

- Phyciodes Tharos*, Dru. Devil's Portage, Lower Liard (long. $126^{\circ} 10'$), July 15, McConnell.
- Phyciodes Pratensis*, Behr. Upper Liard River (lat. 60°), June 26.
- Grapta Faunus*, Edw. Fifty miles below Forty-mile Creek, Pelly or Yukon River, August 7, 1888, McConnell.
- Grapta Progne*, Cram. Lewes River (lat. $61^{\circ} 55'$), August 27.
- Thecla Irus*, Godt. Telegraph Creek, Stikine River, May 29; Cassiar Trail, twenty-two miles east of Telegraph Creek, June 1.
- Chrysophanus Helioides*, Bd. Upper Pelly River (lat. $62^{\circ} 40'$, long. $134^{\circ} 30'$) August 7.
- Lycæna Serpiolus*, Bd. Devil's Portage, Lower Liard (long. $126^{\circ} 10'$), July 17, McConnell; Finlayson Lake, July 25.
- Lycæna Couperii*, Grote. Telegraph Creek, Stikine River, May 31; Cassiar Trail, thirty miles west of Dease Lake, June 2; Cassiar Trail, ten miles west of Dease Lake, June 4; Dease Lake, June 5; Devil's Portage, Liard River (long. $126^{\circ} 10'$), July 13, McConnell; Upper Liard River (lat. 60°), June 26; Frances River (lat. $60^{\circ} 29'$), July 1.
- Lycæna Shasta*, Edw. Upper Pelly River (lat. $61^{\circ} 50'$, long. 132°), August 3; Lewes River (lat. $62^{\circ} 20'$), August 21.
- Lycæna Pseudargiolus*, Bd. Lec.; winter form (1) *Lucia*, Kirby. Dease Lake, June 4; Dease Lake, June 8.
- Lycæna Pseudargiolus*, Bd. Lec.; winter form (2) *Marginata*, Edw. Cassiar Trail, twenty miles west of Dease Lake, June 3.
- Lycæna Pseudargiolus*, B.-L., winter form (3) *Violacea*, Edw. Cassiar Trail, ten miles west of Dease Lake, June 4.
- Lycæna Amyntula* Bd. Devil's Portage, Liard River (long. $126^{\circ} 10'$), July 17, McConnell.
- Nisoniades Icelus*, Lint. Telegraph Creek, Stikine River, May 27.
- Nisoniades Persius*, Scud. Dease Lake, June 4.
- Nisoniades Juvénalis*, Fab. Cassiar Trail, ten miles west of Dease Lake, June 4.

2. List of Diurnal Lepidoptera collected by Mr. W. Ogilvie on Mackenzie River in 1888.*

- Papilio Machaon*, L., var. *Alaska*, Scud. Fort Macpherson (lat. $67^{\circ} 20'$), June 21.
- Pieris Napi*, Esper.; Arctic form *Bryoniæ*, Ochs., var. *Hulda*. Fort Macpherson (lat. $67^{\circ} 20'$), June 21.

* This and the following list do not come strictly within the limits of this report, but are included here to ensure publication.

- Anthracis Ausonides*, Bd. Mackenzie River, July 8.
Colias Christina, Edw. Fort Good Hope (lat. 66° 15'), August 11.
Vanessa Antiopa, L. Ninety miles above Fort Good Hope (lat. 65° 20'),
 July 19, Fort Smith (lat. 60°), August 24.

*List of Diurnal Lepidoptera collected by Mr. Fredk. Bell, at the instance
 of Mr. R. G. McConnell, at Fort Simpson, Mackenzie River
 (lat. 61° 52'), 1888.*

- Papilio Turnus*, L. (Five specimens.) June 24 to July 8.
Pieris Napi, Esper. (2); winter form *Oleracea-hyemalis*, Har. (Thirteen
 specimens.) June 24 to July 8.
Colias Occidentalis, Scud. July 17.
Colias Christina, Edw. Male, July 17; female, July 25.
Grupea Progne, Cram. (Two specimens.) July 12.
Vanessa Milbertii, Godt. (Eleven specimens.) June 26 to July 20.
Limenitis Arthemis, Dru. (1); dimorphic form *Lamina*, Fab. (Three
 specimens.) July 23.
Erebia Discoidalis, Kirby. June 25.
Lycarna Pseudargiolus, Bd. Lec.; winter form (1) *Lucia*, Kirby. June 25.
Nisoniades Icelus, Lint. June 26.

FISHES, DETERMINED FROM PHOTOGRAPHS, BY DR. T. H. BEAN, UNITED
 STATES COMMISSIONER OF FISH AND FISHERIES.

Photographs were taken of some of the fishes met with, but no
 specimens were brought back. The photographs have been kindly
 examined by Dr. Bean, who enumerates the species represented as
 follows —

Salvelinus namaycush, Walbaum.

Lake Trout. Frances River, July 2. Spent male, judging from
 great length of maxilla. "Much darker than the other lake trout,
 and with white instead of yellow flesh."

Salvelinus namaycush, Walbaum.

Lake trout. Frances Lake, July 14. "Ordinary lake trout of
 the region."

Esox lucius, Linné.

Pike. Frances Lake, July 12. Length, 3 feet 3 inches.

Coregonus Nelsoni, Bean.

Nelson's whitefish. Frances Lake, July 16; also Lake Linde-
 man, September 18.

Catostomus catostomus, Forster.

Northern sucker; small-scaled sucker. Frances Lake, July 16.

Thymallus signifer, Richardson.

Back's grayling. Finlayson River, July 19.

DESCRIPTION OF A NEW RED-BACKED MOUSE (*EVOTOMYS DAWSONI*) FROM
THE HEAD-WATER OF LIARD RIVER, NORTH-WEST TERRITORIES.

BY DR. C. HART MERRIAM.

Of a few skins of birds and small mammals brought back, the only one of particular interest is that described below by Dr. J. Hart Merriam, *American Naturalist*, July, 1888. (The figure given with the original description, illustrating the dentition, is not here reproduced.)

"Dr. George M. Dawson, Assistant Director of the Geological and Natural History Survey of Canada, has kindly sent me for determination a red-backed mouse collected by him June 23, 1887, at Finlayson River, one of the northern sources of Liard River, in lat. $61^{\circ} 30' N.$, long. $129^{\circ} 30' W.$, altitude 3000 feet.

"So little is known of the small mammals of this remote and inaccessible region that it is not particularly surprising to find that the mouse collected by Dr. Dawson proves to be undescribed. In some respects it is intermediate between the circumpolar *Evotomys rutilus* and its more southern congener, *Evotomys gapperi*. But, since it differs from both and no intermediate forms are known, it must be regarded as specifically distinct. Hereafter, should intergrades be discovered, it may be necessary to consider it a sub-species. It may be characterized as follows:—

EVOTOMYS DAWSONI, sp. nov.

Dawson's Red backed Mouse.

"Type in Museum of Geological and Natural History Survey of Canada, at Ottawa. From Finlayson River, a northern source of Liard River, N. W. T. (lat. $60^{\circ} 30' N.$, long. $129^{\circ} 30' W.$, altitude 3000 feet). Size, about equal to that of *Evotomys gapperi*. Measurements from mounted specimen (apparently well mounted and not at all stretched): Head and body, 75 mm.; tail vertebrae, 28 mm.—pencil, 8 mm. (total, 36 mm.); ears, from crown, 7 mm. Tail shorter and thicker than in *gapperi*, but longer and slimmer than in *utilus*, in this respect (but no other) agreeing with a specimen collected at Fort Liard by Kennicott (No. 4562, U. S. National Museum). The hind foot is intermediate between that of *utilus* and that of *gapperi*, being thicker than in *gapperi*, but not so thick as in *utilus*. The ears conspicuously overtop the fur, fully equalling those of *gapperi*. The tail is *bicolor*, the yellowish of the under part occupying a little more than half of the circumference. It is well haired, and the terminal pencil is nearly black above (and 8 mm. long). The red dorsal stripe begins just behind the

eye and extends to the root of the tail. In color it is bright chestnut—not far from ferruginous; the sides are tawny gray, and the belly is strongly washed with ochraceous buff. The admixture of black-tipped hairs is as great as in *gapperi*, and it is very much more conspicuous, owing to the lighter ground-color of the back and sides. The result is a sort of 'peppery' appearance not seen in any other representative of the genus. There is a tolerably well-defined whitish post-auricular spot—an exaggeration of the pale blotch sometimes seen behind the ear in *rutilus*. The whiskers are black and white; they reach back to the shoulders, instead of stopping at the occiput, as usual in the genus. A blackish stripe, bordered below with fulvous, runs from the base of the whiskers to the tip of the nose. The projecting margin of the ear is well covered with reddish hairs, brightest on the interior of the auricle.

"*Cranial and Dental Characters.*—Unfortunately the skull was badly smashed and part of it altogether wanting; hence no cranial characters can be made out. The teeth, however, remain, and are represented in the accompanying cut [not reproduced]. Their most marked peculiarity, compared with those of *gapperi*, consists in the openly-communicating loops. The upper molar series measures 4.5 mm. on the crowns, 4.8 mm. on the alveolæ. The lower molar series measures 4.4 mm. on the crowns, 4.6 mm. on the alveolæ.

"I take great pleasure in bestowing upon this handsome mouse the specific name *Dawsoni*, as a slight recognition of the indefatigable zeal of its discoverer, the distinguished explorer and geologist, Dr. Geo. M. Dawson, who has added so much to the fund of knowledge relating to North-western Canada."—*C. Hart Merriam.*

APPENDIX V.

NOTES ON THE LITHOLOGICAL CHARACTER OF SOME OF THE ROCKS COL- LECTED IN THE YUKON DISTRICT AND ADJACENT NORTHERN PORTION OF BRITISH COLUMBIA.

BY MR. F. D. ADAMS, M.A.Sc.

(Of the rocks described below, Nos. 16, 25, 2, 4, 7 and 10 were collected by Mr. R. G. McConnell, "No. C." by Mr. W. Ogilvie, and the remaining specimens by Dr. G. M. Dawson.)

Stikine River, No. 16. (Near mouth of Clearwater River. See p. 55 B.)

Diabase Porphyrite.—A rock consisting of a fine-grained groundmass, through which crystals of plagioclase, augite and iron ore are porphyritically distributed. The plagioclase individuals are well twinned and have good crystalline forms. The augite occurs in eight-sided crystals, both prisms being well developed, and the iron ore, which is ilmenite, partly decomposed to leucoxene. The groundmass is crypto-crystalline and microcrystalline. A good deal of chlorite and other decomposition products occurs disseminated through the rock.

Marsh Lake, No. 86. (North end of lake, near outlet. See p. 164 B.)

Diabase Porphyrite.—Resembles No. 16, but the porphyritic crystals are, as a general rule, smaller. The groundmass also, although for the most part microcrystalline, is in some places isotropic, consisting of glass.

Stikine River, No. 25. (Telegraph Creek. See p. 57 B.)

Diabase Tuff.—A somewhat fine-grained elastic rock a good deal decomposed, made up of irregular-shaped grains of plagioclase, pyroxene,

and titanite iron ore, with a very little pyrite and some fragments of a fine-grained porphyritic rock. The majority of the grains are plagioclase, showing polysynthetic twinning, a few untwinned feldspar grains are also present, some of which may be orthoclase. The plagioclase is a good deal decomposed, many grains consisting almost entirely of a cryptocrystalline or microcrystalline aggregate of calcite, kaolin and other decomposition products. The pyroxene is clear and colorless, being as a general rule less decomposed than the feldspar. It is biaxial, and shows the usual pyroxene cleavage, with a high angle of extinction on the clinopinacoid, which in one case reached 41° . It is sometimes decomposed to chlorite, a considerable quantity of this mineral also occurring scattered through the rock. The fragments of titanite iron ore are for the most part decomposed to leucoxene, showing the characteristic cross-hatched structure. The fragments of fine grained porphyritic rock above mentioned have a fine-grained groundmass, in which are imbedded lath shaped crystals of plagioclase and crystals of augite, and are apparently pieces of a decomposed diabase-porphyrity. Traversing the section are several bands or streaks, much finer in grain and showing cataclastic structure, and which were evidently lines of motion caused by crushing.

Dease Lake, No. 8. (About eight miles from head of lake, west shore
See p. 78 B)

A very fine grained yellowish-green rock, with schistose structure and somewhat talcose appearance. Under the microscope it is seen to consist of an exceedingly fine-grained groundmass, almost opaque, in which are a few strings and irregular-shaped segregations of calcite and a number of porphyritic crystals of pyroxene. Under a very high power, the groundmass is seen to be composed largely of little shreds of a micaceous mineral, probably sericite, which are approximately parallel in position and give to the rock an appearance resembling flow structure. With this is associated a smaller quantity of a colorless mineral polarizing in dull bluish tints and with somewhat undulatory extinction, which resembles feldspar, but does not show any lines of twinning. The pyroxene crystals are colorless. Cross sections are eight-sided, showing the development of both prism and pinacoids, with cleavages parallel to both and extinction parallel to the latter. It is biaxial, and longitudinal sections show a single set of cleavages, sometimes intersected by transverse cracks. The extinction direction makes an angle with this cleavage, which in one case was as high as 34° . The crystals are short and stout, and are occasionally twinned, they generally have good crystalline forms, but are sometimes broken.

A few grains of pyrite and a little chlorite are also present in the rock. As would be expected from the appearance of the hand specimen, the section shows that the rock has been subjected to a good deal of motion, two varieties of the rock differing somewhat in appearance, being irregularly mixed with one another. It is probably some *highly altered basic igneous rock*; the presence of the pyroxene crystals, retaining, as a general rule, their crystalline form, is however, somewhat remarkable.

Tagish Lake, No. 93. (Windy Arm. See p. 171 B.)

Felsite.—An exceedingly fine-grained rock, much crushed and altered. Small irregular-shaped segregations of calcite are scattered through the rock, and here and there little fragments of plagioclase can be seen. It is impossible by means of a section alone to determine its original character. Before the blowpipe it fuses easily to a black magnetic globule, and may provisionally be termed a *felsite*.

Cassiar Trail, No. 4. (Tooya River, at trail-crossing. See p. 70 B.)

Tuff?—An exceedingly fine-grained, red, somewhat schistose rock, holding numerous irregular-shaped cavities, filled with a light green chloritic mineral, mixed with calcite. The section is rendered nearly opaque by a dense impregnation with iron-oxide. It is also traversed by thin veins of calcite. Before the blowpipe the rock fuses to a black magnetic bead. It is probably an altered tuff.

GRANITIC ROCKS FROM THE COAST RANGES.

Wrangell, No. 2. (Wrangell Island. See p. 54 B.)

Biotite Granite.—A rather fine-grained gray granite, with very indistinct foliation. It is composed of quartz, orthoclase, plagioclase, biotite and epidote, with a very small amount of apatite and of an isotropic mineral, light brown in color, with high index of refraction, but without good crystalline form, and which is probably garnet. Almost every grain of quartz exhibits, between crossed nichols, an uneven extinction, showing that the rock has been submitted to pressure. Both the orthoclase and plagioclase are generally fresh. The epidote, which is present in considerable amount, is colorless, strongly doubly refracting, and is almost always associated with the biotite. It occurs in curiously corroded, somewhat elongated, prismatic crystals, with perfect cleavage parallel to the longest axis, the plane of the optic

axes being at right angles to this cleavage. The mode of occurrence of this epidote is very similar to that found in the mica-diorite from Stony Point, on the Hudson River, and described by Dr. George Williams (*American Journal of Science*, June, 1888).

Stikine River, No. 4. (Near mouth of river. See p. 54 B.)

A Porphyritic Biotite Hornblende Granite, approaching a Quartz Diorite in composition—A medium-grained grey rock, with numerous small white porphyritic crystals. It is composed of quartz, plagioclase, orthoclase, biotite and hornblende. The porphyritic crystals are feldspar, which is almost invariably plagioclase. They possess a zonal structure, and contain numerous colorless inclusions heaped up toward the centres of the crystals. Some of them also contain inclusions of muscovite, which is probably a decomposition product. The quartz generally shows an uneven extinction, owing to pressure. The plagioclase preponderates largely over the orthoclase, but some untwinned grains have been referred to the latter species. The biotite and hornblende are intergrown with each other. Two or three grains showing granophyr structure are also seen in this section.

Stikine River, No. 7. (Moraine of Great Glacier. See p. 54 B.)

Biotite Hornblende Granite.—A rather coarse-grained grey granite, with very indistinct foliation. It is composed of quartz, orthoclase, plagioclase, biotite, hornblende, sphene and magnetite. The quartz shows a somewhat uneven extinction. Both feldspars often show zonal structure. The hornblende is about equal to the mica in amount, and only small quantities of sphene and magnetite are present. The latter is probably titaniferous.

Stikine River, No. 10. (Little Cañon. See p. 54 B.)

Biotite Granite.—A coarse-grained grey granite, poor in mica. The orthoclase, of which there is a very large amount, often shows an indistinct zonal structure. A small quantity of magnetite, or more probably ilmenite, with which a little sphene is associated, is also present. A crystal of zircon was observed in one of the mica grains. Although the rock has no foliation, it shows very distinct cataclastic structure, induced by great pressure. The constituent minerals are seen to have been much squeezed and twisted, the larger grains being often, around their edges, broken up into a very fine-grained mass. The mica also, which is in part decomposed to chlorite, has been in many places pulled apart into shreds.

GRANITIC ROCKS FROM THE INTERIOR RANGES.

Upper Pelly River, No. 61. (Near mouth of river. See p. 132 B.)

Muscovite Biotite Granite.—A medium-grained grey granite, with very indistinct foliation. It is composed of quartz, orthoclase, microcline, plagioclase, muscovite, biotite and epidote, with small amounts of garnet, sphene, pyrite and calcite. The plagioclase is present in relatively smaller amount than in the granites from the Coast Ranges. The muscovite is more plentiful than the biotite. The epidote occurs in colorless corroded crystals, and has the appearance of an original constituent of the rock. The garnet is reddish, and occurs in a few irregular-shaped isotropic grains, usually much cracked. The sphene occurs in the usual wedge-shaped crystals. The calcite is seen in the section in a few large grains. The grains of quartz and orthoclase are somewhat cracked and broken, but beyond this, no distinct evidence of pressure is exhibited by the section.

Upper Pelly River, No. 57. (Granite Cañon. See p. 130 B.)

Biotite Granite.—A rather coarse grained, much decomposed, massive grey granite. The feldspars are so decomposed that it is difficult to determine their character, but a considerable amount of plagioclase is present, and probably a still larger amount of orthoclase. The biotite is entirely decomposed to chlorite and epidote. A few small grains of hematite are present in the section. The quartz grains are much cracked, and show very uneven extinction, owing to the pressure to which the rock has been subjected.

Pelly or Yukon, "No. C." (Opposite Stewart River. See p. 34 B.)

Quartzite Biotite Gneiss.—A rather fine-grained red gneiss, showing very distinct foliation. It is composed of quartz, orthoclase, plagioclase, calcite, chlorite, ilmenite and a little pyrite. The plagioclase is present in rather small amount. The chlorite is a decomposition product, probably of biotite, and the calcite, of which there is a considerable quantity, is also a decomposition product. The ilmenite is partly altered to leucoxene. The cataclastic structure is distinctly seen in the section.

Upper Pelly River, No. 53. (Nine miles above Macmillan. See p. 129 B.)

Biotite Granite.—A rather coarse-grained, reddish-grey, massive rock, composed of quartz, orthoclase, plagioclase and chlorite, with a

little ilmenite and pyrite. Both feldspars are much decomposed, being in some places nearly opaque. The plagioclase, which is not so plentiful as the orthoclase, is generally better crystallized, and frequently occurs in crystals penetrating this mineral. The ilmenite is partly decomposed to leucoxene, and the chlorite is evidently a decomposition product of biotite. The section is traversed by a little very fine grained granitic vein, showing a banded structure parallel to its walls. The quartz has been much cracked, nearly every grain showing an uneven extinction.

APPENDIX VI.

METEOROLOGICAL OBSERVATIONS*

The Meteorological Observations here recorded are as follows —

1. Observations made along the line of route, June 1 to September 19, 1887.
2. Observations at Telegraph Creek, Stikine River, by Mr. J. C. Callbreath, 1881-1886.
3. Observations at Laketon, Dease Lake, by Mr. J. Clearihue, 1878-1882
- 4 Record of temperature at Laketon, Dease Lake, by Mr. Robert Reed, 1886-1887.

The observations included under Nos. 2, 3 and 4 are unfortunately very incomplete. They refer to the winter months only, and in general the minimum reading of the thermometer alone is recorded. The thermometers employed were, however, instruments of good class by well-known makers, and in view of the paucity of information bearing on the region, it has been considered useful to print them. I am indebted to Mr. Callbreath for the opportunity of extracting the observations made by him from his diaries, and to Mr. Reed for communicating the third and fourth series of observations. The observations forming the first part of this appendix were recorded by Mr. J. McEvoy during the progress of our journey.

G. M. D.

(1) METEOROLOGICAL OBSERVATIONS IN THE YUKON DISTRICT AND ADJACENT NORTHERN PART OF BRITISH COLUMBIA, JUNE 1 TO SEPTEMBER 19, 1887.

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YUKON DISTRICT AND BRITISH COLUMBIA.

The barometer readings are those of a single pocket aneroid (Cary No. 859) checked at intervals by reference to the mercurial barometer and corrected according to a table of differences based on these comparison. Readings made on two additional aneroids and employed in the determination of elevations are not here included.

Temperature is stated in degrees Fahrenheit. Thermometers employed, Nos. 60,361 and 60,363, Kew Observatory.

The force of the wind is estimated according to Beaufort's scale. The proportion of the sky covered by clouds is estimated by a scale of 0 to 10, 0 being a cloudless sky, 10 a completely clouded sky. The character of the clouds is denoted by the usual letters or combination of letters referring to Howard's classification.

PLACE.	Date.	Hour.	Barometer corrected.	Ther. corrected.			Direction of wind.	Force of wind.	Amt. of cloud.	Kind of cloud.	Temperature of water.	Weather at time.	Weather during last interval.
				Air.	Max.	Min.							
Tah-tan Bridge, Cassiar Trail, 10 ft. above river	June	1 5 00 a.m.	29.66	38.5	..	30.5	W.	1	8	C & K.	..	..	Detached Clouds.
Wilson's	"	2 7 00 p.m.	29.59	..	..	..	W.	1	2	K.	..	Fair	.. and blue sky.
Cariboo Camp	"	2 5 00 a.m.	28.34	39.	..	30.5	Calm.	..	1	C.	..	..	Passing clouds.
"	"	2 7 00 p.m.	27.89	51	..	..	N. W.	3	7	K.	..	Showery.	Fair. Clear and passing showers.
"	"	8 5 20 a.m.	27.96	42	..	37.	Lt. var.	..	9	C K.	..	Dull	Showers. Detached clouds and over-cast.
24 m. post	"	3 7 00 p.m.	27.97	54	51	..	N E	3	1	C.	..	Fair	Passing showers.
"	"	4 6 45 a.m.	28.18	49	..	31.	N. E.	4	0	..	..	..	Clear.
Nine-mile Creek	"	4 7 00 p.m.	27.59	60	5	..	N. E.	2	0	..	..	Clear.	Clear. Very warm all day.
"	"	5 6 40 a.m.	27.52	41.	..	28.	N E	2	0	..	..	..	Very light C. clouds.
Head of Dease Lake	"	5 7 00 p.m.	27.35	63	..	..	S E	2	1	C.	..	Hazy.	Clear. Very warm.
"	"	6 7 00 a.m.	27.41	48	5	45.5	Calm.	..	0	..	..	..	Fair.
"	"	6 7 00 p.m.	27.25	63	76.	..	W.	3	..	..	..	Hazy.	{ " Hot sun all day. Open water 3 m. on lake.
"	"	7 7 15 a.m.	27.33	45.	..	35.	N. W	1	..	..	..	..	Clear. Strong N.W. wind.
"	"	7 7 40 p.m.	27.56	68.	74	..	S.	1	..	..	..	Hazy.	" Light breeze.
"	"	8 7 00 a.m.	27.27	..	..	32.	N.	1	1	C.	..	..	" Calm.
Dease Lake, 5 m. down	"	8 7 00 p.m.	27.14	61	..	..	N.	1	1	C & K	..	..	" Light N. airs.
"	"	9 7 00 a.m.	27.26	..	..	29.5	N.	2	1	C.	..	..	Cloudy.
"	"	9 7 00 p.m.	27.19	57.	68.	..	N N. W	2	8	K.	..	..	Clouds. S. wind 3. Hot sun.
"	"	10 7 00 a.m.	27.30	49.	..	35.5	N.	2	10	C.	..	Threatening.	Gloomy. Overcast.
"	"	10 7 00 p.m.	27.30	50	63.	..	N. E.	2	9	C & S.	..	Raining.	Rain. Wind S. & E. 5. Showery p.m.
"	"	11 7 00 a.m.	27.31	41	5	37.5	Lt. var.	10	10	S & C.	..	Gloomy, ugly.	Overcast. Gloomy. Calm

Dease Lake, 5 m. down.	11 7.00 p.m.	27 29 55 307 5	W.	1	K	Light showers - Light N.E. air.
" " 10 m. down.	12 7.00 a.m.	27 33 44	Calm	1	K & C	Light W. wind.
" " "	12 7.00 p.m.	27 21 53	W.	1	C & K	C. clouds. Light W. wind.
" " "	13 7.00 a.m.	27 25 43	S.	2	C K	Light S. Wind. Ice formed on pools.
" " "	13 7.00 p.m.	27 18 52 5 13	S. W.	2	10	Clouded over. *p.m., strong S. wind for a while.
" " "	14 7.20 a.m.	27 18 41 5	Lt. var.	4	S.	"
" " "	14 7.00 p.m.	27 12 46 5 52	Calm.	10	S.	Clearing.
" " "	15 7.10 a.m.	27 10 49	S.	1	5	Breaking.
" " "	15 7.00 p.m.	27 17 56 5 5	S.	10	K S	Threatening
" " "	16 7.00 a.m.	27 26 44	S.	2	10	Detached clouds. Lt. sprinkle from S.
" " Laketon.	16 7.00 p.m.	27 23	S.	3-4	5	Overcast. Gloomy. S. wind 4.
" " "	17 8.00 a.m.	27 23	S.	1	5	Light showers.
" " "	17 7.00 p.m.	27 17	S.	1	7	Showery.
" " "	18 7.30 a.m.	27 12	Calm.	9	S.	Hail and rain showers. p.m., N. & S. var. wind.
" " Porter's Landing.	18 7.00 p.m.	27 03 49	N.	1	8	Passing showers.
" " "	19 7.00 a.m.	27 22 45	S.	1	10	Showery.
" " River, 1st camp.	19 7.00 p.m.	27 38 53	S. W.	2	1	Shower all day. Wind 3 var. N. & S.
" " "	20 6.30 a.m.	27 44	S.	2	3	Heavy rain.
" " McDame Creek.	20 7.00 p.m.	27 51 64	S.	1	10	Rainy morning, cleared up 9 a.m.
" " "	21 6.30 a.m.	27 00 48	Calm.	10	K S	Fair. C. clouds. Wind S.W. 2.
" " "	21 7.00 p.m.	27 54 61	S S W.	1	10	Overcast. Dull. p.m., wind S. 2.
" " "	22 6.30 a.m.	27 60 34	S S W.	1	1	Heavy rain during night. Wind 3.
" " "	22 7.00 p.m.	27 69 56	S. W.	3	8	Detached clouds. W. air.
" " "	23 6.30 a.m.	27 68 41	S. W.	2	10	Showery.
" " "	23 7.00 p.m.	27 66 49	S. W.	1	10	Wind 4. Cleared off.
" " "	24 8.15 a.m.	27 70 43	W.	1	10	Snowers of rain and hail. Wind 2.
" " "	24 7.00 p.m.	27 68 46	W.	1	10	Cold Windy. River rose 15 in.
" " "	25 7.00 a.m.	27 79 45	W.	1	10	during night.
Mouth of Dease River	25 7.00 p.m.	27 76 51	W.	1	10	Heavy Rain.
" " "	26 6.00 a.m.	27 81 43	N. W.	1	9	Cold heavy rain. River rising.
" " "	26 7.00 p.m.	27 67 58	S.	1	5	Heavy rain. River fell 1 ft.
" " 6 m. above "	27 6.00 a.m.	27 64 50	W.	2	9	Steady rain all day.
" " "	27 7.00 p.m.	27 66 61 5	W.	2	1	Raining.
" " "	28 6.00 a.m.	27 79 54	Calm.	1	1	Gloomy.
" " "	28 7.00 p.m.	27 73 61 5	W.	2	5	Showers last night. Clouds a little broken. River fell.
" " "	29 6.00 a.m.	27 76 47 5	N.	1	9	Showery. Generally overcast.
" " "	29 7.15 p.m.	27 63 57	Calm.	1	1	Light showers. River fell 3 in.
" " "	30 6.00 a.m.	27 63 45	"	2	1	K. & C. clouds. 2 to 3, sunshine.
" " "	30 7.00 p.m.	27 65 51	"	1	1	Calm night. River fell 2 1/2 in.
" " head of 1st cañon	1 6.00 a.m.	27 58 48	"	9	1	Hazy. C & K clouds.
" " "	1 7.00 p.m.	27 43 59	"	4	1	Calm night. River rose 2 in.
" " "	2 6.00 a.m.	27 38 49	"	1	1	K. clouds. Showers. Warm day.
" " "	2 7.00 p.m.	27 25 55 5	S.	1	1	Dull. Light showers this morning.
" " "	3 6.00 a.m.	27 34 46	S.	1	1	River rose 1 in.
" " "	3 7.00 p.m.	27 32 54	W.	1	1	Warm day. K. clouds 3
" " "						Calm night.
" " "						p.m. S 10. Lt. rain. Cleared off 5 p.m.
" " "						Gloomy. Clear sunshine early this morning
" " "						Detached K. clouds.
" " "						Calm K. 4.
" " "						Gloomy. Light passing showers. Wind S.
" " "						Several showers during night. Wind S
" " "						K. 5. Light S. wind.

PLACE.	Date.	Hour.	Barometer corrected.	Ther. corrected.			Direction of wind.	Force of wind.	Amt. of cloud.	Kind of cloud.	Temperature of Water.	Weather at time.	Weather during last interval.
				Air.	Max.	Min.							
Frances River.....	July	4 6 30 a.m.	27.29	38.	...	27.	Calm.	10	S.	.....	.....	Gloomy.	Clouded over during night.
" "	"	4 7 00 p.m.	27.11	52	...	37.	N.W.	1	5	K & S.	.....	Showery.	Drizzling rain a.m.; p.m., showery.
" "	"	5 6 00 a.m.	27.30	44.5	...	37.	S.	1	10	S & K S.	.....	.....	Two showers during night.
" " 2nd cañon.	"	5 7 00 p.m.	27.34	51.	...	33.	N.W.	1	8	K.	46.5	.....	Showery. Heavy K. clouds 6.
" "	"	6 6 00 a.m.	27.39	49.	...	33.	N.	1	2	C & K.	.....	.....	Fair night. K. 5.
" "	"	6 7 00 p.m.	27.38	50.	...	36.	Calm.	.....	8	K.	48.	.....	K. clouds 1-6.
" "	"	7 5 30 a.m.	27.31	40.	...	36.	S. W.	1	3	S.	45.	.....	Overcast.
" " near foot of lake.	"	7 7 00 p.m.	27.31	42.5	...	32.	S. E.	1	1	C.	.....	.....	Showers. Hail in evening.
" "	"	8 6 00 a.m.	27.18	41.5	...	32.	S. E.	1	1	C.	.....	.....	K. & S. clouds. Ice 1 in. River fell 1 in.
" Lake	"	8 7 00 p.m.	27.11	51.	...	32.	Calm.	.....	8	C & K.	50.	.....	Showery. Wind S. K 1-8. Rather warm.
" "	"	9 6 30 a.m.	27.22	47.	...	36.	"	9	K & S.	.....	.....	Gloomy.	lower this morning.
" "	"	9 7 00 p.m.	27.26	52.	...	43.	"	9	K & K S.	49.7	.....	.....	Showery. N wind 4. K. 1-8.
" "	"	10 6 00 a.m.	27.33	47.	...	43.	S.	1	10	K & K S.	.....	Gloomy.	Calm. Overcast. K. S.
" "	"	10 7 00 p.m.	27.32	49.	...	43.	S.	1	10	K & S.	.....	Raining.	Rain storms all day. 1st thunder of season.
" "	"	11 7 00 a.m.	27.42	...	34.5	...	W.	1	3	K	.....	Fair.	Showery.
" "	"	11 7 00 p.m.	27.42	45.	63.	...	S. W.	1	8	K & K S.	46.	Showery.	Showers all day. Wind W. Warm sun
" "	"	12 6 21 a.m.	27.49	48.	...	29.	W.	1	6	K.	.....	Fair.	Fair night. Clear.
" "	"	12 7 00 p.m.	27.34	51.	62.	...	S.	1	1	C.	47.5	.....	Few showers. Wind S. 2 Lake fell 6 in. in 3 days.
" "	"	13 6 00 a.m.	27.24	41.	32.	...	N.	1	9	K & K S.	.....	Raining.	Fair. K. 6 Clouded up this morn.
" "	"	13 7 00 p.m.	27.17	58.	46.	...	Calm.	10	9	K & K S.	51.	.....	Showers. Lake fell 4 in.
" "	"	14 6 00 a.m.	27.20	44.	...	37.	S.	1	8	C & S.	46.	Gloomy.	Rain all night.
" "	"	14 7 00 p.m.	27.32	50.	58.	...	S.	1	8	C & S.	46.	Hazy.	Showers. Gloomy. Water fell 3 in
" "	"	15 7 00 a.m.	27.33	41.	4.	...	S.	1	10	C & S.	49.	Raining.	Rained latter part of night.
" "	"	15 7 00 p.m.	27.32	41.	58.	...	S.	1	9	C & S.	49.	.....	Raining a.m.; p.m. cleared.
" "	"	16 7 00 a.m.	27.39	42.5	40.	...	Calm.	.....	1	K & C	.....	Fair, clear.	Fair.
" "	"	16 7 00 p.m.	27.35	61.	45.	...	"	1	1	K.	.....	.....	Sprinkle. K. 1-4. Little thunder.
" "	"	17 6 00 a.m.	27.44	45.	29.	...	"	1	1	C.	.....	Fair, clear.	Fair
" "	"	17 7 00 p.m.	27.44	55.5	43.5	...	E. N. E.	2	9	S & K.	50.	.....	Clouded in p.m.
Finlayson River, 3 m. up.	"	18 7 00 a.m.	27.18	58.5	43.5	...	Calm.	1	6	S & K S.	53.	.....	Clearing during night.
" "	"	18 7 00 p.m.	27.17	64.	41.	...	S.	1	2	K & K S.	53.	.....	Fair. Sunny.
" "	"	19 6 00 a.m.	27.20	52.	41.	...	W.	9	9	S & K S.	.....	Gloomy.	Dull night.
" "	"	19 7 00 p.m.	27.12	61.	37.	...	Calm.	1	1	K.	.....	.....	Fair. K. 5.
" "	"	20 6 00 a.m.	27.15	51.	37.	...	"	1	1	C.	.....	.....	Calm night.
" "	"	20 7 00 p.m.	27.00	61.	37.	...	"	1	1	C S.	.....	Fair.	Very warm day.
" "	"	21 6 00 a.m.	27.08	48.	33.	...	"	1	1	C.	.....	.....	night. Skin of ice.
" "	"	21 7 00 p.m.	26.93	65.	33.	...	W.	1	5	K.	59.5	.....	Warm day.

Finlayson River.	July	22	6 30 a.m.	26.98	49	41	Calm.	1	K & C	Fair	Fair. River fell 1 n
East Branch Finlayson River.	"	23	8 00 p.m.	28.84	58	5	N.W.	0	"	"	Warm.
	"	23	7 30 a.m.	26.91	57	40	Calm.	1	K.	"	night.
Finlayson River Valley.	"	23	7 10 p.m.	26.51	72	"	"	1	C & K	"	Very warm all day.
	"	24	7 00 a.m.	26.60	67	50	S.	1	"	"	night.
" Lake	"	24	7 00 p.m.	24.80	74	"	Calm.	0	"	64.	K. 1 greater part of day. Fair.
"	"	25	7 00 a.m.	28.83	59	41.5	"	0	"	"	Fair. S. wind 2 last night. Smoky
"	"	25	6 00 p.m.	26.84	74	78.5	"	1	C.	65.	N. wind 2. Blue sky.
"	"	26	6 30 a.m.	26.83	58	52.	"	0	"	"	S. wind 1. Smoky. fair.
"	"	26	7 15 p.m.	26.79	72	"	"	1	C S	66.	Fair. S. wind 1 a.m.; calm p.m.
"	"	27	6 30 a.m.	26.72	58	51	E.	1	K S.	"	E wind 1-2 all night.
Country west of Finlayson Lake	"	27	7 30 p.m.	25.84	70	"	Calm.	1	K.	"	K. 2-7.
"	"	28	6 00 a.m.	25.74	50	37.	"	0	"	"	K. 1-2.
"	"	28	6 00 p.m.	26.46	69	"	W.	1	C & K.	"	Smoky. K. 1-4
"	"	29	"	26.54	40	46.	Calm.	1	"	"	Fair.
Pelly River	"	19	7 10 p.m.	26.88	64	"	S.	1	C S.	61.	p.m. S. wind 2. Like rain.
"	"	30	4 30 a.m.	26.93	55	46	Calm.	6	K & K S	"	Fair. River fell 1 m.
"	"	30	7 00 p.m.	26.87	55	70.	"	10	S.	60.	Thunderstorm in evening. S. wind 1.
"	"	31	7 00 a.m.	26.86	51	43	"	4	K.	"	Rain all night. Cleared 6 a.m.
"	"	31	7 00 p.m.	26.84	53	56.5	S. W.	2	K.	59.	Wind S. W. 2 K. 1-5.
"	Aug.	1	6 30 a.m.	26.84	43	29.	Calm.	9	K.	"	Fair. K. 2-5
"	"	1	7 10 p.m.	26.87	54	"	"	10	K S.	59.	Wind W 2 Showery. K & K.S.
"	"	2	6 00 a.m.	26.81	40	40	"	1	K & C	"	Light sprinkle rain during night.
"	"	2	7 00 p.m.	27.12	57	"	Lt. var.	2	C & K S.	56.	Showers Wind W 2. K & K.S.
"	"	3	6 00 a.m.	27.25	33	28	Calm.	0	"	"	Fair night. River still falling.
"	"	3	7 10 p.m.	27.28	49	"	Lt. var.	9	K & S.	51.	" Clear. Wind N. 2.
Hooles Cañon	"	4	6 00 a.m.	27.22	50	40.	N. E.	1	K	"	Clear. off last evening. Wind 3
"	"	4	7 00 p.m.	27.42	51	"	N.W.	2	S.	53.	Showers p.m. Wind N.W. 3 p.m.
"	"	5	6 00 a.m.	27.45	44	37.	W.	1	S.	"	Gloomy night. River fell 2 in. Wind
"	"	5	7 00 p.m.	27.62	54	"	Lt. var.	10	K S	52.5	N.W. 2.
"	"	6	6 00 a.m.	27.70	47	41.	E	1	K S	"	W. wind. 3 showers. Dull day
"	"	6	7 00 p.m.	27.81	58	"	Calm.	3	K.	54	2 showers in night. K.S. 10-2
"	"	7	6 00 a.m.	27.88	36	"	"	1	K.	"	Wind W 2. Sunshine p.m.
"	"	7	7 00 p.m.	27.83	64	"	"	0	"	57.	Calm. Fair. K. 1.
"	"	8	5 10 a.m.	27.63	51	50.	W.	2	K & S.	"	Fair wind N & N E 2 to-day
"	"	8	7 00 p.m.	27.69	59	"	W.	3	K.	57.	K. & K.S. 0-6 p.m. River fell 1 in.
"	"	9	6 00 a.m.	27.99	45	41.	Lt. var.	0	"	"	Wind W. 2. Cleared up about 12 m.
"	"	9	7 00 p.m.	28.19	58	"	"	0	"	57.	Wind W 3
"	"	10	4 0 a.m.	28.30	40	34.	Calm.	1	C S.	"	Showers. Wind 2. K. 0-6
"	"	10	7 00 p.m.	28.28	60	"	E.	1	K S.	56.	Fair.
"	"	11	6 00 a.m.	28.39	34	38.	Calm.	1	C.	"	Fog on river
Camp near Fort Selkirk.	"	11	7 00 p.m.	28.43	62	"	"	6	C S.	56.3	Gloomy.
"	"	12	7 00 a.m.	28.46	50	46.	E.	1	S & K S	"	S.C. 5. Light winds up & down river.
"	"	12	7 10 p.m.	28.45	54	78.	W.	1	C K.	56.	K.S. 10-0.
"	"	13	7 00 a.m.	28.38	50	45.	S.	1	K S.	"	C.K. 2-4. Light N.W. air.
"	"	13	7 00 p.m.	28.30	65	75.5	Calm.	1	K.	57.	Hazy and calm
"	"	14	7 01 a.m.	28.39	45	38.	E.	1	K.	"	C & K.S. 0-9 Dull day.
"	"	14	7 00 p.m.	28.33	63	71.	Calm.	3	C.	56.5	K.S. 8. Calm.
											" 1. River fell 1 in.
											" 1. "
											C.S. 1-4. "

PLACE	Date.	Hour.	Barometer corrected.	Ther corrected.			Direction of wind.	Force o' wind	Amt. of cloud	Kind of cloud.	Temperature of Water.	Weather at time.	Weather during last interval.
				Air	Max.	Min							
Camp near Fort Selkirk.	Aug. 15	7.00 a.m.	28.26	48	18.	Calm.		6	C K	...		Threatening.	Gloomy. Calm. C S & K 5. River
" " " " " " " "	"	15 7.00 p.m.	28.24	70	58 15	"	"	3	C.	58		Smoky.	fell 1 in Sultry. C 1-4.
" " " " " " " "	"	16 7.30 a.m.	28.25	62	40	"	"	5	C K & C S	...		"	Calm. C S & K 4. Very thin clouds.
" " " " " " " "	"	16 7.00 p.m.	28.31	62	70	"	"	3	C & K.	57.		"	C & K 5 all day. River fell
" " " " " " " "	"	17 8.30 a.m.	28.34	59.	...	18	"	3	K.	...		Fair.	1 in. Cloudy C S & C K 4-6.
" " " " " " " "	"	17 7.00 p.m.	28.29	69.	80.	...	S.E. Air	0	"	50		"	Fair. Clear.
" " " " " " " "	"	18 6.30 a.m.	28.36	39.	...	33	Calm.	1	C S	...		"	Very clear night.
Lewes River	"	18 7.00 p.m.	28.13	65	...	...	"	1	C	59		"	Wind 1 S. Clear p.m.
" " " " " " " "	"	19 5.30 a.m.	28.24	47.	...	15.	"	1	K S	...		"	Overcast.
" " " " " " " "	"	19 7.00 p.m.	28.22	55.	...	...	"	10	S & K.	56		Rainy	Rain from S p.m.
" " " " " " " "	"	20 1.45 a.m.	28.34	47	...	42	"	10	S.	...		Foggy	Stopped raining last eve. Calm. Ugly.
" " " " " " " "	"	20 7.00 p.m.	18.32	55	...	...	"	0	...	56		Fair	Overcast till 4 p.m. Wind S E. 1.
" " " " " " " "	"	21 5.45 a.m.	28.41	45	...	34	"	0	...	...		Dense fog.	"
" " " " " " " "	"	21 7.00 p.m.	28.29	65.	...	...	"	5	C & K	56		Fair	K. 3 Wind 1 S E Warm day.
" " " " " " " "	"	22 6.00 a.m.	28.41	45	...	44	"	0	...	...		Fair, clear	Light showers during night.
" " " " " " " "	"	22 7.00 p.m.	28.32	59.	...	...	"	1	K.	56		Fair.	Sunny. Wind S S.W. 1.
" " " " " " " "	"	23 6.00 a.m.	28.10	33.	...	...	"	0	...	...		Foggy.	"
" " " " " " " "	"	23 7.00 p.m.	28.09	59.	...	...	"	1	C.	56		Fair	Calm C S 5
" " " " " " " "	"	24 6.00 a.m.	28.08	8.	...	31.	"	6	K.	...		Clear	Clear. Wind S. 1.
" " " " " " " "	"	24 7.00 p.m.	27.89	64	...	...	"	0	...	56		"	Hot day.
" " " " " " " "	"	25 6.00 a.m.	27.95	52.	...	51.	"	10	K S	...		Drizzling.	Rainy, light
" " " " " " " "	"	25 7.00 p.m.	27.92	49	...	...	S.	1	10	K & S.	55.	Gloomy.	Clouded all day Raining half time.
" " " " " " " "	"	26 6.00 a.m.	27.91	46.	...	44	S E	1	10	K & S.	...	"	Showery Wind S. 1
" " " " " " " "	"	26 7.00 p.m.	27.82	52.	...	...	"	1	10	K & K S	54.	"	K & K S 10 all day Cool wind
" " " " " " " "	"	"	"	"	"	"	"	"	"	"	"	"	S E. 1
" " " " " " " "	"	27 6.00 a.m.	27.83	41.	...	37	Calm.	9	K S	...		Fog.	K S 10. Calm
" " " " " " " "	"	27 7.00 p.m.	27.82	53	...	...	"	4	K S	55.		Fair	Showery. K 5-6. Warm sun.
" " " " " " " "	"	28 6.00 a.m.	27.93	43.	...	32.5	E.	1	C.	...		Fog	K 4-6.
" " " " " " " "	"	28 7.00 p.m.	27.86	46.	...	...	Calm.	1	K	54		Fair	Sunny. K. 3.
" " " " " " " "	"	29 6.00 a.m.	27.92	30	...	28.5	"	0	...	...		Fog	Clear. Calm
" " " " " " " "	"	29 7.00 p.m.	27.86	55	...	...	S.	1	6	K	51.	Fair.	Fair wind S 3 K S. 5-9.
" " " " " " " "	"	30 6.00 a.m.	...	30	...	35	Calm.	...	8	S & C K	...	Fog.	C K & S 6
" " " " " " " "	"	"	"	"	"	"	"	"	"	"	"	Gloomy.	Showery. K & S 10. Wind S. 3. Cold.
" " " " " " " "	"	31 7.00 p.m.	27.72	55.	...	...	S.W.	3	10	S & K S.	52	"	" S & K S. 10 " 3.
" " " " " " " "	"	31 7.30 a.m.	27.70	54	...	49.	S.	4	10	S & K S	...	Fair.	K S & C S 8. Wind S. 3 all day.
" " " " " " " "	"	31 7.00 p.m.	27.72	57.	...	60	S.	3	6	C K.	52.	Fair.	R S & C S 8. Wind S. 3 all day.
" " " " " " " "	Sept.	1 5.30 a.m.	27.72	52.	...	49.5	Calm.	10	1	S.	...	Light rain.	Showery. Wind died out last night.

Lewes River.....	Sept. 1	7 00 p.m.	27 63	57.	...	S. W.	2	8	S & K S	52.	Fair	Wind N.E. 1 a.m. S 2 p.m.
Foot of Lake Labarge.....	"	2 5 30 a.m.	27 78	32	...	Calm.	...	0	...	...	Fog	Fair. Clear.
"	"	5 7.00 p.m.	27 88	41.	...	"	...	3	K	...	"	K. 1-6. Wind S. 2.
Lake Labarge.....	"	3 6 00 a.m.	27 92	33.5	...	N.	1	6	C S.	...	Fair.	Clear. Calm.
"	"	3 7.00 p.m.	27 71	54.5	...	S.	3	3	C.	51 5	"	C. & S. 1-5. Wind S. 3 all day.
"	"	4 5 30 a.m.	27 83	39 5	...	Lt. var.	...	10	CS & K.	...	"	Hazy sunshine.
Near head of Lake Labarge.....	"	4 7.00 p.m.	27 69	56.	...	W.	2	5	K & S.	49 5	"	C. 5. Wind died out early last night.
"	"	5 6.00 a.m.	27 88	41.	...	"	1	10	K S.	...	"	C. clouds coming rapidly from W. p.m.
Lewes Riv., below Tahkheena R.	"	5 7.00 p.m.	27 87	53	...	Calm.	...	3	C S.	54.	Light rain.	Showery a.m. W. wind 3 for 1 hour.
"	"	6 6.00 a.m.	27 67	60	...	S.	3	10	S & K.	...	Fair.	Fair C.K. 3. Wind S. 1, p.m.
"	"	6 7.00 p.m.	27 54	53.	...	Calm.	...	3	K & C.	53.5	Gloomy.	S. 10 wind latter part of night.
"	"	7 6.00 a.m.	27 72	42	...	"	...	9	K S.	...	Fair.	K.C. 1-4. Wind S. 4
"	"	7 7.00 p.m.	27 65	48 5	...	S.	2	10	S.	53.	"	Calm. K. 2-6. Light rain this a.m.
"	"	8 6.00 a.m.	27 67	44.	...	Lt. var.	...	6	K	...	"	K. 0-5. Wind S. 1.
"	"	8 7.00 p.m.	27 57	51.	...	S. W.	1	6	K S.	53 5	"	Fair. Wind S.W. 1
"	"	9 6.00 a.m.	27 49	38.	...	Lt. var.	...	9	K.	...	Gloomy.	K. 2-0
"	"	9 7.00 p.m.	27 54	18.	...	N.W.	2	10	S.	...	"	Wind p.m. N.W. Cool day.
"	"	10 7.00 a.m.	27 75	41 5	...	Calm.	...	10	S.	...	Drizzling	Rained a little. Calm. Snowed on mts.
Lake Marsh.....	"	10 7.00 p.m.	27 76	41 5	...	Lt. var.	...	10	S & K S	52.	Gloomy.	Showery. Wind W 1 Cool.
"	"	11 6 20 a.m.	27 83	39.	...	E.	1	10	S & K S	...	"	Overcast all night. Calm.
Tagish Houses.....	"	11 7.00 p.m.	27 69	42.	...	Calm.	...	1	K.	49 5	Fair	K S & K. 8-2, a.m.; p.m., Wind
"	"	12 6 00 a.m.	27 60	24.	...	"	...	10	S.	...	Gloomy.	W. 2. C. clouds
Tagish Lake.....	"	13 6 30 a.m.	27 69	36.	...	Lt. var.	...	3	CS & K	...	Fair.	K S. 1. Calm. Clouded over this a.m.
Windy Arm.....	"	13 7.00 p.m.	27 76	33	...	"	...	1	K S	48 5	"	Wind W. 3.
"	"	14 6.00 a.m.	27 88	26 5	...	Calm.	...	0	...	...	"	K S 4-0. A.m. wind N. 1; p.m.
Bennett Lake.....	"	14 7.00 p.m.	27 83	36.	...	N.	1	0	...	46 5	"	calm.
"	"	15 6 00 a.m.	27 83	20.	...	S	1	1	K	...	Fair.	Clear. Calm
"	"	15 7.00 p.m.	27 75	43.	...	N.	3	8	K.	45 5	"	K. 1. Hot sun. Wind S 2 all day.
"	"	16 6 30 a.m.	27 75	40 5	...	N.	1	10	K S.	...	"	Clear. Calm.
Lake Lindeman.....	"	16 7.00 p.m.	27 75	40.	...	N.	1	10	K S.	45.	Gloomy.	K & C K 1 3 Low wind N 2
"	"	17 7.00 a.m.	27 74	41.	...	S. W.	1	8	K	...	"	high wind W.
"	"	17 7.00 p.m.	27 72	37.	...	S.	1	1	K.	45	Fair.	K. 8 N. 2 wind all night.
"	"	18 7.00 a.m.	27 75	36	...	Calm.	...	0	...	...	"	K S. 6-10. Wind S. 1, a.m.; N. 1, p.m.
"	"	18 7.00 p.m.	27 71	32.	...	N. E.	1	1	C.	45	"	K. 10-6. Calm.
"	"	19 6 00 a.m.	27 75	21.	...	N. E.	1	0	...	...	"	K. 10-4. High wind N., low wind S. 1.

[DANSON.]

APPENDIX VI.

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(2) OBSERVATIONS AT TELEGRAPH CREEK, STIKINE RIVER, B. C., DURING PORTIONS OF THE YEARS 1881 TO 1886, BY J. C. CALLBREATH.

DATE.	Minimum Temperature.	REMARKS.	DATE.	Minimum Temperature.	REMARKS.
1881.	°		1881.	°	
Oct. 2	23	Cold-st night yet.	Dec. 21	20	
3	23	Heavy frost last night.	22	20	
8	12		23	20	
9	7	First ice running on river.	24	20	
10	14		25	15	
11	22		26	20	
12	20		27	20	
13	.....	Little frost last night.	28	20	
14	.....	No frost this morning.	29	20	
15	23		1882.		
16	14		Jan. 1	-4	
17	10		2	-17	
18	7		3	-4	
19	10		4	-13	
20	21		5	-2	
21	30		6	6	
22	.....	No frost last night.	7	6	
23	.....	Weather mild.	8	6	
24	.....	" "	9	8	
25	.....	" "	10	8	
26	.....	" "	11	8	
27	.....	" " 9 p.m., 45°	12	15	
28	26		13	.....	Heavy thaw.
29	25		14	8	
30	33		17	30	
31	23		18	22	
Nov. 1	20		19	22	
2	32		20	15	
3	26		21	7	
4	.....	No frost last night.	22	-4	
6	32		23	-15	
8	25		26	-25	
9	31		27	-30	Mild.
10	29		28	27	
11	24		29	6	
12	16		30	13	
13	12	2 in. snow on range at Tahltan.	Feb. 1	14	
14	8		2	5	
15	-13	3 or 4 in. snow on range at Tahltan.	3	5	
16	-17		4	15	
17	-4		7	-1	
20	.....	Mild.	8	-5	
22	-7		9	-12	
23	4	Mild all day.	10	-28	
24	8	8 in. snow on range at Tahltan.	11	-25	
25	32		12	20	
26	34		13	0	
27	20		14	9	
28	20		15	-27	
29	15		16	-32	
30	10		17	-29	
Dec. 1	20		18	.....	9 a.m., -2°
2	20		19	.....	Thawing.
3	2		20	4	
4	0		21	30	
5	4		22	12	
6	12		23	-8	
7	7		24	-1	
8	3		25	-2	
9	-2		26	0	
10	0		27	.....	Mild.
11	-13		28	5	
12	-29		March 1	10	
13	-29		2	-6	
14	-18		3	-16	
15	-4		4	-22	
16	6		5	-13	
17	24		6	10	

DATE.	Minimum Temperature.	REMARKS.	DATE.	Minimum Temperature.	REMARKS.
1882.	°		1882.	°	
March 7	20		Oct. 4	19	
8	23		6	.....	Bright, fine day.
9	14		7	21	
10	14		8	30	Cloudy, light sprinkle rain a.m.
11	7		10	33	" raining a little all day.
12	22		11	36	
13	22		18	30	
14	6		24	24	
15	6		26	30	Fine, clear day, strong wind
16	13		27	30	up river.
17	13		28	32	Cloudy and calm.
18	18		29	32	Rained hard in eve., drizzling
19	17		30	35	all day.
20	10		31	32	Snowing this morn., melting as
21	19				it fell.
22	19		Nov. 1	14	Mild and pleasant.
23	2		2	10	Ice running in river for first
24	15		3	24	time.
25	22		4	15	Wind up river since noon.
26	8		5	15	Fine, mild day.
27	15				Mild and pleasant; bright all
28	15		6	12	day; less than 1 in. snow fell
29	12		7	17	yesterday
30	10		8	18	Mild and calm all day.
April 1	14				Overcast, light mist; little or
2	10		9	3	no ice in river.
3	10		10	2	Calm, mackerel-sky clouds
4	15				moving up river
5	14		11	22	Mild and calm all day.
6	12		12	25	Snowed a little.
7	12		13	19	Clear and calm all day.
8	22		14	24	Light floating clouds; calm
9	23				and mild all day.
10	24		15	17	Commenced raining 2 p.m.
11	24		16	32	Rained all night; snowed for 1
12	25				hour after daylight; cleared
13	33		17	30	off.
14	24		18	25	Mild and pleasant all day;
15	24				wind up river.
16	30		19	20	Mild and pleasant; light snow
17	30		20	11	in evening.
18	0		21	11	Bright, calm day.
19	16		22	10	Partly clear.
20	16		23	10	Clear and calm.
21	11				Partly overcast a.m., p.m.
22	27		24	6	mild, calm, overcast.
23	27		25	7	Lightly overcast, calm.
24	17		26	20	Snowed a little this a.m.
25	16		27	8	Lightly clouded all day, mild
26	17				overcast, snowing a little,
27	19		28	7	mild all day.
28	26		29	3	Clear and mild all night.
29	25				Misty, began snowing from
30	16		30	15	N.E. 4 p.m.
May 1	27				Snowed 3 in.; river nearly
2	28		Dec. 1	6	closed.
3	34		2	7	Lightly overcast.
4	34		3	14	Mild day.
5	33		4	14	Light overcast, calm all day.
6	82		5	14	Heavy and calm.
7	82		6	14	
8	26		7	0	Mild and calm.
9	33		8	1	Mild, overcast; lt. snow p.m.
10	33		9	11	Lightly overcast, mild and
11	42				calm.
12	28		10	8	Partly clouded; snow squalls.
13	31		11	-7	Cold all day; wind down
14	30				river.
15	28				
16	35				
17	38				
18	26				
19	29				
20	29				
21	29				
22	29				
23	.....	No frost.			
24	22	Coldest night of season, bright			
Sept. 29	22	clear day.			
30	30	Wind N., bright and clear all			
		day.			
Oct. 1	24	Wind N.			
8	19				

DATE.	Minimum Temperature.	REMARKS.	DATE.	Minimum Temperature.	REMARKS.
1882.	°		1883	°	
Dec. 12	-11		Feb. 17	5	Overcast; a little snow.
13	-28	Cutting N. wind; not above -20° all day.	18	10	Mild and calm; snowed 2 in. last night.
14	.....	9 a.m., -16°; 5 in. fine snow all day.	19	7	Calm.
15	-11	Snowed about 8 inches.	20	-2	Clear and calm.
16	6	Little snow during night; growing warmer.	21	-3	Clear.
17	21	Overcast, wind E.	22	.....	10 p.m., 5°.
18	6	Overcast, as usual this mild weather.	23	-1	Calm and partly clouded.
19	-4		24	9	Cloudy.
20	.....	This evening 33°.	25	-1	10 a.m., thawing—first thaw of season
21	20		26	33	Thawing; clear all day.
22	12	Mild and pleasant all day.	27	35	Thawed all night.
23	.....	10 a.m., 31°.	28	32	Bright and warm.
24	23	Misty, sprinkle of snow, mild and calm.	March 1	9	Clear.
25	12	Clear, mild and pleasant all day.	2	.....	Warm day.
26	5	Clear; 15 in. snow on Tabitan range.	3	25	Wind N.E.
27	-10	Clear and calm.	4	11	Bright, clear.
28	-14		5	11	Bright.
29	-4	Mild and calm.	6	7	Clear.
1883.			7	15	Clear, warm day; thawing in shade.
Jan. 1	4	" " "	8	21	Clear, bright; strong wind up river.
2	0		9	28	Clear.
3	.....	9 p.m., -3°.	10	18	Clear and warm,
4	.....	8 a.m., -11°.	11	12	
5	16	Clear; wind N.	12	26	
6	20	Clear and calm.	13	36	
7	-16	Mild all day; clear.	14	24	
8	0		Oct. 13	.....	Weather mild.
9	-6	Overcast.	14	.....	" " overcast.
10	.....	8 a.m., 5°.	15	.....	Very mild.
11	-11	Mild and calm all day.	16	.....	Mild and calm.
12	-9		17	.....	About 12°; weather moderate;
13	.....	8 a.m., 5°.	18	.....	little ice running in river.
14	.....	Calm.	19	.....	Coldest night of season; much ice in river.
15	0		Nov. 1	-5	
16	-17	Clear and calm; cold all day.	2	5	9 p.m., 8°.
17	-24	" " " growing milder.	3	4	10 p.m., 32°.
18	-18		4	27	Snowed 1 in.; mild day.
19	-8		5	26	" 2 " last night.
20	2	Mild and calm.	6	27	
21	17	Calm all day.	7	16	
22	24	Lightly overcast, squally.	8	10	
23	16	Mild and squally.	9	15	Snowing lightly a.m.; p.m. clear
24	10	Misty overhead; calm.	10	-3	Lightly overcast.
25	6	Calm; lightly overcast.	11	6	Mild, hazy, calm.
26	-2	Lightly overcast and calm.	12	.....	8 a.m., -4°; clear, calm.
27	.....	11 p.m., 0°.	13	-12	Moderating; calm.
28	0	Mild and calm.	14	-3	Clear and calm.
29	10	" " " partly overcast.	15	10	Mild and calm.
30	-3		16	12	Clear; wind down river.
Feb. 1	.....	Weather milder.	17	.....	8 a.m., 27°; river closing fast.
2	.....	10 p.m., -24°; clear.	18	25	Mild and overcast.
3	.....	11 p.m., -22°.	19	26	
4	.....	10.30 p.m., -10°; clear.	20	28	Clear.
5	-13	Lightly overcast; cold and clear.	21	.....	8 a.m., 21°.
6	-10	Clear.	22	13	
7	-4		23	-7	Clear; N. wind.
8	-3	Lightly overcast.	24	-16	Clear and calm.
9	-2	Clear and calm.	25	-20	
10	-4	Clear; snowed a little.	26	-25	Clear and calm a.m.; p.m. hazy.
11	12	Overcast a.m.; strong E. wind, clear and calm p.m.	27	-27	Snowed a little last night; clear day.
12	0	Strong N.E. wind; clear.	28	-12	
13	-20	Clear; N. wind.	29	-11	Mild; overcast all day.
14	-23	Clear and calm.	30	-3	Snowed and rained a little to-day.
15	-23	Lightly overcast and calm.	Dec. 1	14	
16	-10	" " sprinkling snow.	2	31	

DATE.	Minimum Temperature.	REMARKS.	DATE.	Minimum Temperature.	REMARKS.
1883.	°		1884.	°	
Dec. 3	9	Hazy, calm	Feb. 10	-18	Clear and calm
4	9	Mild.	11	-18	" " "
5	16	Mild.	12	-17	" " "
6	-10	Calm, hazy mild.	13	-15	" " "
7	.....	8 a.m., 22°; snowed 1 in. last night.	14	-9	" " "
8	13	Calm and clear.	15	-23	Calm
9	16	Misty; snowed a little	16	-19	Strong north wind; clear
10	26	Wind S	17	-21	Strong N.E. wind; lt. snow; overcast.
11	26	Clear and calm.	18	-20	Clear; N. wind.
12	21	Clear.	19	-30	Clear and calm; coldest night of winter.
13	7	Mild all day	20	-25	Calm
14	12	Snowed a little all day.	21	-25	Clear and calm; p.m. overcast.
15	.....	9 a.m., 22°; snowed a.m.; rain p.m.	22	-5	Snowed a little.
16	.....	9 a.m., 42°; clear; strong S. wind.	23	10	Lightly overcast; little snow
17	.....	9 a.m., 34°.	24	4	Strong S. wind; thawing.
18	.....	9 a.m., 23°; little snow.	25	24	
19	14		26	35	Rained hard during night
20	18		27	30	Little hazy.
21	18	Clear and calm.	28	12	
22	-1	Clear and hazy.	29	10	Clear, calm.
23	.....	9 a.m., -10°.	March 1	15	" "
24	.....	9 a.m., -11°.	2	20	Clear.
25	-17	Clear and calm.	3	20	Overcast; strong N.E. wind all day
26	-14		4	-2	Clear; N. wind.
27	-9	Clear.	5	-7	
28	-26	Clear; N. wind.	6	-8	
29	-30	Clear and calm.	7	10	
30	-31		8	6	Clear and calm.
31	.....	6 a.m., -1°; wind N.E.	9	-3	" " "
1884.			10	-4	" " "
Jan. 1	-6	Clear and calm.	Oct. 18	.....	Ice commenced running in R.
2	-10	Clear.	19	12	
3	-14	Clear; N. wind.	20	.....	Not much ice running to-day.
4	-20	Hazy all day; 10 p.m., -6°.	21	.....	More
5	-6	Hazy; 10 p.m., -2°; lt. snow.	22	.....	Ice running thick; little frost last night; thawed all day.
6	-15		23	.....	Ice running thick; froze a little last night; thawing this a.m.
7	-6		24	.....	Snowing this evening.
8	.....	9 a.m., 5°.	25	.....	Mild; snowing a little; river almost clear of ice.
9	.....	" " 8°.	26	.....	Mild; no ice running.
10	.....	" " 16°; snowed 1 inch.	27	.....	Cloudy; light snow.
11	.....	" " 22°; hazy, calm.	28	20	Overcast; light snow; good deal of ice running.
12	15	Snowed a little last night.	29	18	Much ice running; mild to-day
13	7		30	12	Dry, mild and clear.
14	2		Nov 1	7	Clear; coldest night of season so far.
15	0		2	14	Lightly overcast; mild and pleasant.
16	37	Strong southerly wind; thawing.	3	16	Mild and pleasant day.
17	9	Clear and calm.	4	24	Snowing this a.m.
18	6	Hazy, calm.	5	30	Snowed 2 in. last night; thawing this morn.; snow at Thaltan range nearly 1 ft. deep.
19	-10	Clear and calm.	6	24	Clear.
20	0	Partly overcast.	7	28	
21	14	Mild and hazy; a little snow	8	29	
22	20	Clear and calm.	9	29	
23	22	Mild all day.	10	30	
24	23		11	32	Snowing at noon; turned to rain and sleet.
25	23	Snowed about 2 in. last night	12	38	Raining.
26	6	N.E. wind.	13	32	Clear; no ice in river.
27	-17	Clear and calm.	14	24	Clear and calm.
28	-21		15	14	
29	-21	Clear; wind up river.	16	18	Overcast.
30	-25	Thawing all day; 10 p.m., 36°.	17	20	Misty and calm; snowed little in evening.
Feb. 1	-5	Snowed 4 in. last night; strong N.E. wind.			
2	-19				
3	-31				
4	-5				
5	-7	Clear.			
6	-5	" and calm.			
7	-7	" strong wind down river.			
8	-15	" and calm.			
9	-8				

DATE.	Minimum Temperature.	REMARKS.	DATE.	Minimum Temperature.	REMARKS.
1884.	°		1885	°	
Nov. 18	32	Clear	Jan. 30	.....	Light snow.
19	32	A little snow during day.	31	.....	Mild and calm
20	29	Overcast, calm.	Feb. 1	19	
21	11	Hazy and calm	2	22	Calm
22	13	Mild	3	25	Lightly overcast.
23	16	Clear.	4	30	Overcast, calm.
24	14	Hazy and calm.	5	11	
25	10	Snowed about 2 in. last night.	6	10	Cloudy; E. wind.
26	26	Nearly clear.	7	12	Clear and calm.
27	26	Hazy.	8	19	" " "
30	30	Rained hard all day.	9	15	" " "
Dec. 1	31	Clear a.m.; clouded and raining p.m.	10	15	Calm and overcast.
2	....	8 a.m., 34°; 1 p.m., raining; 3 p.m., cleared.	11	10	" " misty.
3	30	Clear.	12	10	Clear and calm.
4	24	Snowed about 2 in. this eve.	13	13	Hazy " " lt. snow in eve.
5	24	Clear.	14	14	Clear
6	20	Misty and cloudy; wind S.W.	15	20	10 p.m., 15°.
7	....	10 a.m., 42°	16	....	
8	30	Clear and calm.	17	4	Clear and windy.
9	21	Lightly overcast.	18	9	" " calm.
10	21	Clear.	19	16	" " "
11	12	Clear; wind down river.	20	15	" " "
12	7	Clear.	21	5	Overcast.
13	3	Lightly overcast.	22	19	Thawing in shade at noon.
14	8	Clear; N. wind.	23	29	Heavy thaw all day.
15	-15	Clear; N. wind: below -12° all day.	24	20	Clear and calm.
16	-16	Clear.	25	20	Clear; thawing all day.
17	-4	Strong easterly wind.	26	27	
18	-8	Clear; strong wind down river; crossing on ice to-day.	27	12	Wind N.E.
19	-12	Clear; N. wind.	28	32	Sleet this p.m.
20	-15	" " "	29	30	Clear; maximum temp. 40° in shade.
21	-20	Strong; N.W. wind a.m.; calm p.m.	30	26	Clear and calm.
22	-20	Little wind.	1	30	Clear all day.
23	-10	Overcast.	2	10	Clear and calm.
24	-5	Clear.	3	10	Lightly overcast; clearing.
25	-15	" " "	4	22	Overcast, calm; snowing at 2 p.m.
26	-22	Clear, strong north wind.	5	38	Raining hard.
27	-2	" " "	6	34	Overcast, calm.
28	-3	Clear.	7	16	Clear, calm.
29	-20	Clear and calm.	8	18	Snowed a little this evening.
30	-14	" " "	9	21	Clear; strong S.W. wind.
1	-7	Lightly overcast,	10	26	Snowing all day.
1885.			11	24	6 in. snow fell yesterday; last night clear and calm.
Jan. 1	-3	Calm and hazy.	12	14	Clear.
2	-8	Lightly overcast.	13	34	Clear; heavy thaw.
3	5	Partly clear.	14	22	Clear and calm.
4	-6	Overcast; snowing.	15	12	" " "
5	17	" " "	16	12	" " "
6	....	Mild and calm.	17	....	" " "
7	....	Snowed 4 in. last night; light snow to day.	18	20	" " "
8	....	Clear and colder this morning.	19	10 p.m., 28°.	
9	....	10 p.m., -1°; below zero all day.	20	10	Clear and calm.
10	....		21	18	
11	-22	Clear.	22	23	
12	-30	" N. wind.	23	82	No frost last night; cloudy; strong wind up river.
13	-32	" " and calm.	24	26	Clear; wind up river.
14	-28	" " "	25	30	Warm; S. wind all day.
15	-22	" " "	26	13	Overcast in morning; raining p.m.
16	-28	" " "	27	....	Rained and snowed most of night; 1/2 in. went off this p.m.; bright.
17	-5	Hazy; light snow last night.	28	35	Frost last night.
18	8	Calm, misty.	29	18	Clear.
19	10	Snowed about 3 in. last night; clear and calm.	30	22	Cloudy.
20	-6	Hazy, calm.	1	....	No frost last night; strong S.W. wind.
21	6	" " "	2	35	
22	19	" " "	3	18	
23	16	Rained all p.m.	4	22	
24	....	Mild.	5	....	
25	....		6	....	
26	....		7	....	
27	....		8	....	
28	....		9	30	

DATE.	Minimum Temperature	REMARKS.	DATE	Minimum Temperature	REMARKS.
1885.	°		1886.	°	
April 10	28	Clear; strong wind up river,	Jan. 2	18	Snowed 2 in.
11	31		3	-2	Wind N.E.
12	31	High winds.	4	-9	Snowed 2 in.
13	30	Little wind; some snow squall.	5	-26	Clear.
14	...	Not much wind to-day.	6	-32	Clouded up p.m.; snowed 2 in.
15	25		7	-10	Clear.
16	16		8	-6	Calm.
17	10		9	4	Clear.
18		Hard frost.	10	6	Overcast; snowed a little in evening.
19	...	No frost last night.	11	16	Snowed about 2 in.
20	27		12	20	Snowed 4 in.; calm and clear
21	28		13	-5	Clear and calm.
22	20		14	-17	" " "
23	4		15	15	8 a.m., -10°; clear; wind N.W.
24	7	Strong S.E. wind	16	-14	8 a.m., 20°; clear.
25	22	First ice running in river.	17	...	Very clear.
26	5	Clear, good deal of ice running.	18	-8	N.E. wind all day; clear.
27	20	Calm.	19	-14	Very clear; N. wind.
28	22	Calm; spitting snow; cloudy.	20	-23	Clear and calm.
29	18	Calm and clear	21	-26	Clear and calm.
30	14	Clear; snowed a little last night.	22	-30	9 a.m., 14°.
1 May	19	A little ice running.	23	...	Blew a gale all night.
2	22	Calm.	24	-16	
3	18	Overcast, calm.	25	-31	
4	22	Calm; snowing a little.	26	-36	Hazy.
5	16	Clear.	27	-12	" "
6	12		28	-6	
7	7	Clear.	29	-10	Snowed 2 in.
8	6	Clear, river open yet; very little ice running.	30	-12	Clear.
9	1		31	-6	Clear and calm.
10	1		Feb. 1	-10	
11	1	Hazy, calm	2	-2	Overcast; a little snow.
12	21	River entirely free of ice; hazy.	3	0	Snowed about 4 in.
13	17	Hazy.	4	-2	" a little
14	10	Hazy, p.m. clear	5	22	" 2 in.
15	12	Clear and calm.	6	34	Rained all night, snow in eve.
16	10	Hazy and calm.	7	22	Clear.
17	31	Snowing 9 p.m., p.m. thawing.	8	18	misty.
18	28	9 in. snow fell during night.	9	20	Blowing a gale; snowed 6 in., drifting badly.
19	7	Clear, calm.	10	-2	Clear; evening snowing.
20	2		11	...	8 a.m., 12°; snowed a little; clear
21	...		12	-2	Lightly overcast.
22	22	Snowing a little.	13	-10	
23	20	Cloudy.	14	-10	Clear and calm.
24	7	Overcast.	15	-2	Snowed 2 in.; rained a little
25	12	Clear.	16	...	7 in.
26	9	Clear and calm.	17	34	9 a.m., 26°; max., 42°, much rain.
27	-18		18	...	Strong S.W. wind; much rain
28	0	Snowed a little.	19	...	8 a.m., 36°; raining hard most of night and to-day.
29	8	Hazy, calm all day; snowed a little in evening.	20	38	8 a.m., 36°.
30	10	Snowed 5 in. last night.	21	36	Max., 44°; cloudy and raining.
31	14		22	27	Rained nearly all night; clear to-day.
1 June	12	Hazy, calm.	23	...	Overcast; snowed a little.
2	12	Clear	24	26	10 p.m., 0°; very clear.
3	12	Clear and calm.	25	0	Clear and calm.
4	3		26	0	
5	-6	Clear.	27	8	Clear.
6	-10	Clear; river closing from edge.	28	18	Overcast; p.m. snowing.
7	-16		29	28	Cloudy.
8	4	Clear and calm.	30	4	Overcast.
9	...	8 a.m., -10°.	31	14	Hazy and calm; eve. clear.
10	6		1 July	8	Clear.
11	10	Thawing; raining in evening.	2	...	10 p.m., 22°.
12	26		3	18	Cloudy and calm.
13	28	Cloudy.	4	24	Thawing all day.
14	28	Cloudy; snowed 1 in.; wind up R.; wind down R. in eve.	5	30	Clear.
15	29	Clear (?); snowing a little all day.	6	37	Cloudy most of day
16	31	Clear.	7	24	
17	...				
18	...				
19	...				
20	...				
21	...				
22	...				
23	...				
24	...				
25	...				
26	...				
27	...				
28	...				
29	...				
30	...				
31	...				
1886.					
Jan. 1	-4	Snowed 12 in.; strong wind up R.			

DATE.	Minimum Temperature.	REMARKS.	DATE.	Minimum Temperature.	REMARKS.
1886.	°		1886.	°	
Mar. 14	30	Heavy thaw.	April 6	18	
15	27	Wind N.E.; snowed 1 in.	7	20	
16	4	Clear; wind N.E.	8	30	
17	-4		9	31	Clear.
18	16		10	30	
19	12		11	.....	No frost.
20	10		12	27	
21	8	Cloudy most of day.	13	28	Clear.
22	12		14	.....	No frost.
23	8		15	20	Clear.
24	18	Clear; freezing in shade.	16	30	Clear; clouded up in evening.
25	20	Strong N.W. wind; thawing.	17	.....	No frost.
26	26	Wind up river; thawing.	18	14	
27	.....	No frost; cloudy.	19	.....	Frost last night.
28	28	Calm.	20	.....	No frost last night.
29	23		21	.....	Finished ploughing.
30	30		22	.....	Pack-train off to range.
April 1	30	Overcast.	23	.....	Canoes arrived to-day.
2	.....	No frost, overcast and foggy.			
3	.....	No frost.			
4	20				
5	20				

(3) OBSERVATIONS AT LAKE TON, DEASE LAKE, B.C., DURING PORTIONS OF THE YEARS
1878 TO 1882, BY MR. J. CLEARHUE.

DATE.	Minimum Temperature.	Direction of Wind.	REMARKS.	DATE.	Minimum Temperature.	Direction of Wind.	REMARKS.
1878.	°			1878.	°		
Nov. 1	0	S.W.	Mild and cloudy.	Dec. 4	12	N.W.	Bright and clear.
2	0	S.W.	Mild and clear.	5	0	N.W.	Cloudy.
3	8	S.W.	Raining.	6	0	N.W.	"
4	22	N.W.	Heavy snowfall.	7	12	N.W.	"
5	0	S.W.	Mild and clear.	8	8	S.W.	Lake frozen in front of town.
6	0	S.W.	Mild and cloudy.	9	1	N.W.	Bright and clear; skating on ice.
7	20	S.W.	Mild; sunshine.	10	-8	N.W.	First arrival from McDames and Thibert Cr. on ice.
8	14	S.W.	Rain in afternoon.	11	12	S.W.	First arrival from head of lake on ice.
9	0	S.W.	Heavy snowfall at night.	12	16	S.W.	Cloudy.
10	14	N.W.	Bright and clear.	13	18	S.W.	Heavy snow p.m.
11	10	N.W.	" " "	14	20	S.W.	" " last night.
12	10	N.W.	" " "	15	4	S.W.	Bright and clear.
13	12	N.W.	Cloudy, stormy afternoon.	16	-4	N.W.	Snow.
14	16	N.W.	Bright and clear.	17	1	N.W.	Bright and clear.
15	14	N.W.	Light snowfall.	18	14	S.W.	Cloudy.
16	18	S.W.	" " "	19	24	S.	Very mild, bright and clear.
17	18	S.W.	Drifting all day.	20	20	S.	Heavy thaw; lake open in places.
18	0	S.	Cloudy; mild in p.m.	21	12	W.	Cloudy.
19	0	S.	Snowing.	22	6	W.	"
20	20	S.	Cloudy.	23	-2	N.W.	Bright and clear.
21	18	N.W.	Heavy snowfall.	24	-4	N.W.	" " "
22	10	N.W.	Mild, cloudy.	25	-8	N.W.	" " "
23	20	S.W.	Cloudy.	26	-4	N.W.	" " "
24	18	S.W.	Cloudy.	27	-6	N.W.	" " "
25	8	W.	Bright and clear.	28	-7	N.W.	" " "
26	10	W.	" " "	29	-4	N.W.	" " "
27	10	W.	" " "	30	-8	N.W.	" " "
28	12	W.	" " "	31	-10	N.W.	" " "
29	12	S.W.	Snowing p.m.				
30	28	S.W.	Mild, bright and clear; heavy snow at night.	1879.			
1	10	S.W.	Bright and clear.	Jan. 1	-4	N.W.	" " "

DATE.	Minimum Temperature.	Direction of Wind.	REMARKS.	DATE.	Minimum Temperature.	Direction of Wind.	REMARKS.
1879.	°			1879.	°		
Jan. 2	-1	S.W.	Bright and clear.	Mar. 13	-20	N.	Bright and clear.
3	4	S.W.	Bright and clear.	14	-4	N.W.	Stormy.
4	6	S.W.	Bright and clear; light snow last night.	15	-9	N.	Bright and clear.
5	10	S.W.	Bright and clear.	16	-19	N.	" " "
6	6	S.W.	Snowing.	17	-2	N.	" " "
7	0	S.W.	" " "	18	-4	N.	" " "
8	8	S.W.	Bright and clear.	19	2	N.	" " "
9	-22	S.W.	" " "	20	10	N.	" " "
10	-26	N.	" " "	21	2	N.	" " "
11	-32	N.	" " "	22	10	N.W.	" " "
12	-36	S.W.	Snowing; at noon, -12°.	23	2	N.W.	" " "
13	-30	S.W.	Bright and clear.	24	0	N.	Storming.
14	-22	S.W.	Snowing; at noon, -4°.	25	18	N.W.	Very mild.
15	6	S.W.	Cloudy.	26	22	N.	Strong wind.
16	0	S.W.	Bright and clear.	27	22	N.	Snowing.
17	4	S.W.	" " "	28	24	N.	" " "
18	-2	S.W.	Snowing; very stormy.	29	14	N.	Bright and clear.
19	-8	S.W.	Bright and clear.	30	1	N.	" " "
20	-4	S.W.	" " "	31	1	N.	" " "
21	-6	S.W.	Cloudy; stormy p.m.	Nov. 18	2	N.	Snowing and drifting all day.
22	-8	S.W.	Stormy all day.	19	4	N.	drifting, cloudy.
23	-2	S.W.	Strong drifting.	20	12	N.	Light snowfall.
24	-18	S.W.	Bright and clear.	21	14	N.	Cloudy; clear towards evening.
25	-24	S.W.	Cloudy.	22	4	N.	Cloudy.
26	-20	S.W.	Bright and clear.	23	14	S.W.	Cloudy; north wind in evening.
27	-2	S.W.	Cloudy.	24	12	S.W.	Mild; lake partially frozen over.
28	10	S.W.	Bright and clear; snow last night.	25	3	N.	Light snow; lake frozen over.
29	12	S.W.	Bright and clear.	26	12	S.	Cloudy; light snow.
30	12	S.W.	" " "	27	-12	N.	Bright and clear.
Feb. 1	10	S.W.	Storming.	28	-20	N.	" " "
2	-11	S.W.	Storming; heavy snow last night.	29	-28	N.	" " "
3	-11	S.W.	Bright and clear.	30	-30	N.	Cloudy; strong wind.
4	6	S.W.	" " "	Dec. 1	-22	N.	Storming.
5	16	S.W.	" " "	2	-21	N.	Cloudy.
6	10	S.W.	" " "	3	-10	N.	Bright and clear.
7	-6	S.W.	" " "	4	-10	N.	Cloudy.
8	-27	S.W.	" " "	5	-10	N.	Bright and clear.
9	-29	S.W.	" " "	6	-33	N.	Bright and clear.
10	-18	S.W.	" " "	7	-31	N.	Bright and clear; high wind.
11	-23	S.W.	" " "	8	-31	N.	Cloudy and storming; strong wind.
12	-23	S.W.	" " "	9	-30	N.	Cloudy and storming; strong wind.
13	-24	S.W.	" " "	10	-22	N.	Cloudy and storming; strong wind.
14	-23	S.W.	" " "	11	-14	N.	Cloudy and storming; strong wind.
15	-29	S.W.	" " "	12	-24	N.	Cloudy and storming; strong wind.
16	-10	S.W.	" " "	13	-24	N.	Cloudy and storming; strong wind.
17	-19	S.W.	" " "	14	-12	N.	Cloudy and storming; strong wind.
18	-17	S.W.	Stormy.	15	-4	N.	Cloudy and storming; strong wind.
19	-20	S.W.	Bright and clear.	16	-26	N.	Bright and clear; strong wind.
20	-15	S.W.	Stormy, drifting.	17	-37	S.	Cloudy.
21	-25	S.W.	Bright and clear.	18	-28	N.	Bright and clear.
22	-28	S.W.	Stormy, drifting.	19	-32	N.	Cloudy.
23	-16	S.W.	Bright and clear.	20	-22	N.	Bright and clear.
24	-24	S.W.	Snow last night.	21	-23	N.	" " "
25	-30	S.W.	Heavy storm, snowing, drifting.	22	-23	N.	" " "
26	-10	S.W.	Snowing and drifting.	23	-23	N.	" " "
27	-10	S.W.	Heavy wind, drifting.	24	-10	N.	Cloudy; light snowstorm.
28	-8	S.W.	Storming.	25	-8	N.	Bright and clear.
Mar. 1	-8	S.W.	Bright and clear.	26	-12	S.	" " "
2	-4	S.W.	Cloudy, drifting.	27	-12	S.	" " "
3	0	S.W.	Bright and clear.				
4	-12	S.W.	Bright and clear.				
5	-12	S.W.	Bright and clear.				
6	-6	S.W.	Bright and clear; strong wind.				
7	-3	S.W.	Bright and clear.				
8	-4	S.W.	Bright and clear.				
9	-4	S.W.	Bright and clear.				
10	-12	S.W.	Bright and clear.				
11	-12	S.W.	Bright and clear.				
12	-12	S.W.	Bright and clear.				

DATE.	Minimum Temperature.	Direction of Wind.	REMARKS.	DATE.	Minimum Temperature.	Direction of Wind.	REMARKS.
1879.	°			1880.	°		
Dec. 28	-38	N	Bright and clear.	Mar. 2	-39	N.	Bright and clear; 4 p.m., -20°.
29	-11	N	Cloudy.	3	-34	N.	Strong wind; bright and clear; 4 p.m., -8°.
30	-3	N.		4	-32	N	Strong wind; bright and clear; 4 p.m., 12°.
31	-5	N.	Snowing and drifting.	5	-31	N.	Bright and clear; 4 p.m., -16°.
1880.				6	-44	N.	Bright and clear; 4 p.m., -12°.
Jan. 1	-18	N	Bright and clear.	7	-22	N.	Bright and clear; 4 p.m., 0°.
2	-27	N.		8	-12	S.	Storming all day; 30° above zero.
3	-33	N.	Cloudy, drifting.	9	14	S.	Cloudy; strong wind last night.
4	-22	N.		10	8	N	Bright and clear; strong wind.
5	-29	N.	Bright and clear; at noon -10°.	11	-27	.....	Bright and clear.
6	-45	N.	Bright and Clear.	Nov. 1	.....	N.W.	Mild; light snowfall.
7	-43	N.	Cloudy.	2	.....	N.W.	Mild.
8	-43	N.	Bright and clear.	3	.....	N.W.	Very mild; raining.
9	-45	N.		4	.....	N.W.	Very mild; heavy rain.
10	-44	N.	" " "	5	.....	N.W.	Heavy fall of snow.
11	-45	N.	" " "	6	.....	N.W.	Very mild.
12	-44	N.	" " "	7	.....	N.W.	Mild, cloudy.
13	-40	N.	" " "	8	12	N.	" "
14	-30	N.	" " "	9	0	N.	" "
15	-28	N.	Storming and drifting.	10	0	N.	" "
16	-25	N.		11	12	N.	Mild; raining in evening.
17	-41	N.	Bright and clear.	12	.....	N.	Mild; rain.
18	-26	N.	Cloudy.	13	.....	N.	Mild.
19	-10	S.	Cloudy; light wind.	14	.....	N.	Mild; summer weather.
20	5	S.	Bright and clear.	15	26	N.	Frosty, beautiful morning.
21	4	S.	Cloudy; light snow in p.m.	16	14	N.	Cloudy; fine weather.
22	0	S.	Bright and clear; heavy S. gale last night.	17	14	N.	Clear and bright.
23	-12	N.	Bright and clear.	18	14	N.	
24	-10	N.	" " "	19	8	N.	Cloudy; light snowfall.
25	-30	N.	" " "	20	11	N.	
26	-40	N.	" " "	21	22	N.	Cloudy.
27	-43	N.	" " "	22	18	N.	Cloudy and mild.
28	-14	N.	Light snow; 8 a.m., 6°.	23	13	N.	
29	-4	N.	Cloudy.	24	7	S.	Cloudy and mild; snowing in evening.
30	12	N.	"	25	15	S.	
31	14	N.	"	26	13	S.	Cloudy.
Feb. 1	16	N.	Bright and clear; light snow last night.	27	15	S.	Bright and clear.
2	10	S.	Cloudy.	28	10	S.	Cloudy; lake partially frozen.
3	14	S.	Very soft.	29	18	S.	High winds; ice broken up.
4	0	S.	Very soft; at noon, 12°.	30	21	N.	Strong wind.
5	4	S.	Very soft.	Dec. 1	4	N.	Bright and clear; high wind.
6	-14	N.	Bright and clear.	2	-14	N.	Cloudy; lake partially frozen.
7	-23	N.		3	-15	N.	Cloudy; light snow; lake frozen over.
8	8	N.	Cloudy.	4	-6	N.	Cloudy; high wind.
9	2	.....	Bright and clear.	5	-10	N.	Bright and clear; crossed lake on ice.
10	-13	.....		6	-20	N.	Bright and clear; strong wind.
11	-12	.....		7	-19	N.	Cloudy; strong wind.
12	0	N.	Cloudy; S. wind p.m.	8	-14	N.	Cloudy; drifting; light snow.
13	-12	N.	Cloudy.	9	-13	N.	Storming and drifting.
14	-14	N.	Bright and clear.	10	-2	S.	
15	-14	N.		11	12	S.	
16	-38	N.		12	6	S.	Light snow.
17	-12	N.	Cloudy; light snowfall.	13	4	S.	
18	-12	N.	Bright and clear.	14	15	S.	
19	-12	N.	Heavy snowstorm.	15	-8	N.	
20	12	S.	Storming all day; heavy snows last night.	16	-14	N.	Cloudy; drifting.
21	12	S.	Heavy snowstorm last night.				
22	18	.....					
23	-8	.....	Bright and clear.				
24	.....	.....					
25	.....	.....	Bright and clear; high wind.				
26	-42	N.	Bright and clear.				
27	-16	N.	Cloudy, mild.				
28	4	S.	Light wind.				
29	0	N.	Bright and clear.				
Mar. 1	-84	N.	Bright and clear; 4 p.m., -70°.				

DATE.	Minimum Temperature.	Direction of Wind.	REMARKS.	DATE.	Minimum Temperature.	Direction of Wind.	REMARKS.
1880.	°			1881.	°		
Dec. 17	-15	N.	Bright and clear.	Feb. 19	-1	N.	Heavy snow-storm; drifting.
18	-12	N.	Bright and clear; south wind p.m.	20	-29	N.	Bright and clear.
49	-11	N.	Bright and clear; 8 p.m., -20°.	21	-37	N.	Bright and clear.
20	-23	N.	Bright and clear.	22	-37	N.	Cloudy; drifting.
21	-18	N.	" " "	23	-4	N.	Heavy snowfall.
22	-21	N.	" " "	24	-15	N.	Bright and clear.
23	-21	N.	Cloudy.	25	-37	N.	" " "
24	-13	N.	Bright and clear.	26	-38	N.	" " "
25	-14	N.	" " "	27	-6	N.	Cloudy.
26	-21	N.	Bright and clear; very heavy wind.	28	-6	N.	Cloudy and drifting.
27	-21	N.	Bright and clear; very heavy wind.	Mar. 1	-5	N.	Bright and clear.
28	-22	N.	Bright and clear; very heavy wind.	2	0	N.	Cloudy; light snow.
29	-16	N.	Cloudy.	3	6	N.	Cloudy.
30	-10	N.	Bright and clear.	4	6	N.	Cloudy; snowfall p.m.
31	6	N.	Light snowfall.	5	4	N.	Cloudy.
1881.				6	7	N.	"
Jan. 1	14	S.		7	2	N.	Cloudy; snow storm p.m.
2	16	S.		8	4	N.	Cloudy; high wind.
3	14	S.	Light snowfall.	9	0	N.	Bright and calm; light snow in evening.
4	4	S.	"	10	0	N.	Light snow.
5	5	S.	Light snowfall, cloudy.	11	8	N.	Cloudy.
6	6	S.	"	12	6	N.	Cloudy; light snow.
7	4	S.	"	13	-18	N.	Cloudy.
8	9	S.	Bright and clear.	14	18	N.	Cloudy; light snow.
9	4	S.	Cloudy; snowfall last night.	15	17	N.	Cloudy.
10	-2	N.	Windy; drifting.	16	12	N.	Snow-storm; drifting.
11	-17	N.	Bright and clear.	17	7	N.	Cloudy.
12	-24	N.	Bright and clear; 5 p.m., -25°.	18	6	N.	Light snow; heavy thaw.
13	-29	N.	Cloudy.	19	12	N.	Spring weather.
14	-28	N.	Bright and clear.	20	24	N.	
15	-20	N.	Cloudy; noon, 6°.	21	24	N.	
16	2	N.	Cloudy.	22	26	N.	
17	2	N.	Bright and clear.	23	-2	N.	Bright and clear.
18	2	N.	"	24	-2	N.	" " "
19	15	N.	Cloudy; light snow.	25	-6	N.	" " "
20	2	N.	Cloudy.	26	0	N.	Cloudy; light snow.
21	10	N.	Bright and clear.	27	above zero.	S.	Snow-storm; drifting; strong wind.
22	30	N.	Cloudy.	28	"	S.	Snowstorm; drifting; strong wind.
23	10	N.	Bright and clear.	29	"	N.	Rain in evening.
24	0	N.	" " "	30	"	N.	
25	-20	N.	Cloudy.	May 25	.....		Creek commenced to rise.
26	-17	N.	Bright and clear.	30	.....		Highest water.
27	-1	N.	" " "	June 4	.....		First trip of steamer to Thibert Creek.
28	-28	N.	" " "		.....		Very cold, wet summer.
29	-39	N.	Cloudy.	Sep. 27	.....		Snowfall in evening.
30	-34	N.	Cloudy; light snow; drifting.	Oct. 6	.....		Light snowfall.
31	-10	N.	" " "	21	.....		Rain.
Feb. 1	-2	N.	Snowing and drifting.	22	.....		
2	-22	N.	Cloudy.	23	.....		
3	-14	N.	Snowing and drifting; heavy storm.	26	.....		Very mild.
4	-19	N.	Bright and clear.	Nov. 1	26	N.	Light snow.
5	-14	N.	" " "	2	26	N.	Heavy rain last night.
6	-10	N.	" " "	3	31	N.	Snow all gone.
7	-14	N.	" " "	4	25	N.	Very light snow.
8	-14	N.	" " "	5	25	N.	" " "
9	-18	N.	" " "	6	23	N.	" " "
10	-13	N.	" " "	7	23	N.	" " "
11	-12	N.	" " "	8	29	N.	Strong wind.
12	-11	N.	Cloudy.	9	30	N.	
13	-6	N.	Cloudy; clear p.m.	10	23	N.	Heavy snow; storming all day.
14	-6	N.	Bright and clear; windy.	11	18	N.	Heavy winds.
15	-30	N.	Bright and clear.	12	8	N.	Heavy winds; drifting.
16	-26	N.	Cloudy.	13	-3	N.	Bright and clear.
17	-4	N.	Cloudy and light snow.	14	-6	N.	" " "
18	6	N.	Light snow.	15	-15	N.	" " "
19	6	N.	Light snow; drifting.	16	-20	N.	Cloudy; at noon, -4°.

DATE.	Minimum Temperature.	Direction of Wind.	REMARKS.	DATE.	Minimum Temperature.	Direction of Wind.	REMARKS.
1881. Nov. 17	0	N.	Lake partially frozen over.	1882. Jan. 18	0	W.	Cloudy; snowfall.
18	20	N.	Heavy snowfall.	19	20	W.	Cloudy; snowfall; rain in evening.
19	20	N.	Light snow.	20	-1	N.	Cloudy; snowfall.
20	21	N.	Bright and clear.	21	-13	N.	Cloudy.
21	6	N.	Lake frozen opp. town.	22	-13	N.	Bright and clear.
22	3	N.		23	-13	N.	Drifting.
23	10	N.	At noon, 34°.	24	-13	N.	Bright and clear.
24	23	N.	At noon, 38°; rain.	25	-16	N.	Cloudy.
25	26	N.	Raining.	26	-47	N.	Strong wind.
26	34	N.	Bright and clear; Indian crossed ice.	27	-20	N.	Strong wind; drifting.
27	13	N.	Snowstorm.	28	-10	N.	Bright and clear.
28	18	N.	Bright and clear.	29	10	N.	Strong wind; drifting.
29	2	N.	Cloudy; lake nearly all frozen.	30	3	N.	Bright and clear.
30	18	S.	Ice broken up between town and Thibert Cr.	Feb. 1	-1	N.	Cloudy.
Dec. 1	16	S.	Strong wind.	2	8	N.	Bright and clear.
2	13	S.	Cloudy.	3	6	N.	Drifting.
3	3	S.	Bright and clear.	4	6	N.	Very heavy drifting and snowing.
4	3	S.	Light snowfall.	5	-12	N.W.	Drifting.
5	0	S.	Bright and clear.	6	-13	N.	Drifting.
6	5	S.	Heavy fog in morn.; p.m. clear.	7	-25	N.	Bright and clear.
7	5	S.	Heavy fog in morn.; p.m. clear.	8	-20	N.	Cloudy; drifting.
8	-9	S.	Light snow, drifting.	9	-42	N.	Cloudy.
9	-0	S.	Bright and clear.	10	-20	N.	Light snow.
10	-14	S.	" " "	11	-10	N.	Heavy snow, drifting.
11	-21	S.	" " "	12	-14	N.	Storm.
12	-41	S.	" " "	13	-41	N.	Bright and clear.
13	-25	N.	Cloudy.	14	-52	N.	" " "
14	-20	N.	Light snowfall.	15	-3	N.	Cloudy; weather changed.
15	-30	N.	Light snowfall; drifting.	16	-21	N.	Strong wind.
16	-15	N.	Bright and clear.	17	-11	N.	Cloudy.
17	7	N.	Heavy wind; drifting; heavy snow-storm.	18	28	N.	Cloudy; strong wind.
18	5	N.	Bright and clear.	19	12	N.	Cloudy.
19	22	N.	Cloudy.	20	-26	N.	Bright and clear.
20	8	N.	Bright and clear.	21	-14	N.	Cloudy.
21	-7	N.	Cloudy.	22	-3	N.	Very strong wind; drifting.
22	-6	N.	Bright and clear.	23	-11	N.	Heavy wind; drifting.
23	-3	N.	Cloudy.	24	-15	N.	Cloudy.
24	10	N.	Bright and clear.	25	-6	N.	Storming.
25	25	N.	Bright and clear.	26	-3	N.	Bright and clear.
26	28	N.	Bright and clear.	27	-31	N.	" " "
27	-10	N.	" " "	28	-3	N.	" " "
28	-1	N.	" " "	29	-25	N.	Cloudy.
29	-10	N.	Heavy snow-storm; drifting.	30	-4	N.	Bright and clear.
30	-10	N.	Cloudy.	31	9	N.	Very fine.
31	-10	N.	Cloudy.		13	N.	Bright and clear.
1882. Jan. 1	-15	N.	Bright and clear.		-14	N.	Very fine.
2	-23	N.	" " "		0	N.	Rain in evening.
3	-14	N.	" " "		15	N.	Cold wind.
4	-17	N.	Cloudy.		2	N.	Bright and clear.
5	-20	N.	Cloudy; light snow.		-3	N.	High wind.
6	-11	N.	Cloudy.		-26	N.	Very cold wind.
7	-4	N.	Light snowfall.		-4	N.	Bright and clear; strong wind.
8	6	N.	Bright and clear.		-2	N.	Bright and clear.
9	-11	N.	Cloudy; light snowfall.		-29	N.	Drifting; cold wind.
10	-8	N.	Beautiful morning, like spring.		-31	N.	Bright and clear.
11	5	S.	Bright and clear; heavy rain last night.		-16	N.	Heavy storm; snowing and drifting.
12	25	S.	Bright and clear.		-40	N.	Heavy fall of snow.
13	-17	N.	Cloudy; light snow.		-8	N.	Storming; snow.
14	-2	N.	Heavy rain, turning to snow.		5	N.	Cloudy.
15	29	S.	Heavy rain; light snow.		18	N.	Heavy snowfall all day.
16	25	S.			8	N.	
17	25	S.			10	N.	

DATE.	Minimum Temperature.	Direction of Wind.	REMARKS.	DATE.	Minimum Temperature.	Direction of Wind.	REMARKS.
1882.	°			1882.	°		
Mar. 28	-17	N.	Bright and clear.	Apr. 12	-2	S.	Cloudy; cold wind.
29	-30	N.	" " "	13	-5	S.	" " "
30	-30	N.	" " "	14	-14	S.	" " "
31	-20	N.	High wind; drifting.	15	-23	S.	" " "
April 1	-2	N.	Cloudy; drifting.	16	-27	S.	" " "
2	2	N.	Cloudy.	17	-20	S.	Snowing and storming.
3	5	N.	High wind; drifting.	18	-20	S.	Snowing in evening.
4	11	N.	Cloudy.	19	-23	S.	Cloudy; cold wind.
5	11	N.	Cloudy.	20	-7	S.	Cloudy; storming in eve.
6	14	N.	Light snowfall all day.	21	-22	W.	Storming; cold wind.
7	12	N.	Fine day.	22	-24	S.	Bright and clear.
8	15	N.	Raw, cold wind.	23	2	S.	Cloudy; light snow drift- ing.
9	12	N.	Cloudy.	24	7	S.	Bright and clear.
10	20	N.	Bright and clear.				
11	-1	N.	Cloudy; cold wind.				

(4.) RECORD OF TEMPERATURE AT LAKETON, DEASE LAKE, B. C., DURING PORTIONS OF THE YEARS 1886 AND 1887, BY MR. ROBERT REED.

DATE.	Minimum Temperature.	DATE.	Minimum Temperature.	DATE.	Minimum Temperature.	DATE.	Minimum Temperature.
1886.	°	1886.	°	1887.	°	1887.	°
Nov. 20	-14	Dec. 22	-30	Jan. 23	-30	Feb. 26	-40
21	-21	23	-44	24	-28	27	-30
22	-11	24	-38	25	-34	28	-31
23	-14	25	-39	26	-29	Mar. 1	-55
24	-2	26	-41	27	-40	2	-49
25	-4	27	-40	28	-61	3	-13
26	-3	28	-34	29	-61	4	-9
27	-19	29	-43	30	-52	5	-15
28	16	30	-38	31	-52	6	-45
29	14	31	-35	Feb. 1	-42	7	-32
30	7			2	-47	8	-28
Dec. 1	6	1887.		3	-56	9	-15
2	-4	Jan. 1	-32	4	-48	10	-41
3	-7	2	-25	5	-37	11	-31
4	-7	3	-13	6	-38	12	-22
5	13	4	-13	7	-5	13	-12
6	12	5	-10	8	-31	14	-13
7	12	6	-23	9	-49	15	-7
8	3	7	8	10	-27	16	-10
9	-2	8	10	11	-23	17	-5
10	3	9	11	12	-3	18	-12
11	-1	10	-5	13	-31	19	2
12	-5	11	-6	14	-32	20	2
13	-1	12	8	15	-1	21	18
14	-2	13	-7	16	-14	22	25
15	-7	14	-28	17	-3	23	2
16	-9	15	-35	18	-2	24	-20
17	-18	16	-54	19	-21	25	-9
18	-18	17	-32	20	-32	26	-2
19	-16	18	-27	21	-35	27	8
20	-10	19	-23	22	-5	28	11
21	-6	20	-29	23	-23		
		21	-46	24	-43		
		22	-39	25	-45		

APPENDIX VII.

SUMMARY OF ASTRONOMICAL OBSERVATIONS BY DR. G. M. DAWSON, EMPLOYED IN THE CONSTRUCTION OF THE MAP ACCOMPANYING THIS REPORT.

NOTE.—The angular instrument employed was a sextant of seven inch radius, Cary, No. 938. The longitudes of places on the map depend on two small chronometers, Frodsham, No. 06859, and Arnold, No. 9699, running mean and sidereal time respectively. The first-mentioned was employed in taking time in all the observations, and has been given double weight in longitude determinations beyond Telegraph Creek, as it was an instrument of higher class than No. 9699, and proved to be extremely trustworthy. The chronometers were rated wherever possible, as shown in the annexed note. No. 9699 changed its rate suddenly on one occasion, in consequence apparently of a slight jar received on Finlayson Lake, but subsequently recovered a satisfactory rate. The longitude of the site of Fort Selkirk on the map depends entirely on that brought round by our route from Wrangell, as we are still in possession of the preliminary plotting only, of Mr. Ogilvie's Lewes River traverse. (See foot note on p. 276 B.)

The chronometers, in their cases, were packed together in a padded leather-covered box, which was invariably handled and transported with the greatest care. Comparisons were made throughout the journey on every second day at 8 P.M., approximate local mean time.

*General Note on Rates of Chronometers, determined at Esquimalt, Dease Lake,
Frances Lake and Camp near site of Fort Selkirk.*

Frodsham, No. 06859, running mean time.

Rate determined on board H. M. S. <i>Triumph</i> ,			
at Esquimalt, May 4-9.....	2	seconds daily, losing.	
Dease Lake, June 5-7 by obsn.....	37	" " "	
Frances Lake, July 11-16 by obsn.....	48	" " "	
Camp near site of Fort Selkirk, Aug. 13-17,			
by obsn.....	625	" " "	

Arnold, No. 9699, running sidereal time. Rate given on mean time, and including the daily difference between sidereal and mean time (=3 m. 56.555 s.)

Rate determined on board H.M.S. *Tri-*

umph, at Esquimalt, May 4-9.... 3' 53''·45 seconds daily, losing.

Dease Lake, June 5-7, by obsn..... 3' 54''·078 " " "

Frances Lake, July 11-16, by obsn.... 3' 54''·82 " " "

Camp near site of Fort Selkirk, Aug.

13-17, by obsn..... 3' 52''·6 " " "

(Chronometer received a slight shock since last determination of rate, which accounts for its sudden change.)

Wrangell, Alaska, May 19, 1887.

	h.	m.	s.			
Frodsham, 06859.....	1	12	51·5	Obs. alt. ☉.....	88°	5' 20''
	1	15	03·5		88	34 30
	1	17	24·5		89	5 10
	1	18	12·5		89	15 30
	1	20	0		89	38 30
	1	21	42·5		90	1 30
	1	23	20·5		90	21 55

Index error and eccentricity -2 9

Taking latitude of observation spot as 56° 28' 18'', from

U. S. Pacific Coast Pilot, Alaska, Part I, 1883.

Chron. 06859 fast 3h. 49m. 03s.

River-bank near site of H. B. Co.'s old post, Stikine R., May 21, 1887.

	h.	m.	s.			
Frodsham, 06859.....	1	5	17	Obs. alt. ☉.....	86°	57' 35''
	1	7	16		87	24 10
	1	8	26		87	38 50
	1	9	44		87	56 20
	1	10	41		88	8 30

Index error and eccentricity -2 31

Chron. 06859 fast 3h. 46m. 33·4s.

	h.	m.	s.			
Frodsham, 06859	3	48	28·5		106°	48' 0''
	3	50	10·5		106	46 40
	3	51	15		106	45 10

Index error and eccentricity -1 52·5

Resulting latitude from above two series of observations.. 57 8 1

Longitude by Frodsham, 06859..... 131 46 45

Glenora, Stikine River, May 23, 1887.

Jupiter, obs. merid. alt..... 46° 4' 5''

Index error and eccentricity -3 49

Latitude 57 50 16

Telegraph Creek, Stikine River, May 27, 1887.

Jupiter, obs. merid. alt..... 46° 7' 25''

Index error and eccentricity -3 44

Latitude 57 55 0

Telegraph Creek, May 28, 1887.

	h.	m.	s.			
Frodsham, 06859.....	12	27	16.5	Obs. alt. ☉.....	79° 55'	0''
	12	28	21.5		80	10 40
	12	29	49		80	31 40
	12	31	29		80	55 30
Index error and eccentricity.....					-2	48
∴ Frodsham, 06859, fast.....					3h. 44m.	06.1s.

Telegraph Creek, May 29, 1887.

	h.	m.	s.			
Frodsham, 06859.....	2	0	22	Obs. alt. ☉.....	99° 25'	0''
	2	2	28.5		99	45 10
	2	4	3		100	0 0
	2	6	12		100	20 0
	2	8	23		100	40 10
Index error and eccentricity.....					-2	39
∴ Frodsham, 06859, fast.....					3h. 44m.	04.5s.

Telegraph Creek, May 29, 1887.

Obs. meridian alt. ☉...	108° 5'	50''
Index error and eccentricity.	-2	23
∴ Latitude	57	54 56

Telegraph Creek, May 29, 1887.

	h.	m.	s.			
Frodsham, 06859.....	5	25	39	Obs. alt. ☉.....	99° 0'	50''
	5	26	37		98	41 10
	5	27	51		98	28 50
	5	29	32.5		98	11 55
	5	30	44.5		97	59 20
Index error and eccentricity.....					-2	42
∴ Frodsham, 06859, fast.....					3h. 44m.	07.2s.

Telegraph Creek, May 30, 1887.

	h.	m.	s.			
Frodsham, 06859.....	6	37	51.5	Obs. alt. ☉.....	84° 34'	50''
	6	39	51.5		84	6 30
	6	41	26		83	44 55
	6	43	3.5		83° 22'	10''
	6	45	2.5		82	54 0
Index and eccentricity.....					-2	42
∴ Frodsham, 06859, fast.....					3h. 43m.	56.4s.

Telegraph Creek, Stikine River (summary).

Diff. in long. between Fort Wrangell and Telegraph Creek,
by comparing two a.m. sets of observations :

Frodsham, 06859.....	1° 13' 40''
∴ Chron. long. of Telegraph Creek ...	131 10 20
Latitude adopted	57 55 58

NOTE.—By Hunter's surveyed line, continued by that of McConnell to Telegraph Creek, the longitude, depending on observation point at Wrangell, (long. 132° 24' 00'') is 131° 10' 05''. As the chronometers were subjected to exceptional conditions while ascending the Stikine by steamer this longitude is adopted for Telegraph Creek in preference to that resulting from observations

Head of Dease Lake, June 5, 1887.

	h.	m.	s.		Obs. alt. $\odot$	
Frodsham, 06859	6	32	22		55° 45' 40''	
	6	33	44		85 27 0	
	6	34	55.5		85 11 0	
	6	36	2.5		84 55 20	
	6	37	23		84 37 5	
	6	38	30		84 21 50	
Index error and eccentricity.....					—2 53	
∴ Frodsham, 06859, fast					3h. 39m. 18.5s.	

Head of Dease Lake, June 5, 1887.

	h.	m.	s.		Obs. alt. $\odot$	
Frodsham, 06859 ...	3	29	34		108° 57' 15''	
	3	30	38		108 58 10	
	3	31	59		108 58 40	
	3	33	45.5		109 0 20	
	3	34	56		109 0 55	
	3	36	8		109 1 5	
	3	37	27		109 1 25	
	3	38	21.5		109 1 30	
	3	39	25.5		109 1 15	
	3	41	11		109 0 35	
	3	42	53		108 59 10	
	3	44	14		108 58 30	
	3	45	52		108 57 35	
	3	47	14		108 56 40	
Index error and eccentricity					—2 2	
∴ Latitude					58 28 17.3	

Head of Dease Lake, June 7, 1887

Obs. merid. alt. $\odot$	109° 13' 15''
Index error and eccentricity.....	—2 1.5
∴ Latitude	58 28 6

	h.	m.	s.		Obs. alt. $\odot$	
Frodsham, 06859.....	6	56	34		80° 33' 30''	
	6	57	47		80 15 20	
	6	58	38.5		80 2 50	
	6	59	40		79 48 10	
	7	0	40		79 33 25	
Index error and eccentricity.....					—2 50	
∴ Frodsham, 06859, fast					3h. 39m. 17.8s	

Head of Dease Lake (summary).

Diff. in long. between Telegraph Creek and head of Dease Lake:

Frodsham, 06859.....	1° 10' 34''·5
Arnold, 9699.....	1 9 54·5
Adopted diff.....	1 10 20

NOTE.—Here, and subsequently throughout, double value is assigned to Frodsham, 06859.

∴ Chron. long. of head of Dease Lake..... = 130° 0' 00''

NOTE.—This longitude depends directly on Wrangell by chronometers. Taking into consideration the corrected longitude for Telegraph Creek, and assuming a mean value as between chronometer longitude and longitude by paced traverse from Telegraph Creek to head of Dease Lake, the longitude of head of lake is found to be 130° 2' 0'', which is adopted. Subsequent longitudes along the line of traverse are made to depend fundamentally on this position.

Adopted latitude, from series of circum-meridian altitudes, June 5, 1887, 58° 28' 17''·3.

Laketon, Dease Lake, June 17, 1887.

	h.	m.	s.		
Frodsham, 06859.....	1	18	2	Obs. alt. ☉.....	93° 55' 5''
	1	21	33		94 37 0
	1	23	35		95 1 30
	1	25	44		95 26 30
	1	29	5·5		96 5 20
	1	30	2		96 16 0
	1	31	56		96 37 45
Index error and eccentricity.....					—2 19
∴ Frodsham, 06859, fast.....					3h. 39m. 26s.

	h.	m.	s.		
Frodsham, 06859.....	3	42	31·5	Obs. alt. ☉.....	109° 57' 30''
	3	43	51		109 57 0
	3	45	16·5		109 56 20
	3	46	47		109 55 35
Index error and eccentricity.....					—1 50

	h.	m.	s.		
Frodsham, 06859.....	8	14	20·75	Obs. alt. ☉.....	62° 24' 50''
	8	16	10·5		61 56 40
	8	17	16·5		61 39 5
	8	19	2·75		61 12 0
	8	20	1·5		60 56 50
	8	21	1·3		60 36 0
Index error and eccentricity.....					—3 9

Resulting adopted lat. from second and third series of observations..... 58 42 20

By last observation:

Frodsham, 06859, fast..... 3h. 39m. 16s.

Diff. in long. between Laketon and head of lake by long bearings..... 3' 32''

∴ Resulting adopted long. of Laketon..... 130° 5' 32''

Sta. I, Dease River, June 19, 1887.

Obs. merid. alt. $\odot$	109° 34' 15''
Index error and eccentricity.....	-2 3
$\therefore$ Latitude.....	58 56 38.9

Sta. U, Dease River, June 20, 1887.

Obs. merid. alt. $\odot$	109° 13' 50''
Index error and eccentricity.....	-2 08
$\therefore$ Latitude.....	50 7 25.6

Sta. E, Dease River, June 21, 1887.

Obs. merid. alt. $\odot$	108° 49' 45''
Index error and eccentricity.....	-2 0
$\therefore$ Latitude.....	59 19 35.2

Sta. M, June 22, 1887.

	h.	m.	s.		Obs. alt. $\odot$	
Frodsham, 06859.....	10	12	13		50° 38' 40''	
	10	19	17		51 0 50	
	10	20	18		51 26 0	
	10	21	2.25		51 37 0	
Index error and eccentricity.....					-3 1	
$\therefore$ Frodsham, 06859, fast.....					3h. 36m. 16s.	
Lat. for above observation from traverse.....					59° 34' 0''	
Diff. in long. between place and head of Dease Lake, Frodsham, 06859.....					44 0	
$\therefore$ Chron. long. of place.....					129 18 0	

Sta. U 2, Dease River, June 22, 1887.

Obs. merid. alt. $\odot$	108° 4' 15''
Index error and eccentricity.....	-1 57.3
$\therefore$ Latitude.....	59 42 5.8

Lower Post, mouth of Dease River, June 25, 1887.

	h.	m.	s.		Obs. alt. $\odot$...	
Frodsham, 06859.....	1	21	35		93° 55' 25''	
	1	22	46		94 8 0	
	1	23	25.5		94 15 35	
	1	24	8		94 23 50	
	1	25	37		94 40 5	
	1	26	41.5		94 51 30	
	1	27	22		94 58 30	
	1	28	6		95 6 20	
	1	29	2		95 16 20	
Index error and eccentricity.....					-2 16.5	
$\therefore$ Frodsham, 06859, fast.....					3h. 32m. 0.8s.	

NOTE.—This series of observations was not employed in determining long., the sun being too near meridian.

	h.	m.	s.			
Frodsham, 06859.....	3	19	34	Obs. alt. $\odot$	107° 17' 20''	
	3	20	24		107 18, 50,	
	3	21	24		107 20 40	
	3	22	44.5		107 22 5	
Index error and eccentricity.....					-1 51	
By a m. obsn. and last, with interval of time.						
Latitude.....					59 55 56.7	
	h.	m.	s.			
Frodsham, 06859. ...	3	37	31	Obs. alt. $\odot$	107° 30' 10''	
	3	38	30		107 29 20	
Index error and eccentricity.....					-1 51	
By a.m. obsn., and this, with interval of time.						
Latitude.....					59 55 55	
Difference in long. between place and head of Dease Lake:						
Frodsham, 06859.....				1° 32' 24''		
Arnold, 9699.....				1 30 40.5		
Mean, (giving double value to Frodsham).....				1 31 50		
∴ Chron. long. of place.....				128 30 10		
Long. ascertained by bearings carried through by Dease River.....				128 35 10 adopted		
Sta. I, Cañon on Upper Liard River, June 26, 1887.						
Obs. merid. alt. $\odot$					107° 16' 20''	
Index error and eccentricity.....					-1 58	
∴ Latitude.....					60 1 6.2	
Sta. P, Upper Liard River, June 27, 1887.						
Obs. merid. alt. $\odot$					107° 6' 30''	
Index error and eccentricity.....					-1 58.5	
∴ Latitude.....					60 3 43.7	
Sta. Y, Upper Liard River (confluence of Frances R.), June 29, 1887.						
Obs. merid. alt. $\odot$					106° 29' 10''	
Index error and eccentricity.....					-2 19.5	
∴ Latitude.....					60 16 35.3	
Sta. F, Frances River, June 30, 1887.						
	h.	m.	s.			
Frodsham, 06859.....	9	10	54	Obs. alt. $\odot$	47° 30' 25''	
	9	11	49.5		47 17 10	
	9	12	38.5		47 5 15	
	9	13	25.5		46 53 45	
	9	14	12.5		46 41 50	
	9	15	1.5		46 30 0	
	9	16	21		46 10 50	
Index error and eccentricity.....					- 3 19	
∴ Frodsham, 06859, fast.....					3h. 35m. 38.8s.	
Lat. for above obsn. by traverse.....					60° 26' 0''	
∴ Long. by Frodsham, 06859.....					129 11 46	

Sta. H, Frances River, July 1, 1887.

	h.	m.	s.			
Frodsham, 06859.....	3	42	45.5	Obs. alt. $\odot$	105° 53'	0''
	3	44	9.5		105	52 30
	3	45	23.5		105	52 10
	3	46	12.5		105	51 20
Index error and eccentricity.....					-2	0
With time by last observation and long. of traverse,						
Latitude.....					60	27° 28

Sta. W, Frances River, July 3, 1887.

Obs. merid. alt. $\odot$	105° 10'	45''
Index error and eccentricity.....	-2	0
$\therefore$ Latitude.....	60	39 15.1

NOTE—Observation fair only.

Sta. E, Frances River, July 4, 1887.

Obs. merid. alt. $\odot$	104° 41'	50''
Index error and eccentricity.....	-2	15.5
$\therefore$ Latitude.....	60	47 53.4

Sta. P, Frances River, July 7, 1887.

Obs. merid. alt. $\odot$	103° 24'	35''
Index error and eccentricity.....	-2	18
$\therefore$ Latitude.....	61	9 25

Câche Camp, Frances Lake, near mouth of Finlayson River, July 11, 1887.

	h.	m.	s.			
Frodsham, 06859.....	12	45	32	Obs. alt. $\odot$	81° 15'	30''
	12	46	41		81	28 50
	12	48	23		81	49 20
	12	49	15		82	0 0
	12	50	55		82	20 0
	12	52	36		82	40 0
	12	54	18		83	0 0
	12	56	1		83	20 0
Index error and eccentricity.....					-3	17
$\therefore$ Frodsham, 06859, fast.....					3h. 37m. 23s.9.	

Câche Camp, Frances Lake, July 7, 1887.

	h.	m.	s.			
Frodsham, 06859.....	3	35	33.5	Obs. alt. $\odot$	101° 43'	40''
	3	36	32		101	44 25
	3	37	19		101	44 50
	3	38	16.5		101	45 0
	3	39	26		101	45 20
	3	40	24.5		101	45 40
Approx. app. noon					101	45 50
	3	43	20		101	45 30
	3	45	26		101	45 10

	h.	m.	s.			
	3	46	36.5		101	45 5
	3	47	58		101	44 30
	3	49	1.5		101	44 0
	3	50	53		101	42 40
Index error and eccentricity.....					-2	38
∴ Latitude					61	29 22

Câche Camp, Frances Lake, July 11, 1887.

	h.	m.	s.			
Frodsham, 06859.....	6	29	1.5	Obs. alt. ☉	83° 20'	0''
	6	30	44		83	0 0
	6	22	23		82	40 0
	6	34	7.5		82	20 0
	6	35	45		82	0 0
	6	38	20		81	28 50
Index error and eccentricity					- 3	16
∴ Frodsham, 06859, fast					3h. 37m. 29s.	

Câche Camp, Frances Lake, July 16, 1887.

	h.	m.	s.			
Frodsham, 06859.....	10	55	18	Obs. alt. ☉..	55° 5'	50''
	10	56	18.5		55	20 45
	10	57	35		55	38 30
	10	58	31.5		55	52 10
	10	59	11		56	2 35
	11	0	6		56	14 45
	11	1	31		56	34 30
Index error and eccentricity.....					-3	40
∴ Frodsham, 06859, fast					3h. 37m. 22s.	

Diff. in long. between place and head of Dease L. by mean of two first obsns

Frodsham, 06859	0° 23'	36''
Arnold, 9699	0	21 22.5
Mean. (giving double value to Frodsham)....	0	22 51.5
∴ Chron. long. of place.....	129	39 8.5 adopted.

Sta. P, Frances Lake, July 12, 1887.

Obs. merid. alt. ☉.....	101° 46'	30''
Index error and eccentricity	-2	34
∴ Latitude	61	21 7.9

Sta. T, Finlayson Lake, July 24, 1887.

Obs. merid. alt. ☉.....	96° 53'	30''
Index error and eccentricity.....	-2	37.6
∴ Latitude	61	40 12.9
Correction for temp. and pressure, -6.7''		

St. U, Finlayson Lake, 14'' south of last, July 24, 1887.

Frodsham, 06859.....	9	43	46	Obs. alt. ☉.....	36° 0'	35''
	9	44	47		35	46 25
	9	45	40		35	34 0

	h.	m.	s.	
	9	46	37	35 20 50
	9	47	37.5	35 8 20
	9	48	20	34 56 30
	9	49	0	34 47 10
Index error and eccentricity.....				-3 34
∴. Frodsham, 06859, fast				3h. 40m. 29s.

Sta. V, Finlayson Lake, July 25, 1887.

	h.	m.	s.		
Frodsham, 06859.....	12	51	45	Obs. alt. $\odot$	77° 0' 0''
	12	52	47.5		77 12 5
	12	53	36.5		77 21 50
	12	54	25.5		77 31 0
	12	55	25		77 42 40
	12	56	13		77 52 10
	12	57	6.5		78 2 30
	12	57	47		78 10 25
	12	58	45		78 21 10
Index error and eccentricity.....					-3 23
∴. Frodsham, 06859, fast					3h. 40m. 46s.
Obs. merid. alt. $\odot$					96° 28' 10''
Index error and eccentricity.....					-2 38
Correction for temp. and pressure, -6.					
∴. Latitude.....					61 40 0.6

Sta. V, Finlayson Lake (summary).

Mean of last obsn. and that of July 24, reduced to this point, gives,	
Latitude.....	61° 40' 0'' adopted.
Diff. in long. between place and Cache Camp, Frances Lake:	
Frodsham, 06859	50' 12''
Arnold, 9699.....	46 51
Mean, (giving double value to Frodsham) ..	49 5
∴. Chron. long. of place	130° 28' 13''.5
Long. of place by traverse between Frances	
Lake and Pelly Banks.....	130 28 52
Mean of this and chron. long.....	130 28 32.7 adopted.

Pelly River, First Camp, near site of Fort Pelly Banks, July 29, 1887.

	h.	m.	s.		
Frodsham, 06859.....	7	4	59	Obs. alt. $\odot$	70° 54' 30''
	7	6	46		70 32 35
	7	7	41.5		70 20 50
	7	8	33.5		70 10 0
	7	9	23		69 59 10
	7	10	14.5		69 48 30
	7	12	17		69 23 10
	7	13	15		69 11 10
	7	13	58		69 2 10
Index error and eccentricity.....					-3 22
∴. Frodsham, 06859, fast					3h. 42m. 45

Pelly River, First Camp, July 29, 1887.

	h.	m.	s.			
Frodsham, 06859.....	7	57	32.5	Obs. alt. $\odot$	59°	1' 40''
	7	58	58.5		58	42' 0''
	7	59	46.5		58	31 10
	8	1	11		58	12 0
	8	2	19		57	55 50
	8	3	17		57	43 10
	8	3	58		57	33 30
Index error and eccentricity.....					-3	30
∴ Frodsham, 06359, fast					3h. 42m.	46s.

Pelly River, First Camp, July 31, 1887.

	h.	m.	s.			
Frodsham, 06859.....	12	36	49	Obs. alt. $\odot$	70°	54' 0''
	12	37	53		71	7 0
	12	38	56.5		71	19 30
	12	39	46		71	30 0
	12	40	31.5		71	38 40
	12	41	28		71	50 40
	12	42	31		72	2 55
	12	43	25.5		72	14 0
	12	44	23		72	25 20
Index error and eccentricity.....					-3	21
∴ Frodsham, 06859, fast					3h. 43m.	42s.9
Obs. approx. merid. alt. $\odot$					93°	23' 10''
Index error and eccentricity.....					-2	42
∴ Latitude.....					61	48 59

	h.	m.	s.			
Frodsham, 06859	3	54	7.5	Obs. alt. $\odot$	93°	21' 50''
	3	55	12		93	21 20
	3	56	34		93	20 40
	3	57	50		93	19 15
Index error and eccentricity.....					-2	42'' 5

	h.	m.	s.			
Frodsham, 06859.....	7	45	57.5	Obs. alt. $\odot$	61°	11' 40''
	7	47	1		60	57 5
	7	48	19.5		60	39 10
	7	49	10.5		60	27 55
	7	50	8.5		60	15 10
	7	50	45.5		60	6 45
	7	51	25.5		59	57 50
	7	52	7.5		59	48 5
	7	53	5.5		59	35 30
Index error and eccentricity.....					-3	29
∴ Frodsham, 06859, fast					3h. 42m.	45s.8

Pelly River, First Camp (summary).

By last two obsns., with interval of time:

Latitude..... 61° 48' 52'' adopted.

Diff. in long. between C  che Camp, Frances L.
and place by mean of sets of obsns.

Frodsham, 06859.....	1	22	7.5	
Arnold, 9699.....	1	21	39	
Mean, (giving double value to Frodsham) ..	1	21	58	
∴ Chron. long. of place.....	131	1	6.5	adopted.

Sta. X, Pelly River, Aug. 2, 1887.

Obs. merid. alt. $\odot$ (fair only).....	92° 30' 20''
Index error and eccentricity ..	—2 44
∴ Latitude	61 44 52.5

Sta. G, Pelly River (Head of Hoole Ca  n), Aug. 3, 1887.

Obs. merid. alt. $\odot$	91° 48' 0''
Index error and eccentricity	—2 41.5
∴ Latitude	61 50 28

Sta. H, Pelly River (lower end Hoole Ca  n), Aug. 4, 1887.

	h.	m.	s.		
Frodsham, 06859.....	9	49	41.5	Obs. alt. $\odot$	30° 17' 50''
	9	50	31		30 30 0
	9	51	26.5		30 42 30
	9	53	8		31 5 40
	9	54	41.5		31 27 25
	9	55	35		31 40 10
	9	56	26		31 52 10
Index error and eccentricity.....					—3 25
∴ Frodsham, 06859, fast				3h. 46m.	47s.5

NOTE.—For above obsn., lat. employed determined by paced

line from Sta. G.....	61° 50' 48".8
Long. by chronometers (giving double value to Frodsham) 132° 1' 51''	

Sta. B, Pelly River, Aug. 5, 1887.

Obs. merid. alt. $\odot$	90° 4' 5''
Index error and eccentricity.....	—2 45
∴ Latitude.....	62 10 20

Sta. L, Pelly River, Aug. 6, 1887.

Obs. merid. alt. $\odot$ (passing clouds, approx.).....	89° 2' 15''
Index error and eccentricity	—2 54
∴ Latitude.....	62 24 53

Sta. C, Pelly River, Aug. 7, 1887.

Obs. merid. alt. $\odot$	87° 57' 10''
Index error and eccentricity.....	—2 54
∴ Latitude.....	62 40 41

Sta. N, Pelly River, Aug. 8, 1887.

Obs. merid. alt. $\odot$	87° 12' 10''
Index error and eccentricity.....	—2 41
∴ Latitude.....	62 46 4

Sta. T, Pelly River (6 m. above Macmillan River), Aug 8, 1887.

Frodsham, 06859.....	9	31	23.5	Obs. alt. $\odot$	37°	8'	10''
	9	32	21.5		36	35	10
	9	33	25		36	40	50
	9	34	18.5		36	28	20
	9	35	7.5		36	17	10
	9	35	59		36	5	30
	9	36	39		35	56	0
	9	37	34.5		35	44	0
	9	38	9		35	36	0

Index error and eccentricity -3 19

$\therefore$ Frodsham, 06859, fast : 4h. 1m. 29s.

NOTE.—For above obsn. lat. employed determined by traverse $62^{\circ} 48' 10''$

Long. by chronometers (giving double value to Frodsham) 135 44 25.5

Sta. O, Pelly River, Aug. 10, 1887.

Obs merid. alt. $\odot$ (approx.).....	85°	52'	25''
Index error and eccentricity.	-2	58	
$\therefore$ Latitude.....	62	51	10

Observations near site of Fort Selkirk.

Three-quarters of a mile below Fort Selkirk, Aug. 11, 1887.

Frodsham, 06859.....	h.	m.	s.	Obs. alt. $\odot$	85°	19'	0''
	4	1	8.5		85	19	40
	4	2	0		85	20	20
	4	2	52		85	21	10
	4	3	58		85	22	5
	4	5	28		85	22	55
	4	7	3		85	23	30
	4	8	15.5		85	24	25
	4	13	17		85	23	50
	4	14	43		85	23	35
	4	16	47.5		85	23	0
	4	17	45.5		85	22	40
	4	18	38.5		85	22	20
	4	19	43		85	21	35
	4	20	50		85	20	55
	4	21	45		-3	4	

Index error and eccentricity..... -3 4

Correction for temp. and pressure, -6.''

$\therefore$ Latitude 62 47 32

Camp opposite Fort Selkirk, Aug. 11, 1887.

Frodsham, 06859.....	h.	m.	s.	Obs. alt. $\odot$	54°	37'	30''
	8	12	7.5		54	22	30
	8	13	16.75		54	12	40
	8	14	2.5		54	1	50
	8	14	53.5		53	54	5
	8	15	30		53	20	10
	8	16	36				

	h.	m.	s.			
	8	17	35.5		53	27 0
	8	18	16		53	18 0
	8	18	58.5		53	9 10
Index error and eccentricity.....					-2	39
∴ Frodsham, 06859, fast					4h. 7m. 42s.3	

Camp opposite Fort Selkirk, Aug. 12, 1887.

	h.	m.	s.			
Frodsham, 06859.....	7	35	59.5	Obs. alt. $\odot$	61° 30' 50''	
	7	38	18		61	2 30
	7	39	22.5		60	50 20
	7	40	10.5		60	40 10
	7	40	58.5		60	30 55
	7	42	5		60	17 30
	7	43	20.5		60	2 10
Index error and eccentricity.....					-2	35
∴ Frodsham, 06859, fast					4h. 7m. 46s.8	

Camp opposite Fort Selkirk, Aug. 13, 1887.

	h.	m.	s.			
Frodsham, 06859.....	0	58	46.5	Obs. alt. $\odot$...	63° 0' 0''	
	1	1	22		63	30 0
	1	3	8.5		63	50 0
	1	4	52.5		64	10 0
	1	7	33.5		64	40 0
Frodsham, 06859.....	4	4	10.5	Obs. alt. $\odot$	84° 6' 55''	
	4	5	33		84	7 35
	4	7	57		84	8 15
	4	9	7		84	8 25
	4	10	4.5		84	8 40
	4	10	59.5		84	9 10
	4	12	44		84	9 0
	4	13	32.5		84	8 50
	4	14	39		84	8 40
	4	16	35		84	8 10
	4	17	46		84	7 40
	4	18	44		84	7 25
Index error and eccentricity.....					-3	7
Correction for temp. and pressure, -6.7						
∴ Latitude.....					62	47 32.4

	h.	m.	s.			
Frodsham, 06859.....	7	18	30.5	Obs. alt. $\odot$	64° 40' 0''	
	7	19	9.5		64	10 0
	7	20	54		63	50 0
	7	22	40		63	30 0
	7	25	16.5		63	-0 0

By the above series of observations, paired with a.m. series

by equal altitudes, Frodsham, 06859, fast..... 4h. 7m. 47s.8

Camp opposite Fort Selkirk, Aug. 15, 1887.

	h.	m.	s.			
Frodsham, 06859.....	1	17	56.5	Obs. alt. ☉.....	65°	30' 0''
	1	19	48.5		65	50 0
	1	21	41.5		66	10 0
	1	23	32.5		66	30 0
	1	25	25.5		66	50 0
	1	27	20.5		67	10 0

	h.	m.	s.			
Frodsham, 06859.....	6	55	55	Obs. alt. ☉.....	67°	10' 0''
	6	57	48.5		66	50 0
	6	59	42.5		66°	30 0
	7	1	37		66	10 0
	7	3	29.5		65	50 0
	7	5	19		65	30 0

By the above sets of equal alt. obsns. Frodsham, 06859, fast 4h. 7m. 46.5s

Camp opposite Fort Selkirk, Aug. 17, 1887.

	h.	m.	s.			
Frodsham, 06859.....	0	39	16.5	Obs. alt. ☉ . . .	57°	0' 0''
	0	40	55.5		57	20 0
	0	42	35		57	40 0
	0	44	16		58	0 0
	0	45	56.75		58	20 0

	h.	m.	s.			
Frodsham, 06859.....	4	7	38	Obs. alt. ☉.....	81°	36' 40''
	4	9	10		81	37 10
	4	11	5		81	37 20
	4	12	0.5		81	37 5
	4	13	29		81	36 30
	4	16	30		81	35 55
	4	17	32.5		81	35 20

Index error and eccentricity..... —2 0

Correction for temp. and pressure, —5.3

∴ Latitude 62 47 29

	h.	m.	s.			
Frodsham, 06859.....	7	36	25	Obs. alt. ☉.....	58°	20' 0''
	7	38	5		58	0 0
	7	39	46		57	40 0
	7	41	26		57	20 0
	7	43	7		57	0 0

By the above series of observations, paired with a.m. series

by equal altitudes, Frodsham, 06859, fast 4h. 7m. 45s.

Camp opposite Fort Selkirk, Aug. 17, 1887.

Obs. merid. sit. Altair.....	71°	35'	30''
Index error and eccentricity.....	+1	8	
Correction for temp. and pressure, —4.1			
Latitude	62	47	28.3

The adjustments of the sextant were changed here.

Site of Fort Selkirk (summary).

Reducing the foregoing latitude observations (taken at two different points) to the ruins of Fort Selkirk, we find:²—

From obs. of 11th.....	62° 47' 12''	adopted.
" " " 13th.....	62 47 12.4	
" " " 17th.....	62 47 9	
" " " 17th (on Altair).....	62 47 8.3	

Diff. in long. between Cache Camp, Frances L. and Camp opp. Fort Selkirk, by directly comparing two equal alt. obsns.:—

Frodsham, 06859.....	7° 40' 9''	
Arnold, 9699.....	7 42 34.5	
Mean, (giving double value to Frodsham)....	7. 40 57.5	adopted.
∴ Long. of Camp opposite Fort Selkirk.....	137 20 6	
Or reduced to site of Fort Selkirk.....	137 20 22 *	

Lower end Lake Labarge, Sept. 4, 1887.

	h.	m.	s.		
Frodsham, 06859...	12	20	54	Obs. alt. Arcturus...	48° 58' 30''
	12	23	29		48 21 30
	12	25	35		47 51 40
	12	27	18		47 26 20
	12	28	38.5		47 7 30
	12	30	14.25		46 44 30
Index error and eccentricity.....					+1 2
∴ Frodsham, 06859, fast.....					3h. 58m. 4 ¹ / ₂ s.
∴ Long. of place.....					135° 5' 45''

	h.	m.	s.		
Frodsham, 06859...	12	36	22	Obs. alt. Polaris....	122° 46' 10''
	12	39	7		122 47 55
	12	41	11		122 49 20
	12	43	35		122 50 55
	12	45	44		122 52 30
	12	47	38		122 53 35
	12	49	57		122 55 25
Index error and eccentricity.....					+2 56
∴ Latitude.....					61 25 13

Employing local time obtained from observations on Arcturus.

	h.	m.	s.		
Frodsham, 06859...	1	2	1	Obs. alt. Altair...	74° 20' 10''
	1	4	28		74 18 25

* The longitude thus determined for Fort Selkirk, depends directly upon Wrangell, and my line of traverse by the Stikine, Dease, Liard, Frances and Upper Pelly rivers. It is that used on the accompanying map. Since the map has been engraved, and after this Appendix was in type, a first computation (still subject to possible small corrections) has been made of Mr. Ogilvie's winter observations near the 141st meridian and of his instrumental traverse from Fort Selkirk to that point. His resulting longitude for Fort Selkirk is 137° 22' 45'', the difference between the two independently determined positions being 2216 yards only. It is therefore probable that all intermediate places on my line of traverse are correct in longitude within small limits of error.

1 5 52.5	74 17 40
1 7 21.5	74 16 20
1 8 59	74 15 10
1 10 59	74 13 10
Index error and eccentricity.....	+1 20
∴ Latitude.....	61 25 0
Employing local time obtained from observations on Arcturus.	

OBSERVATIONS FOR MAGNETIC VARIATION.

Mag. variation observed at head of Dease Lake.

Lat. $58^{\circ} 28' 17''$. Long. $130^{\circ} 2' 0''$ June 5, 1887, 3.40 p.m., obs. var. E..... $30^{\circ} 26' 0''$

Mag. variation observed at Frances Lake.

Lat. $61^{\circ} 29' 22''$. Long. $129^{\circ} 39' 8''$.

Date and time.	True bearing of object.	Mag. bearing.	Obs. variation.
July 12, '87, 6 a.m....	$127^{\circ} 37'$	$93^{\circ} 45'$ compass 1	$33^{\circ} 52'$
" " " " " " " "	$127^{\circ} 37'$	$93^{\circ} 0'$ compass 2	$33^{\circ} 47'$
			} mean $33^{\circ} 45'.5$

Mag. variation observed at First Camp on Pelly River.

Lat. $61^{\circ} 48' 52''$. Long. $131^{\circ} 1' 6''.5$

Date and time.	True bearing of object.	Mag. bearing.	Obs. variation.
July 30, '87, 5.40 p.m.	$202^{\circ} 59'$	$167^{\circ} 45'$ compass 2	$34^{\circ} 24'$
" " " " " " " "	$202^{\circ} 59'$	$168^{\circ} 45'$ compass 3	$34^{\circ} 36'$
" " " 6.40 p.m.	$308^{\circ} 18'$	$273^{\circ} 30'$ compass 2	$34^{\circ} 0'$
			} mean $34^{\circ} 30'$

Mag. variation observed opposite site of Fort Selkirk.

Lat. $62^{\circ} 47' 30''$. Long. $137^{\circ} 20' 6''$.

Date and time.	True bearing of object.	Mag. bearing.	Obs. variation.
Aug. 12, '87, 4 p.m.....	$169^{\circ} 27'$	$134^{\circ} 15'$ compass 2	$35^{\circ} 12''$ *
" " " " " " " "	$169^{\circ} 27'$	$135^{\circ} 30'$ compass 3	$34^{\circ} 0''$ *

Determined by Mr. Ogilvie at same place (with transit).... $34^{\circ} 21'.5$ " " " " " " " " at Fort Selkirk... $34^{\circ} 5'$

* The differences between these obsns. and Mr. Ogilvie's at same place, were assumed as index error of instruments and applied to the obsns. at other places.

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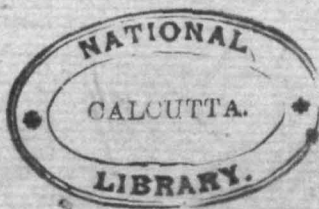
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