 ✓ 1592 S. side of Pigeon Point, Sec. 26, T. 64, R. 7 E. " "
 ✓ 1593 " " " " " A. E. $\frac{1}{4}$ Sec. 25, T. 64, R. 7 E. " "
 1594 E. " " " " " " " " " " " "
 1595 A. side of " " " " " " " " " " " "
 ✓ 1596 " " " " " " Sec. 28, T. 64, R. 7 E. " "
 ✓ 1597 S. W. $\frac{1}{4}$ of S. E. $\frac{1}{4}$ 19 " " " " " "
 ✓ 1598 A. W. $\frac{1}{4}$ " A. E. $\frac{1}{4}$ 30 " " " " " "
 1599 " " " " " " " " " " " "
 ✓ 1600 S. W. $\frac{1}{4}$ " A. W. $\frac{1}{4}$ 28 " " " " " "
 1601 " " " " " " " " " " " "
 1602 A. side of S. Arm of Pigeon Bay
 1603 Cuts 1602 & 3
 ✓ 1604 Same point
 1605 Near E. end of N. point of S. Arm Pigeon Bay
 ✓ 1606 Massive rock irregularly stratified with 1605
 1607 East end of same point Cutting slates
 ✓ 1608 Cld. in mouth of S. Arm of Pigeon Bay
 1609 A. shore A. Arm Pigeon Bay
 ✓ 1610 Cuts 1609

Stored in
Box No.

Lake Shore Overlies 1573
 " " 1574

4

From high cliff

E. and W. dike cutting slate
 Cutting slate

4

4

N. E. point of Island

4

4

Cutting 1589

4

4

4

4

4

Rock over which Pigeon River falls

From gorge of " "

4

Cuts 1598

S. side of mouth of " "

N. " " " " " "

- ✓ 1611 Same place as 1609
- ✓ 1612 E. point of Pine River Bay
- 1613 E. end of point S. of Big Trout Bay. Thunder Bay
- 1614 Slate layers interstratified with 1616 N. point
- ✓ 1615 Cuts 1614 and 1615
- ✓ 1616 Interstratified with 1614
- 1617 Dike rock N. point Big Trout Bay
- 1618 Slate N. point " " "
- ✓ 1619 Csd. near N. point " " "
- ✓ 1620 E. end of " " " " "
- 1621 Dike rock " " " " "
- 1622 " " E. end of N. point Big Trout Bay
- ✓ 1623 S.W. end Victoria Csd. dike rock
- ✓ 1624 Same place as 1623
- 1625 Middle of N.W. side of Victoria Csd.
- 1626 Nearest point on mainland to Victoria Csd. Overlies slate
- 1627 Underlies 1628
- 1628 Overlies 1627 Same layer as 1626 S.E. side of south
- 1629 A phase of 1628
- 1630 E. end of S. point of Prince's Bay
- 1631 " " " " " " "
- 1632 " " " " " " "
- 1633 Interstratified with slate N. point of Prince's Bay
- ✓ 1634 Capping flow, top of big bluff near Sucker's Ck. W. side Thunder
- ✓ 1635 Same place as 1634, 100' above Lake Dike(?)
- 1636 Slate, cut by 1635(?)
- ✓ 1637 N. 60° E. dike, Grand Point, W. side Thunder Bay
- 1638 Slate in contact with 1637
- 1639 Another dike near 1637
- ✓ 1640 Slate in contact with 1639
- 1641 Slate two feet from contact with 1639
- 1642 From high cliff above 1639
- 1643 No specimen
- 1644 " "
- 1645 " "
- 1646 " "
- 1647 " "

4

Big Trout Bay

point of Prince's Bay

Bay 350' above Lake

4

1648 No specimen

1649 " "

✓ 1650 On Current River, near mouth

✓ 1651 Bear Point North shore Thunder Bay

✓ 1652 Apparently interstratified with 1651

1653 Just W. of Goose Point Thunder Bay

1654 Goose Point Thunder Bay

1655 Apparently under 1654

✓ 1656 Loose fragment from ^{core} behind Goose Point

✓ 1657 Island E. of Goose Point. Thunder Bay

✓ 1658 Baker Mine N. Shore Thunder Bay

1659 Underlies 1658

1660 McKenzie's River Bay N. shore Thunder Bay

✓ 1661 " " " " " " " "

✓ 1662 Short distance W. of Mouth of McKenzie's Riv. Thunder Bay

1663 First point E. of McKenzie's Riv. Thunder Bay

✓ 1664 Amethyst Harbor. Thunder Bay

✓ 1665 Small island near Amethyst Harbor

✓ 1666 From a neighboring island. appear to overlie 1665

1667 Spheroidal weathering of 1668

1668 From point of Big or Caribou Isd. nearest to mainland

✓ 1669 Underlies 1668

✓ 1670 From point $3\frac{1}{2}$ miles S.W. of head of Thunder Bay

1671 Overlies 1670

1672 No specimen

1673 Continuation of 1671

1674 Head of Thunder Bay N. Side

✓ 1675 " " " " " " " "

1676 $\frac{1}{2}$ mile below mouth of Blinde Riv. Thunder Bay

1677 " " " " " " " "

✓ 1678 Pebble from 1676

1679 1 mile below Blinde River, E. side Thunder Bay

✓ 1680 4 miles " " " " " " " "

1681 Pebble from conglomerate under 1680

1682 Conglomerate pebble from beach near 1680

✓ 1683 5 miles from Blinde River E. side of Thunder Bay

1684 6 " " " " " " " "

4

4

Thunder Bay

Loose fragments

Sandstone cliff

4

- 1685 Rounded patches in 1684
- 1686 8 miles from Blende River East side Thunder Bay
- ✓ 1687 9 " " " " " " " "
- 1688 9½ " " " " " " " "
- 1689 10 " " " " " " " "
- 1690 Slate in contact with 1689
- ✓ 1691 Shows contact of 1690 and 1689
- 1692 N.W. end of Thunder Cape ^{cliff} at waters edge
- 1693 Thicker layers interstratified 1692
- ✓ 1694 W. face of Thunder Cape cliff 790 feet above lake
- ✓ 1695 " " " " " " 745 " " "
- ✓ 1696 " " " " " " 725 " " "
- ✓ 1697 " " " " " " 715 " " "
- ✓ 1698 " " " " " " 700 " " "
- ✓ 1699 " " " " " " 660 " " "
- ✓ 1700 " " " " " " 625 " " "
- ✓ 1701 Underlies 1700
- 1702 10 feet above 1701
- ✓ 1703 Fragments from foot of W. cliff Thunder Cape
- ✓ 1704 " " " " " " " "
- ✓ 1705 Dike rock behind slate. E. of Thunder Cape light
- ✓ 1706 " " Silverchilet Landing
- ✓ 1707 Slate " " "
- 1708 Conglomerate " " "
- ✓ 1709 Sandstone overlying 1708
- 1709A
- ✓ 1710 Granite from near Enterprise dock - W. side Black Bay
- 1711 Near 1710
- ✓ 1712 ½ mile S. of 1711 - W. coast Black Bay
- 1713 No specimen
- 1714 Same place as 1712
- ✓ 1715 Near 1714
- 1716 3 miles W. of Enterprise Mine dock Black Bay
- 1717 in contact with 1716
- 1718 Shows junction of 1716 and 1717
- ✓ 1719 East side Black Bay
- 1720 " " " "
- ✓ 1721 " " " "

Chem. Analysis Stored in
Box No.

Dike rock

" "

" "

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1 27

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- ✓ 1722 East side Black Bay
- ✓ 1723 " " " "
- ✓ 1724 " " " "
- 1725 N.E. end of Lamb Island Nipigon Straits
- 1726 N. side " " " "
- ✓ 1727 N.E. end of Bead Island, mouth Nipigon Straits
- ✓ 1728 " " " " " "
- 1728B
- ✓ 1729 Near 1728 and grading into it
- ✓ 1730 Directly opposite 1728, on mainland
- 1731 Red Head, 1 mile above Nipigon Straits
- ✓ 1732 Small island off S.W. point Roche de Bout Bay
- ✓ 1733 S.W. point of mainland at mouth of Roche de Bout Bay
- 1734 From island off Mamelle's Point
- ✓ 1735 From first bay above Point Magnet
- ✓ 1736 From large island off Cabrous Niding Point - Amygdaloid
- ✓ 1737 Dike rock - Same place as 1739
- ✓ 1738 N.E. end of large island off Cabrous Niding Point
- 1739 Amygdaloid from mouth of 1st small bay below Point Magnet
- ✓ 1740 Lower part Nipigon Straits
- ✓ 1741 " " " "
- 1742 " " " "
- 1743 " " " "
- ✓ 1744 " " " "
- 1745 " " " "
- 1746 N. side of Plum Isd. Nipigon Straits
- ✓ 1747 Burnt Isd. " Bay
- 1748 " " " "
- 1749 N.W. shore Nipigon Bay near mouth Nipigon River
- 1750 White layer in 1749
- 1751 Vein 2 feet wide W. side mouth Nipigon Straits
- ✓ 1752 Rock adjoining 1749
- ✓ 1753 Lower part Nipigon Straits
- 1754 Hill back of Prince Arthur's Landing
- ✓ 1755 ~~Dike rock - Silver Islet Mine~~
Street at Prince Arthur's Landing
- ✓ 1756 ~~Dike rock - Silver Islet Mine~~
Collected by R. D. Irving, Portage Lake & Keweenaw Point, Mich. Sept. 1880.
- 1757 N.W. 1/4 Sec. 1, T. 54, R. 34 W.
- ✓ 1758 Epidiolic rock 25 paces N.W. 1757

Chem. Analyses stored in
Book Page Box No.

4

1 19 4

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1 38 4

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4

4

Bay

Amphiboloid and cutting dike rock

Magnum

u

to

11

Pressure vein, Huron Location, Portage Lake

- ✓ 1759 Diabase 100 paces N. W. 1758
 1760 " old finishing mill Sec. 1, T. 54, R. 34 W.
 1761 Thin layers in 1760
 1762 Huron Location Sec. 1, T. 54, R. 34 W.
 ✓ 1763 " " " " "
 1764 " " " " "
 1765 " " " " "
 1766 " " " " "
 1767 " " " " "
 1768 " " " " "
 1769 " " " " "
 ✓ 1770 " " " " "
 1771 " " " " "
 1772 No Specimen
 1773 Dump at Huron mine "
 1774 North line Sec. 1, T. 54, R. 34 W.
 1775 " " " " "
 ✓ 1776 " " " " "
 1777 S.W. $\frac{1}{4}$ 36 55 "
 1778 " " " " "
 1779 " " " " "
 1780 North line 1 54 "
 1781 ~~SE 22~~ A.W. $\frac{1}{4}$ 8 55 "
 ✓ 1781 A " " " "
 ✓ 1782 " " " " "
 ✓ 1783 " " " " "
 1784 " " " " "
 ✓ 1785 " " " " "
 ✓ 1786 S.E. $\frac{1}{4}$ 27 " "
 ✓ 1787 " " " " "
 ✓ 1788 " " " " "
 1789 " " " " "
 ✓ 1790 " " " " "
 ✓ 1791 " " " " "
 ✓ 1792 34 " "
 1793 " " " "
 ✓ 1794 " " " "
 1795 " " " "

Near end of Huron Dam

" " " " Conglomerate No. 12

4

" " " " " Interstratified with 1763

" " " " " = 1763

New shaft Huron Location, Overlies 1763

Conglomerate 11

Overlies 1767

Underlies "

450 paces S. E. of flag staff

4

250 " " " " "

Near "Mott's vein"

" "Tissot vein"

" "Capeau vein"

4

Isle Royale Mine

Patches in 1777

Isle Royale Amygdaloid

Conglomerate No. 3

Albany and Boston Conglomerate

1 18

5-

" " " " "

" " " " Amygdaloid

5-

Overlies Albany and Boston Conglomerate

Albany and Boston amygdaloid

5-

Road west from Hancock

" " " " "

5-

" " " " "

5-

" " " " "

5-

" " " " "

5-

" " " " "

Atlantic mill

" " " " "

" " " " road Conglomerate No. 22

5-

" " " " Southside Property

- 1796 S.W. $\frac{1}{4}$ Sec 35, T. 54, R. 34 W.
- 1797 " " " "
- ✓ 1798 N.E. $\frac{1}{4}$ " " "
- ✓ 1799 Stannard's Rock Lake Superior
A.C. Campbell E. Coast
- 1800 Gros Cap E. coast Lake Superior
- 1801 1 mi. North Gros Cap E. coast L. Superior
- 1802 " " " " " " " "
- 1803 $\frac{1}{4}$ mi. S. of 1802 " " " "
- 1804 4 mi. N. of Gros Cap " " " "
- 1805 " " " " " " " "
- 1806 " " " " " " " "
- 1807 " " " " " " " "
- ✓ 1808 5 " " " " " " " " Shale &
- 1809 " " " " " " " " " "
- ✓ 1810 6 " " " " " " " " " "
- 1811 $5\frac{3}{4}$ mi. N. by E of mouth of Carp River, Batchewanning Bay
- 1812 6 " " " " " " " " " "
- 1813 " " " " " " " " " "
- ✓ 1814 " " " " " " " " " "
- ✓ 1815 " " " " " " " " " "
- 1816 " " " " " " " " " "
- 1817 East side Pancake Bay E. shore L. Superior
- 1818 " " Mammie's Point " " " "
- 1819 " " " " " " " " "
- 1820 " " " " " " " " "
- 1821 " " " " " " " " "
- 1822 " " " " " " " " "
- ✓ 1823 " " " " " " " " "
- 1824 " " " " " " " " "
- 1825 " " " " " " " " "
- 1826 " " " " " " " " "
- 1827 " " " " " " " " "
- 1828 " " " " " " " " "
- 1829 " " " " " " " " "
- 1830 " " " " " " " " "
- 1831 " " " " " " " " "
- 1832 Norway Mine Menominee Iron Range Mich

Chem. Analyses		Stored in
Book	Page	Box No.
		5
1	17	5
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		181(3)
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		5

Dakota property

" "

South end of Hancock bridge

L. Sups. Aug-Sept. 1880

Sandstone

"

Iron ore Pewabic mine

Associated Rk " "

Banded jasper " "

Associated R-K. " "

" " " "

Iron Ore and associated rocks

1833 Vulcan Mine, Menominee Iron Range, Mich.
 1834 Chapin " " " " "

1835 S.E. $\frac{1}{4}$ Sec. 26, T 55, R. 34 W. Mich

✓ 1836 1 " 23 "

1837 " " " "

✓ 1838 26 56 " "

1839 " " " "

✓ 1840 " " " "

1841 " " " "

1842 " " " "

1843 " " " "

✓ 1844 " " " "

1845 " " " "

✓ 1846 A.W. $\frac{1}{4}$ 19 58 31 "

✓ 1847 " " " "

✓ 1848 " " " "

1849 A.W. $\frac{1}{4}$ " " " "

1850 " " " "

1851 S.E. $\frac{1}{4}$ 11 " " "

✓ 1852 " " " "

1853 " " " "

✓ 1854 A.E. $\frac{1}{4}$ 23 " " "

1855 " " " "

1856 S.E. $\frac{1}{4}$ 11 " " "

1857 12 " " "

✓ 1858 " " " "

1859 " " " "

1860 " " " "

1861 " " " "

✓ 1862 S.E. $\frac{1}{4}$ " " " "

✓ 1863 " 26 58 29 "

✓ 1864 " " " "

1865 " " " "

1866 " " " "

1867 " " " "

✓ 1868 " " " "

1869 " " " "

Iron ore and associated rocks

" " " "

Quincy Mine Amygdaloid

Sandstone quarry Torch Lake R.R.

" " " "

Douglas Houghton ravine

" " "

" " "

" " "

" " "

" " "

" " "

5

Great Conglomerate, Mouth Eagle Riv.

Base of Great " " " "

5

"Ashbed diabase" " "

5

Underlies Great conglomerate

"The Ashbed", Corlies 1848

Near Copper Falls mine

Sandstone overlying 1857

5

Diabase " 1852

"The Greenstone"

" " Schoolhouse near Central Mine

Upper part of 1852, Conglomerate

Base of Great Conglomerate

Child's shaft Copper Falls mine

5

Sandstone Underlies 1858

Copper Falls, Sandstone No. 2

" " " No. 1

5

N. shore Bete Grise Bay

Eastern Sandstone

" " " " " Pebbles from 1863

" " " " "

" " " " "

" " " " "

" " " " "

" " " " "

1870	S. E. $\frac{1}{4}$	Sec 26 T58 R29W	Mich.
1871	"	"	"
1872	"	"	"
1873	"	"	"
1874	"	"	"
✓ 1875	"	"	"
✓ 1876	"	"	"
✓ 1877	"	"	"
1878		25	"
✓ 1879		"	"
✓ 1880		"	"
✓ 1881		"	"
✓ 1882	A. E. $\frac{1}{4}$	31 58 29	"
✓ 1883	"	"	"
✓ 1884	"	"	"
✓ 1885	"	"	"
✓ 1886	"	"	"
✓ 1887	S. half	29	"
1888	"	"	"
✓ 1889	"	"	"
✓ 1890	"	"	"
1891	"	"	"
1892	N.W. $\frac{1}{4}$	32	"
1893	N.W. $\frac{1}{4}$	"	"
✓ 1894	S.W. $\frac{1}{4}$	29	"
✓ 1895	N.W. $\frac{1}{4}$	"	"
✓ 1896	"	"	"
✓ 1897	"	"	"
✓ 1898	"	"	"
✓ 1899	"	"	"
✓ 1900	"	"	"
1901	"	"	"
838 1902	A. E. $\frac{1}{4}$	32	"
84 1903	"	"	"
✓ 1904	W. line of N.W. $\frac{1}{4}$	25	"
✓ 1905	" " " S.W. $\frac{1}{4}$	24	"
1906	" " " "	"	"

N. shore Bête Grise Bay Eastern Sandstone

" " " " " "

" " " " " "

" " " " " "

" " " " " Trap at junction with Eastern Sandstone.

" " " " " " " " " "

" " " " " " " " " "

" " " " " " " " " "

" " " " " "

" " " " " "

" " " " " "

" " " " " "

" Side of Lac la Pelté at old smelting works

" " " " " at Hill above " "

" " " " " " " " " "

" " " " " " " " " "

" " " " " " " " " "

Top of Mt. Bohemia

" " " " " Thin beds in 1887

South flank Mt. "

" " " " "

" " " " "

Road side

Mendota mine road

" " " "

Old Mendota mine road

" " " "

" " " "

" " " "

" " " "

" " " "

" " " "

South foot Mt. Bohemia; old addit

" " " " "

South foot of Mt. Houghton

" flank " "

5

5

5

5

✓1907	W. line of S.W. $\frac{1}{4}$	Sec. 24, T. 58, R. 29 W. Mich.			
✓1908	" " " "	" " " "	"	"	"
²³ ✓1909	S.W. $\frac{1}{4}$	" " " "	"	"	"
1910	" " " "	" " " "	"	"	"
1911	No specimen				"
✓1912	N.W. $\frac{1}{4}$	25	"	"	"
✓1913	S.W. $\frac{1}{4}$ of S.W. $\frac{1}{4}$	29	"	"	"
✓1914	S.E. $\frac{1}{4}$ " S.E. $\frac{1}{4}$	30	"	"	"
✓1915	S.E. $\frac{1}{4}$	"	"	"	"
✓1916	"	"	"	"	"
✓1917	"	"	"	"	"
✓1918	"	"	"	"	"
✓1919	"	"	"	"	"
✓1920	"	"	"	"	"
✓1921	"	"	"	"	"
²³ ✓1922	"	"	"	"	"
✓1923	"	"	"	"	"
✓1924	"	"	"	"	"
✓1925	"	"	"	"	"
✓1926	"	"	"	"	"
✓1927	"	"	"	"	"
²³ ✓1928	N.W. $\frac{1}{4}$	"	"	"	"
✓1929	"	"	"	"	"
✓1930	"	"	"	"	"
²³ ✓1931	"	"	"	"	"
1932	"	"	"	"	"
²³ ✓1933	"	"	"	"	"
✓1934	"	"	"	"	"
✓1935	"	"	"	"	"
1936	"	"	"	"	"
1937		15	58	30	"
1938		"	"	"	"
1939		"	"	"	"
1940		"	"	"	"
1941	N.E. $\frac{1}{4}$	36	"	"	"
²³ ✓1942	"	"	"	"	"
✓1943	"	"	"	"	"

Chem. Analyses stored in Box M.

Top of Mt. Houghton

Book	Page
1	21

1 21

Mt. Houghton 200 ft. below summit S.E. flank

1 20

Coar fragment

Delaware mine road

“ ”

“ “ “

7

✓ 6 11

9

7 7 7

“ “ “

" " "

11 12 13

11 12 13

1 0 1

" " "

11 12 13

" " "

“ “ “

Delaware conglomerate

" amygdaloid

Wall rock of 1938

Pebble from 1937

Pebbles from top of "Great Conglomerate" Eagle Harbor

Eagle Harbor. Bottom of diabase overlying 1941

" " Sandstone from top of 1941

✓1944

N.E. $\frac{1}{4}$ Sec. 36, T. 58 R. 30 W. Mich.

1945

" " " " "

1946

" " " " "

1947

" " " " "

✓1948

" " " " "

1949

" " " " "

1950

" " " " "

✓1951

" " " " "

1952

" " " " "

1953

" " " " "

1954

" " " " "

✓1955

" " " " "

✓1956

" " " " "

1957

" " " " "

✓1958

" " " " "

1959

" " " " "

1960

S.W. $\frac{1}{4}$ 29 58 31 "

1961

" " " " "

1961 $\frac{1}{2}$

" " " " "

✓1962

N.W. $\frac{1}{4}$ of N.W. $\frac{1}{4}$ 15 57 31 "

✓1963

" " " " " "

✓1964

S.W. corner 10 " " "

✓1965

S.W. corner 10 " " "

✓1966

9 " " "

✓1967

" " " "

1968

56 33 "

✓1969

" " " "

✓1970

23 " " "

1971

" " " "

1972

" " " "

1973

" " " "

1974

Sec 36 55 34 "

✓1975

27 " " "

✓1976

" " " "

1977

29 56 " "

1978

" " " "

1979

" " " "

1980

" " " "

Eagle Harbor. Sandstone from top of 1941

" " Amygdaloid from base of 1942

" " 3 ft. stratigraphically above 1945

" " Quarried in 1946

" "

" "

" "

" "

" "

" "

" "

" "

" " Foot wall of 1955

" " Hanging " " "

" "

" " Outermost rock seen at Eagle Harbor

Phos. mine "The slide"

" " "The greenstone"

" " amygdaloid

Prayville

"

/ //

Old Suffolk amygdaloid

Hanging wall of 1969

Calumet conglomerate

" "

Junction of Calumet conglomerate and hanging wall

Foot wall Calumet conglomerate

Cupriferous pebbles Calumet conglomerate

Grand Portage Location, fissure vein

Quarry N. side Portage Lake

Thin layers in 1975

Lake shore cliff

" " " interstratified with 1977

" " " " " "

" " " " " "

✓ 1981
1982-2499 Vacant.

Sec 29 T 56 R 34 W. Mich

Collected by W. M. Chawont and B. N. White in

✓ 2500	Center of S.E. $\frac{1}{4}$	Sec. 1, T. 50, R. 43 W.	Mich.
2501	" " "	" " "	"
2502	" " "	" " "	"
✓ 2503	" " "	" " "	"
✓ 2504	" " "	" " "	"
✓ 2505	" " "	" " "	"
✓ 2506	N. W $\frac{1}{4}$ " N. W $\frac{1}{4}$	12 " "	"
2507	" " "	" " "	"
✓ 2508	" " "	" " "	"
✓ 2509	S.E. $\frac{1}{4}$ " N.E. $\frac{1}{4}$	4 " "	"
2510	N.E. $\frac{1}{4}$ " N. E. $\frac{1}{4}$	" " "	"
2511	In center of N.E. $\frac{1}{4}$ of N.E. $\frac{1}{4}$	31 51 42	"
2512	N.E. $\frac{1}{4}$ of S.E. $\frac{1}{4}$	4 50 43	"
2513	Same place as 2511		"
✓ 2514	2000 paces N 700 W	Sec. 5, T. 50, R. 43 W.	"

Lake shore cliff, quarry rock

the Porcupine Mts, Mich.

Sept. + Oct. 1880.

Aonesuch Mine

" "

" " Pebbles in sandstone footwall

" " Conglomerate bands in sandstone

" " Sandstone of footwall

" " The vein

5

Overlies 2509

2515	250 paces	N. 900 W.	Sec. 35 T51, R. 48 W.	Mick
2516	500	"	" 1100 "	"
2517	720	"	" 1000 "	"
2518	1750	"	" 1750 "	8 50 43
2519	"	"	" " "	"
2520	840	"	" 50 "	32 51 42
2521	"	"	" " "	"
2522	290	"	" 1300 "	34 " 43
2523	1050	"	" 1500 "	27 " 42
2524	1850	"	" 1600 "	" " "
2525	"	"	" " "	" " "
2526	1950	"	" 1750 "	" " "
2527	"	"	" " "	" " "
2528	"	"	" " "	" " "
2529	200	"	" 1750 "	22 51 42
2530	1950	"	" 1750 "	27 51 42
2531	1750	"	" 1850 "	22 " "
2532	"	"	" " "	" " "
2533	450	"	" 25 "	" " "
2534	540	"	" 1630 "	19 " "
2535	"	"	" " "	" " "
2536	"	"	" " "	" " "
2537	"	"	" " "	" " "
2538	"	"	" " "	" " "
2539	"	"	" " "	" " "
2540	282	"	" " "	" " "
2541	"	"	" " "	" " "
2542	100	"	" 1520 "	" " "
2543	"	"	" " "	" " "
2544	50	"	" 1580 "	" " "
2545	1850	"	" 1500 "	30 " "
2546	"	"	" " "	" " "
2547	1790	"	" " "	" " "
2548	1760	"	" 1590 "	" " "
2549	"	"	" " "	" " "
2550	1675	"	" " "	" " "
2551	1420	"	" 1400 "	35 51 43

Pebbles in 3620

Union Mine

" "

" "

Union Mine

5

2552	632	paces	N. 1132	W. Sec. 13, T51, R. 43	W.	Mich.
2553	"	"	"	"	"	"
2554	"	"	"	"	"	"
2555	"	"	"	"	"	"
2556	N.W. $\frac{1}{4}$ of S.E. $\frac{1}{4}$			14	"	"
2557	800	paces	N. 380	W	24	"
2558	1350	"	"	1059	"	"
2559	1400	"	"	1128	"	"
2560	"	"	"	"	"	"
2561	1630	"	"	1600	"	"
2562	"	"	"	"	"	"
2563	1630	"	"	1790	"	"
2564	1550	"	"	500	23	"
2565	"	"	"	"	"	"
2566	"	"	"	"	"	"
2567	"	"	"	"	"	"
2568	"	"	"	"	"	"
2569	1400	"	"	500	"	"
2570	1200	"	"	"	"	"
2571	1400	"	"	"	"	"
2572	1600	"	"	600	26	"
2573	1900	"	"	1450	29	"
2574	500	"	"	1450	20	"
2575	1575	"	"	1665	23	"
2576	1575	"	"	1345	"	"
2577	"	"	"	"	"	"
2578	"	"	"	"	"	"
2579	"	"	"	"	"	"
2580	"	"	"	"	"	"
2581	"	"	"	"	"	"
2582	"	"	"	"	"	"
2583	"	"	"	"	"	"
2584	"	"	"	"	"	"
2585	1375	"	"	1175	"	"
2586	790	"	"	1300	"	"
2587	"	"	"	"	"	"
2588	800	"	"	850	10	"

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1 12

5

Over his 2565

Mich.

2589 Carp Lake Landing

2590 " " "

2591 1000 paces N. 535 W. Sec. 13, T. 51, R. 43 W.

2592 " " " " " " " "

2593 " " " " " " " "

2594 " " " " " " " "

2594 " " " " " " " "

2595 " " " " " " " "

2596 Cuyahoga Landing

2597 935 paces N. 00 W. Sec. 17, T. 51, R. 42 W.

2598 " " " " " " " "

2599 " " " " " " " "

2600 N. E. $\frac{1}{4}$ of N. W. $\frac{1}{4}$ 12 " " "

2601 1150 paces N. 250 W. 13 " " "

2602 " " " " " " " "

2603 600 " " 1825 " " " "

2604 " " " " " " " "

2605 " " " " " " " "

2606 25 " " " " " "

2607 N. E. $\frac{1}{4}$ 9 50 39 " "2608 S. E. $\frac{1}{4}$ 27 " " " "

2609 1050 paces N. 50 W. 23 " " " "

2610 1050 paces N. 50 W. 23 50 39 " "

2611 S. E. corner 7 " " " "

2612 " " " " " " " "

2613 S. W. $\frac{1}{4}$ 28 " " " "

2614 Center of 16 " " " "

2615 " " " " " " " "

2616 " " " " " " " "

2617 " " " " " " " "

2618 " " " " " " " "

2619 " " " " " " " "

2620-2700 Vacant.

Puyahoga Mine

" "

" "

Rockland

5

5

Pebbles in 1615

Underlying 1615

Overlying "

Collected by N. W. Chaumont at Keweenaw Point, Mich. Oct. 1880

2701	Hungarian River, Keweenaw Pt.					Mich
2702	"	"	"	"	"	"
2703	"	"	"	"	"	"
2704	"	"	"	"	"	"
2705	"	"	"	"	"	"
2706	"	"	"	"	"	"
2707	"	"	"	"	"	"
2708	No specimen					"
2709	"	"				"
2710		Sec. 14, T. 57, R. 33 W.				"
2711		36	56	33		"
2712		"	"	"		"
2713		"	"	"		"
2714		"	"	"		"
2715		"	"	"		"
2716		"	"	"		"
2717		S.W. 1/4 31 56 32				"
2718		"	"	"		"
2719		"	"	"		"
2720		36	56	33		"
2721						
2722						
2721-2999 Vacant						

Collected by R. D. Irving near Rockland Mich, Sept. 1880.

3000	National Mine, Rockland					Mich.
3001	"	"	"	"	"	"
3002	"	"	"	"	"	"
3003	From stream near National Mine, Rockland					"
3004	"	"	"	"	"	"
3005	"	"	"	"	"	"
3006	"	"	"	"	"	"
✓ 3007	Near center Sec. 4, T. 50, R. 39 W.					"
✓ 3008	"	"	"	"	"	"

Conglomerate at falls

Diabase underlying 2701

" " "

Sandstone near junction with trap

Eastern sandstone

" "

Lake shore

Douglas-Houghton River

" " "

" " " Sandstone layers in 2711

" " " 200 paces down from 2713

" " " Pebbles in 2714

" " " " " "

" " " Eastern sandstone

" " " " "

" " " " "

" " " Diabase at falls of,

Overlies 3001

"National vein"

Conglomerate underlying 3001

Sandstone

Amygdales overlying 3003

Upper part of same layer as 3003

Pebble from 3003

"Slate"

Underlies 3007

✓ 3009	S.E. $\frac{1}{4}$	Sec. 21, T. 51, R. 38 W.	Mich.
✓ 3010	"	" " " "	"
✓ 3011	"	" " " "	"
3012	"	" " " "	"
3013	"	" " " "	"

3014-3049 Vacant

Collected by R. D. Irving, Duluth + St. Louis River

3050	S.E. $\frac{1}{4}$	Sec. 27, T. 50, R. 14 W.	Minn.
3051			
3052	S.E. $\frac{1}{4}$	27 50 14	"
3053	S.W. $\frac{1}{4}$	28 " "	"
23 3054	"	" " "	"
✓ 3055	E. half	13 " "	"
3056	N.E. $\frac{1}{4}$	27 " "	"
✓ 3057	"	" " "	"
3058	"	" " "	"
3059	"	" " "	"
3060	From sandstone quarry at Huickley		"
3061	Sec. 11, T. 48, R. 16 W.		"
3062			"
✓ 3063			"
✓ 3064	S.W. $\frac{1}{4}$	Sec. 11, T. 48, R. 16 W.	"
3065			"
3066	N.W. $\frac{1}{4}$	27 50 14	"
✓ 3067	"	" " "	"
✓ 3068	"	" " "	"
3069		6 48 15	"
✓ 3070		24 39 21	"
3071	Grand Portage Bay Island (= Winchell's 255)		
3072	" " " (= " 254)		
3073	From great conglomerate on national boundary		
3074	North side of Gunflint Lake " "		
✓ 3075	National boundary (= Winchell's 311)		
✓ 3076a	Great conglomerate, national boundary		
✓ 3077a	Grand Portage Bay Island (= Winchell's 256)		

Interstratified with 3009

" " 3012

Conglomerate underlying 3009

Pebbles from 3012

Minor and Miscellaneous

Duluth

Duluth. Lakeshore

" " " Dike rock

" " " Near mouth of Chester Cr.

Mouth Fischer's Cr.

Duluth

" Hill side

" " "

" " "

No. 1, bridge St. P. & D. R. R.

A. P. Junct. Dike rock from near middle of dike

" " " " " side " "

A. P. Junct.

Duluth hill side

" " "

" " " Cuts gabbro

Fond du Lac

Chengwatona conglomerate

Overlies 3072

= Winchell's 7381

= " 3091

= (Winchell's 7441)

Overlies 3071

5

5

6

Y. mac Farlanei *Merch specul*

✓ 3076	Selwyn's	1	Michipicoten Island
✓ 3077	"	2	" "
✓ 3078	"	3	Chippewa Falls, Quebec
✓ 3079	"	4	Michipicoten Island
✓ 3080	"	5	" "
✓ 3081	"	6	" "
✓ 3082	"	7	" "
✓ 3083	"	8	" "
✓ 3084	"	9	" "
✓ 3085	"	10	" "
✓ 3086	"	11	" "
✓ 3087	"	12	" "
✓ 3088	"	13	" "
✓ 3089	"	14	" "
✓ 3090	"	15	" "
✓ 3091	"	16	" "
✓ 3092	"	17	" "
✓ 3093	"	18	" "
✓ 3094	"	19	" "

Collected by A. N. Chester Mesabi Range

✓ 3095	Chesters	18
✓ 3096	"	2 "
3097	"	3 "
✓ 3098	"	4 "
3099	"	5 "
3100	"	6 "
3101	"	7 "
3102	"	8 "
✓ 3103	"	9 "
3104	"	10 "
3105	"	1 M.
3106	"	2 "
3107	"	3 "
3108	"	4 "
3109	"	5 "

2d L.S. prepared by W. R. L. L.

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1 14

1 15

Vermilion Lake, Minn. 1880

6

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✓ 3/10	Chester's	1 N.
3/11	"	2 "
3/12	"	3 "
3/13	"	4 "
3/14	"	5 "
✓ 3/15	"	6 "
3/16	"	7 "
3/17	"	1 A
3/18	"	2 "
3/19	"	3 "
3/20	"	4 "
3/21	"	5 "
3/22	"	6 "
3/23	"	7 "
✓ 3/24	"	8 "
3/25	"	9 "
3/26	"	10 "
✓ 3/27	"	11 "
3/28	"	1 B
3/29	"	2 "
3/30	"	3 "
3/31	"	4 "
3/32	"	5 "
3/33	"	6 "
3/34	"	7 "
3/35	"	8 "
3/36	"	9 "
3/37	"	10 "
✓ 3/38	"	11 "
3/39	"	12 "
3/40	"	13 "
✓ 3/41	"	14 "
✓ 3/42	"	15 "
3/43	"	X
3/44	"	B1
3/45	"	" 2
3/46	"	" 3

91
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3/47	Chester's	B 4
3/48	"	" 5
3/49	"	" 6
3/50	"	" 7
3/51	"	" 8
3/52	"	" 9
3/53	"	P 1
✓3/54	"	" 2
3/55	"	" 3
3/56	"	T 1
3/57	"	" 2
3/58	"	" 3
✓3/59	"	a
3/60	"	b
3/61	"	d
✓3/62	"	z
3/63	"	C 5
3/64	"	D 5
3/65	"	12 ₂
3/66	"	12 ₅
3/67	"	13 _a
✓3/68	"	13 _c
3/69	"	13 _e

Collected by A. N. Chester Nipigon + Thunder Bays.

3/70	Chester's	A	Prevailing rock between L. Superior and 30 T.
3/71	"	B	10 miles N. of the E. end of Nipigon Bay on White
3/72	"	C	
3/73	"	D	" " " " " " " " " "
3/74	"	E	" " " " " " " " " "
3/75	"	F 8	" " " " " " " " "
3/76	"	G 5	" " " " " " " " "
3/77	"	H 5	" " " " " " " " "
3/78	"	I 3	" " " " " " " " "
3/79	"	K. 25	" E of Red Rock on Lake Shore
3/80	"	L	Vert Island, Nipigon Bay
3/81	"	M.	" " " " "

o Thunder Lake Superior.

Sand River

Underlies I.

- 3182 Chester's N. Vert Island, Nipigon Bay
 3183 " O. " " " "
 3183 " P. 4 mi E. of Nipigon Riv. on E. side of small bay
 3184 " R. Layer in P.
 3185 " S. 4 mi. E. of Nipigon Riv. on W. side of small bay
 3186 " T. Sandstone underlying S
 3187 " U. W. side of Nipigon Riv. at entrance to Nipigon
 3188 " V. Layers in red rock underlying U.
 3189 " X. Prince Arthur's Landing
 3190 " 30 T. 10 mi N. of the E. end of Nipigon Bay on

Specimens of sandstone showing crystalline quartz

- ✓ 3191 Potsdam Sandstone, New Lisbon Feb. 16 / 82
 ✓ 3192 " " " " " "
 ✓ 3193 St. Peters " Oct. / 81
 ✓ 3194 " " " "
 ✓ 3195 St. Peters " Apr. 9 / 81
 ✓ 3196 " " " "
 ✓ 3197 Potsdam " New Lisbon Feb. 16 / 82
 ✓ 3198 " Sandstone " "
 ✓ 3199 Potsdam (Hard rock crushed) N. Lisbon Feb 7 / 82
 ✓ 3200 Galena sand " "
 ✓ 3201 Potsdam sandstone (1) Soft rock (2) Hard rock Jan. 24 / 82
 ✓ 3202 (1) Potsdam " (2) St. Peters sandstone " "
 ✓ 3203 (1) " " (2) " " " "

Microscopic mountings of specimens

- ✓ 3204 A.E. $\frac{1}{4}$ of S.E. $\frac{1}{4}$ Sec. 29, T. 10, R. 9 E. Burlington
 ✓ 3205 " " " " " "
 ✓ 3206 S.E. $\frac{1}{4}$ " S.E. $\frac{1}{4}$ 28 " " "
 ✓ 3207 A.E. $\frac{1}{4}$ " S.E. $\frac{1}{4}$ 13 10 7 West Point
 ✓ 3208 S.E. $\frac{1}{4}$ 23 12 8 Caledonia
 ✓ 3209 " 27 " " "
 ✓ 3210 A.E. $\frac{1}{4}$ 30 15 9 Packwaukee

Underlies M

" N

Bay

White Sand River

from A. A. Young, New Lisbon, Wis.

Microscopic mounting

" "

" "

" "

" "

" "

} Lancaster
St. Peters S.S. near
Lancaster Grant Co.

Microscopic mounting

" "

" "

" "

" "

belonging to the Wis. Geological Survey

Columbia Co. St. Peter's S. = 725 Wis. Coll.

" " " " = 727 " "

" " " " = 730 " "

" " " " = 735 " " Gibraltar Bluff

" " Quartzite = 753 " "

" " " " = 755 " "

Marquette " Potsdam S. = 760 " "

✓ 3211		Sec. 22, T. 21, R. 4 W. Depot B. R. Falls
✓ 3212	A.E. $\frac{1}{4}$	27 12 7 E. Lower Narrows
✓ 3213		22 " " " " "
✓ 3214	A.E. $\frac{1}{4}$ of A.E. $\frac{1}{4}$	21 " " " " "
✓ 3215	South line	29 " " " Peck's Prairie
✓ 3216	" "	" " " " " "
✓ 3217	S.E. $\frac{1}{4}$ of S.E. $\frac{1}{4}$	22 12 7 " Lower Narrows
✓ 3218	A.W. $\frac{1}{4}$	27 " " " " "
✓ 3219		
✓ 3220	A.W. $\frac{1}{4}$	22 11 5 E. Freedom
✓ 3221		29 12 " " Upper Narrows
✓ 3222		" " " " " "
✓ 3223	S.E. $\frac{1}{4}$	33 " " " Ahlman's
✓ 3224	"	" " " " "
✓ 3225	A.E. $\frac{1}{4}$ of S.E. $\frac{1}{4}$	30 18 6 " Roche Ecrit
✓ 3226		Silver Bluff
✓ 3227	A.W. $\frac{1}{4}$	Sec. 22, T. 11, R. 5 E. Freedom
✓ 3228	Quartzite, Portland, Dodge Co. Wis	Microscopic
✓ 3229	Magnetitic schist Blk. Riv. Falls, Jackson Co., Wis.	"
✓ 3230	Quartzite, Devil's Lake, - Sauk Co., Wis.	"
<u>A. R. Marvine's type collection of Keweenaw Point rocks</u>		
3231	Marvine's No. 22	
3232	" " 23	
3233	" " 25	
3234	" " 65	
3235	" " 65	
3236	" " 66	
3237	" " 66	
3238	" " 81	
3239	" " 88	
3240	" " 94	
3241	" " 107	
3242	" " 108	
3243	" " 120!	
3244	" C	
3245	" P	

Jackson Co. Potsdam S. = 1012 Wis. Coll.

Sauk " Quartz schist = 1234 " "

" " " = 1239 " "

" " Quartz Porphyry = 1243 " "

" " Quartzite = 1247 " "

" " " = 1248A " "

" " " = 1250 " "

" " " = 1256 " "

" " " = 1257 " "

" " " = 1271 " "

" " Quartzite = 1274 " "

" " " = 1277 " "

" " " = 1282 " "

" " " = 1283 " "

Adams " Potsdam S. = 1381 " "

Jackson "

Sauk " = 1271 Wis. Coll.

mounting

presented by J. C. Chamberline.

3246 Marvinés - I

3247 " R.

Miscellaneous Thin Sections

✓✓ 3248

✓ 3249

✓ 3250

3251 - 4000 Vacant

= 1267 Wis. Coll.

= 1233 " "

= 1275 " "

4000

4001 N. E. $\frac{1}{4}$ of N. E. $\frac{1}{4}$, Sec. 11 T. 48 R. 16 W. From the

4002 " " " " " " " " " " " "

4003 " " " " " " " " " " " "

✓ 4004 S. W. $\frac{1}{4}$ " S. E. $\frac{1}{4}$ " 10 " 48 " " " " "4005 N. E. $\frac{1}{4}$ " S. W. $\frac{1}{4}$ " " " " " " " " " "4006 S. E. $\frac{1}{4}$ " N. W. $\frac{1}{4}$ " 8 " " " " " " "✓ 4007 S. E. $\frac{1}{4}$ " 14 " 49 " 17 " " "

4008 100 paces east of 4007 " "

4009 N. W. $\frac{1}{4}$ of S. W. $\frac{1}{4}$ Sec. 13, T. 49 R. 17 W. " "

4010 Near north line of Sec. 30, T. 49 R. 16 W. From island in

R ✓ 4011 N. E. corner Sec. 8, T. 48, R. 16 W. Under St. P. and D. Ry. bridge

4011a Nest in the slate

4012 S. E. $\frac{1}{4}$ Sec. 10 T. 48 R. 17 N. Minn.

4013 Vein quartz in 4012

4014 S. N. $\frac{1}{4}$ Sec. 10, T. 48 R. 17 N. Minn.4015 S. N. $\frac{1}{4}$ Sec. 17 " " "

4016 " " " " " "

✓ 4017 Nest in 4016

✓ 4018 300 to 400 paces east of 4019

4019 Near the center Sec. 25-48-18 N.

4020 Quartz veins in 4018

4021 Center of N. W. $\frac{1}{4}$ Sec. 4, T. 47, R. 18 W.

4022 At N. E. corner 2 46 19

R ✓ 4023 " " " " " " "

R ✓ 4024 1800 paces N. 1150 W. 29 " "

4025 Nest in 4024

4026 700 paces N. 560 W. 20 46 19

✓ 4027 1120 " " 800 " 30 " "

✓ 4028 " " " " " " "

4029 1800 " " 600 " 29 " 21

4030 " " " " " " "

4031 00 " " 600 " 21 " "

✓ 4032 2000 " " 1850 " 32 " 20

✓ 4033 900 " " 1860 " 29 41 26

✓ 4034 1300 " " 1900 " " " "

Minut.

Sept. & Oct. 1882,

101

Stored in
Box No.

St. Louis

" " overlying 4001

" " " 4002

" "

" "

" "

" "

" "

" "

the St. Louis

" "

" "

" "

B. 1. ; p. 1

1 ; 1

1 ; 2

1 ; 2

1 , 3

1 , 3

1 , 3

1 , 3

1 , 3

1 , 3

1 , 4

6

1 , 4

1 , 5

6

1 , 5

1 , 5

1 , 6

1 , 6

1 , 7

1 , 7

1 , 7

1 , 7

Run River

1 , 8

1 , 8

Layers in 4027

St. W. Branch Kettle River

" " " " Feet in 4029

" " " "

" " " "

4035 1300 paces N. 1900 W. Sec. 29, T. 41, R. 26 W.

RV 4036 N. E. corner " 33 " 130 " 29 "

RV 4037 On E. bank Miss. Riv. opposite a point 750 paces N.

RV 4038 From Little Elk Riv. 650 " "

RV 4039 On W. bank Miss. Riv. 1800 " "

RV 4041 Island in " " opposite a point 800 " "

4042 " " " " " " " " " " " "

4043 On E. bank " " " " " " 600 " "

4044 " " " " " " " " " " " "

RV 4045 " " " " " " " " " " 1600 " "

RV 4046 " " " " " " " " " " 1200 " "

RV 4047 " W. " " " " " " " " 1650 " "

4048 " " " " " " " " " " 950 " "

4049 " " " " " " " " " " " "

4050 " " " " " " " " " " 500 " "

4051 On W. bank Miss. Riv. 200 " "

4052 " " " " " " " " " " 00 " "

4053 " " " " " " " " " " " "

4054 " " " " " " " " " " " "

4055 " E. " " " " opposite a point 400 " "

4056 " " " " " " about 250 paces N. E. of 4055

4057 " " " " " " " " " " " "

4058 " " " " " " " 150 " W. " "

4059 " " " " " " opposite a point 1350 paces N.

4060 " W. " " " " 1350 " "

4061 " " " " " " 1900 " "

4062 From E end of wagon bridge at Paul Rapids, opposite, 50 " "

4063 " " " " " " " " " " " "

4064 " " " " " " " " " " " "

4065 About 200 paces below 4062 on E. bank

4066 " 200 " " 4065 " " "

4067 100 paces N. 1500 W. Sec. 17, T. 35 R. 30 W.

Specimens collected by C. R. Vanhise from Devil's

4068 Top of East bluff, near Cliff House Devil's Lake

4069 " " " " about 40 rds. S. of 4068

4069A " " " " 2 feet from 4069

4070 " " " " 40 rds. S. of 4069

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Book

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Rum River

W. bank Mississippi Riv.

1000 W. Sec. 5, T. 129, R. 29 W.

1300 " " "

1450 " " "

1650 " 17 " "

" " " "

1700 " " "

" " " a few paces N. W. of 4043

1250 " 7 128 29

750 " 29 " "

1100 " 32 " "

950 " " " "

" " " " "

750 " 10 126 29

300 " 7 " "

00 " " " "

" " " " "

" " " " "

450 " 34 126 38 about 100 ft above river

1750 W. Sec. 10, T. 125, R. 28 W.

1650 " " " "

1250 " 2 124 28

900 " 35 125 28

" " " " "

" " " " "

Lake, Sauk Co. Wis. Nov. 1882

- 4071 Top of East bluff, Devil's Lake, about 40 rods S of 4070
 4072 " " " " " " S. E. corner
 4073 " " " " " " above Devil's Gate
 ✓ 4074 A few feet below top of bluff at Devil's Gate
 4075 " " " " 4074
 ✓ 4076 " " " " "
 4077 Near 4075 & 4076. Varieties grade into each other
 ✓ 4078 Close to 4077
 4079 Junction fragment 12 feet from Devil's Gate
 ✓ 4080 Base of Devil's Gate
 ✓ 4081 }
 ✓ 4081A } 30 feet below Devil's Gate, different varieties grading into
 ✓ 4081B }
 ✓ 4082 Half way between Kirk's and Cliff House
 ✓ 4082A " " " " " "
 ✓ 4083 " " " " " "
 4083A " " " " " "
 4084 " " " " " " 20 feet
 4085 Base of East bluff, near Kirk's R.R. cut.
 4085A " " " " " "
 4085B " " " " " "
 ✓ 4086 Talus East bluff, Devil's Lake
 4086A Talus East bluff " "
 ✓ 4087 Talus South bluff " "
 ✓ 4087A " " " " "
 ✓ 4087B " " " " "
 ✓ 4087C " " " " "
 4087D " " " " "
 4087E " " " " "
 4087F " " " " "
 4087G " " " " "
 4087H " " " " "
 4087I " " " " "
 4087J " " " " "
 4087K " " " " "
 ✓ 4088 Talus West bluff " "
 ✓ 4088A " " " " "

me: another

above R.R. track

4088B Talus West Cliff Devil's Lake

4088C " " " " "

4088D " " " " "

4088E " " " " "

4088F " " " " "

4088G " " " " "

4088H " " " " "

4088I " " " " "

4088J " " " " "

Miscellaneous 1883

4089 West side of Harbor on south side Michipicoten Island

4090 " " " " " " " "

4091 " " " " " " " "

4092 " " " " " " " "

4093 Interstratified with and intersecting 4089

4094 " " " " " "

4095 " " " " " "

4096 Granite from north of Hausan N.E. 24-30-7E.

4097 Quartz-porphry, Pine Bluff Markesan Green

4098 " " Montello Marquette Co.

4099 Rock from bottom of Buah well Wis. Depth about 700 ft.

stored in
Box No.

Marathon Co. This	6
Lake Co. This Microscopic mounting	
" "	
See Geol This Vol I p	24 Vol IV p

Specimens collected by R. S. Irving's party
from July 11 to 1883

- 4100 From exploration shaft 140 paces S. by E. of Commonwealth
4101 " " " " " " " " " " " "
✓ 4102 " foot wall of Commonwealth Mine Wis.
4103 " just E. of " " " "
4104 " " S. of E. part of ore pit Commonwealth Mine
4105 " Rich ore from the Commonwealth Mine Wis.
4106 " Exploration pits in S. 1/4 of S. 1/4 Sec. 32, T. 40, R. 18 E. "
4107 " Pit near 4106
4108 " Same place as 4106 and 4107
4109 " 200 paces East of 4106
4110 " Hanging wall, Florence Mine, N.E. 1/4 of S.E. 20-40-18 E. Wis.
4111 Foot wall Florence Mine " " " " " "
4112 Ore samples from stock pile, Florence Mine, " " " "
4113 Pyrite Florence Mine
4114 Rock of falls, Crystal Falls, Mich. N. 1/4 of S.E. 20-43-32 T. Mich.
4115 Same place as 4114
4116 Ore from the Great Western Center 21-43-32 T. Mich.
4117 " " " Paint River Mine S.E. 1/4 20-43-32 T. "
4118 From Rock Cut S.E. of N.E. 20-43-32 T. Mich.
4119 " Youngstown Mine N. 1/2 S.E. 1/4 19-43-32 T. Mich.
4120 " " " " " " " " " "
4121 " " " " " " " " " "
4122 " R.R. cut S. 1/4 of S.E. 1/4 20-43-32 T. "
4123 " Union Mine N. 1/4 of N. 1/4 31-43-32 " "
4124 " " " " " " " " " "
4125 " R.R. cut (South end) N. 1/4 28-43-32 " "
4126 " " " " (Middle) S.E. 1/4 20-43-32 " "
4127 " " " " " " " " " "
4128 " " " " " " " " " "
4129 " " " " " " " " " "
4130 " " " " (North end) " " " " " "
✓ 4131 Brulé Riv. N.E. 1/4 of N.E. 1/4 14-40-18 E. Wis.
✓ 4132 50 paces south of 4131
✓ 4133 Short distance south of 4132
✓ 4134 " " " " 4133

Mamm. Insects regions

Book, page

Mene Wis.

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Contorted ferruginous schist

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Pyritiferous and Graphitic slate

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N. E. 1/4 of S. 1/4 34-40-18 E

2, 1

Yellowish brown limonitic ore

2, 4

Soft reddish black ore

2, 4

Cherty material

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Quartz schist

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Slaty quartzite

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Loose

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Rich ore

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Rich ore

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Vermistone

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from road near bank of Riv

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- ✓ 4135 S.E. of N.E. 14-40-18 E. This.
 ✓ 4136 Near Upper Twin Fall N.E. of N.E. 11-39-19 E. This
 ✓ 4137 At " " " S.E. of S.E. 2-39-19 " "
 ✓ 4138 " " " " " " " " " " "
 ✓ 4139 " " " " " " " " " " "
 ✓ 4140 " " " " " " " " " " "
 ✓ 4141 " " " " " " " " " " "
 ✓ 4142 " " " " " " " " " " "
 4143 " " " " " " " " " " "
 4144 " " " " " " " " " " "
 ✓ 4145 From East end of Bridge near Upper Twin Falls
 ✓ 4146 " Road between Upper and Lower Twin Fall (Mich. side)
 ✓ 4147 " Lower Twin Fall N.E. $\frac{1}{4}$ S.E. $\frac{1}{4}$ Sec. 12-40-31 N. Mich.
 ✓ 4148 " " " " " " " " " " "
 4149 " " " " " " " " " " "
 4150 " Ry. cut E $\frac{1}{2}$, 24-40-31 N. Mich.
 4151 " Hill top south of Chapin Mine N $\frac{1}{2}$ N. $\frac{1}{4}$ 31-40-30 N. Mich.
 4152 " S. line S. $\frac{1}{4}$ 30-40-30 N. Mich.
 4153 " About half way between 4151 and 4152
 4153a 200 paces south of 4151
 4153a Rich ores Chapin Mine S $\frac{1}{2}$ of S. $\frac{1}{4}$ 30-40-30 N.
 4154 Big Quinnesec Falls S. $\frac{1}{4}$ of S. $\frac{1}{4}$ 5-38-20 E. This.
 4155 " " " " " " " " " "
 4156 " " " " " " " " " "
 4157 " " " " " " " " " "
 4158 " " " S.E. cor. 6 " " " "
 4159 " " " N.E. of S. $\frac{1}{2}$ 8-39-30 N. Mich.
 4160 " " " " " " " " " "
 4161 " " " S.E. " N. $\frac{1}{4}$ " " " "
 4162 " " " " " " " " " "
 4163 " " " " " " " " " "
 4164 " " " " " " " " " "
 ✓ 4165 " " " " " " " " " "
 4166 Little Quinnesec Falls Sec. 15-39-30 N. Mich.
 4167 " " " " " " " " " "
 4168 " " " " " " " " " "
 4169 " " " " " " " " " "

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Rest in 4142

Shows some of 4143 attached to the rock

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- 4170 Little Quinnesec Falls Sec. 15-39-30 N. Mich.
 4171 " " " " " "
 4172 " " " " " "
 4173 " " " " " "
 4174 " " " " " "
 4175 " " " " " "
 ✓ 4176 " " " " " "
 4177 " " " " " "
 4178 No specimen
 4179 Little Quinnesec Falls 15-39-30 N. Mich.
 4180 " " " " " "
 4181 " " " " " "
 4182 " " " " " "
 4183 Rich ore Quinnesec Mine S.E. cor 34-40-30 N. Mich.
 4184 " " " " " "
 4185 " " " " " "
 4186 South wall Vulcan Mine, S₂ of S₂ 11-39-29 N. Mich.
 4187 North " " " " " "
 4188 Lean ore " " " " " "
 4189 Rich " " " " " "
 4190 Limestone 1000? ft. N.W. of Vulcan Mine
 4191 South wall West Vulcan Mine Cen. of E. side of 10-39-29 N. Mich.
 4192 North " " " " " "
 4193 Lean ore " " " " " "
 4194 Rich " " " " Center of E. side of 10-39-29 N. Mich.
 4195 Hall rock Saginaw Mine S. N. $\frac{1}{4}$ of S. E. $\frac{1}{4}$ of 4-40-29 N. "
 4196 Lean ore " " " " " "
 4197 Rich ore " " " " " "
 4198 Hanging wall, Norway " N.E. of S.E. of 5-40-29 N. Mich.
 4199 Foot " " " " " "
 4200 Lean ore " " " " " "
 4201 Rich ores " " " " " "
 4202 Sandstone overlying horizontally at Norway mine
 4203 Hall rock Cyclops Mine, S. N. of S.E. 5-40-29 N. Mich.
 4204 Lean ore " " " " " "
 4205 Rich " " " " " "
 4206 Sandstone overlying at Cyclops

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Banded schist
Horizontal sandstone

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- 4206a A small vein in the ferruginous schist of the Cyclops
- 4207 Diamond Drill Core, Lake Superior mine. Depth 457.8'
- 4208 " " " " " " " 615'
- 4209 " " " " " " " 147'
- 4210 " " " " " " " 370'
- 4211
- 4212 Near center Sec. 10 T. 47 R. 27 N. Michigan
- 4213 Short distance East of 4212 near $\frac{1}{4}$ line
- 4214 Between 4212 and the Lake Superior mine workings
- 4215 Footwall Goodrich Mine N. $\frac{1}{2}$ N. $\frac{1}{4}$ 19-47-27 N. Mich.
- 4216 20 Steps north of 4215
- 4217 " " " " 4216
- 4218 Banded Jasper from contact with conglomerate Goodrich Mine
- 4219 Conglomerate from contact
- 4220 Footwall, Goodrich Mine, N. $\frac{1}{2}$ N. $\frac{1}{4}$ 19-47-27 N. Mich.
- 4221 Pebble from ore bed, do. " " " " " "
- 4222 Ore Goodrich Mine " " " " " "
- 4223 Soapstone " " " " " " " "
- 4224 Hanging wall " " " " " " " "
- 4225 S. N. $\frac{1}{4}$ N. E. $\frac{1}{4}$ 19 - 47 - 27 N. Mich.
- 4226 N. N. $\frac{1}{4}$ N. E. $\frac{1}{4}$ " " " " " "
- 4227 Soapstone from dump heap at Saginaw Mine, Mich.
- 4228 Coarse conglomerate overlying ore at Saginaw Mine, Mich.
- 4229 Finer conglomerate 50 paces north of 4228
- 4230 " " 30 " " " 4229
- 4231 " " 30 " " " 4230
- 4232 Quartzite 30 " " " 4231
- 4233 " 10 " " " 4232
- 4234 Soapstone with specular iron, Saginaw Mine
- 4235 Quartzite Near north $\frac{1}{4}$ post 20-47-27 N. Mich.
- 4236 Granite (?) N. side stream S. N. $\frac{1}{4}$ N. E. $\frac{1}{4}$ 31-47-26 N. Mich.
- 4237 From road E " " " N. E. $\frac{1}{4}$ " " " "
- 4238 Ferrug. Schist 300 paces north of 4237
- 4239 New Home Mine N. N. $\frac{1}{4}$ N. E. $\frac{1}{4}$ 32-47-26 N. Mich.
- 4240 Old pit N. N. $\frac{1}{4}$ " " " " "
- 4241 Greenstone from old Ry. cut N. N. " " " " "
- 4242 Old Home Mine S. E. $\frac{1}{4}$ 29-47-26 N. Mich.

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Hole 14

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N. 1/4 Sec. 14 19-47 27 1/2

- ✓ 4243a Conglomeritic quartzite, Hanging wall, Palmer Mine N. 26. 44
 ✓ 4243 Upper part of vein " " "
 4244 Lower " " " " " "
 4245 Foot wall, banded jasper " " "
 ✓ 4246 Ore and wall rock from Ropes gold mine N. 29-48-27 N. Mich.
 ✓ 4247 Limestone from quarry N. 28-48-27 N. Mich.
 4248 Calc " " " " " " "
 ✓ 4249 Peridotite (?) S. 1. 29-48-27 N. Mich.
 4249a Chrysotile veins in 4249
 ✓ 4250 Greenstone from near 4249
 ✓ 4251 " " Deer Lake road N. 33-48-27 N. Mich.
 4252 Schist from near center of N. 1/2 of 11-47-27 N. Mich.
 ✓ 4253 Diorite " " " " " " " " "
 ✓ 4254 " " " " " " " " "
 ✓ 4255 " " " " " " " " "
 ✓ 4256 Quartzite from north of Goodrich Mine S. 1. 18-47-27 N.
 4257 Banded soft Hematite from old pits New England Mine N. E. 20-47-27 N.
 4258 Hanging wall Salisbury Mine N. 15-47-27 N. Mich.
 4259 No specimen
 4260 On hanging wall one foot further from ore than 4258
 4261 Lean ore on foot wall Salisbury mine
 4262 One foot stratigraphically above 4260
 ✓ 4263 Freshest part of hanging wall Salisbury mine
 ✓ 4264 Foot wall schist " "
 ✓ 4265 Greenstone 50 paces north of hanging wall face Salisbury mine
 ✓ 4266 " from north side of head of Salisbury ravine
 4267 " " south " " " " "
 4268 Ore Salisbury mine
 ✓ 4269 Loose fragment south side of Peal Lake S.E. 35-48-27 N. Mich.
 ✓ 4270 On bank above the "Bessemer" mine " " " " "
 4271 Ore Salisbury mine
 4272 Ore Cambria mine S.E. 35-48-27 N. Mich.
 ✓ 4273 Ferrug. Schist Cambria mine " " " " "
 4274 Quartzite from N. side of N. end Peal Lake N. 1/2 " " " "
 ✓ 4275 Iron " " " " " " " " "
 ✓ 4276 " " " " " " " " "
 ✓ 4277 Interbanded with the quartzites from " " " " "

31- 47- 262^h Mich

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No. 3

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- ✓ 4278 From north side of Teal Lake N.H. 35-48-27 N. Mich
 ✓ 4279 " same place as 4278
 ✓ 4280 " north side of Teal Lake N.E. 35-48-27 N. Mich.
 ✓ 4281 Lake Superior mine Pit No. S.H. 10-47-27 N. "
 4282 Banded jasper and ore from same pit
 4283 Schist from N. side of same pit
 4284 Ore from Lake Superior mine
 ✓ 4285 Conglomerated or brecciated ore Jackson mine N.E. & S.E. 1-47-27 N.
 4286 Soft Hematite " " " " " "
 4287 Jasper and soapstone " " " " " "
 4288 Grape ore " " " " " "
 ✓ 4289 Schist (dike) No. 5 Pit " " N.E. of S.H. " " "
 4290 Banded jasper " 5 " " " " " " "
 ✓ 4291 Film between Schist and jasper " " " " " "
 ✓ 4292 Banded jasper No. 5 Pit " " " " " "
 4293 Jaspery ore No. 3 Pit " " N.H. of S.E. " " "
 ✓ 4294 Greenstone from bluff in N.H. of N.H. 6-47-26
 ✓ 4295 " " " " " " " " "
 4296 Mica-schist, Michigammi Lake, S.H. 28-48-30 N. Mich
 4297 From island " " S. part 27 " " "
 4298 " " " " N. " 34 " " "
 4299 Showing veinlets in 4298
 4300 East end of large island Michigammi Lake S.H. 27-48-30 N.
 ✓ 4301 Limestone North of Norway Mine S.H. 4-40-29 N. Mich
 ✓ 4302 Slate rock N. side of E. end of Lighthouse point Marquette
 ✓ 4304 From wall of dike intersecting 4302
 ✓ 4303 Slate rock at junction with 4304
 ✓ 4305 Dike rock 20 feet from junction with slate
 4306 From smaller dike 18" wide near 4302
 4307 Slate in contact with 4306
 ✓ 4308 Granite from island in N.H. 2-48-25 N. Mich
 ✓ 4309 Dike rock in 4308
 4310 From dike near the wall
 4311 Whitish layers in sandstone N. side of Presqu' Isle
 4312 Pebbles from conglomerate underlying 4311
 4313 Peculiar veined rock " 4312.
 ✓ 4314 Black veined peridotite, N. side N. end Presqu' Isle

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Pit. No. 7.

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- ✓ 4315 Peridotite Presqui' Isle near 4314
 ✓ 4316 Core of black peridotite in 4315
 ✓ 4317 Veins in 4316
 4318 One foot above 4316
 4319 " " below "
 ✓ 4320 Veined rock from N.E. side of Presqui' Isle West wall of a
 4321 Peridotite " " " " " " " " " " " "
 4322 " " " " " " " " " " " " East " " "
 ✓ 4323 Black Peridotite, about 350 Yds S.E. of 4322
 4324 Sandstone " 300 " S. " 4323
 4325 Peridotite 25' horizontally from 4324
 ✓ 4326 Sandstone 15' above lake level and overlying 4327
 4327 Conglomerate overlying a veined rock same place as 4324-5-6
 ✓ 4327a Veined rock 1/2 mile South 4327
 ✓ 4327b Conglomerate overlying the veined rock near 4327a
 4328 From a large dike in the northernmost of the Picnic Islands
 ✓ 4329 " near the walls of same dike
 4330 Rock composing the Island
 4331 Wall rock of above dike
 4332 Veined rock, Presqui' Isle near 4327b.
 ✓ 4333 Prevailing black rock of the northernmost of the Picnic Isds.
 4334 Epidotic seams and nests in 4333
 4335 No specimen
 4336 " "
 4337 " "
 4338 White quartzite N.E. 1/4, 1-47-25 N. Mich.
 ✓ 4339 Siliceous schist Immediately north of 4338
 ✓ 4340 Quartzite from a few paces north of 4339
 ✓ 4341 " " " " " " " " " "
 ✓ 4342 From near 4338
 4343 " N.W. 1/4 of N.W. 1/4 6-47-24 N. Mich.
 0 4344 " " " " " " " " " "
 4345 " " " " " " " " " "
 ✓ 4346 " " " " " " " " " "
 ✓ 4347 " " " " " " " " " "
 4348 " " " " " " " " " "
 ✓ 4349 " " " " " " " " " "

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small bay

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near Marquette Mich.

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- ✓^o 4350 From N.W.¹/₄ of S.W.¹/₄ 6-47-24 N. Mich.
- 4351 " " " " " " " "
- ✓^o 4352 " S.W.¹/₄ " N.W.¹/₄ " " " " "
- ✓^o 4353 From Gannister quarry N.E.¹/₄ of S.E.¹/₄ 86-48-25 N. Mich.
- ✓ 4354 " " " " " " " "
- ✓ 4355 Quartzite from unconformity of Quartzite and Sandstone, N.W.¹/₄
- 4356 Sandstone " " " " " "
- 4357 " " actual contact of 4355 and 4356
- 4358 Quartzite from road near the unconformity
- ✓^o 4359 Limestone from roadside near S.E. cor. 86-48-25 N. Mich.
- ✓ 4360 Prevailing rock of Picnic Point near Marquette "
- 4360a Less common phase of 4360
- 4360b " " " "
- ✓ 4361 Felsite(?) dike in 4360
- 4362 West wall of 4361
- 4363 East " " 4361
- 4364 Areas of a schistose rock in 4360
- ✓ 4365 Conglomeritic form of 4360
- ✓ 4366 Pebble(?) in 4365
- 4367 A less usual pebble(?) in 4365
- 4368 Granite area in 4365
- 4369 " veins in 4360
- ✓ 4370 From quartz porphyry dike, south side Light House Point, Marquette Mich.
- 4371 " same dike at junction with the slate on the north
- 4372 Slate in contact with 4371
- ✓^o 4373 Schist 10 feet north 4371
- 4374 Black dike rock cutting 4371
- 4375 " " " at junction with slate
- 4376 Slate at contact with 4374
- 4377 " 18 paces west of Black dike and 2 south of quartz-porphyry
- ✓^o 4378 Black dike 27 paces east of dike 4374
- 4379 Stringer running from 4378 into 4370
- 4380 From the quartz-porphyry dike at junction with 4378
- 4381 " " " " " " " 4374
- 4382 " a " " North side of Light House Pt. Marquette
- 4383 From dike rock 4382 at its contact with the slate on the north
- 4384 " Slate at contact with dike rock 4382 on the north

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S.E. 1/4 36-48-25 A. Mich. On Lake shore

" " " " " " "

lake

- 4385 Slate 7½ feet from dike
- 4386 From dike of quartz-porphry 15 feet from the last dike from
- 4387 " middle of this dike (4386)
- 4388 " dike (4386) at its northern contact
- 4389 " Slate north of this dike (4386)
- 4390 ^{R. D. Sawing, north shore Lake Huron, Aug. 1883.} Greenstone from foot of cliff on high bluff opposite Squirrel Isd. channel
- 4391 Brown near top of same bluff
- 4392 " calcite vein " "
- 4393 " Talus of " "
- 4394 Pebbly quartzite East Peerbish Isd., Canada
- 4395 Predominating quartzite of East Peerbish Isd.
- 4396 " " " " " "
- 4397 " " " " " "
- 4398 " " " " " "
- 4399 White quartzite from quartzite islands below East Peerbish
- 4400 " " " " " " " "
- 4401 " " " " " " " "
- 4402 Greenstone taken from a narrow belt of islets among the last mentioned
- 4403 " " " " " " " " " "
- 4404 " " " " " " " " " "
- 4405 Slate from line between Parbot and Johnson townships, "Lot 1"
- 4406 Red quartzite, McLennan's Landing, Canada
- 4407 Slaty quartzite from point north of Campement D'ours Canada
- 4408 Pebbly quartzite from quartzite islands S. E. of Peerbish Rapids
- 4409 " " " " " " " " " "
- 4410 Slate from one of the Palladeau Ids., Canada
- 4411 Banded gneiss 6 miles east of Pt. Thessalon N. Shore Lake Huron
- 4412 " " " " " " " " " "
- 4413 Granite from ½ miles east of ^{west} mouth of Mississagui River N. Shore
- 4414 Greenstone dike cutting 4413
- 4415 Dike rock near the wall
- 4416 Granite at the contact with 4414
- 4417 " near " " " " "
- 4418 Granitoid rock from south point of easternmost large island
- 4419 Mica schist from 6½ mi. west of mouth of Serpent River
- 4420 " " " " " " " " " "
- 4421 Interstratified with 4419

Chem. Analyses stored in
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southern contact

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Canada

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Lake Huron

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at mouth of Mississagui River

4 11

Canada

4 12

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- 4422 Gneiss boulder from near 4422
 4423 Mica schist about 550 yds west from 4419
 ✓ 4424 Granite from Island at mouth of Serpentine River Bay
 4425 Mica schist from point about $2\frac{1}{2}$ mi. west from 4423
 4426 Quartz-schist " island " $1\frac{1}{2}$ " S. of " " 4425
 4427 From same place as 4426
 4428 Greenstone from islet 6 miles east of mouth of Blind Riv.
 4429 Fine grained phase of 4428
 4430 From small island $1\frac{1}{2}$ miles east of mouth of Blind River
 4431 " " " " " " " " " " " "
 4432 " " " " " " " " " " " "
 4433 From end of long point $\frac{1}{2}$ mi. west " " " " "
 ✓ 4434 " " " " " " " " " " " "
 4435 " " " " " " " " " " " "
 ✓ 4436 " $\frac{1}{4}$ mile east of 4418 from same island
 ✓ 4437 " same point as 4418
 ✓ 4438 " " " " " "
 4439 " east bank Missisquoi River just above the forks
 4440 " " " " " 400 feet above 4439
 4441 Rock at rapids $\frac{1}{2}$ mile above the forks of the river
 ✓ 4442 Quartzite from large island on south side Missisquoi Bay
 4443 Greenstone from large dike cutting 4442
 4444 Granite from islands on north side of mouth of Missisquoi Bay
 4445 Dike rock cutting 4444
 ✓ 4446 Another dike in 4444 cutting 4445
 4447 From near end of point about 5 mi. west of N. mouth of Missisquoi River
 4448 " " " " " " " " " " " "
 4449 " small island $3\frac{1}{2}$ mi. west of 4447
 4450 20 feet from 4449 across strike
 4451 Interbedded with 4450
 4452 From islet just south of 4449; from belt succeeding 4449 on the south
 ✓ 4453 " a vein intersecting 4452
 ✓ 4454 " " " " " "
 4455 " islands a short distance east of 4452
 4456 " " " " " " " 4455
 ✓ 4457 " " " " " " " 4455
 4458 Greenstone dike cutting 4457

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- 4459 Greenstone dike cutting granite on coast just east of 4458
 4460 From junction of 4459 with wall rock
 4461 " 1/4 miles east of 4460
 4462 Gneiss from end of point 3 1/2 miles west 4449
 4463 From mainland 1/2 mile N. W. 4462
 4464 " granite vein cutting 4463
 4465 Red gneiss 3 miles west
 ✓ 4466 About 4 miles east of Pt. Thessalon at "Les Grande Sables"
 4467 A very narrow band in 4466
 4468 Red granite veins cutting 4466
 ✓ 4469 Greenstone dike 22" wide intersecting 4466 and 4468
 4470 From black veinlet supposed to branch from 4469
 4471 " granite island two mi. east of Thessalon Pt.; about 200 feet below
 4472 Gneissic rock from same island
 4473 Fragments from the boulders of the conglomerate 2 mi. east of Pt. Thessalon
 ✓ 4474 Arenaceous quartzite interstratified with the boulder conglomerate
 ✓ 4475 " " " " " " "
 ✓ 4476 " " " " " " "
 ✓ 4477 From same island as 4476
 ✓ 4478 " the larger island (4473) showing matrix and large pebbles
 4479 " " " " " " "
 4480 " " " " " " "
 4481 Granitic material from southeast corner of same island (4473)
 ✓ 4482 " " " " " " "
 4483 From the conglomerate of this island (4473)
 4484 Quartzite from island 400 west of conglomerate island (4473)
 4485
 4486
 4487
 4488
 4489 } Specimens taken in order from east to west, at short
 4490 } intervals, beginning at a point about 1 1/2 mi. east of Pt.
 4491 } Thessalon and continuing to within 1/2 mi. of the Pt.
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base of Huronian

From an island

on a small island near south point of above island

4496 }
 4497 } Belong to the above series.
 4498 }

4499 From east side of St. Phœsalon. midway of its length

Miscellaneous 1883.

4500 Prairie Riv. Falls Minn. C.E. Garrison (104) Highest point of

4501 " " Upper Falls " " " (107) Near the highest

✓ 4502 Chalcedony Florida Cabinet No 1576

✓ 4503 Silicified Wood Bijou Basin, Colorado

✓ 4504 Chalcedony U. St. Cabinet No 1501

✓ 4505 Semi Opal " " 862

4506

✓ 4507 Chalcedony Middle Park Colorado " "

✓ 4508 Flint " " 1479

✓ 4509 Silicified Wood

✓ 4510 Jasper, Marquette, Mich. C. No. 1079

✓ 4511 Flint C. No. 1094

✓ 4512 Silicified Wood 30 mi west Pike's Peak Col.

✓ 4513 Hornstone C. No. 1499

✓ 4514 Silicified Wood " " 1505

✓ 4515 Calcite, Gibraltar " " 1465

✓ 4516 Agate, Thunder Bay. Lake Superior

✓ 4517 " " " " "

✓ 4518 " " " " "

✓ 4519 Semi Opal Middle Park Colorado

4520 172 his. Quartzite F. II Penokee Huronian N. St. 14-44-3 St.

4521 32 " " III " " S. St. 17 " "

4522 176 " Penokee Range S. E. 33-45-1 St.

4523 1401 A. 2 his " " S. St. 14-44-3 "

4524 1407 A. " Gneiss " Gap N. St. 14-44-3 "

4525 1416 A. " " " " " " " "

4526 1422 A. " Quartzite F. II " Huronian " " " "

4527 1443 " " Range " 10 " "

4528 1446 " " Huronian " 14-44-3 St.

4529 1450 " " " " " "

4530 1451 " " " " " "

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exposure and west of the trail from lower landing to lower lake
exposure, east of trail around the falls
Thin section only

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- 4530 1461 Wis. F. IV Penokee Huronian 14-44-3 N.
 4532 2055 " F. III " " N.E. 17-44-2 N. Mt. Hur.
 4533 2056 " F. II " " " " " "
 4534 2057 " F. II " " " " " "
 4535 2090 " " " " " "
 4536 2091 " " " " " "
 4537 3382 " " " " " "
 4538 1458 " F. IV " " N. 14-44-3 N.
 4539 1491 " " " " S.E. 2 " "
 4540 2006 " V. XXI " " " " "
 4541 2115 " " " " " "
 4542 651 " Madison Sandstone Middleton Dane Co. Wis.
 4543 N. H. of N. H. Sec 10 T. 23 R. 6 E. Hood Co. Wis.
 4544 106 Wis.
 4545 107 Wis.
 4546 137 "
 4547 921 "
 4548 941 "
 4549 2022 "
 4550 753 "
 4551 Indurated sandstone, "Orange Sand" J. A. Diller
 4552 Red Sandstone, Marquette, Mich.
 4553 Quartzite carrying *Paleacmaea Irvingi*, Silver Bluff.
 4554-4699 Vacant

0 4557

Thin section only

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Specimen and thin section (see Diller's letter June 2/84)

Jackson Co., Wis. (Thin section only)

Thin section only

Blank Pages

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Skipped

	4700	S. $\frac{1}{4}$ S. $\frac{1}{4}$	20-22-12 E. This.
	4701	375 paces N. 1750 N.	S. E. cor. 20-22-12 E. This.
0	4702	350 " " 1750 "	" 22-25-12 E. "
0	4703	400 " " 1800 "	" " " "
	4704	100 " " 1600 "	" " " "
	4705	375 " " 1575 "	" " " "
	4706	1875 " " 1375 "	" 26-25-12 E "
	4707	1875 " " 1395 "	" " " "
V 0	4708	50 " " 00 "	" " " "
	4708a	" " " " "	" " " "
	4709	1800 " " 1200 "	" " " "
	4710	1350 " " 1000 "	" " " "
	4711	125 " " 200 "	" 19-22-12 E. This.
	4712	200 " " 250 "	" " " "
	4713	300 " " 250 "	" " " "
	4714	350 " " 300 "	" " " "
0	4715	1025 " " 00 "	" 21 " " "
V 0	4716	650 " " 1925 "	" 22 " " "
	4717	1900 " " 1250 "	" 14 " " "
V 0	4718	100 " " 1100 "	" 11 " " "
	4719	1900 " " 600 "	" 5 " " "
V 0	4720	1900 " " 150 "	" 5 " " "
	4721	1836 " " 1414 "	" 24 -28 2 E. This.
	4722	1286 " " 1850 "	" 19-28 3 E. "
	4723	A short distance east of 4722	
V 0	4724	1000 paces N. 1065 N.	S. E. cor Sec. 4-27-3 E. This.
	4725	1000 " " 1200 "	" " " " "
	4726	1000 " " 1360 "	" 3 " " "
	4727	950 " " 814 "	" 3 " " "
	4728	750 " " 1350 "	" 2 " " "
	4729	1320 " " 1050 "	" 11 " " "
	4730	1280 " " 1050 "	" 11 " " "
	4731	875 " " 450 "	" 11 " " "
	4732	850 " " 200 "	" 11 " " "
	4733	900 " " 1100 "	" 13 " " "
	4734	1740 " " 1200 "	" 20-27-4 E. This
	4735	650 " " 2000 "	" 21- " " " "
	4736	650 " " 2000 "	" 21 " " " "

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	4737	1420	paces N. 200 ft. S.E. cor	21-27-4E. this.
Jo	4738	1300	" " 1260 "	" 22- " " "
Vo	4739	1950	" " 1250 "	" 36 " " "
Vo	4740	1450	" " 1500 "	" 10 26 3E "
	4741	500	" " 800 "	" 13 " " "
	4742	700	" " 1570 "	" 17 36 10E "
Vo	4743	1870	" " 750 "	" 20 " " "
	4743a	1870	" " 750 "	" 20 " " "
	4744	1280	" " 20 "	" 20 " " "
	4744a	1280	" " 20 "	" 20 " " "
Vo	4744b	1280	" " 20 "	" 20 " " "
Jo	4745	1750	" " 1620 "	" 27 " " "
Vo	4746	1250	" " 750 "	" 4 " " "
Vo	4747	1360	" " 1770 "	" 4 " " " on an island
Vo	4748	1000	" " 1680 "	" 9 " " "
	4749	1600	" " 670 "	" 17 " " "
	4750	1500	" " 650 "	" 17 " " "
	4751	1465	" " 875 "	" 7 35 11 E. this.
	4752	500	" " 1000 "	" 4 " 10 " "
Vo	4753	1170	" " 1000 "	" 4 " " " "
	4754	1160	" " 900 "	" 4 " " " "
Vo	4755	150	" " 1200 "	" 34 36 " " "
	4756	50	" " 1120 "	" 34 " " " "
Vo	4757	400	" " 1650 "	" 34 " " " "
	4758	1850	" " 1000 "	" 3 35 " " "
Vo	4759	Near center section		29 36 " " "
Vo	4760	650	paces N. 800 ft.	" 22 - 36 - 9 E "
	4761	825	" " 1100 "	" " " " "
	4762	250	" " 600 "	" 21 " " "
	4763	19	" " 1790 "	" 29 - 24 4E "
	4764	650	" " 750 "	" 12 - 23 4E "
	4765	900	" " 1100 "	" 10 - 23 6 " "
	4765a	900	" " 1100 "	" 10 - 23 6 " "
Vo	4766	From top of Bluff near cor. between Secs. 5, 6, 7, 8, T21-R2E this.		
	4767	" 2/3 way down on west side of same bluff.		
	4768	" Bluff near center of line between Secs 485 T21 R2E "		
	4769	" Near Junction City Wis		

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4770 Sec. 6, T107 R. 60 N. near middle of N.E. $\frac{1}{4}$ Dakota

4771 " " " " " " " " " "

4772 " " " " " " " " " "

4773 " " " " " " " " " "

4774 " " " " S.E. cor. of S. $\frac{1}{4}$ of N. $\frac{1}{4}$ "

4775 N. $\frac{1}{4}$ Sec. 6 - 103 - 60 N.

4776 S. $\frac{1}{4}$ Sec 81 - 104 - 60 " within a few rods of 4775

4777 " " " " " " " " " "

4778 " " " " " " " " " "

4779 N. $\frac{1}{4}$ 6 - 103 - 60

4780 " " " "

4781 " " " "

4782 Chalk rock from the Firesteel just east of Mitchell

4783 Near line between Secs. 17 and 18 - 102 - 59 S. part of secs. on

4784 " " " " " " " " " "

4785 " " " " " " " " " "

4786 Near Corner Secs 45-8-9-102-59 Dakota

4787 " " " " " " " " "

4788 " " " " " " " " "

4789 " " " " " " " " "

4790 N. $\frac{1}{4}$ of S.E. Sec. 6, - 101 - 58 N. Dakota

4791 " " " " " " " " "

4792 S. $\frac{1}{4}$ of S. $\frac{1}{4}$ " 5 " " " "

4793 N.E. " N. $\frac{1}{4}$ " 8 " " " "

4794

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4796 } Taken in order from south to north through
4797 } Sec. 27 T100 R. 59 N.

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4802 Near center of S.E. $\frac{1}{4}$ Sec. 21 - 101 - R. 56 N. Dakota

4803 " " " " " " " " "

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4805 " " " " " " " " "

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4815 Sandstone from near surface of above exposure

4816 Pipestone layer in above

4817 S. E. $\frac{1}{4}$ Sec 24-103-57 Th. Dakota4818 N. W. $\frac{1}{4}$ " 14-102-58 " "

4819 " " " " " "

4820 Sec. 36-103-58 Th.

4821 " " " " "

4822 " " " " "

4823 N. W. $\frac{1}{4}$ Sec. 15-103-58 Th. Da.4824 E. $\frac{1}{2}$ " 9-103-58 " "

4825

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4828 From the Palisades proper in Sec 30-103-47 Th.

4829

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4832

4833 from Devil's Gulch in Sec 17-103-47 Th.

4834 " " " " " "

4835 " highest point seen on Pipestone River about 2 miles

4836 " Sec. 11. 102-51 on Skunk Creek

4837 " " " " " "

4838 " " " " " "

4839 " " " " " "

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4841 Specimens taken from north to south along the dells

4842 at Dell Rapids beginning in Sec 9-104-49 Th.

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above Devils Gulch

- 4844/

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East Haven, 3 miles E. of N. Haven. Spec. & thin sect. J. D. Dana.

Lisbon, Wis.
of Moutreat River. Thin section only.

River Ashland Co, Wis. " " "

River, Wis. " " "

Superior. From C. W. Hall.

Portage, Minn. " " " "

Minn. " " " "

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- ✓ 4882 Animitsee quartzite, Keweenawong
 ✓ 4883 Porphyritic diabase Taylor's Falls.
 Specimens from the Copper
 ○ 4884 Felsite breccia Sec. 25, T 58,
 ○ 4885 " " (?) SE, NE, Sec. 27, T 58,
 ○ 4886 " " (?) SW. Sec 25, T 58,
 ○ 4887 Nodular felsite Sec 30, " "
 ○ 4888 Laminated felsite, Sec. 30, T. 58,
 4889 " " (?) 475 feet N. of Albany + Bo
 ○ 4890 Brecciated portion of ^{porphyry belt.} N. W., S W., Sec 29,
 ○ 4891 Felsite NE, NW, Sec 35, T 58, R 28
 ○ 4892 Porphyry from Sec 29, T 58, " "
 ○ 4893 Summit of Mt. Houghton. Felsite.
 ○ 4894 Epidotic felsite (?) SE, SE, Sec. 27,
 ○ 4895 " Massive seams of conglomerate merging
 4896 Felsite pebble, Bête Grise Bay.
 ○ 4897 " North Cliff Mine, part of ash bed"
 4898 " Sedimentary seam, 3 feet wide
 4899 " Mendota Hill strata above so-called synite."
 ○ 4900 " Wolverine Mine."
 ○ 4901 " Hanging wall of conglomerate belt
 ○ 4902 " Cliff Mine diabase."
 ○ 4903 " Melaphyr, Cliff Mine."
 ○ 4904 " Cliff Mine diabase".
 ○ 4905 " Atlantic Mine amygdaloid.
 ○ 4906 " E. line Sec. 12, T. 50, R. 44 N. Mich.
 ○ 4907 " Amygdaloid-conglomerate, Bête
 ○ 4908 " Damarac shaft, 500 feet below
 ○ 4909 " Hanging wall of ash-bed North
 ○ 4910 " Wolverine Mine, amygdaloid."
 ○ 4911 " Quarz-porphyr, NE. Cor. Sec 17,
 ○ 4912 Felsite NE. Cor Sec. 11, T 50,
 ○ 4913 " Sec. 30, T. 58, R. 27 N. Mich. Amyg-
 ○ 4914 " Hanging wall of ash-bed
 ○ 4915 " Epidotic melaphyr, near school.
 ○ 4916 Felsite, NW. Cor Sec. 11, T. 50, R.
 ○ 4917 " Mendota Hill, Keweenaw Point.

Town
Bot 9

Bay, Lake Superior. From C. W. Hall.
Minn. " " " "

Rocks of Kew. Pt. ridge in Dr. C. Rominger, Mar. 1885
R. 28 W. Mich.

" " " " 9

" " " " 9

" 27 " " Stratified portion of porphyry belt 9

" " " " 60 feet in thickness. Impossible that it is igneous rock is

conglomerate with amygdaloid. 9

T. 58, R. 28 W. Mich. 9

W. Mich. 9

" " " 9

T. 58, R. 28 W. Mich. 9

into porphyry belt. Montreal River, Kew. Pt. 9

Kew. Point. 9

resembling the porphyry of Mt. Houghton, Tamarac ^{shaft 463 feet below surface.} 9

Allouez Mine. 9

9

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9

felsite. 9

Grise Bay. 9

surface. 9

Cliff Mine. 9

9

T. 49, R. 42 W. Mich. 9

R. 44 W. Mich. 9

daloid carrying Thompsonite. 9

old Thomson Mine. 9

house, Houghton. 9

44 W. Mich. 9

9

- o 4918 " Kearsage conglomerate, Keweenaw
- o 4919 " Foot wall of porphyry, D.B. NW NE,
- o 4920 " Wall rock of Fisher vein, old
- o 4921 " Part of ash-bd, ~~at~~ North Cliff
- o 4922 " Laumontitic amygdaloid Ray
- o 4923 " Mendota Mine, Lac la Belle,
- o 4924 " Damarac shaft, 600 feet below
- o 4925 " Hanging wall of porphyry,
- o 4926 " So called synite, Mendota Mine
- o 4927 " Mendota Mine, below 4926.
- o 4928 " Ashbd old Phoenix Mine, with
- o 4929 Melaphyr, Atlantic Mine.
- o 4930 Copper Falls Mine, Keweenaw
- o 4931 " Sedimentary strata mingled with a
- o 4932. Old Phoenix Mine, epidotic seam
- o 4933 Porphyry 1 mile north of Rockland,
- o 4934 Felsite SW. Sec 12, T. 50, R. 44 N.
- o 4935 NW. Sec 12, T. 50, R. 44 N, Mich.
- o 4936 Felsite, NE. cor Sec. 11, T. 50,
- o 4937 " 4 miles N. of Norwich Mine
- o 4938 " Conglomerate, Montreal River,
- 4939 South slope of Mt. Houghton.
- o 4940 Brecciated amygdaloid belt from
- o 4941 Yellow oxide of copper, Wolverine
- o 4942 Basswood Lake Granite, Merriam

4943-4999 Vacant.

Point.	9
Sec 35, T 58, R. 28 W Mich.	9
Phoenix Mine, Kew. Pt.	9
Mines, Kew. Pt.	9
monds Creek, west of Houghton.	9
Keweenaw Point.	9
surface, hanging wall of conglomerate."	9
W W N E Sec. 35, T. 58, R. 28 W. "	9
Keweenaw Point."	9
	9
datolite anygda anygdules.	9
	9
Point.	9
brecciated amygdaloid, Houghton."	9
5 or 6 feet wide, sedimentary(?).	9
Mich.	9
"	9
	9
R. 44 W. Mich.	9
on road.	10
Keweenaw Pt. Intimately associated with breccia of felsite"	10
near Houghton. Cemented by compact sedimentary material resembling the porphyries of Bete Grise Bay.	10
Mine."	10
Original number lost.	10

C. W. Hall, Central Minnesota, July + Aug. 1883.

✓	5000	660 N. 625 N.	Sec. 19 T. 23 R. 27 N. Minn.
✓	5000a	" " " "	" " " "
✓	5001	685 " 700 "	" " " "
✓	5002	00 1500 "	" 18-123 28 " "
✓	5003	500 " 1500 "	" 19 " " "
✓	5004	625 " 1800 "	" 17 " " "
✓	5005	400 " 1800 "	" " " " "
✓	5006	220 " 1600 "	" " " " "
✓	5007	1990 " 260 "	" 19 " " "
✓	5008	1465 " 1210 "	" " " " "
✓	5008a	" " " "	" " " " "
✓	5009	2000 " 1500 "	" 30 " " "
✓	5010	" " " "	" " " " "
✓	5010a	" " " "	" " " " "
✓	5011	1600 " 1550 "	" 16 " 29 " "
✓	5012	300 " 1100 "	" 9 " " "
✓	5013	500 " 1200 "	" 2 " " "
✓	5014	750 " 1350 "	" " " " "
✓	5014a	" " " "	" " " " "
✓	5015	850 " 1000 "	" " " " "
✓	5015a	" " " "	" " " " "
✓	5016	900 " 1300 "	" 19 " 30 " "
✓	5016a	" " " "	" " " " "
✓	5017	1650 " 275 "	" 30 " 30 " "
✓	5018	1750 " 275 "	" " " " "

Specimens stored in boxes A-H are duplicates.

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A 10	13	16
A 10	13	17
	13	17
	13	18
10	13	18
A 10	13	19
10	13	19
A 10	13	20
A 10	13	21

✓	5018a	1750	N. 275	N. Sec. 30	N. 123	R. 30	N. Minn.			
✓	5019	100	"	1700	"	"	20	"	"	"
✓	5019a	"	"	"	"	"	"	"	"	"
✓	5020	15	"	1700	"	"	"	"	"	"
✓	5020a	"	"	"	"	"	"	"	"	"
✓	5021	1400	"	1700	"	"	29	"	"	"
✓ missing	5022	1000	"	1500	"	"	"	"	"	"
✓	5023	1975	"	1950	"	"	21	"	"	"
✓	5023a	"	"	"	"	"	"	"	"	"
✓	5024	1000	"	900	"	"	"	"	"	"
✓	5025	500	"	450	"	"	"	"	"	"
✓	5026	100	"	1900	"	"	22	"	"	"
✓	5027	200	"	1950	"	"	27	"	"	"
✓	5028	"	"	"	"	"	"	"	"	"
✓	5029	300	"	700	"	"	22	"	"	"
✓	5030	1700	"	1800	"	"	23	"	"	"
✓	5031	"	"	"	"	"	"	"	"	"
✓	5032	"	"	"	"	"	"	"	"	"
✓	5033	"	"	"	"	"	"	"	"	"
✓	5033a	"	"	"	"	"	"	"	"	"
✓	5034	1500	"	700	"	"	27	124	29	"
✓	5035	1800	"	300	"	"	26	"	"	"
✓	5035a	"	"	"	"	"	"	"	"	"
✓	5036	450	"	100	"	"	24	"	"	"
✓	5036a	"	"	"	"	"	"	"	"	"
✓	5037	450	"	1720	"	"	19	"	28	"
✓	5038	500	"	1975	"	"	"	"	"	"
✓	5039	500	"	1650	"	"	"	"	"	"
✓	5039a	"	"	"	"	"	"	"	"	"
✓	5040	500	"	400	"	"	"	"	"	"
✓	5040a	"	"	"	"	"	"	"	"	"
✓	5041	"	"	"	"	"	"	"	"	"
✓	5042	1850	"	1800	"	"	28	"	"	"
✓	5043	"	"	1700	"	"	"	"	"	"
✓	5044	2000	"	1000	"	"	28	124	28	"
✓	5044a	"	"	"	"	"	"	"	"	"
✓ missing	5044B	"	"	"	"	"	"	"	"	"

Specimens stored in Boxes A-H are duplicates.

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Stored in Box No.	Notes Rock	Page
A	13	21
10	13	22
10	13	23
B 10	13	24
10	13	24
10	13	25
	13	26
B 11	13	27
11	13	27
B 11	13	28
B 11	13	29
11	13	30
B 11	13	31
B 11	13	32
11	13	34
B 11	13	35
11	13	36
	13	37
B 11	13	38
11	13	38
11	13	39
B 11	13	40
11	13	41
11	13	43
11	13	44
11	13	45
B 11	13	46
B 11	13	47
11	13	47
B 11	13	48
11	13	48
B 11	13	49
B 11	13	50
11	13	51
11	14	1
11	14	1
11	14	1

5045 1300 faces N. 1000 ft. 28-124-28 ft. Min.

5045A " " " " " " " " " "

5045B " " " " " " " " " "

5046 175 " " 2000 " " " " " "

5046A " " " " " " " " " "

5046B " " " " " " " " " "

5047 1500 " " 1800 " 33 " " " " "

5048 " " " " " " " " " "

5049 1250 " " 500 " 32 " " " " "

5049A " " " " " " " " " "

5050 " " " " " " " " " "

5051 1300 " " 400 " " " " " "

5052 1650 " " 750 " " " " " "

5053 150 " " 300 " 29 " " " " "

5054 400 " " 250 " " " " " "

5055 400 " " 300 " " " " " "

5056 1450 " " 400 " " " " " "

5057 " " " " " " " " " "

5057A " " " " " " " " " "

5058 " " " " " " " " " " Dike

5059 1700 " " 700 " " " " " "

5060 1800 " " 700 " " " " " "

5060A " " " " " " " " " "

5061 " " " " " " " " " "

5061A " " " " " " " " " "

5062 " " " " " " " " " "

5063 1900 " " 1300 " " " " " "

5064 2000 " " 1800 " " " " " "

5065 1500 " " 2000 " " " " " "

5065A " " " " " " " " " "

5066 000 " " 100 " 19 " " " " "

5067 150 " " 250 " " " " " "

5068 75 " " 1900 " 20 " " " " "

5068A " " " " " " " " " "

5069 " " " " " " " " " "

5070 1500 " " 50 " 28 " " " " "

5071 " " " 100 " " " " " "

5072 " " " 1/25 " " " " " "

Specimens stored in boxes A-H are duplicates

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Stored in Box No.	Note Book	Page
B	14	2
	14	2
	14	2
^B 12	14	3
12	14	3
^B 12	14	4
^B 12	14	4
12	14	6
12	14	7
^B 12	14	7
^B 12	14	7
12	14	8
^B 12	14	8
^B 12	14	9
^B 12	14	10
^B 12	14	12
^B 12	14	13
12	14	13
^B 12	14	14
12	14	15
^B 12	14	16
12	14	17
^B 12	14	17
12	14	18
12	14	19
^B 12	14	20
^B 12	14	21
^B 12	14	22
12	14	22
^B 12	14	23
^B 12	14	23
^B 12	14	24
12	14	24
^B 12	14	25
^B 12	14	26
^B 12	14	26
^B 12	14	27

✓	5073	1500	paces	N. 425 N.	Sec. 28, T. 24, R. 28 N. Minn				
✓	5074	550	"	"	60 "	21	"	"	"
✓	5074A	"	"	"	"	"	"	"	"
✓	5075	"	"	"	"	"	"	"	"
✓	5076	1400	"	"	200 "	30	"	"	"
✓	5077	"	"	"	"	"	"	"	"
✓	5078	"	"	"	"	"	"	"	"
✓	5079	"	"	"	300 "	"	"	"	"
✓	5080	750	"	"	800 "	19	"	"	"
✓	5080A	"	"	"	"	"	"	"	"
✓	5081	"	"	"	"	"	"	"	" Dike
✓	5082	250	"	"	1020 "	20	"	"	"
✓	5083	50	"	"	1050 "	"	"	"	"
✓	5084	400	"	"	700 "	"	"	"	"
✓	5085	"	"	"	"	"	"	"	"
✓	5086	1800	"	"	1000 "	29	"	"	"
✓	5087	750	"	"	60 "	18	"	"	"
✓	5088	"	"	"	"	"	"	"	"
✓	5089	"	"	"	"	"	"	"	"
✓	5090	750	"	"	1200 "	8	"	"	"
✓	5090A	"	"	"	"	"	"	"	"
✓	5091	600	"	"	"	"	"	"	"
✓	5092	"	"	"	"	"	"	"	"
✓	5093	850	"	"	1200 "	"	"	"	"
✓	5094	"	"	"	"	"	"	"	"
✓	5095	750	"	"	1750 "	17	"	"	"
✓	5096	800	"	"	1950 "	"	"	"	"
✓	5097	650	"	"	1800 "	"	"	"	"
✓	5098	425	"	"	1700 "	18	"	"	"
✓	5099	"	"	"	"	"	"	"	"
✓	5100	"	"	"	"	"	"	"	"
✓	5101	"	"	"	"	"	"	"	"
✓	5102	1900	"	"	100 "	"	"	"	"
✓	5103	1120	"	"	800 "	17	"	"	"
✓	5104	300	"	"	200 "	34	126	33	"
✓	5105	1925	"	"	1790 "	15	"	"	"
✓	5106	81	"	"	"	"	"	"	"

Specimens stored in boxes A-H are duplicates

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stored in Box No.	Note Book	Page
12	14	27
^B 12	14	28
12	14	28
^C 13	14	29
^C 13	14	30
^C 13	14	32
^C 13	14	33
^C 13	14	34
^C 13	14	35
13	14	35
^C 13	14	36
^C 13	14	37
^C 13	14	38
^C 13	14	39
^C 13	14	39
^C 13	14	40
^C 13	14	41
^C 13	14	42
13	14	42
^C 13	14	43
13	14	44
^C 13	14	45
^C 13	14	46
^C 13	14	47
^C 13	14	48
^C 13	14	49
^C 13	14	50
^C 13	14	51
^C 13	15	1
^C 13	15	3
^C 13	15	4
^C 13	15	4
13	15	5
^C 13	15	6
^C 13	15	7
^C 13	15	8
^C 13	15	10

✓	5106	1925	faces	N. 1790 ft.	Sec 15	T. 126	R 33	T. Minn.
✓	5107	"	"	"	"	"	"	"
✓	5108	1525	"	" 2000 "	17	"	35	"
✓	5109	"	"	"	"	"	"	"
✓	5110	"	"	"	"	"	"	"
✓	5111	"	"	"	"	"	"	"
✓	5112	600	"	" 700 "	10	"	29	"
✓	5113	1250	"	" 1800 "	6	125	28	"
✓	5114	"	"	"	"	"	"	"
✓	5115	975	"	" 250 "	"	"	"	"
✓	5115a	"	"	"	"	"	"	"
✓	5116	850	"	" 1900 "	5	"	"	"
✓	5117	1550	"	" 700 "	21	"	"	"
✓	5118	1425	"	" 800 "	"	"	"	"
✓	5118a	"	"	"	"	"	"	"
✓	5119	1350	"	" 900 "	"	"	"	"
✓	5120	1250	"	" 1250 "	"	"	"	"
✓	5121	1600	"	" 200 "	"	"	"	"
✓	5122	1250	"	" 50 "	17	"	"	"
✓	5123	"	"	"	"	"	"	"
✓	5124	"	"	" 1000 "	21	"	"	"
✓	5125	575	"	" 900 "	"	"	"	"
✓	5126	"	"	"	"	"	"	"
✓	5127	200	"	" 250 "	12	"	28	"
✓	5128	1800	"	" 350 "	13	"	"	"
✓	5129	1600	"	" 550 "	"	"	"	"
✓	5130	1150	"	" 900 "	"	"	"	"
✓	5131	1275	"	" 950 "	12	"	"	"
✓ missing	5132	1200	"	" 1200 "	8	127	29	"
✓	5133	"	"	"	"	"	"	"
✓ missing	5134	"	"	"	"	"	"	"
✓	5135	250	"	" 500 "	4	128	30	"
✓	5136	1650	"	" 1400 "	7	130	30	"
✓	5136a	"	"	"	"	"	"	"
✓	5137	"	"	"	"	"	"	"
✓	5138	1550	"	" 1300 "	"	"	"	"
✓	5139	"	"	" 1150 "	"	"	"	"

Specimens stored in boxes A-H are duplicates

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^c 13	15	10
13	15	11
^c 13	15	13
^c 13	15	16
^c 13	15	17
^c 14	15	18
^c 14	15	19
^c 14	15	20
^c 14	15	21
^c 14	15	22
14	15	22
14	15	23
^c 14	15	24
^c 14	15	25
14	15	26
14	15	27
^c 14	15	28
	15	29
^c 14	15	30
^c 14	15	31
14	15	32
^c 14	15	33
^c 14	15	34
14	15	35
^c 14	15	36
14	15	37
14	15	38
^c 14	15	39
	15	40
14	15	40
	15	40
^c 14	15	41
^c 14	15	42
14	15	44
^c 14	15	45
^c 14	15	45
^c 14	15	45

	5440	1600	faces	N. 300 ft.	Sec. 13, T. 129, R. 30 N. Minn				
✓ missing	5140a	"	"	"	"	"	"	"	"
✓	5141	1600	"	" 200 "	"	"	"	"	"
✓	5142	1500	"	" 350 "	"	"	"	"	"
✓	5143	1000	"	" 1350 "	34	133	32	"	"
✓	5144	1250	"	" 1150 "	"	"	"	"	"
✓	5145	1320	"	" 250 "	15	131	33	"	"
✓	5146	"	"	"	"	"	"	"	"
✓	5146a	"	"	"	"	"	"	"	"
✓	5147	900	"	" 400 "	2	109	30	"	"
✓	5148	"	"	"	"	"	"	"	"
✓	5149	"	"	"	"	"	"	"	"
✓	5150	"	"	"	"	"	"	"	"
✓	5151	"	"	"	"	"	"	"	"
✓	5152	800	"	" 1800 "	"	"	"	"	"
✓	5153	"	"	"	"	"	"	"	"
✓	5154	"	"	"	"	"	"	"	"
✓ missing	5155	"	"	" 1600 "	"	"	"	"	"
✓ missing	5156	"	"	"	"	"	"	"	"
✓	5157	"	"	"	"	"	"	"	"
✓	5158	"	"	"	"	"	"	"	"
✓	5159	"	"	"	"	"	"	"	"
✓	5160	900	"	" 1700 "	"	"	"	"	"
✓	5161	1000	"	" 1200 "	"	"	"	"	"
✓	5162	"	"	"	"	"	"	"	"
✓	5163	"	"	"	"	"	"	"	"
✓	5164	"	"	"	"	"	"	"	"
✓	5165	"	"	"	"	"	"	"	"
✓	5166	"	"	"	"	"	"	"	"
✓ missing	5167	"	"	"	"	"	"	"	"
✓	5168	"	"	"	"	"	"	"	"
✓✓	5169	1300	"	" 900 "	"	"	"	"	"
✓	5170	"	"	"	"	"	"	"	"
✓	5171	1800	"	" 00 "	"	"	"	"	"
✓	5172	450	"	" 1400 "	27	110	30	"	"
✓	5173	700	"	" 1300 "	"	"	"	"	"
✓	5173a	"	"	"	"	"	"	"	"

Specimens stored in boxes A-H are duplicates

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15 57

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15 51

D14

16 12

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16 14

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16 14

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16 15

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16 21

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16 23

D15

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16 24

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16 25

16 25

✓	5174	600	paces N.	1600 ft.	See 27	T 110	R. 30 ft. Minn		
✓	5175	1700	"	"	800	"	22 111 32	"	"
✓	5176	"	"	"	750	"	"	"	"
✓	5177	1400	"	"	1000	"	"	"	"
✓	5178	"	"	"	"	"	"	"	"
✓	5179	1950	"	"	1300	"	"	"	"
✓	5180	"	"	"	"	"	"	"	"
✓	5181	100	"	"	"	"	15	"	"
✓	5182	1900	"	"	1900	"	22	"	"
✓	5183	"	"	"	"	"	"	"	"
✓	5184	1400	"	"	800	"	2	33	"
✓	5184a	"	"	"	"	"	2	33	"
✓	5185	800	"	"	400	"	34 112	33	"
✓	5186	1200	"	"	100	"	"	"	"
✓	5187	1600	"	"	400	"	2 111	33	"
✓	5188	1600	"	"	350	"	"	"	"
✓	5189	"	"	"	"	"	"	"	"
✓	5190	1830	"	"	2000	"	22 111	32	"
✓	5191	1300	"	"	950	"	"	"	"
✓	5192	"	"	"	"	"	"	"	"
✓	5193	500	"	"	1150	"	15	"	"
✓	5194	1500	"	"	1500 ft	"	2 109	30	"
✓	5195	1500	"	"	"	"	"	"	"
✓	5196	550		1550			35 110	30	"
✓	5197	250	"	"	0 W	"	"	"	"
✓	5198	"							
✓ missing	5199	900	"	"	500	"	34 112	33	"
✓	5200	500	"	"	250	"	13 112	34	"
✓	5201	500	"	"	250	"	13 112	34	"
✓	5202	1100	"	"	300	"	X	"	"
✓	5203	750	"	"	950	"	"	"	"
✓	5204	1300	"	"	1050	"	10	"	"
✓	5205	1300	"	"	1050	"	"	"	"
✓	5206	"	"	"	"	"	"	"	"
✓ missing	5207	"	"	"	"	"	"	"	"
✓ missing	5208	200	"	"	1250	"	4	"	"
✓ missing	5209	"	"	"	"	"	"	"	"

Specimens stored in boxes A-H are duplicates

	stored in Box No.	Note Book	Page
	D15	16	26
	D15	16	27
	D15	16	28
	D15	16	29
	D15	16	29
	15	16	30
	15	16	31
	D16	16	31
	D16	16	32
	D16	16	32
	D16	16	33
	16	16	34
	D16	16	35
	D16	16	36
	D16	16	37
	D16	16	38
	16	16	39
	D16	16	42
	D16	16	43
	D16	16	45
	D16	16	46
Quarry - Red Stone - Allen.	D16	30	6
" " "	16	30	6
Quartzites Congl. near Red Stone	D16	30	7
" " " "	D16	30	7
	D16	30	8
		30	10
Birch Coaly Minn	D16	30	11
Modification of 5200	D16	30	12
	D16	30,	13
	E16	30,	14
	E16	30,	15
Hornblende.	16	30,	16
	16	30,	16
		30,	16
		30,	17
		30	17

✓	5210	900	paces	N	1300	sk	Sec. 31	T. 113	R. 34	N. Minn.
✓	5211	900	"	"	"	"	"	"	"	"
✓	5212	"	"	"	"	"	"	"	"	"
✓	5213	"	"	"	"	"	"	"	"	"
✓	5214	"	"	"	"	"	"	"	"	"
✓	5215	1300	"	"	600	"	9	112	"	"
✓	5216	"	"	"	"	"	"	"	"	"
✓	5217	1400	"	"	2000	"	33	113	"	"
✓	5218	1600	"	"	100	"	28	"	"	"
✓	5219	"	"	"	"	"	"	"	"	"
✓	5220	"	"	"	"	"	"	"	"	"
✓	5221	700	"	"	50	"	29	"	"	"
✓	5222	"	"	"	"	"	"	"	"	"
✓	5223	100	"	"	2000	"	28	"	"	"
✓	5224	225	"	"	250	"	36	"	36	"
✓	5225	300	"	"	300	"	"	"	"	"
✓	5226	250	"	"	400	"	"	"	"	"
✓	5227	700	"	"	650	"	31	"	34	"
✓	5228	600	"	"	400	"	29	"	35	"
✓	5229	"	"	"	"	"	"	"	"	"
✓	5230	"	"	"	"	"	"	"	"	"
✓	5231	550	"	"	300	"	"	"	"	"
✓	5232	"	"	"	"	"	"	"	"	"
✓	5233	1500	"	"	85	"	30	"	"	"
✓	5234	250	"	"	700	"	3	"	36	"
✓	5235	"	"	"	"	"	"	"	"	"
✓	5236	400	"	"	1800	"	1	115	39	"
✓	5237	300	"	"	"	"	"	"	"	"
✓	5238	"	"	"	"	"	"	"	"	"
✓	5239	1900	"	"	900	"	11	"	"	"
✓	5240	"	"	"	"	"	"	"	"	"
✓	5241	1800	"	"	700	"	35	113	35	"
✓	5242	"	"	"	"	"	"	"	"	"
✓	5243	50	"	"	600	"	26	"	"	"
✓	5244	1300	"	"	"	"	15	"	"	"
✓	5245	"	"	"	"	"	"	"	"	"
✓	5246	"	"	"	"	"	"	"	"	"

Specimens stored in boxes A-H are duplicates.

Stored in
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Note
Book Page

E 16	30	18
E 16	30	20
16	30	20
E 16	30	21
16	30	21
E 16	30	22
17	30	23
	30	24
17	30	25
17	30	26
27	30	26
17	30	27
17	30	28
17	30	29
E 17	30	30
E 17	30	31
E 17	30	31
E 17	30	32
E 17	30	33
E 17	30	34
E 17	30	34
E 17	30	35
E 17	30	36
E 17	30	37
E 17	30	38
E 17	30	39
E 17	31	1
E 17	31	2
E 17	31	3
17	31	4
17	31	5
E 17	31	6
E 17	31	7
E 17	31	8
E 17	31	9
17	31	10
E 17	31	11

Curve in Birch Cooley Creek.

" " " " "

" " " " "

" " " " "

Falls on " " "

" " " " "

Old mill on " " "

At ~~an~~ near falls " "

In a quarry near the falls on Birch Cooley Creek

Below mill on Birch Cooley Creek

East of depot at Marton.

Quarry below Redwood Falls.

" " " "

" " " "

East " " " "

" " " " "

Minnesota Falls.

" "

" "

School house at Minnesota Falls

" " " " "

Beaver Falls.

" "

" "

✓	5247	1300	faces N.	600	N.	Sec. 15	D. 113	R. 35	N. Min	
✓	5248	1200	"	"	1800	"	22	"	"	"
✓	5249	100	"	"	1100	"	"	"	"	"
✓	5250	"	"	"	"	"	"	"	"	"
✓	5251	50	"	"	1200	"	"	"	"	"
✓	5252	700	"	"	1300	"	27	"	"	"
✓	5253	500	"	"	200	"	20	"	"	"
✓	5254	700	"	"	600	"	"	"	"	"
✓	5255	600	"	"	1700	"	"	"	"	"
✓	5256	1800	"	"	500	"	21	"	"	"
✓	5257	1900	"	"	18.50	"	20	"	"	"
✓	5258	S. E 1/4 - - - - -					18	"	"	"
✓	5259	1450	faces N.	1850	N.	"	"	"	"	"
✓	5260	400	"	"	1500	"	2	"	36	"
✓	5261	600	"	"	1900	"	2	"	"	"
✓	5262	1900+	"	"	400	"	4	"	"	"
✓	5263	2000	"	"	400	"	"	"	"	"
✓	5264	1600	"	"	1300	"	33	114	"	"
✓	5265	1500	"	"	1300	"	"	"	"	"
✓	5266	1550	"	"	"	"	"	"	"	"
✓	5267	1300	"	"	1000	"	29	"	"	"
✓	5268	1000	"	"	50	"	30	"	"	"
✓	5269	700	"	"	400	"	23	"	37	"
✓	5270	1000	"	"	1950+	"	"	"	"	"
✓	5271	"	"	"	"	"	"	"	"	"
✓	5272	1200	"	"	900	"	16	"	"	"
✓	5273	1300	"	"	"	"	"	"	"	"
✓	5274	1600	"	"	700	"	7	"	"	"
✓	5275	1650	"	"	950	"	"	"	"	"
✓	5276	1900	"	"	1200	"	"	"	"	"
✓	5277	1200	"	"	1900	"	12	115	39	"
✓	5278	1300	"	"	1800	"	"	"	"	"
✓	5279	1275	"	"	"	"	"	"	"	"
	5280	1300	"	"	"	"	"	"	"	"
	5281	700	"	"	1700	"	"	"	"	"
	5282	250	"	"	200	"	13	"	"	"
	5283	"	"	"	"	"	"	"	"	"

Specimens stored in Boxes A-H are duplicates

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Box No.

Note
Book

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Page

Beaver Falls.

E 17

31

12

E 17

31

13

North of ford near Beaver Falls

E 17

31

14

"

"

"

"

"

"

E 17

31

15

"

"

"

"

E 17

31

16

E 18

31

17

E 18

31

18

E 18

31

19

E 18

31

20

Small creek flowing into Beaver Creek

E 18

31

21

18

31

23

18

31

24

31

25

31

26

31

29

31

31

18

31

32

Hornblende schist

18

31

34

"

"

18

31

35

18

31

36

Near small lake in this section.

18

31

37

Porphyritic gneiss.

18

31

39

Near Vicksburgh.

18

31

40

"

"

18

31

42

"

"

18

31

43

18

31

44

18

31

45

31

46

18

31

47

18

31

48

18

31

49

18

31

50

E 18

31

51

Hornblende gneiss.

"Hornblende."

South of Minnesota Falls.

18

32

1

Hornblende.

18

32

2

S.E. 1/4 of Sec.

18

32

3

Alternating feldspathic or gneissic exposures.

18

32

4

5284	2000	haces	N. 300	W. Sec. 14, T. 115, R. 39	St. Minn.			
5285	"	"	"	"	"	"	"	"
5286	1100	"	"	100	"	29	116	"
5287	1600	"	"	750	"	3	115	"
5288	50	"	"	1900	"	12	"	"
missing 5289	1000	"	"	1000	"	11	"	"
5290	600	"	"	100	"	"	"	"
missing 5291	"	"	"	"	"	"	"	"
5292	1300	"	"	700-750	"	2	"	"
5293	1995	"	"	1998	"	3	"	"
missing 5294	75	"	"	1750	"	34	116	"
✓ 5295	900	"	"	700	"	"	"	"
5296				"	"	"	"	"
5297				"	"	"	"	"
5298	1600	"	"	800	"	"	117	40
5299	"	"	"	"	"	"	"	"
5300	"	"	"	"	"	"	"	"
5301	100	"	"	1985	"	21	"	"
missing 5302	"	"	"	"	"	"	"	"
missing 5303	150	"	"	1975	"	"	"	"
missing 5304	250	"	"	400	"	20	"	"
5305	1900	"	"	800	"	19	"	"
5306	"	"	"	"	"	"	"	"
missing 5307	500	"	"	1400	"	31	118	"
5308	"	"	"	"	"	"	"	"
5309	1990	"	"	1980	"	6	117	"
5310	1600	"	"	1000	"	13	"	41
5311	1900	"	"	800	"	10	118	42
5312	700 (est)	"	"	1350 (est)	"	31	121	44
5313	"	"	"	"	"	"	"	"
5314	"	"	"	"	"	"	"	"
5315	300	"	"	1800	"	2	120	45
5316	"	"	"	"	"	"	"	"
5317	500	"	"	1900	"	"	"	"
5318	700	"	"	1500	"	36	121	"
5319	"	"	"	"	"	"	"	"
5320	1400	"	"	600	"	30	"	"

5321	1450	faces	N.	600	W.	Sec. 30	S. 121	R. 45	W.	Minn.
5322	1200	"	"	50	"	25	"	46	"	"
5323	1525	"	"	650	"	22	"	"	"	"
5324	900	"	"	1100	"	26	"	"	"	"
5325	850	"	"	1050	"	"	"	"	"	"
5326	100	"	"	1700	"	23	"	"	"	"
5327	300	"	"	800	"	22	"	"	"	"
5328	2000	"	"	1700	"	"	"	"	"	"
5329	"	"	"	1700	"	"	"	"	"	"
5330	25	"	"	50	"	16	"	"	"	"
5331	500	"	"	300	"	26	"	"	"	"
5332	1200	"	"	1100	"	32	"	"	"	"
5333	1300	"	"	700	"	4	120	45	2k	"
5334	1200	"	"	1500	"	9	"	"	"	"
5335	1150	"	"	1400	"	"	"	"	"	"
5336	200	"	"	100	"	16	"	"	"	"
5337	1900	"	"	900	"	22	"	"	"	"
5338	650	"	"	1300	"	15	"	"	"	"
5339	1200	"	8"	600	"	"	"	"	"	"
5340	1200	"	"	600	"	"	"	"	"	"
5341	1250	"	"	1000	"	"	"	"	"	"
5342	1200	"	"	500	"	12	"	"	"	"
5343	1300	"	"	400	"	20	"	44	2k	"
5344						32	119	42	2k	"
5345						"	"	"	"	"
5346						"	"	"	"	"
5347	800	faces	N.	1400	W.	"	"	"	"	"
5348	300	"	"	1600	"	"	118	"	"	"
5349	300	"	"	1600	"	"	"	"	"	"
5350	300	"	"	1600	"	"	"	"	"	"
5351	1700	"	"	1400	"	15	"	"	"	"
5352	1300	"	"	1900	"	14	"	"	"	"
5353	1500	"	"	950	"	30	117	40	2k	"
5354	800	"	"	1500	"	13	116	"	"	"
5355	900	"	"	700	"	14	"	"	"	"
5356	900	"	"	700	"	"	"	"	"	"
5357	1900	"	"	700	"	"	"	"	"	"
5358	300	"	"	1200	"	13	"	"	"	"

Specimens stored in boxes A-H are duplicates

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Red granitoid gneiss

Gneissic.

Granitoid character.

From railroad cut.

Granitoid in texture, highly siliceous

Granitoid gneiss

Gneiss

Granitoid gneiss.

Schist or schistose gneiss.

Granitoid gneiss

" "

Mingling of gneiss & schist.

Granitoid

"

"The mass is that of a gneiss."

Gneissic rock.

Gneissic rock

F19

32

42

F19

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33

5359	1000	faces	7.	300	W.	A. 24	116	R. 40	W.	Minn.
5360	950	"	"	300	"	"	"	"	"	"
5361	100	"	"	900	"	28	"	39	W.	"
5362	1900	"	"	600	"	4	115	"	"	"
5363	1800	"	"	500	"	"	"	"	"	"
5364	1200	"	"	800	"	28	116	"	"	"
5365	1600	"	"	1700	"	"	"	"	"	"
5366	500	"	"	1900	"	19	114	38	W.	"
5367	"	"	"	"	"	"	"	"	"	"
5368	1900	"	"	600	"	13	"	"	"	"
5369	1000	"	"	500	"	12	"	"	"	"
5370	900	"	"	400	"	"	"	"	"	"
5371	1300	"	"	900	"	"	"	"	"	"
5372	100	"	"	1850	"	8	"	37	W.	"
5373	"	"	"	"	"	"	"	"	"	"
5374	"	"	"	"	"	"	"	"	"	"
5375	"	"	"	"	"	"	"	"	"	"
5376	900	"	"	"	"	21	"	"	"	"
5377	"	"	"	"	"	"	"	"	"	"
5378	1900	"	"	600	"	26	"	"	"	"
5379	1300	"	"	1800	W.	32	"	36	W.	"
5380	150	"	"	150	"	"	"	"	"	"
5381	"	"	"	1200	"	3	113	"	"	"
5382	"	"	"	"	"	"	"	"	"	"
5383	300	"	"	1400	"	"	"	"	"	"
5384	700	"	"	1100	"	13	"	"	"	"
5385	1700	"	"	150	"	32	"	38	W.	"
5386	1000	"	"	---	"	30	"	39	W.	"
5387	"	"	"	"	"	"	"	"	"	"
5388	1700	"	"	700	"	"	112	38	W.	"
5389	700	"	"	400	"	6	111	"	"	"
5390	1100	"	"	200	"	12	"	"	"	"
5391	"	"	"	"	"	"	"	"	"	"
5392	"	"	"	"	"	"	"	"	"	"
5393	1400	"	"	650	"	28	113	35	W.	"
5394	500	"	"	1800	"	31	"	"	"	"
5395	"	"	"	"	"	"	"	"	"	"

Specimens stored in boxes A-H are duplicates

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F	33	34
20		
20	33	35
20	33	36
F 20	33	37
F 20	33	38
F 20	33	39
F 20	33	40
20	33	41
^{27 and} 21	33	43
F 20	33	44
F 21	33	45
F 21	33	47
F 21	33	48
F 21	33	49
F 21	33	50
21	34	1
F 21	34	2
F 21	34	2a
F 21	34	3
F 21	34	4
F 21	34	5
F 21	34	6
F 21	34	7
F 21	34	8
21	34	9
21	34	10
F 21	34	11
21	34	13
21	34	15
F 21	34	16
F 21	34	17
F 21	34	18
F 21	34	19
21	34	19
F 22	34	20
^{27 and 22} 22	34	21
22	34	21

Redwood Falls. East bluff of river just below falls.

" " " " " " " "

5396	1700	paces	N.	700	ft.	Sec. 30	T. 112	R. 38 ft.	Minn.
5397	"	"	"	"	"	"	"	"	"
5398	1900	"	"	600	"	15	"	34 ft.	"
5399	1850	"	"	600	"	"	"	"	"
5400	1200	"	"	1200	"	14	"	"	"
5401	600	"	"	1950	"	13	"	"	"
5402	"	"	"	"	"	"	"	"	"
5403	1800	"	"	1650	"	24	"	"	"
5404	2000	"	"	"	"	24	"	"	"
5405	1600	"	"	1000	"	33	"	33 ft.	"

5406

5407

5408

5409

5410

5411

5412

5413 1600

List of Ridge Specimens collected by C. W. Hall. (Nov 3d, 1886.)

5414 1600

" N. 350 " Sec 2 T. 111 R. 33

T.P. Ridgely, Minn.

5415 150

" N. 350 " " 2 111 33

Ridgely, Minn.

5416 1750

" " 1900 " " 1 111 33

Eden, Minn.

5417 1750

" " 150 " " 11 115 39

Minn. Falls, Minn.

5418 1775

" " 50 " " 11 115 39

" " " "

5419 1900

" " 400 " " 11 115 39

" " " "

5420 600

" " 700 " " 3 115 39

" " " "

5421 1500

" " 10 " " 4 115 39

" " " "

5422 1500

" " " " " 4 115 39

" " " "

5423 1000

" " (-) " " 4 115 39

" " " "

5424 450

" " 100 " " 10 115 39

" " " "

5425 450

" " 100 " " 10 115 39

" " " "

5426 650

" " 300 " " 10 115 39

" " " "

5427 400

" " 1000 " " 17 115 43

Omro, Minn.

5428 400

" " 1000 " " 17 115 43

" " " "

5429 75

" " 400 " " 17 115 43

" " " "

5430 100

" " 400 " " 17 115 43

" " " "

5431 1250

" " 1800 " " 34 116 39

Granite Falls, Minn.

5432 1200

" " 350 " " 83 116 39

" " " "

Specimens stored in boxes A-H are duplicates

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Box No.

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27
F22

34 22

22

34 23

G22

34 24

G22

34 25

G22

34 26

G22

34 27

G22

34 28

G22

34 29

G22

34 30

G22

34 31

22

22

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G22

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G23

G23

G23

G23

G23

G23

G23

G23

23

G23

Biotite schist

Epidote vein in hornblende biotite gneiss

Hornblende biotite granitoid gneiss

Hornblende biotite gneiss

Hornblende biotite gneiss

Biotitic augite schist (?)

Hornblende biotite diabase

Garnetiferous biotite augite schist

Garnetiferous quartzose hornblende diabase

Quartz vein stuff

Hornblende (biotitic?) diabase

Hornblende (augite)? schist

Granitell

Hornblende schist

Quartz vein stuff

Hornblende schist?

Quartz in schist

Chlorite biotite gneiss

Biotite gneiss and hornblende diabase in contact

5433	1200	"	"	850	"	"	33	116	39	Granite
5434	(—)	"	"	600	"	"	33	116	39	"
5435	(—)	"	"	600	"	"	33	116	39	"
5436	1200	"	"	650	"	"	33	116	39	"
5437	1050	"	"	1500	"	"	33	116	39	"
5438	1750	"	"	250	"	"	32	116	39	Otis
5439	1780	"	"	280	"	"	32	116	39	Otis
5440	1900	"	"	1975	"	"	33	116	39	Granite
5441	1900	"	"	1900	"	"	33	116	39	"
5442	1900	"	"	1700	"	"	33	116	39	"
5443	1986	"	"	75	"	"	4	115	39	"
5444	1950	"	"	1800	"	"	4	115	39	"
5445	350	"	"	1000	"	"	34	116	39	"
5446	1800	"	"	1300	"	"	4	115	39	Minnesota
5447		"	"		"	"	21	41	29	Granite
5448		"	"		"	"	21	41	29	"
5449							21	41	29	"
5450	1800	"	"	1300	"	"	18	41	29	Pierz
5451	1600	"	"	250	"	"	22	40	30	Pierz
5452	1275	"	"	1800	"	"	18	39	30	Buckman
5453	500	"	"	1800	"	"	17	40	30	Unorganizing
5454	250	"	"	500	"	"	13	40	31	Little Falls
5455	1200	"	"	400	"	"	18	41	30	Pierz
5456	500	"	"	25	"	"	23	41	31	Pierz
5457	625	"	"	1100	"	"	6	35	30	Haven
5458	150	"	"	800	"	"	6	35	30	Haven
5459	150	"	"	800	"	"	6	35	30	"
5460	150	"	"	800	"	"	6	35	30	"
5461	150	"	"	800	"	"	6	35	30	"
5462	150	"	"	800	"	"	6	35	30	"
5463	750	"	"	800	"	"	6	35	30	"
5464	550	"	"	1150	"	"	6	35	30	"
5465	550	"	"	1150	"	"	6	35	30	"
5466	550	"	"	1150	"	"	6	35	30	"
5467	1250	"	"	1100	"	"	24	38	27	Unorganizing
5468	1250	"	"	1100	"	"	24	38	27	"
5469	(E. end of the bridge)						23	36	31	Sauk Rapids

	stored in Box No.
Hornblende gneiss	G 23 27 and
Hornblende diabase	G 23
Hornblende biotite gneiss	G 23
Hornblende biotite gneiss (?)	G 23
Hornblende biotite gneiss	G 23 28 and
Porphyritic Hornblende (perhaps augitic) schist	G 23
Hornblende biotite gneiss.	G 23
Hornblende diabase	G 23
Biotite Diorite (?)	23
Hornblende schist	G 23
Gneiss (?) in contact with dyke	G 23
Granitell	G 23
Hornblende diabase	G 23
- - schist	G 23
Biotite gneiss	G
Granite vein stuff.	G 23 27 and
Biotite gneiss	G 23
Biotite gneiss	G 23
Porphyritic biotite gneiss	G 23
Hornblende biotite granite	G 23 27 and
Biotite gneiss.	G 23
Biotite granite	23 27 and
Hornblende biotite gneiss	23 27 and
Hornblende biotite gneiss	G 23
Hornblende biotite granite.	G 23
Hornblende biotite granite	24
Hornblende biotite granite (vein stone)	24 27 and
Granitell (vein)	24
Granitell	G 24
Hornblende biotite granite	G 24
Hornblende biotite granite	G 24
Hornblende biotite granite	G 24 27 and
Pegmatite	G
Hornblende biotite gneiss	G 24
Hornblende biotite granite	G 24
Hornblende biotite granite	G 24
Hornblende biotite granite	G 24

5470	Sank Rapids quarry	²³ 36	31	Sank Rapids
5471	Sank Rapids quarry	23 36	31	"
5472	Sank Rapids quarry	23 36	31	"
5473	Sank Rapids quarry	23 36	31	"
5474	1400 " " 1300 " "	35 37	31	Itatao
5475	1400 " " 1300 " "	35 37	31	Itatao
5476	1400 " " 1300 " "	35 37	31	"
5477	1500 " " 600 " "	35 37	31	"
5478	1500 " " 600 " "	35 37	31	"
5479	1500 " " 600 " "	35 37	31	"
5480	1500 " " 500 " "	35 37	31	"
5481	1800 " " 250 " "	36 113	36	Delhi Ka
5482	1700 " " 1600 ^{estimated} " NW 1/4 Sec 30	35	(10W) ² 11W	— Itatao
5483	is above estimated 30	35	(10W) ² 11W	—
5484	" " " " Sec. 31	35	(10W) ² 11W	—
5485	Lower falls Flambeau River			
5486	Same as above			
5487	Below the lower falls Flambeau River			
5488	Same as preceding			
5489	Nearest exposure of gneissic rocks sampled above Flambeau sta. M., S. ste. M., + A. Ry. Flambeau River			
5490	Same as preceding			
5491	S.W. 1/4 SW 1/4	Sec. 10 34	8 W	
5492	Same as preceding	34	8 W	
5493	Same as preceding	34	8 W	
5494	Borings from the Artesian well at Mankato (1876?) to the depth of 2204 feet.			Mankato, Minn.
5495	do	do	do	"
5496	do	do	do	"
5497	do	do	do	"
5498	do	do	do	"
5499	do	do	do	"
5500	do	do	do	"
5501	do	do	do	"
5502	do	do	do	"
5503	do	do	do	"
5504	do	do	do	"
5505	do	do	do	"
5506	do	do	do	"

	Stored in Box No.
Hornblende biotite granite	G 24
Hornblende biotite granite	G 24
Olivine bearing Hornblende diabase porphyrite	G 24
Contact of 5470 and 5472	24
Hornblende(?) biotite granite	G 24
Granitic vein stuff fine.	G 24
Granitic inclusion	F 24 and F 24
Epidote as vein stuff	F 24
At contact of 5474 and 5480	F 24
Hornblende biotite granite	F 24
Hornblende biotite granite	F 24
Kaolinized Orthoclase.	
Red Quartzite	65
Impure Catlinite.	65
Pink Quartzite.	65
Hornblende gneiss	65
Orthoclase(?) in masses in the preceding gneiss	65
Hornblende gneiss	65
Hornblende schist in thin bands in the preceding gneiss	65
Hornblende gneiss	
Inclusion in the preceding gneiss	65
— — schist	65
Quartz 20 ft. below surface, Auriferous.	65
and cavities from which pyrite has been removed.	
Quartz from surface containing pyrite crystals.	65

5507	Boring from Artesian well at Mankato in 1876? to the depth of 2204 feet							Mankato Minn
5508	do	do	do	do	do	do	do	" "
5509	do	do	do	do	do	do	do	" "
5510	do	do	do	do	do	do	do	" "
5511	do	do	do	do	do	do	do	" "
5512	do	do	do	do	do	do	do	" "
5513	do	do	do	do	do	do	do	" "
5514	Borings from the Artesian well bored at Lakeview ^{came from} county 1884-85, 2150 ft deep							Minnapolis Minn
5515	do	do	do	do	do	do	do	" "
5516	do	do	do	do	do	do	do	" "
5517	do	do	do	do	do	do	do	" "
5518	do	do	do	do	do	do	do	" "
5519	do	do	do	do	do	do	do	" "
5520	do	do	do	do	do	do	do	" "
5521	do	do	do	do	do	do	do	" "
5522	do	do	do	do	do	do	do	" "
5523	do	do	do	do	do	do	do	" "
5524	do	do	do	do	do	do	do	" "
5525	do	do	do	do	do	do	do	" "
5526	Boring from the Artesian well at (bored in 1886, 660 feet deep)							Grafton, Dak
5527	do	do	do	do	do	do	do	" "
5528	do	do	do	do	do	do	do	" "
5529	do	do	do	do	do	do	do	" "
5530	do	do	do	do	do	do	do	" "
5531	Borings from Artesian well at							" "
5532	do	do	do	do	do	do	do	" "
5533	do	do	do	do	do	do	do	" "
5534	do	do	do	do	do	do	do	" "
5535	Hornblende biotite gneiss or schist 690 ft. below surface							" "
5536	Pyritous concretions from Artesian well at							Aberdeen, Dak
5537	Shale 490 feet below the surface from the Artesian well at							Brown Valley Minn
5538								" "
5539								" "
5540								" "
5541	1750	"	"	500	"	"	82 124 28	St. Cloud Minn
5542	1750	"	"	990	"	"	28 124 28	" "
5543	Same locality as 5542					124	28	" "

Specimens stored in boxes A - are duplicates

189

Stored in
Box No.

Hornblende biotite granite
Hornblende biotite granite
Granitell

66

66

66

5544	Same locality as 5052					124	28	St. Cloud	
5545	Undermined					20	123	31	Wakefield
5546	Undermined					13	37	30	Gilmanton
5547	350	"	"	400	"	27	37	31	Watab
5548	850	"	"	400	"	27	37	31	"
5549	350	"	"	400	"	27	87	31	"
5550	1500	"	"	600	"	35	87	31	"
5551						7	41	30	Pierz
5552						7	41	30	"
5553	1950	"	"	1900	"	27	134	32	Unorganizing
5554	1950	"	"	1900	"	27	134	32	"
5555	1950	"	"	1900	"	27	134	32	"
5556	1300	"	"	1900	"	28	134	32	"
5557	1300	"	"	1900	"	28	134	32	"
5558	1300	"	"	1900	"	28	134	32	"
5559	1300	"	"	1900	"	28	134	32	"
5560	1500	"	"	1325	"	34	133	32	Villard
5561	1750	"	"	500	"	32	128 ⁴	24 ⁸	St. Cloud
5562	1750	"	"	500	"	32	128 ⁴	24 ⁸	"
5563	1750	"	"	990	"	28	128 ⁴	24 ⁸	"
5564	650	"	"	1750	"	17	124	28	"
5565	650	"	"	1750	"	17	124	28	"
5566	650	"	"	1750	"	17	124	28	"
5567	150	"	"	800	"	6	35	30	E. St. Cloud
5568	150	"	"	800	"	6	35	30	"
5569	150	"	"	800	"	6	35	30	"
5570									
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[illegible]

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Box No.

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Box No.

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Blank Pages

196-217

Skipped

- 6000 635 paces N. 800 ft. 23-63-1 N. Minn.
 6001 698 " " 800 " " " " "
 6002 1800 " " 800 " " " " "
 6003 1020 " " 1500 " 15 " " "
 6004 1400 " " 1400 " 16 " " "
 6005 850 " " 1100 " 32 64 " " (Approximate)
 6006 South side of Cross Lake T64-1 N. Minn.
 6007 " " " " " " " "
 6008 At east end of small lake in southeast part 45-2 N. Minn.
 6009 South shore of "Key" lake just west of above lake
 6010 North " " " " "
 6011 In T. 64, R. 3 N. Minn.
 6012 N. E. part of T. 64 R. 4 N. Minn. from "Snipe" Lake
 6013 Sec. 9, T. 64, R. 4 N. Minn. N. N. side "Copper" Lake
 6014 " " " " " " " "
 6015 " " " " " West end " "
 6016 " 15 " " 5 " "
 6017 " 7 " " " "
 ✓ 6018 " 7 " " " "
 8 6018a " 7 " " " "
 ✓ 6019 " 7 " " " "
 ✓ 6020 from short distance east of 6019
 ✓ 6021 S. N. corner T. 65 R. 5 N. Minn.
 6022 Center 36-65-6 N.
 6023 S. E corner 26-65-6 N. Minn.
 ✓ 6024 Massive quartzite as shown in Secs 36, 25 and 26 - T. 65 R. 6 N.
 ✓ 6025 Staly bands in above quartzite (6024)
 ✓ 6026 N. E. 1/4 26-65-6 N. Minn.
 ✓ 6027 Near center of 26-65-6 N. Minn.
 ✓ 6028 N. E. 1/4 of N. 1/4 24-65-6 N. "
 6029 N. N. 1/4 13-65-6 N. Minn. N. E. cor. Ogishke-Mancie Lake
 6030 N. N. 1/4 of S. E. 1/4 13-65-6 N. Minn. " " "
 6031 S. N. 1/4 of S. E. 1/4 13-65-6 N. " " "
 6032 " " " " " " " "
 6033 S. E. 1/4 " N. N. 1/4 24 65-6 N. "
 ✓ 6034 S. N. 1/4 " N. N. 1/4 " " "

		Note Book	Page
		7	9
		7	9
Olivine Gabbro.		7	9
" "		7	10
" "		7	12
Telsitie Porphyry		7	15
Olivine Orthoclase Gabbro.		7	16
Gabbro.		7	16
		7	18
Orthoclase Gabbro.		7	18
		7	18
Olivine Gabbro		7	19
		7	20
" "		7	20
		7	21
Fine grained very magnetic quartz and augite schist.		7	21
		7	23
		7	23
Olivine-Orthoclase-Gabbro Quartzose Greenstone	25	7, 23-25	
	25	7	24
	25	7	25
	25	7	25
	25	7	25
Biotite schist or siliceous slate.		7	25
		7	27
Recomposed Basic Rock	25	7	27
Biotite clay slate	25	7	27
Dolomite or calcite.		7	27
		7	28
Fine grained Slate.	25	7	32
Typical Jasper. Basic Recomposed R.		7	29
Coarse Greywacke.		7	29
		7	30
		7	30
Dolomite or calcite		7	31
Fine grained Slate.	25	7	31

- ✓ 6035 N. $\frac{1}{4}$ of N.E. $\frac{1}{4}$ 26-65-6 T. Minn.
- ✓ 6036 " " " " " " " " " near N. line of sec.
- 6037 S.E. $\frac{1}{4}$ " S.N. $\frac{1}{4}$ 23-65-6 " " from an island
- 6038 S.N. $\frac{1}{4}$ " S.E. $\frac{1}{4}$ 23-65-6 " " "
- 6038a from areas in 6038
- 6039 " one of the jasper belts in conglomerate 6038
- 6040 S.N. of S.E. 23-65-6 T. Minn. near S. line of section
- 6041 N.E. of S.N. 26-65-6 T. " "
- ✓ 6042 " " " " " " " " "
- 6043 S.E. of N. $\frac{1}{4}$ 27-65-6 T. " "
- 6044 N. $\frac{1}{4}$ " N. $\frac{1}{4}$ " " " " "
- 6045 N.E. " N. $\frac{1}{4}$ 28 " " "
- 6046 N. $\frac{1}{4}$ " N. $\frac{1}{4}$ 22 " " "
- 6047 " " " " " " " "
- 6048 N.E. " N. $\frac{1}{4}$ 21 " " "
- 6049 N. $\frac{1}{4}$ " N. $\frac{1}{4}$ " " " "
- 6050 N. $\frac{1}{4}$ " S.E. 17 " " "
- 6051 N. $\frac{1}{4}$ " 15 " " "
- ✓ 6052 " $\frac{1}{4}$ 16 " " "
- 6053
- 6054 S.E. of S. $\frac{1}{4}$ 17-65-6 T. Minn.
- 6055 S. $\frac{1}{4}$ " S.E. 17-65-6 T. Minn.
- ✓ 6056 Shows white weatherings in 6055
- 6057 Near center 24-65-7 T. Minn.
- 6058 From last Bay near the outlet of Knife Lake
- 6059 Slate East end Tucker portage Canada (National Boundary)
- 6060 Near middle of Sucker Lake
- 6061 " " " " " " " "
- 6062 Sec. 36-65-9 T. Minn. Basswood Lake " "
- 6063 " 2-64-9 " " " " "
- 6064 2 " " " " " " "
- 6065 S. $\frac{1}{4}$ 35-65-9 T. Minn. " "
- 6066 From a band in 6065
- ✓ 6067 S.E. $\frac{1}{4}$ 32-65-9 T. Minn.
- 6068 9-64-10 T. " "
- ✓ 6069 From Canadian side of Basswood opp. Sec. 5, T. 64, R. 9 T. Minn.
- 6070 " " " " " " N.E. from 2-64-9 T. " "

stored in
Box No.

221

Note Book Page

25

7

33

Recomposed Granite

7

33

7

34

Calcite magnetite chlorite.

7

35

Graywacke conglomerate.

7

37

7

39

Graywacke.

7

40

7

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Calcite

25

7

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Basic Recompoused Rock.

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42

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Siliceous Slate

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45

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25

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45

Pyritiferous siliceous schist.

7

46

Aphanitic clay-slate.

7

46

Slate

25

7

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Fine grained Basic Recompoused R.

7

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Between Knife and Basswood Lakes

8

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Granite.

25

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Granite

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5

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5

- 6071 Sec. 1. T. 64, R. 9, N. Minn
- 6072 From Canadian shore opp. 2-64-9 N. Minn
- ✓ 6073 " " " " " " " " " " " "
- ✓ 6074 " " " " " " " " " " " "
- 6075 At meander corner between Secs 11th & 12 - 65-7 N.
- 6076 S. N. 1/4 32-66-6 N. Minn. at Otter Track Lake
- 6077 East end of small lake center 24-66-6 N.
- 6078 West shore Saganaga 24-66-6 N. Minn
- 6079 " " " " " " " " " " " "
- 6080 S.E. of S.E. 24-66-6 N.
- 6081 From Saganaga lake 1 mile north of outlet that runs to Cypress
- ✓ 6082 " " " " 2 " N.E. " " " " " " " "
- ✓ 6083 " " " " 2 " " " " " " " " " "
- 6084 N. N. shore Saganaga lake
- 6085 " " " " " " " " " " " "
- 6086 " " " " " " " " " " " "
- ✓ 6087 " " " " " " " " " " " "
- 6088 N. N. corner 22-66-5 N. Minn.
- 6089 33-66-5 " " " "
- ✓ 6090 On N. shore of S. N. arm of Saganaga on line between 4th & 5 - T. 65, R. 5 W.
- ✓ 6091 Sec 7-65-5 N. on an island in Island Lake
- ✓ 6092 On the N and S. line between 7 and 8 - 65-5 N.
- 6093 Meander post between 17th & 18 - 65-5 N. on West Gull Lake
- 6093a Half way between Gishke-Muncie and Prouline lakes
- ✓ 6094 N. N. 1/4 12-65-6 N. Minn.
- 6095 From island in Sea Gull Lake at witness cor. on line between 10th & 11
- ✓ 6096 From N.E. cor. of bay on east side of outlet to Sunflint Lake, Canada
- 6097 " South side " " " " " " " " " " " "
- 6098 " " " " " " " " " " " " " "
- 6099 " Long point between above bay and second narrow bay to the S.
- ✓ 6100 " " " " " " " " " " " " " "
- 6101 " " " " " " " " " " " " " "
- 6102 Overlies 6101
- 6102a " 6102
- 6103 Above 6102a
- 6104 South side of above point
- 6104a Below 6104

	Stored in Box No.	Photo No.	Note Book f	Page
Epidotie hornblende schist (?)			f	7
Calcutie chert.			f	7
Granite	25		f	7
Mica schist or gneiss (doubtful)	25		f	7
			f	8
			f	8
Graywacke.			f	9
			f	9
			f	9
			f	9
			f	10
	26		f	11
Fine grained Altered Diabase.	26		f	11
(Calcutie and Quartzite)			f	11
			f	12
			f	12
	26		f	12
			f	13
			f	13
			f	13
	26		f	13
	26		f	13
			f	13
			f	14
Greywacke ?	26		f	15
			f	18
Granite	26		f	19
Typical Jasper (Oxyferrous)			f	20
			f	20
			f	20
Magnetic chert or fine grained Quartzite	26		f	20
			f	20
Fine grained Magnetitic Quartzite.			f	21
			f	21
Chert.		578	f	21
			f	21
			f	21

- 6104⁵ From near east end of above point
- 6105 " East side narrows between Gunflint Lake and the N.H. arm
- ✓✓ 6106 Near 6100
- 6107 From N. shore main Gunflint Lake near narrows
- 6108 From end of point near center 30-65-3⁴ Minn
- ✓ 6109 " corner between Sects. 29, 30, 31, 32, N. 65- R. 3⁴ Minn
- 6110 " " " " " " " " " " " "
- 6111 " " " " " " " " " " " "
- 6112 " " " " " " " " " " " "
- 6113 " " " " " " " " " " " "
- 6114 " " " " " " " " " " " "
- 6115 North side Gunflint about $\frac{1}{2}$ mile east of narrows
- 6116 Same place as 6115
- ✓ 6117 " " " " " " " " " " " "
- 6118 N. H. of S. H. 24-65-3⁴ Minn.
- 6119 North shore Gunflint opp. 27-65-3⁴
- ✓ 6120 " " " " " " " " " " east of 6119
- ✓ 6121 S.E. of N. H. 35-65-3⁴ Minn.
- ✓ 6122 " " " " " " " " " " " "
- 6123 " " " " " " " " " " " "
- ✓ 6124 " " " " " " " " " " " "
- ✓ 6125 " " " " " " " " " " " "
- 6126 S.E. of N.E. " " " " " "
- ✓ 6127 N.E. of S.H. 36 " " " " " "
- 6128 S.E. of S.H. 36 " " " " " "
- 6129 S.E. " S.E. 36 " " " " " " Near N.E. cor. of 116
- ✓ 6130 " " " " " " " " " " " "
- 6131 " " " " " " " " " " " " near S.H. cor of 116
- 6132 S.H. .. S.E. 32-65-2⁴ ..
- 6133 West end of Chon Lake Minn
- ✓ 6134 N. shore Gunflint, north of line between 23rd and 24-65-3⁴ Minn
- 6135 Underlies 6134
- 6136 " 6135
- 6137 " 6136
- 6138 " 6137
- 6139 Same place as 6134
- 6140 " " " " " "

stored in
Box no.

225

Photo no.	Note Book	Page
f		21
f		21
26	f	22
	f	22
	f	23
26	f	25
	f	25
	f	25
	f	25
	f	26
	f	26
	f	28
	f	29
26	f	29
	f	31
	f	33
26	f	33
26	f	37
26	f	37
	f	37
26	f	38
26	f	38
	f	38
26	f	39
	f	39
	f	41
26	f	41
	f	41
	f	42
	f	42
26	f	45
	f	45
	f	45
	f	45
	343, 564 340, 565	45
	f	45
	f	45

Cherty dolomite.

of Gunflint Lake

Slate

Overlying 6109nd and 6110 Altered Biotite and Chloritic
" 6111 Diabase.

The overlying greenstone Altered biotite hornblende
Cherty dolomite. Diabase.

Schist

Gabbro

Slate

Banded fine grained Siliceousⁿ clay slate.
Slate

Biotitic Gabbro.

Altered Gabbro. (Hornblende)

Gabbro (coarse)

Dolomitic Chalcidony and Chert.

- 6141 From just east of 6134
 6142 " " " " "
 6143 " island in N. bay of North Lake
 6144 Long point S. shore of North Lake in 16-65-2^d Minn.
 6145 North shore North Lake opp. line between 26th and 27-65-2^d
 6146 " " " " " " " " " "
 6147 " " " " " " " " " "
 ✓ 6148 One mile N.E. of a point on shore of North Lake 3 mi from its N. end
 6149 Same place as 6148
 6150 Iron bluff near 6148
 6151 " " " "
 ✓ 6152 North side of central bay on Canada side of Gunflint Lake
 ✓ 6153 " " " " " " " " "
 ✓ 6154 Quartzite from north shore Gunflint
 ✓ 6155 Greenstone from small island N. side Gunflint
 6156 On portage half way between Mountain and Clearwater Lakes
 6157 North shore Clearwater Lake S.E. of N.E. 27-65-1 E. Minn.
 ✓ 6158 Near center 27-65-1 E Minn.
 6159 below 6158
 6160 Slate from contact with 6159
 6161 " directly under 6160
 6162 below 6161
 6163 " 6162
 6164 " 6163
 ✓ 6165 " 6164
 6166 Slate from beds 6161 and 6165
 ✓ 6167 S.E. of S.E. 6-64-3 E. Top of Cliff
 6168 Grades into 6167 above
 6169 Vein in 6168
 ✓ 6170 Directly beneath 6168
 6171 " " 6170
 6172 Slate bed below 6171
 6173 From bottom of 6172
 6174 Quartzite from same cliff as 6167-68 etc.
 ✓ 6175 South side McFarland's Lake, low shore, E $\frac{1}{2}$ 4-64-3 E
 6176 Partridge Falls, Pigeon Riv. Minn.
 6177 " " " " "

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Page

Chloritic chert		8	46
		8	48
Chert and chalcedony.		8	48
		8	48
Diabase (fine-grained)		8	49
		8	49
Granite	26	8	50
		8	50
		8	51
		8	52
		8	54
Slate	26	8	54
	26	8	54
Porphyritic Diabase?	26	8	54
		9	2
		9	2
Gabbro?	26	9	4
		9	4
		9	4
		9	4
Siliceous Slate.		9	4
		9	4
		9	4
Slate	26	9	4
		9	4
Gabbro?	26	9	7
		9	7
		9	7
		9	8
	26	9	8
		9	8
		9	8
		9	9
Chloritic and Biotitic Diabase.	26	9	9
		9	10
		9	10

6178 Just below Partridge Falls. Pigeon Riv.

6179 " " " " " "

6180 " " 6177

6181 Top of dike just S. of Pigeon Riv. Near mouth of Poplar Cr.

✓ 6182 Similar to 6181, taken in gorge at water level

6183 Calcite rock from between 6181 and slate beds

6184 Rock from top of dike (6181)

6185 Quartzite near contact with dike

6186 Rusty layers " " " "

6187 From the slate near dike (6181)

6188 " " " " " "

6189 " " " " " "

6190 West end Partridge portage in river bed

6191 Sec. 29 T65 R14 Minn

6192 " " " " " "

6193 " " " " " "

Specimens illustrating crystalline rocks of

No.	1/4	Sec.	T	R.	Slate	Remarks copied from Roman
✓ 6194	NW	29	49	25	Minn	
✓ 6195	NW	29	49	25	"	between slides
✓ 6196		31+32	49	25	"	Near 1/4 post.
✓ 6197		34	49	25	"	Partridge Island.
✓ 6198		34	49	25	"	N. side Partridge Island.
✓ 6199		34	49	25	"	Partridge Island
✓ 6200	SE SE	32	49	26	"	
✓ 6201		36	49	25	"	SE side Presq Isle Dyke
✓ 6202	NW NE	36	49	26	"	625 steps from the corner. Dyke
missing 6203		1	48	25	"	Granite from Island near Presq' Isle.
6204		2	"	"	"	Island
o 6205		"	"	"	"	Island
✓ 6206		"	"	"	"	Magnetic dyke.
✓ 6207	SE. SW.	3	"	"	"	Dyke.
✓ 6208	SE	"	"	"	"	Diabase interposed between the
✓ 6209	SE, SE.	"	"	"	"	
✓ 6210	SE SE	"	"	"	"	
✓ 6211	NE NE	"	"	"	"	

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11/11

Dolomitic siliceous slate.

Michigan presented by Dr C. Rominger, March, 1885.

ger's labels.

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2.

granite

No.	1/4	Sec.	T.	R.	State	Remarks copied from Rominger
6212	NE. SE.	4	48	25	Mich	Highly magnetic dyke.
6213		"	"	"	"	" Identical with a basiferous dyke.
6214		"	"	"	"	Dyke; near shore. no. 4.
6215	NE SE	"	"	"	"	Granite close to dyke.
6216		5	"	"	"	Dyke no. 4.
6217	SW SW	"	"	"	"	
6218	SW SW	"	"	"	"	
6219	SW SW	6	"	"	"	
6220		7	"	"	"	E. of Bancroft's furnace building.
6221		"	"	"	"	Northeast corner.
6222		"	"	"	"	Bancroft's Furnace. ^{Band parallel to granite} both intersected by diorite
6223	SW SW	8	"	"	"	
6224	SW SW	"	"	"	"	
6225	SW SW	9	"	"	"	
6226	NE. NE.	10	"	"	"	
6227	SE, NE.	"	"	"	"	
6228	SE NE	"	"	"	"	
6229	SW, SW	"	"	"	"	
6230	SE, NE.	"	"	"	"	
6231	NE SW	"	"	"	"	
6232	SE NE	"	"	"	"	
6233	SE NE	"	"	"	"	
6234	SE NE	"	"	"	"	
6235		11	"	"	"	Mouth of Dead River.
6236	SW SW	"	"	"	"	Slaughterhouse Riedingers
6237	SW SW	"	"	"	"	
6238		13	"	"	"	
6239	SW	"	"	"	"	
6240		"	"	"	"	Pic Nic Islands, Marquette
6241		"	"	"	"	" " "
6242		15	"	"	"	Subordinate seams.
6243		15 & 16	"	"	"	Intrusive dyke attached to granite
6244		"	"	"	"	Dyke enclosing granite fragment
6245		"	"	"	"	Basaltic dyke.
6246		"	"	"	"	Line between the two sections
6247	SE. SE	16	"	"	"	

labels.

dyke.

dyke.

25 feet wide
granite.

granite and
dyke.

the

rock on

rocks

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No.	1/4	Sec.	T	R.	State	Remarks copied from Rominger's
6248		16	48	25	Mich.	
6249	SE.	"	"	"	"	Granite.
6250	SE. SE.	"	"	"	"	
6251	SE SE	"	"	"	"	
6252		"	"	"	"	Diorite obscurely stratified south of
6253	SE	"	"	"	"	
6254	NE	"	"	"	"	In fork of creek. Dyke in granite.
6255	SE SE	"	"	"	"	Dyke
6256	SE SE	"	"	"	"	Band of granite in massive diorite.
6257	NE	18	"	"	"	Stones Mill. Dyke.
6258	NE NE	20	"	"	"	
6259	NE.	"	"	"	"	Dyke intersecting granite
6260	NE NE	19	"	"	"	
6261	NE	"	"	"	"	
6262	NE SE	20	"	"	"	
6263		23	"	"	"	Gulf Island, Marquette. Dyke
6264		"	"	"	"	Granite. Marquette city.
6265		"	"	"	"	" " Michigan
6266		"	"	"	"	Marquette. Mouth Whetstone Creek.
6267		"	"	"	"	" " " "
6268		"	"	"	"	" Michigan Street
6269		"	"	"	"	" " "
6270		"	"	"	"	" Northwestern Hotel.
6271		24	"	"	"	Marquette Lighthouse Aug. tie app.
6272		"	"	"	"	" " Dyke of granite
6273		"	"	"	"	" " Dyke
6274		"	"	"	"	Dyke near sawmill Marquette Lumber Co.
6275		"	"	"	"	" " " "
6276		28+21	"	"	"	1/4 post between sections
6277		"	"	"	"	1/4 post between the sections
6278		28+29	"	"	"	Line " " "
6279	SE	29	"	"	"	Travertine on N. side of quartzite in SE.
6280		2	"	26	"	South line
6281	SW NE	"	"	"	"	
6282	SW SE	4	"	"	"	
6283	SE SE	5	"	"	"	

labels

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granite bands

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schist

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granite

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street

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with diorite

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schists

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schists

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Co.

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No.	1/4	Sec.	T.	R.	State	Remarks copied from Rominger's table
6284	SE NW	8	48	26	Mich	Novaculitic schists
6285	NE SE	9	"	"	"	
6286	NW SE	13	"	"	"	
6287	NW NW	14	"	"	"	
6288	NW NE	15	"	"	"	Belt in granite.
6289	SE NW	20	"	26	"	Intersected by dyke
6290	NE NW	"	"	"	"	
6291	SW NW	23	"	"	"	Magnetic dyke.
6292	SW NW	25	"	"	"	on section line. Close to road
6293	SW NW	"	"	"	"	on sect line
6294		27	"	"	"	NE corner
6295	SE SW	30	"	"	"	(H.)
6296	SE SW	"	"	"	"	
6297	NW 1/2	3 1/2	"	"	"	
6298	NE	"	"	"	"	Quartzite schist below quartzite
6299		1+2	"	"	"	Line between sections. 734 steps
6300		1+2	"	"	"	2000 ft. of 1/4 p. between sects.
6301	SW NE	1	"	27	"	"Holsike"
6302	NW	"	"	"	"	
6303	NE SW	21	"	"	"	
6304		22	"	"	"	580 steps E. of NW corner
6305	SW SE	29	"	"	"	Dyke
6306	NW SW	31	"	"	"	Magnetic
6307		19 or 30	"	30	"	Michigamme, above actinolitic
6308	SW	29	"	"	"	Mica schist formation
6309		33	"	"	"	Lake Michigamme. Manitowish
6310		"	"	"	"	" Mica schist
6311		"	"	"	"	" Goat Island.
6312		"	"	"	"	" " "
6313		"	"	"	"	" Mica schist
6314		"	"	"	"	" Devil's Island
6315		24	"	31	"	Spur Mine below ore formation
6316		24	"	"	"	" " " "
6317		18	"	—	"	massive quartzite ^{red gneiss} ^{bagged} ^{Michigamme} ^{actinolitic} (No range given.)
6318	NW NW	1	47	25	"	
6319		1	"	"	"	Interposed seam between granite

labels.

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road

port.

schist

and the
above
schist.

parallel to strike

No.	1/4	Sec	T.	R	State	Remarks copied from Rominger
6320		1	47	25	Mich	Schist dip south at south end of
6321		14	2	"	"	South of northern township line.
6322	NE	2	"	"	"	NE corner
6323		2	"	"	"	
6324		36	"	28	"	Granite
6325	NE SE	4	"	26	"	
6326	NE NE	6	"	"	"	
6327	NE NE	"	"	"	"	
6328		7	"	"	"	Megaunee Hematite Mines
6329	NE	15	"	"	"	
6330	SE	30	"	"	"	
6331	SE NE	31	"	"	"	
6332	NE NE	1	"	27	"	(X)
6333		"	"	"	"	S 1/4 post
6334		2	"	"	"	NE corner. Dioritic schist
6335	NE SE	3	"	"	"	
6336	NE SE	"	"	"	"	
6337		"	"	"	"	Lake Bancroft
6338	SE SE	4	"	"	"	" " near
6339	NE SE	5	"	"	"	
6340	SE	"	"	"	"	S 1/2 of 1/4. Next above dioritic schist
6341	NE SE	"	"	"	"	
6342	SE	"	"	"	"	S 1/2 of 1/4
6343	SE 1/4	6	"	"	"	Hanging wall Excelsior Mine
6344		"	"	"	"	" " " "
6345		"	"	"	"	Quartzite connected with ore bed of
6346		"	"	"	"	Iron ore fading into sandrock
6347		"	"	"	"	With quartz veins in diorite
6348	SE NE	12	"	"	"	
6349		13	"	"	"	NE corner
6350	SE	21	"	"	"	rrd. bridge across
6351		36	"	28	"	Diorite from granite regions
6352		11	"	29	"	S. of Washington Mine. flags + garnet
6353		7	46	"	"	In contact with granite S.
6354		"	"	"	"	Next to Granite S of Republic
6355		"	"	"	"	Near hotel In contact with gneiss

labeled

crop

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10 yds. decomp.
parts

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Knob

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rocks

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Chloritic schist

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collecting ferrug.
rock

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Republic

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Actinolite
with red
ores

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No.	1/4	Sec	T	R	State	Remarks copied from Rominger
✓ 6356	SE	7	43	31	Mich	
6357	st st	32	"	"	"	
6358	st st	30	41	30	"	
6359	st st	"	"	"	"	
6360	st st	"	"	"	"	
6361		15	"	31	"	Center of st 1/4
6362		16	"	"	"	Mouth of Michigan River.
6363	SE NE	17	"	"	"	
6364	SE NE	"	"	"	"	
6365	SE NE	"	"	"	"	
6366	SE NE	"	"	"	"	
6367	SE NE	"	"	"	"	
6368	SE NE	"	"	"	"	
6369	SE NE	"	"	"	"	
6370	SE NE	"	"	"	"	
6371	SE NE	"	"	"	"	
6372	NE SE	"	"	"	"	
6373	NE SE	"	"	"	"	
6374	SE SE	23	"	"	"	
6375	SE SE	"	"	"	"	Diabase dyke.
6376		12	"	32	"	
6377		"	"	"	"	Below mouth of Taint River
6378		"	"	"	"	" " " "
6379		"	"	"	"	" " " "
6380		"	"	"	"	" " " "
6381		"	"	"	"	" " " "
6382		"	"	"	"	" " " "
6383	NE	16	40	18E	Wis	
6384	NE	"	"	"	"	
6385	st st	9	"	30	Mich	
6386	SE	12	"	31	"	Lower Twin Falls, schistose
6387		13	"	"	"	1/2. Above R.R. bridge - Sp. No. 2
6388		11	39	19	Wis	R.R. cut
6389	st st	6	"	28	Mich	
6390		26	"	29	"	Surgeon River, Falls of M.
6391		8	"	28	"	" River " , Below

ingering labels.

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Nr. 7

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bride

Marion. River.

low with conglomerate.

No.	1/4	Sec	T	R	State	Remarks copied from Rominger
6392		8	39	28	Mich	Sturgeon River Falls. Next to q
6393		"	"	"	"	" " " , below. m
6394		"	"	"	"	" " " with granite
6395		"	"	"	"	" " " conglomerate
6396		"	"	"	"	" " " granite.
6397		"	"	"	"	" " " , above. dy
6398		"	"	"	"	" " " with granite
6399		"	"	"	"	" " "
6400		"	"	"	"	" " " quartzite
6401		26	"	29	"	Sturgeon Falls of Menom. Riv
6402		26	39	29	"	Sturgeon Falls of Menominee Riv
6403	NE 1/4	26	"	29	"	"
6404	SW 1/4	"	"	"	"	With serpentine.
6405	SE 1/4	35	"	"	"	"
6406	SE	"	"	"	"	"
6407		8	"	30	"	Upper Quinnesec Falls, Rapids
6408		"	"	"	"	" " "
6409		"	"	"	"	" " " , below
6410		"	"	"	"	" " "
6411		"	"	"	"	" " "
6412		"	"	"	"	" " " , rapids
6413		"	"	"	"	" " "
6414		"	"	"	"	" " "
6415		"	"	"	"	" " "
6416		"	"	"	"	" " "
6417		"	"	"	"	" " "
6418		"	"	"	"	" " "
6419		"	"	"	"	" " "
6420		"	"	"	"	" " " , 1/2 mile S. of
6421		"	"	"	"	" " " SW. of
6422		"	"	"	"	" " " S. of. gran
6423		14	"	"	"	Lower Quinnesec Falls.
6424		"	"	"	"	" " "
6425		"	"	"	"	" " "
6426		"	"	"	"	" " "
6427	SW 1/4	16	38	28	"	"

Labels.	
to gran.	30
glommate.	30
	31
	31
	31
5 feet wide.	31
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above	31
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above	31
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Inclining granite	31
	31
near indurite	31
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	31
	31
	31

No.	1/4	Sec	T	R	State	Remarks copied from Rominger
✓ 6428	SE NE	20	38	28	Mich	Quiver Falls, Menom. Riv. 3/4 mi
✓ 6429	SE NE	"	"	"	"	" " " "
6430		30	"	"	"	Quiver Falls Menom. Riv. S.W. end
6431		"	"	"	"	" " " " " "
6432		"	"	"	"	" " " " 3/4 mile
6433		"	"	"	"	" " " "
6434		16	37	28	Mich	Cemence Falls.
6435		"	"	"	"	" "
6436		"	"	"	"	" "
6437		"	"	"	"	" "
6438		"	"	"	"	" "
6439		"	"	"	"	" "
6440		"	"	"	"	" " above
6441		"	"	"	"	" " "
6442		"	"	"	"	" " 3/4 mile above
6443		"	"	"	"	" " " " "
6444		"	"	"	"	" " below Newong
6445						Falls of Michigamme
6446						Negaunee dykes.
6447						Menomonee River
6448						Island n. of Brigg Isle ^{Granite}
6449						Island n. of Brigg Isle ^{Granite}
6450						Michigamme above actinolite.
6451			51	31	Mich	Slate River, calcar. ferrug. rock belt
6451a			"	"	"	" " " " " "
6452			51	"	"	Slate Creek. Interlaminated with
6453			"	"	"	Slate River. Calcar. ferrug. rock belt
6454	SE, NW	36	43	35	Mich	
6455			51	31	"	Slate River. Calcar. ferrug. rock belt
6456			"	"	"	Slate Creek, interstratified with
6457		28	"	"	"	Roofing slate, Huron Bay.
6458			51	31	Mich	Gray quartzite, n. of calcar. ferrug. rock belt of Slate River
6459			"	"	"	Slate River, calcar. ferrug. rock belt
6460			"	"	"	" " " " " "
6461			"	"	"	Slate River. Jasper beds above calcar. ferrug. rock belt
6462			"	"	"	Slate with a vertical zigzag fissure filled by quartz

Labels

of

and Island

" "

of

Island
River

to dyke in
of the granite
dyke. Inclining
of the granite.

belt

"

roofing slate

belt

belt

roofing slate

iron bay

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	1/4	Sec.	T.	R.	State.	Remarks copied from Rominger
6463			51	31	Mich.	Slate River, west north of Calcan. ferrug.
6464			"	"	"	Slate River, Huron Bay.
6465			"	"	"	" " " "
6466			"	"	"	" " " "
6467			51	32	Mich.	Silver Creek slate formation Dip north
6468			"	"	"	" " " " near Indian
6469			"	"	"	" " " " Dip north
6470			48	27	"	Talc from limestone quarry of Du
6471 NW 1/4	28	"	"	"	"	
6472 " "	"	"	"	"	"	
6473 NW 1/4	28	48	27	Mich.		
6474 " "	28	"	"	"		
6475	"	"	"	"		
6476	"	"	"	"		
6477 NW 1/2	31	48	28	Mich.	Black slate.	
6478						
6479	31	48	29	Mich.	Champion Mine. Chloritoid	
6480	"	"	"	"	Tourmaline, Champion mine	
6481	"	"	"	"	Schist below quartzite, Keystone mine	
6482	"	"	"	"	With ore belt. Keystone mine.	
6483	48	30	31	Mich.	Slates above amphibolite bds, Michigamnee near P. R. track.	
6484	"	"	"	"	Michigamnee, above actinolite.	
6485 NE 1/4	36	"	30	"	East end of Lake Michigamnee	
6486	"	"	"	"	Goat Island, Lake Michigamnee	
6487	"	30	31	"	On railroad track west of Michigamnee village	
6488	"	30	"	"	Lake Michigamnee, Goat Island	
6489	"	"	"	"	" " " "	
6490	"	"	"	"	Michigamnee.	
6491	"	"	"	"	Base of ore formation, Michigamnee	
6492	19	"	"	"	Quartzite, Michigamnee	
6493	"	"	"	"	Actinolite, Michigamnee.	
6494	"	"	"	"	Manitou Island in Michigamnee Lake	
6495	"	"	"	"	Goat Island, Michigamnee.	
6496	24	"	31	"	East of Spurr Mine, subordinate to	
6497	"	"	"	"	Spurr Mine; actinolite schist; n. of ore	
6498	"	"	"	"	" " beneath iron ore formation	
6499	"	"	"	"	Spurr Mine, Hanging wall.	
6499a	24	48	31	Mich.	Spurr Mine. Hanging wall.	

Labels
rock belt

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Lake furnace.

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igamnee

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mine

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hornblende schist

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actinolite

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belt

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6500 From islands 2 miles N.W. of Thessalon point, Canada

6501 " " 3 1/2 " " " " " "

✓ 0 6502 " " 3 1/2 " " " " " "

6503 Quartzite from mainland N. by N. from above islands

✓ 0 6504 " " " 1/2 mile N. of 6503

✓ 0 6505 " " " 4 1/2 " N.W. by N. from Thessalon Point

6506 Conglomerate between beds of 6505

✓ 0 6507 Dike cutting 6505

6508 Larger dike parallel to 6507 cutting 6505

6509 Quartzite, mainland S. side E. point, Bruce Mine bay

✓ 0 6510 Greenstone forming islet short distance N. of 6509

6511 Greenstone " " off Eagle Point near Bruce Mines

6512 Dike from islet 150 feet S. of 6511

✓ 0 6513 West end of " " " " " "

6514 " " " " " " " " " "

6515 " " " " " " " " " "

✓ 0 6516 " " " " " " " " " "

6517 " " " " " " " " " "

6518 " " " " " " " " " "

6519 " " " " " " " " " "

6520 Quartzite from same islet 10 feet from nearest dike

6521 Dike on last mentioned islet

6522 From middle of dike 6521

✓ 0 6523 " S. edge " " "

6524 Quartzite from between 2 dikes same islet

6525

6526 } Taken in order across a 20 inch space between two

6527 } dikes 6525 and 6528 being in contact with dike

6528

6529 Showing contact at last mentioned place

6530 Greenstone E. side Bruce Mine bay

6531 Granitoid Vein cutting 6530

6532 Greenstone E. side Bruce Mine bay

6533 " " " " " "

6534 " " " " " "

6535 Slate near old Bruce Mine (loose)

[illegible]

- ✓ 6536 Greenstone from French Island Point
 6537 Limestone, mainland 1 mile west of French Islands
 6538 " " " " " " "
 6539 " " " " " " "
 6540 " " " " " " "
 ✓ 6541 " " " " " " "
 6542 " " " " " " "
 6543 }
 ✓ 6544 }
 6545 }
 ✓ 6546 } Collected along the coast for 3 miles N. of 6537
 ✓ 6547 }
 6549 }
 6550 }
 6551 Island off N.W. corner of Campement d'Aurs Island
 ✓ 6552 " " " " " " "
 6553 North east side of " " "
 6554 East coast " " "
 6555 Quartzite, S.E. side of " " "
 ○ 6556 " From St. Joseph's Island opp. S.W. side Campement d'Aurs
 6557 Phase of 6556
 ✓ 6558 Quartzite on west side Campement d'Aurs
 6559 Slate immediately overlying 6558
 6560 Slate conglomerate N. side Campement d'Aurs
 6561 Potsdam overlying 6560
 ✓ 6562 " near top of hill overlying 6560
 ✓ 6563 Slate, small island N.W. of Campement d'Aurs
 6564 }
 6565 } Selected in order from east to west from 6568 to
 ✓ 6566 } near McLennan's Landing
 6567 }
 6568 Greenstone from first island E. of first point E. of McLennan's Landing
 6569 Granite $\frac{2}{3}$ mile E. of McLennan's Landing
 ✓ 6570 " " " " " "
 ✓ 6571 Quartzite $\frac{1}{2}$ " West of 6570
 6572 " from McLennan's Landing
 6573 From islet $\frac{1}{4}$ mile off shore a short distance N. of McLennan's

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6574 Loose fragments on mainland of 6573

6575 From a boulder on French Island Point, Bruce Mine bay
C. R. Vanhise, Canada east ofault St. Marie Aug 1883.

6576 Quartzite, near N. E. cor. Sec. 25 Township MacDonald Canada

6577 " " " " " " " " " "

6578 " " " " " " " " " "

6579 " interstratified with 6576-77-78 " "

6580 " about 60 yds east of 6576 T. of Merrieth " "

6581 " interstratified with 6580

6582 " " " " " " " " " "

6583 From below 6581-82

6584 " Base of exposure

6585 250 feet N. W. of 6576 Town MacDonald, Canada

6586 about 50 yds. S. of E. of N. W. corner S. 30 " Merrieth " "

6587 " " " " " " " " " "

6588 " " " " " " " " " "

6589 " " " " " " " " " "

6590 " " " " " " " " " "

6591 " 160 " S. of N. W. post Sec. 30 " " " "

6592 " " " " " " " " " "

6593 White quartzite

6594 Interstratified with 6595

6595 N. W. 1/4 Sec 31 Town of Merrieth, Canada

6596 Near outlet of Small Lake S. W. 1/4 Sec. 31, T. of Merrieth, Canada.

6597 " " " " " " " " " "

6598 " " " " " " " " " "

6599 " " " " " " " " " "

6600 " " " " " " " " " "

6601 Near road in S. E. 1/4 of N. E. 1/4 Sec. 25 T. of MacDonald " "

6602 " " " " " " " " " "

6603 " " " " " " " " " "

6604 about 1/2 mile from mouth of Echo river near Bruce Mine road

6605 Quarry 3 miles N. E. of Echo Lake

6606

6607 About 1/2 mile N. of Echo River on Bruce Mine Road, Canada

6608 " " " " " " " " " "

6609 Slate from high bluff half way between Echo and Garden Rivers on Bruce

6610 " " " " " " " " " "

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Uline Road

6611 Same place as 6609

6612 Shows transition between 6609-10-11 and 6613

✓ 0 6613 Interstratified with 6609-10-11

6614 From Victoria silver mine about 9 miles N. of mouth of Garden Riv. Canada

0 6615 " " " " " " " " " " " "

6616 " " " " " " " " " " " "

6617 " " " " " " " " " " " "

6618 " " " " " " " " " " " "

6619 Hall rock Victoria mine

6620 Near rich part of vein Victoria mine

✓ 0 6621 A few feet further from vein than 6620

6622 " " " " " " " " " " " "

6623 50 feet from vein

✓ 0 6624 E. end of small lake $\frac{3}{4}$ mile south of Victoria mine

6625 Veins in 6624

✓ 0 6626 Shows contact between 6624 and 6625

✓ 0 6627 " " " 6624 and a greenstone dike

✓ 0 6628 near center of dike

6629 Greenstone from dike 400 yds north of 6628

✓ 0 6630 " " " 6629 30 feet from contact with gneiss

6631 Near Gros Cap

✓ 0 6632

6633 R. R. Vanhise Marquette region Aug. 1883
From test pit N. $\frac{1}{4}$ S. $\frac{1}{4}$ Sec. 9-47-27 T. Mich. (loose)

6634 " " " " " " " " " " " "

✓ 0 6635 " " " S. $\frac{1}{4}$ S. $\frac{1}{4}$ " " " " " "

✓ 6636 " S. $\frac{1}{4}$ N. E. $\frac{1}{4}$ 16-47-27 T. Mich.

✓ 6637 R. R. cut S. $\frac{1}{4}$ of N. E. 16-47-27 T. Mich.

✓ 6638 West of small lake near Barren Mine, Mich.

✓ 0 6639 Greenstone S. $\frac{1}{4}$ of N. $\frac{1}{4}$ 24-48-31 T. Mich.

✓ 0 6640 Short distance S. E. 6639

✓ 6641 Phase of 6640

6642 Short distance S. E. of 6640

✓ 6643 " " " " "

✓ 6644 " " S. " 6642 N. $\frac{1}{4}$ of S. $\frac{1}{4}$ 24-48-31 T. Mich.

✓ 6645 " " " " 6642 " " " " " "

6646 " " S. $\frac{1}{4}$ " 6644

✓ 6647 " " S. E. " 6646

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- 6648 20 feet N. of foot wall of mine a short distance S. E. of 6647
- ✓ 6649 N. wall of mine
- ✓ 6650 Hanging wall of same mine
- ✓ 6651 " " " " " "
- ✓ 6652 2 feet from ore on S. wall; 6650-51 grades into it
- ✓ 6653 Conglomeratic schist 6652 grades into it
- ✓ 6654 " quartzite 6653 " " "
- ✓ 6655 Lean ore
- 6656 Rich ore
- ✓ 6657 Dump pile
- ✓ 6658 " " " "
- ✓ 6659 Chlorite pseudomorphs
- 6660 Rich ore from the Wetmore or Barn Mine N. $\frac{1}{2}$ of N. $\frac{1}{4}$ 25-48-31 N.
- ✓ 6661 Lean " " " " " "
- 6662 From S. side of workings " "
- 6663 Near center of N. line of N. $\frac{1}{4}$ 20-48-30 N. Mich
- ✓ 6664 Greenstone dike cutting 6663
- ✓ 6665 About 400 feet south of 6663
- ✓ 6666 A few feet south of 6665
- ✓ 6667 " " " " " "
- ✓ 6668 Near 6666
- ✓ 6669 " " " "
- 6670 700 feet S. of 6665
- ✓ 6671 Cuts 6670
- ✓ 6672 Shows contact between 6670 and 6671
- ✓ 6673 100 feet S. of 6670 N. $\frac{1}{2}$ cor. S. $\frac{1}{4}$ 20-48-30 N. Mich.
- ✓ 6674 Greenstone bluff near 6673
- ✓ 6675 " " 300 feet south of 6674
- ✓ 6676 " N.E. $\frac{1}{4}$ S.E. $\frac{1}{4}$ 19-48-30 N. Mich.
- ✓ 6677 " N. $\frac{1}{2}$ of S.E. " " " "
- ✓ 6678 10 feet N. of footwall of Michigamni Mine Mich
- ✓ 6679 Footwall of " " "
- ✓ 6680 West end of pit cuts out the ore
- ✓ 6681 Hanging wall Michigamni Mine, Mich
- ✓ 6682 2 feet from 6681
- ✓ 6683 A few feet south of 6682
- ✓ 6684 From dump pile Michigamni Mine

[illegible]

