Greenland
1875

GEOLOGICAL FIELD BOOK.

Record of Photographs

E. O. Hovey,
Am. Mus. Nat. Hist.,
New York.

1915

August – November

Holstenborg →

Telephoto -
Number T.5 -

Other rolls are
numbered
without a
letter

3 August - 1915 - Nor Disko

~~Disko Island~~ Sighted early this morning - Stood in toward it till 10 o'clock (My watch) & then veered into our course again -

Telephoto 1 & 2 - from SW showing high mountain with glacier névé field on southern slope -

✓ Roll 3A - 1, 2 & 3 as we approached island -

Noted for grasses (2 or 3 inches high) and flowers - more than South -

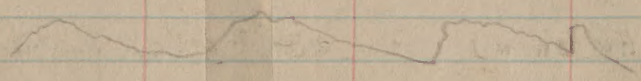
21-4

Hog back ridges run down to western coast

Stratified (?) rocks dipping high toward north - more probably volcanic rocks

Beautiful scenery.

Captain Comer called me at 6 this morning to look at coast line. Profile is peculiar steep faces to north & gentle slopes to south giving strongly serrate appearance. Thus -



21-6. Capt George Comer at the wheel.

Southern end of Disko is the higher part of the island no general ice cap on the island, which looks very attractive for geologizing.

The high mountain shown in the photos seems to have a lava cone & flow in west side below neve field.

Another photo ④ & Telephoto ③ of this mountain.

Don't see any glacier leading down from the neve field.

Foregoing is Holsteinborg not Disko

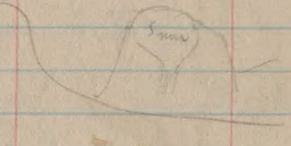
Roll 21

Teleph 3. 9.2cm. 7.12½ 15 to 20 miles
north of Holstenborg - Looking E

4 - 9-2cm. 7.12½ north of no 3
Looking E by N

5 - 2cm - 7 7.12½ Mountain mass
as in 3 showing two cirques
filled with nevé Looking E

6 2cm 7-18 -



Large mountain
mass next north of the big valley
Looking E

3a - 5 - 16-02 - Looking E½S at
Kangek + N. Strom Fjord

Kangek &c

4 Aug. 22½ 8.04 - Iceberg
grounded off Disko Bay

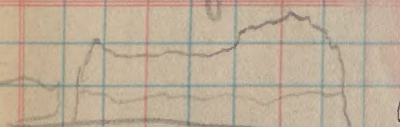
HG

4 Aug.-

Whalefish Islands in Disko ~~Fjord~~ Bay are apparently of volcanic rock - made our good basaltic column in the low cliffs -

✓ 1.6+-6 cm 7-w.o. —

(not ex/) ~~1.6 cm 6-wo~~ are of enormous iceberg off Whalefish I. - 9 o'cl p.m. -



A second, lower berg shows behind the high one.

22-1 - S.W. side Godhavn harbor, showing wreck of "Fox"
22-2 - Do.
22-2a - SS "Fox" - near
now taken by H.C. Pickels
in 6 aug

5 Aug.

23-1 - 16-04 Entrance to Godhavn harbor looking west - "Chett" in harbor

23-2 Lindow Inspector house from SE (near)

23-3 Building ~~Bistrup~~

Bistrup

~~the harbor~~

23-4 - group at ~~the~~ store house (women & girls)

~~23-5 - Indian~~

23-6 - Two women

24 - Views from hill South of town bearing signal -

: A4. A waterfall in cliffs of Blaafjeld near Godhavn

7

surroundings of Godhavn are entirely; massive feldspathic gneiss well rounded & showing glacial striae ~~and~~ grooves

Spec - 553 - Gneiss near signal -

On the gneiss lie horizontal basalt beds. 20-25 in number ~~[illegible]~~ rising perhaps 1500-1700 feet above the gneiss - mt. 2200+ ft

No - 1150 ft on Danish map

24-1-8-04

~~24-2-16~~

Pete Brodery standing beside a pile of bush (a savin) which has been gathered & bundled to dry for fuel

Spec 562 = Commercial Coal

P.M. - Inspector Lindow

Governor Bistrup Capt Pickels
Frandsen, chief & my
self in motor boat about
30 miles along coast
to Orifak Mt. (Uifak)
Nordenskiold got irons
out of water at low tide
in the shallow bay under
the mountain - None
found above

✓25 - En route to Godhavn

✓26 - Blue mts + Orifak Mt

✓27 En route back to "Chett"

Countless sea birds nest in cliffs. Cries strident - 17 to 25 flows lava

nest mt. a/c birds -

← Majat = is name of mountain (fide governor) & Ovifak (ôv-i-fâk) is name applied to coast below this mt. (= Uifak on map)

Collected specimens of basalt from talus and from beside cliff 200 meters ± above sea

554
555
556
557
558
559
560
561

[Spec 702 - See p. 10].

Interesting to note the piling up of débris on each side of the ice

Blaafjeldt (2200') is name on map.

neutral water course
Nugat mt. summit pre-
sents a cliff front
of 2000–2500 feet to
the ocean.

W. of Godthaab
a point makes an
excellent Giants
Causeway – Basalt

Spec. No. 702 Basalt Collected at Uifak by Greenlander + given to Inspector H. Lindow who gave it to me on 30 May, 1917.

6 Aug.

Left in motor boat at 10^45
for trip to eastward —

√28-1 to 4 - views of iceberg
near entrance to harbor - Arch
+ morainic material

√28-5 - Beacon on point
Beacon is made of jawbones
of whales on a wooden
frame.
all rock is gneiss with
a few pegmatite veins
apparently a basalt dike
+ some hornblende (?) schist
inclusions -

Coast 1 mile ± east of Godthaven
is of basaltic agglomerate
(ash) for 1/4 mile -
(On Nugsuak peninsula
Here are tree trunks stand-
ing erect in the coal measures
(See Inspector Window)
The ash bed is much
Grottoed at sea level -
Bed is 30-50 feet thick or
more
Next mile beautifully
small-columnar basalt
flow comes in beneath
ash bed - Columns
curved & sheaf like

Some natural arches - Many small pinnacles -

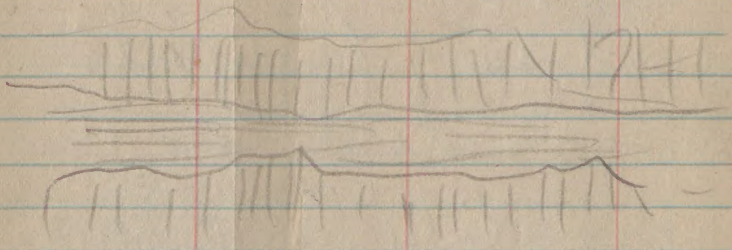
DS-6 - Columnar bed & waterfall.

Then a strictly vertical section of ashbeds & flows the flows show the small curved columns beautifully developed. Cliff some 800 ft high. Picturesque glimpses of highlands through clefts in the shox cliffs - Magnificent Some fine grey ash looks like sandstone

✓29-1-6 - Eastward along coast.

The lower basalt weathers black greenish black brown etc., while upper basalt weathers red + reddish brown. Thin beds of lava noticeable in the breccia

(10±) 9/5 Mi Black shales (1) interbedded with coarse ^ columnar basalt.



15+ mile ^ yellowish white bands with black bands - Coal? (Prob: OK

Siniglik (11 miles in straight line from godhavn) 15

landed at about 16 mile

and examined section

Black band 3-4 feet thick

Containing coal occurs in

the sand, which is (light) yellowish

green when dug into — The sand

below the coal band con-

tains many coaly leads

a fraction of an inch thick

Several coal bearing seams

occur in the yellow sand

Sand is 50-75 feet thick

as exposed (Say 70')

The sand is unconsol-

idated quartz sand.

Sand bed is 70 to 80 ft thick of Basalt

The sands seem to occupy an embayment in the basalt flows & some of the coal is more like Charcoal than real coal — like the charcoal at Martinique & St. Vincent in the ash

Spec - 563 - 4 - V - 6 similik coal

At least 100 bergs were in view in Disko Bay from top of bluff above coal sands 150 to 200 ft above sea

narrow plateau at top of cliffs 200± above sea - bush belonging to Salix willow family ? ? & other plants, forming a turf carpet pleasant to walk upon - looking eastward from point the second point still to east shows much yellowish white sand extending ½ way up the mountain.

Apparently the bays are the older & the sands were formed & the

coal plants grew in
embayments of the
lava flats while they
were depressed below
present position.

Boulders of gneiss are
on this flat as evidence
of glacial Period ice.

Ice cap comes almost
to edge of the great cliffs
see photo—

At 14 miles the sands
are exposed lying on
a bed of basalt—

The ~~bat~~ green-black basalts are of older geol age than upper perhaps!

M. P. Porsild
Mr. ~~Possid~~ (offering?) resident manager of the Arctic station here called this evening He says that the iron bearing basalt is beneath the hill basalt and that it was exposed at Uifak (Ovifak) only at low tide, its upper portion being covered by the talus slope - Of late years very few iron boulders have been found. For two or three years none He has one large + Two small ones -

8 Aug. Disko Fjord -

√ 6-2. 4cm 8 - Stop 16. Disko Fjord - 10 am somewhat hazy

Entered by motor boat from ship which was becalmed -

Apron extending out to form southern point is composed of one (or more) flows of the greenish black basalt -

Made landing at little group tents on small cove east side point

√ Photos 9x2 Maligiak.

Went out to rocky point at entrance basalt weathering very red in places.

Specimen 567 - massive basalt from near point.

9x2. 1+2 Chief Cotton on board Cluett

9x2 3+4 Ice berg off Disko Fjord

9x2-6-9 Maligiak

2-5 Mouth of Disko Fjord

North side of northern fjord or branch there rises a peak of 3,000± feet which looks as if it might possibly have been an old crater of eruption

√76-3 - Cliffs at side of entrance to Disko Fjord (Prob. Olc.)

√76-4 Entrance to Disko Fjord

9 Aug - Mm 1 - 4/25

+ Mm 2 W of 25° northern end of Disko Island from the northwest. Heavy clouds but light on the land

10 Aug. South Point

✓30-1-WO 04 Svartenhuk
(from SW) Poor
wh is the western promontory of Svartenhuks Peninsula.

✓36-5-6cm6 - Svartenhuk
(from N.W. South point)

The top of this bold promontory of lava flows (Disko) wh dips gently toward the northeast is a plateau rising a mile or two back into a high peak now hidden by cloud = Svartenhuk The plateau promontory soon merges toward the north in still higher (2000 ft) bluffs whose top slants up to the peak without intervening plateau. apparently no beaches - Some cliffs look as if they drop directly into the sea, while others show debris cones at their bases

Midnight last night passed through great field of icebergs off Umanak Fjord - This is a great feeding grounds on account of the number and size of the glaciers discharging into the heads of its branches

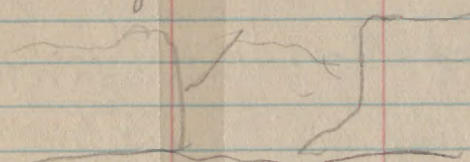
9x 3.1
3/ A.L. - W.S.W. Icebergs & pack
✓ Light very dull -

Entrance to Lake Fjord next South of Sanderson Hope is a Gateway strongly resembling that to ~~Yosemite Valley~~ & Yosemite Park

(Sentinel Rock at left & Bridal Veil at right

The cliffs here are 2000± ~~2000~~

feet high - Granitic?



9x3-2
Aa 2 W 050 - = Entrance
to Loye Fjord from
WNW Rounded
light yellowish brown
island in foreground
Glacial ice fall shows
within fjord on its
South side

Sanderson's Hope
shows good anchy
in its western

face like the ~~[illegible]~~
Washington arches
in Yosemite

30-2 Sandersons Hope b. N. W. NG
30-3 Iceberg & surf

Bb1 9x3-3
✓ - WO 25 Bull -

Profile of bluff of
Sandersons Hope from
SW. (Kaersomak)

Bb2 9x3-4
✓ - WO T Prof spoiled
Arches of Sandersons
Hope - N.G.

Cc1 9x3-5
✓ - WO 25. Northern
Profile of Sandersons
Hope

9x 3.6
C 2 NONS Northeast up
channel north of Sandersons
Hope.

The granite (3) of the
point shows fine rounded
surfaces, due to flaking

9x 3.7
Dd 1 - wo 25 7 30p dull
& overcast
Upernivik from
SW

9x 3.8 - 4.12 Settlement of Upernivik
11 Aug - Upernivik 31 - Kyaks &c
Beaching kyak. N.G.
32
32-6 - Dr's house & huts
33 - Danish Harbor. Old priests house in N.G. double
11 Aug.

34

35 Town of Upernivik & en route
11 + 12 VIII

12 Aug ✓ 27.1 ✓ 7 6-6, 4cm 6 12½ Mls
north of Upernivik

T. 1 A ½ + B ½ - 4cm 6 7 12½ Islands
still further north

T. 7. 1 8 40 50, 4cm 6-12½ + 18 -
Table topped mountain
inland showing between 2
islands north of Upernivik

T-2 a 6 ✓ + B 7 ✓ 4cm 6 7 18 - Sanderson's
Hope f. N.W. + mls west of it -

36-1 8 9 Iceberg with vertical
cliffs 200-250 ft high facing the
north - E

Sighted ice pack about 7:30 p.m.

✓ 36-3 10 - W.O. 04 ~~Last~~ 9 ½ p.m - Large
berg with nearly vertical faces

3626
14 Aug = Hooded seal on board = Cluett "

H

and an enormous snow drift on its northern face.

36-4+5 Iceberg —
15. aug. 10:45 p.m.

5.1 Aa 2 1/2 + 2 1/2 8/295 - Sun in northern sky

5.2 Bb 3 1 - 4/295 Do

5.4 4 2 4/295 Do at 11 p.m.

Roll 30 — 14+15 Aug
Start
30-5 Off C. Shackleton — Iceberg
30-6 Sugar Loaf Bay — Lat. 74°

37-1 - Mts east of Duck Island.
37-2 & 3 Icebergs north of Duck Island

16 Aug. Betw. 9 & 10 a.m.
~~About 9 a.m.~~ Heavy clouds with light background.

5.6 Cc 1 - 4/25 Devils Thumb & Wilcox Head from W.

5.6 Cc 2 11.0/25 Do -

7 T. pl. 3 A. 7 12 1/2, 4 cm 6 Devils Thumb from W.

28.8 3B - Do - Ice front north of Devils Thumb

9 4A - 10, 4 cm 6 Devils Thumb & Wilcox Hd

10 3 - Do - South coastline & Wcox Hd

n.g.

one

The last two phot. spoiled through allowing curtain to catch.

5A. 29 1/2 F 10 5B 0 2/2 F 18 double at 4 cm & 6 feed W.O.

6A 0 F 12 3/2 6B F 18 4/2 at 6 cm & 6 feed

all on Devils Thumb 24 m dist.

Devils Thumb is a lone pillar of rock standing on a small island. The Danish map gives its altitude as 2675 feet. It looks to be less than 1/3 as wide as it is high. The Arctic Pilot vol III p. 66 quotes Lieut Ryder R.D.N. as saying that there is no such pillar here and that what has been described as a pillar is the south snow free side of a field 2621 feet high seen in profile, the snow covered northern side being merged in mist or in the snow of the inland ice cap and therefore invisible to the distant observer from the west. Ryder's statement seems not to be borne out by the Danish chart and the

To me
object certainly looked this morning to be an isolated pillar of rock. The mate, studying it from the mast head with glasses, made it out to be a lone pillar of rock. Capts Comer and Pickels considered it the same. It is a remarkable object if it is a lone pillar so high and narrow, and a remarkable exposure if Lieut Ryder is correctly quoted (Meddelelser om Grönland VIII, 253, is the ref. given in the Arctic Pilot)

5. Od 1, wo 25 - 9.15 p.m. Near view of large berg of old ice (Palearctic?)

5. 17 Aug.
Ship stopped by ice floe about 5 a.m. and made fast to edge. Flat calm.

5. Od 2 - W.V. 4/25 Overcast. Making fast the ship (change from first "moorage")

5.8

5. E E 1 - Do.

5.9

5 Ec 2 - W.O. 75 "Chatt" moored to ice side view. Capt George Comer & Mate Michael Davis.

5.10

5 Ec 1 - W.O. 75 - Do. quartering view.

5.14

5.12 ~~W.O.~~ W.O. 75 - ~~Do.~~ Comer & Davis

6.9 W.O. 75 - E.O. 76.

All with sky heavily overcast & almost raining.

Capt. Comer, the mate, one of the seamen (old Will) and I took a walk out on the ice. At first it seemed strange and insecure to be upon ice thirty miles from ~~shore~~ the mainland and ten miles from the nearest land (Brownes Island) and with lots of open water very near, though none in any direction to do us any good.

At mooring all day.

18 August. Still at mooring all morning. Cast loose and

started engine shortly after dinner
Ran an hour or so and then
lay still in ice for a time. Ran
again & moored. 5 p.m. tried
again but got only the ships length
ahead before we were stuck fast.

Beautifully clear day, no wind.

Clouded over during part of
afternoon.

6 Sq. 2 8/35 Northward from "Cluetts"

6. foretop at first ice mooring.

6 Kk 1, 8/35 Eastward, including

6.3 Brownes Isl. (largest one)

6 Kk 2 8/90 Sabine Island from
b's SW

6 Kk 1 8/90. Browne Island (largest)
from ship's deck

6 Kk 2 8/110 Red Head and ice -
looking southeastward from ship -

Lk 1 4/35 - Captain Comer washing
6.7 2 4/35 clothes
6.8
Mm 1 4/50 Yanker Nathan, the cook.
6.9 2 4/50 Rear view of Captain
6.10 Comer washing & the cook at galley.

Mm 1 4/35 - Captain Pickels using
6.11 N.9. dense ex p
artificial horizon (of molasses)
6.12 2 4/35 - Captain Pickels taking
~~Obs~~ sun in usual way.

J. 2. 1 F 12½, 4 cm 6 speed -
Red Head nunatak and
ice cap. Should show the
crevasses and prominent
irregularities of surface
of the enormous glacier

T 2, 2. ~~Sabine~~ 12½, 4, 6. Largest of the Browne Islands

2, 3 - Spoiled by curtain -

T 2, 4 - 12½, 4, 6. Sabine Island

These were taken while the ship was in motion and took a new set after she stopped.

Tried Keaton camera. Motor refused absolutely to work. Ran machine by hand, showing passage through ice and operation of wheel by two men.

T 2, 5. 12½, 4, 6 - Red Head and ice cap, from N.W.

6 - 12½, 4, 6. Northern end of largest of Browne Islands +

island ice cap in background.

7. 12½, 4, 6. Northern of Brownsdo.

8. 12½, 4, 6. Sabine Island from S.W.

3A-37,5. 11/02 Largest of Brownes seamds from west.

37

6. 8/02 Sabine Island fr. S.W.

19-VIII

3a 38-1. wo of men cutting bench in ice in front of Cluett

20-VIII 38-2-4-5 Ice began to move.

22 VIII 38-5 - Old seal hole in the ice - 38-6 - Thom Island

√3. VIII J.8-3. Melville Monument

√3 VIII J8-5/12½/4cm/9 From "Cluett"
75°38' N. 60°30' W. looking eastward
at inland ice cap showing high
snow-covered pointed peak.

J8-6 Do. Do. Great ~~Arctic~~ paleocrystic iceberg + ice cap beyond.

25-VIII 9.30 to 10.30 a.m.
√7-1-Aa1. 16/35. Eastward from Cluett
in 75°56' N. 61°24' W. Wallhaven
Island, with large berg in foreground
and the inland ice cap in the background
An enlargement might show the cre-
vasses in the ice cap.

Snow-proof Capt Walker

2 √Aa2 16/90. Northward from vessel at
same point. The snow covered cone
which may show is Mt. Haffner.

3 √Bb1 16/90 N.N.E - Icefields + islands

4 √2 16/90 E.S.E. " N. "

"Walhaven Is." prob = Cape Walker

5 - Do 1 4/25 }
6 Do 2 4/25 } Will sharing the cook - (Posed -)

Tq. 2 - 9 - 18/4/6 - N.E from vessel at 75°50' N., 61°24' W. - to show floe ice, bergs, islands and ice cap.

10 - Do Northward from ship - Snow covered cone is Mt. Haffner.

11 Do N. half } Walhaven (Cape Walker?) Island
12 Do S. half } from the west.

Tq - 1 & 2. 18/4/6 - Mt. Haffner & mountain east of it - 2:15 p.m.

3 - 25/4/6 - Glaciers on ~~Walhaven Is.~~ (Cape Walker?) 2:20 p.

26 - VII - Tq 3 - ~~(Dombey Isl. ?)~~ Mt Haffner

4 Mt west of Haffner 12½/6/6

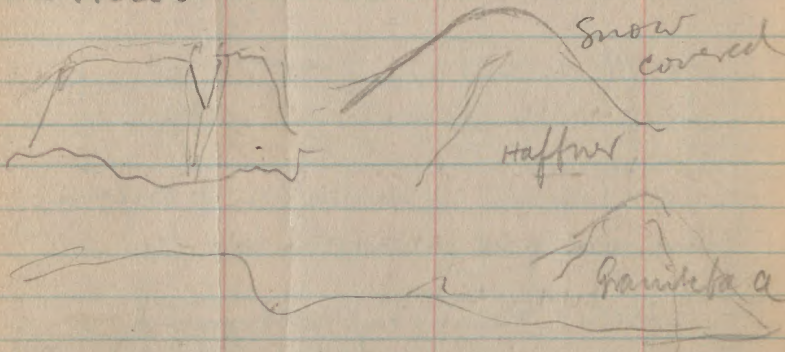
5 16/6/6 Granite? Island or headland bearing N.40 E from ship (Mt Haffner N 20 E (Corrected N 116 E + N 96 E)

6 16/6/6 Crevasses (ice falls) in ice cap, looking N.E.

(Is what I have been calling Wellhaven Is really Cape Walker?)
No

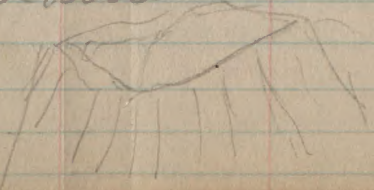
26 VIII 7 Cc 1 (n.q) + 2. 4/90 Mt Haffner + neighbors.

The mountain next west of Haffner shows a wonderful V shaped cleft, (or notch) cutting down half way from its flat top to its base + continued as a narrow gorge to the base.



√T. Roll 10.1 12½/4/6 Broad granite tower.

2. 12½/4/6 Mt. east of Mt Haffner Like a mansard roof in appearance



Steep lower sides rounded and a

Prob. = Leven Is.

smooth low-angled top covered with snow.

3 – 10/4/8 Mr. Haffner & mt. west of it (Notch Mt.)

Graflex? Plate 7. Dd-4/90 Northeastward from vessel centering on Plumduff Island. (Which is Heilprin Island?)

T. Roll 10-4/ 10/4/8 Great Headland at N.E. angle of Melville Bay and ice cap beyond it breaking down as an icefall around a large nunatak.

5 – 12½/4/6 Hog back ridge back (N.E.) of Plumduff Island + ice cap.

6 – 12½/4/6 Ice cap –

Graflex 7. 4/90 Cape Walker Bretharen Island from the west. Dd 2

1

To-day have had a wonderfully fine view of Melville Bay coast ice cap and islands from ~~Walker Island~~ (Cape Walker ?) to Melville Cape. Rocks look and weather like granite. Bold, massive ~~Hilly~~ and mountainous country Perhaps Plumduff Island is Levert or Bolgoni - Are these the round dome covered bare islands that look like Sentinels? Mate Davis would call them the Devil's Teeth.

W.O-01

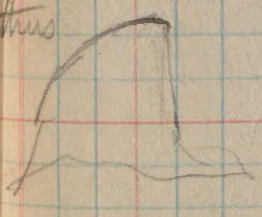
30-VIII 7-9+10 (Ee 1+2) ^ Chief marooned on ice floe X being ferried to ship on little cake by 2d-mate Norman-

31/VIII 7-7f 1+2 (=11§12) 4/90

11- Northward from "Cluett" at ~~5:45~~ 5:45 p.m - The black headland is Cape Melville-

12- Northeastward view from the Cluett across the ice- 5:45 p.m

Near Cape Melville there is a beautiful half-dome (of granite?) like that in the Yosemite Valley thus



The precipice faces the east or southeast. The rounded portion of the mountain is covered with snow.

2 Sept. Thursday. In the ice off Bushman Island.

The south-facing precipice of Cape Melville presents a rusty yellowish brown appearance which contrasts strongly with the almost black (brownish black) sides and top in good sunlight

1 11-1½ 18/4/6 10¼ am. Centred on Cape Melville

2 Do Mts ~~north west~~ of Cape Melville with a large iceberg in front of them.

3 Do Cape York from the east and 25 mi ± distant

4 Do Headlands (3) east of Cape York. from southeast.

5 12½/4/6 Bushman Island from the south – 3 p.m.

3 Sept. Off Cape York Bay entrance - Cliffs show up brown but I cannot determine their nature, except that they are not composed of basalt.

JN-6- 10/46 9 a.m. Headland east of Cape York Bay -

Pr. 8.1. 16/35 Near view of iceberg at entrance to Cape York Bay. Deep clefts in this berg give the blue color - pale at edge, intense further within -

Pr. 8.2, 3 & 4 all 8/35 Eastern Middle & western of three headlands just east of C.Y. Bay. These are dull brown in color, streaked with snow also topped with snow & with snow capped heights behind - Glaciers come down to the sea -

3-IX

66/8/5.25 (10) 32/2/3 94/6 to/28 = 2.5

12-1-18/4/6 Entrance to Cape York Bay. Surface of ice beg to show wind ripples.

9 8-5 16/90 Ice cap east of Cape York Bay - including George Island and eastward.

9 V.8-6 - 16/90 Cape York from E.S.E.

Cape York Bay seems to be filled solid with ice, both sea and glacier.

9 r. 7 Spoiled 9 Diaphragm pin broke at 4/8 (?)

8 4/8/35 - Eastward from George Island (i.e. N.E. from ship) and including Meteorite and Bushman Islands

4 Sept - Off Cape York - Thick weather.

3 Sept - Clear, beautiful day but no wind

9 r. 8-9 - 4/8/90 Glacier in "Crimson cliffs" west of Cape York.

10 - 4/8/90 Cape York from the S.W.

11 & ~~12~~ - 4/8/90 "Crimson cliffs" west of the large glacier shown in No. 9.

The cliffs are warm enough in color to present a pleasing contrast

to the white of the ice cap, glaciers and sea floes - Color is dark, blackish ~~iron oxide red~~ brown with an occasional strong tone of red in it - "Crimson" is a rather strong term to apply to it - There is a greenish hue to some of the talus slopes as if vegetation were present there.

12 Cook beside galley door - Ice on hatch

6 - IX - Cloudy + slightly hazy -

Roll 39-1-9½ a.m. 11/04 Off Cape York One arctic and two vacant bergs -

(Wrongly dated the 7th instead of 6th)

8 - IX - Gr. 9 - 1. 4/90 A large, simple ice berg. Off Cape York

9-2-4/90 - Off Cape York - View northward from top of galley - "Crimson Cliffs", glaciers, icebergs + sea ice.

Clear beautiful day with strong N.N.W. wind which fortunately has been driving lots of ice past us, while we have been protected by a big berg which grounded last night near us. We can do nothing in the ice under this head wind.

9. IX - Clear & fine. Light, baffling southerly winds in morning. Brisk northerly breeze afternoon.

Up sail at 5 a.m., but got jammed in ice about 6 o'clock & were held fast there till ten.

Photos about 9 o'clock -
Graf. 9 - 3, 4 1/25 ; 9, 4 - 4 1/90 ; 9, 5 - 4 1/90 ; 9 - 6 - 4 1/35 Two slightly different views on four plates. "Clarett" jammed in the pan ice off Cape York. Large berg in the background.

Drifted W.N.W. under sail a few miles till noon. Then wind died out and a few minutes later came out of the north - head wind for us — Tide turned & we moored to big grounded berg.

10 - IX Clear & fine. No wind except for occasional light puffs from south or southeast. Left big berg about 5 a.m. and tied up to another at about 10 o'clock - Left that again at noon -

Photos - J. pl. 3 - 1 - 18/4/6 1/2 Crimson

cliffs, Cape York. Glacier with oval nunatak in it. Halfway to ~~Conical Island~~ Parker Snow Point

✓ J. pl. 3. 2 12½/4/6 Crimson cliffs of Cape York - glacier two thirds way to ~~Conical Island~~ Parker Snow Point.

9r. 9. 7 and 8, 4/110 Captains Comer Pickels on iceberg.

✓ 9-9 - 4/90 - E.O.H. on berg.

11-IX - 9r. 9-10 - 4/100 Iceberg off Crimson cliffs.

Weather fine, but no wind blowing - Crimson cliffs well named near point.

✓ 9r. 9, 11 - 4/50 Conical Rk & Parker Snow Point from S.S.E.

✓ 9. 12 - 4/35 ~~Has~~ Crimson cliffs - First glacier southeast of Parker Snow Point.

✓ J. pl. 3, 3. 12½/4/6 Parker Snow Point from S.S.E.

✓ 3, 4 - 18/4/6 Crimson cliffs - First glacier southeast of Parker Snow Point.

9r. 10, 1 ~~48~~ 48/35 Glacier southeast of

Parker Snow Point.

Gr. 10-2 4/25 Ditto, near river.

Parker Snow Point and Conical Rock look to me to be some massive, basic igneous rock in the Archaean.

27 Sept. Sunday

Gr. 10, 3. 4/35 Mostenholme Island from the south. 6 a.m. Strongly colored red + white sandstone, dipping N.W., resting on granite (?) and gneiss.

0, 4. 4/35 Cape Athol from the south, about 6 a.m. Looks like limestone. [but may be gray + black quartzite + is gneiss + schist]

Saunders Island lying north of Mostenholme Is. is a broad flat topped mass of horizontally bedded red + white sandstone. — [Not so but have dip of 15° ± toward north — What I saw first was southern cross section giving the horizontal lines.]

Gr. 10, 5 - 4/30 Peter Freuchen's power boat approaching the "Quest" ?

at 3.30 p.m. left "Elnett" with P.

7 sketches in this book for Etah via Ootah's village on Kiatak Northumberland Is.

-39-2 – Dalrymple Rock from SW

✓ 9hr. 10,6 4/90 & 5 p.m. – Dalrymple Rock near northern side Wostenholme Island. Saunders Island is in background and should show northward dip of the sandstones –

Western side Wostenholme Island shows great development of gneiss & schist cut by great veins of feldspathic pegmatite.

13 Sept. Monday – arrived Northumberland Island at 3:30 am. after a wonderful night of calm and freedom from ice –

✓ 9hr. 10,7 Ootah's tupic & group about the victrola Before sunrise

✓ 10,8 – Ootah beside victrola, do

✓ 10,9 – Time group of newly prefered winter houses – Woman Padlika

✓ 10-10 – Time Two women (Ootah's mother & missionaries wife Padlika too sad sad

10, 11 - Time - glacier with its strong marginal moraines of Potsdam (?) or Medina (?) sandstone.

All foregoing taken before sunrise.

10, 12 - Grave + group of houses.

Motor boat grounded on rocks by recession of tide! Examined shore line east side of island for 1/2 mile.

39 Got 3a and made 4 or 5 photos of beach + the shore cliffs.

Landed on basaltic columnar pavement of old diabase or diorite

Spec. 568 + ~~569~~ 569 are from basement rock of east cliffs near Ootaks tupic

Spec 571 Comprises contact between this old igneous and a sheet of the newer basic trap (diabase?)

Spec. 572 Diabase (2) at contact with the underlying stratified rock - ~~This~~ (this a quartzitic shale)

Spec 573. Massive diabase (1) from about 3 feet above lower contact (with the underlying shale)

Spec 574 Four fragments making one hand specimen from quartzite band in contact with overlying diabase

The quartzite + quartzitic shale overlies the old diorite + underlies the newer diabase (or basalt)

3a photos are

39-~~13~~ - Beach with grounded boat, glacial grooves + background of glacier + mountains

~~39-14~~ 39-5 ✓ Photo in quartzite

+ shale. Grotto is uncommon in that it has ice + frost in it all summer although at sea level + exposed to eastern sun.

39-4 Cliff section showing contact ~~with~~ between shales + overlying diabase or basalt. P. Frenchem as scale.

39-5 Fault zone in shales - P. Frenchem as scale

~~39-6~~ 39-6.

~~Left~~ Got boat free + started at 11 a.m.

Northumberland Island is large + high + apparently presents some interesting geology. Saw one great dike cutting from bottom to top of sea slope from table land.

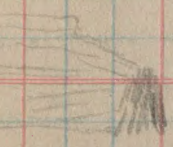
Passed entrance to Triple -

field Gulf – Very attractive looking region up its reaches – glacier galore. Heavy sea today –

Coast north of Inglefield presents more of the fine glaciers filling bays at sea level

Cliffs present horizontal lines of bedding – sandstones & shales with black bands (are these coal from ? with coal ?)

Petrowaric – Igneous dike forms footlower half of face of cliffs



Heavy swell

Rigstor broke down about 6 p. m. just after Francken said that another four hours wld land us in Etah. Nothing doing but the two Eskimos got over & towed into the small boat & towed the big boat – dreadfully hard work

wh. the swell made harder, but fortunately there was no wind. I steered. At about 12.30 we reached the little cove at south east end of Cape Alexander promontory where Franck found Ekblaw in August 1926. We cast anchor in poor holding ground and put a long line ashore which was made fast around a column of basalt. = Sarfalik (or Sorfalik) on Sonntag Bay. Two (perhaps 3) glaciers discharge into this bay and they kept us guessing as to what the bergs from them would do to us.

14.IX Got a very little sleep during rest of night but a strong N. or N.E. wind came down on us about three a.m. and gave us plenty to do to keep out of trouble. Hendrik got the engine fixed up, but we could not leave, because wind was too high. He & Sigdlu went ashore to adjust

our mooring - They had not put the boxes of oranges, guns + walrus gun aboard the large boat + they had to leave them on shore in order to get out again - Much vertically columnar basalt along this part of the shore - Deep, narrow canyon discharges just beside our moorage. Old igloo here - Also caches of walrus meat and canned goods belonging to our Etah people - Peter + Siqdlu went ashore about 10 o'cl. The little boat (the Chiefs work boat) was almost wrecked in the surf by the chunks of ice - We pulled the tender out by means of the power boat + at high tide 2 p.m. Hendrik went ashore by sparring along the mooring rope and got the men but left the boxes -

At about 3 o clock Peter went

as nearly ashore as he could & cut the rope & we started.

✓Photos - 9x 11, 1 - 4/35 1:30 p.m. Front view of glaciers in Sonntag Bay.

✓11, 2 4/35 Sarfalik. Landing place, basaltic columns. One igloo should show.

Southeast of where the landing was made there is a bouldery beach - formed by the stream issuing from the canyon.

The columnar basaltic lava forms the shore for half a mile ± at Sarfalik and westward.

The mass of Cape Alexander is made up of Hurronian(?) quartzites with interbedded lavas and sills - Great feeding dikes are seen in some places.

✓11, 3 4/90 Walrus group in the water - Near Sarfalik (Silkwadi)

11,4 8/90 Cliff of red and yellow quartzite with old interbedded lava rising east of second glacier from the point. Lava very green in color. Faulted with the quartzite. Feeding dike at south end of cliff.

11,5. 8/90 Distant view of faulted cliff.

~~11,6 8/90~~ We came to anchor for a short time in a cove at the foot of this glacier, on account of wind which was strong. "Hayes Harbor"

11,6 8/90 Glacier hanging on to the south side of Cape Alexander between its two great glaciers

Cape Alexander glacier, i.e. the one nearest the point on south side of the promontory, presents an abrupt cliff edge in which the lines of sand showing old surfaces are very prominent. They run at many

angles with reference to the present surface. In places the débris has accumulated enough to amount to small lateral moraines, now included or buried in the ice.

9x 11,7 4/35 } Near views of the front
8 4/90 } of Cape Alexander
~~9 4/90~~ } glacier to show
its make up

9x 11,9 4/90 Cape Alexander glacier. ~~general~~ front view.

9x 11,10 4/90 Cape Alexander glacier. Western edge and bordering land.

9x 11,11 4/90 Cape Alexander glacier, ~~general~~ view of front.

The heavy wind prevented our rounding the point and we retreated to a place, where a small bight in the shelving quartzite had a bouldery bottom gave holding ground

from anchor and the shore gave a mooring. Here we lay till 3:40 the next morning.

15 September. 6:45 a.m. arr. Etah.
House built on a steep débris cone formed by stream coming the near high land.
Provision Point, half a mile ~~and~~ west of the house, is where the Erik landed her cargo in 1913 & where Peary made headquarters. It is composed of ~~Columnar basalt~~ Rocky hornblende gneiss. Ship can moor alongside
9x 11, 12 ✓ 9x 12, 1 to 12. All at Etah [4 lost]
9x. 13, 1 to 12 - at Etah and glaciers of Northumberland Isl. on board the Chelt in North Star Bay near N. Umenak. 9-12 on 19 Sept.

16 September. Stopped at Nerke to see Mac Millan and Small, who were hunting walrus for food. Left at 6 a.m.

Great glaciers characterize north side of Northumberland Island.
Photos in 9x. No 13 - Side moraines -

~~Cape~~ Northumberland Island shows some remarkable dikes cutting across the strata from sea level to the table land -

Cape Parry is a bold promontory of basalt (?). Columnar basalt along sea level. Some small grottoes are in this.

High S.E. wind forced us to anchor for night.

17 September - ~~South~~ Western point of Saunders Island presents strikingly vertical cliffs which are very beautiful with their inclined banding of red, purple and white quartzite (Huronian)

About 6 p.m. reached "Cluett" at anchor in North Star Bay not far from Umenak

19 September - Sunday ~~18~~ 13.9 lx 14, ✓1 to 4 - Dundas mountain etc at east end of North Star Bay & the "Inger Lis" leaving the "Cluett" with her tender & Mac's canoe in tow - [14.3+4 spoiled in development Dundas]

19. IX. 1915

9x. 14, 5 & 6 4/35 E.A.H. in full winter costume. Kooletah given me by Peter Fraser. Bearskin pants, kamiks and mittens belonging to Ekblaw.

20 September.

9x. 14, 7. 4/35 Petowik Glacier from the south at 8 a.m.

9x 14, 8. 4/35 Cape Dudley Digges from the south west.

14, 9. 4/35 Conical Rock from the east. S.E.

14, 10. 4/35 Conical Rock from S.E.

14, 11. 4/35 Crimson cliffs opposite Conical Rock looking S.E.

14, 12. 4/35 Crimson cliffs opp. Conical Rock looking N.E.

Roll 40, 1 11/02 Conical Rock and Crimson cliffs from the south.

24 September 1915.

Roll 40, 2 11/04 Parker Snow Bay. Glacier and nunatak east of head.

40,3 11/04 Parker Snow Bay -
cliffs forming north shore, from southeast. Great sill showed show.

Considerable flat at head of bay below the two glaciers which discharge here. Curving beach of pebbles and sand, behind which there is a pond of fresh water from the glaciers. Beach rises toward north and its top is ridged more or less parallel to the beach. Pressure ice foot at high tide.

Spec. 575 Mica schist from beach at head of Parker Snow Bay.

Roll 40, 4 & 11/04 "Cluett" moored to cliff near Parker Snow Point. from north east N. 8.

40,5 11/04 "Cluett" ditto from north west.

Spec. 576 to 585 incl. Granodiorite gneiss and dike diabase from part of cliff to which "Cluett" was moored -

25 September. In the morning Ekblaw and I climbed to top of cliff above igloo at northeast turn of the bay. ~~Hornblende granite gneiss and granite~~ Schists and gneiss

In the afternoon he and I visited the northern of the two glaciers - This bears a considerable terminal moraine of micaceous gneiss (gray) boulders and sand. Water still flowing copiously. Must be a lot flowing during the summer.

28 September. Walked with Ekblaw across the grass slope at the foot of the northern hills east of the bay. Polygonal ~~solufluction~~ forms well developed. Ekblaw says that they are still better at Umenak. Due to shrinkage and aggravated by freezing. They are like the shrinkage polygons of a drying mud flat but are on a much larger scale. All sizes of polygons - many 5, 6 & 7 sided. Major cracks are one ft. to two feet or more wide and deep.

29 September

Spec. 586, 587, + 588 Intrusive granite collected by Captain H.C. Pickels on Conical Rock off Parker Snow Point. The specimens are duplicates broken from one fragment.

3 October. "Ipsuisuk"

Ashore this morning with Ekblaw, Grea and Capt. Pickels.

There is a strong copper stain (malachite?) coloring a three or four foot band of the schist, ca 200 feet above the sea at the northeast turn of the bay. Seems to be due to alteration of chalcopyrite.

The high grass covered talus shows many vertical crevices due to ~~the~~ downward creep

~~Oct~~ 7 October - Local. = Ipsuisuk

On shore with Ekblaw, climbing to top of mountain overlooking

Cape Dudley Diggs and surrounding region. Gentle slopes wh. form the mountain mass above the shore cliffs are covered with angular loose fragments of the country rock - Rarely does a bit of ledge project thro' this coating. The angular blocks are of all sizes. They speak eloquently of the effects of the extensive and practically continuous frost work that has broken up the rocks. It seems probable that the prevailing winds across these ridges are Easterly, coming from the ice cap. The sandy or rather gravelly detritus is arranged in long windrows which extend irregularly in a general north-south direction apparently the fine material has been blown out from among the coarse blocks and assembled itself in these windrows. The rock is all quartzite ? + it dips N.W. or west of north. Old intrusives and ~~gneiss~~ show in the cliff section ~~of the quartzites also gneiss~~ (Sk. 589) ~~no bottom in lower one third~~

8 October. 9x 15,1 4/10 Parker Snow Bay - warping the "Cluett" back through the ice.

15,2 4/20 Ditto.

10 October - Roll 40,6 8/.2 Parker Snow Bay - North side of entrance at 4 p.m. from inner bay.

17 October 9x 15, 3+4 - 4/25 Panorama of head of Parker Snow Bay.

9x 15, 5 - 4/25 Head of Parker Snow Bay.

18 October - 9x 15,6. 4/10 Hauling "Cluett" into E-W. position - From N.W.

9x 15,7. 4/25 Do. From S.W.

9x 15,8 4/25 Do. From S.E. Men pulling on stern rope and pushing against side of vessel.

19 October - Roll 41, 1 11/10 & 41,2 8/5 "Cluett" prepared for beginning of winter Berth is 150 yds from shore.

~~41,3~~ 22 October Clear + bright. 41,3 - 8/25 - Parker Snow Bay -

Northeast quarter showing "Cluett" between two peaks of an iceberg.

41,4 - 8/25. Parker Snow Bay - North east quarter from slightly different standpoint.

41,5 - 8/25 Parker Snow Bay. Section of small tongue glacier at sea level, middle of southern side of inner bay. This is a snow-drift glacier. Big cracks in the near-shore ice prevented my going to the glacier. Section shows curved lines of old surface, - bent during accumulation.

41,6 - 8/25 Parker Snow Bay - North-west coast from Dudley Digges Point to Soapstone Valley. From the south-east from near the tongue glacier.

24. X - 10:30 a.m. Clear.
9x15, 9x16 8/25 Staff group on ice astern of the "Cluett"

25. X 10:30 a.m. Cloudy & dull.
Roll 42,1. W.O/25. Egingwah, Evik, Pudlak and a sledge and team of dogs.

(Call glacier at head of Wolstenholme Sd
Ekblaw Glacier – If I have the right to do [X]
already named by Erichsen

28·X· 10:30 am. Clear – Sun below zenith

✓ Roll 42, 2. W.O./10.
✓ Pudlak, Inetliak and their baby on its mother's back. On board "Cluett"

✓ Roll 42, 3. W.O./10 Do.

11 a.m.

✓ Roll 42, 4 W.O./25
Crew of "Cluett" hauling coal ashore in bags on Pudlak's kamatik

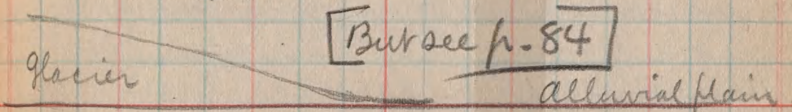
✓ 42, 5. W.O./25
Evik with kamatik and dogs ready to start for Cape York.

✓ 42, 6. W.O./50 N.G.
Evik + Eginguah en route for Cape York. Just after the start.
(Capt. Pickels on one of the kamatiks)

29 October.
Ekblaw and I ascended southern glacier at head of bay and walked a mile or more southeastward on the ice cap. Hard or impossible to say where glacier ends and ice cap begins, since there is no cirque at head of this glacier. ~~Slope~~ Glacier

Call this the George B Cluett glacier
(& the big ice glacier ~~the [illegible]~~ glacier)
,or perhaps better the Ekblaw glacier
rises with gradual slope from the alluvial plain. Seems to be no cliff at foot of ice, tho' this may be so low that it is hidden by the snow. Lower portion of glacier looks concave but may not be so, as if its profile were like this: No terminal moraine.

[But see p. 84]



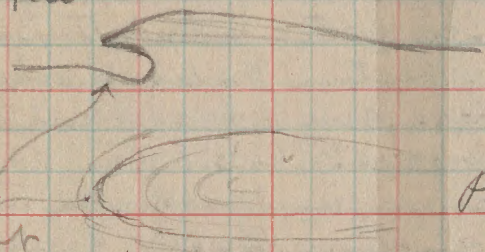
We crossed no crevasses and saw none. Most of the surface is covered with snow, and this was its appearance when I first saw it from the "Cluett" passing the entrance to the bay at a distance of six miles ± on 11 September. Also when I saw it from the shore at the head of the bay a half-mile distant on 24 September. In this feature the contrast with a neighboring glacier 1/4 mile to the north is marked. That is mostly bare, bluish green ice and is furthermore steep or precipitous at its lower end, is deeply crevassed and has a strong terminal moraine along part of its lower end.

The prominent nunatak of the southern glacier is a lenticular boss of gneissoid granite or strongly gran-

See p. 73

slopes are
itoid gneiss - Its ~~surface~~ is entirely
covered with angular blocks, 6 to
10 inches across and larger - saw one
huge erratic 4 yards thick. I was particularly interested in the
sastrugi developed everywhere (almost)
over the surface of the glacier and on
the ice cap. Those of the glacier were
more varied in form and more characteristic perhaps than those of the ice cap;
the snow left on the glacier being hard
and more closely compressed than
that of the cap - through greater force
of the wind perhaps. The sastrugi of
the glacier were in two layers, at
least, the lower pointing east and
the upper southeast. Noted concavities
like little cirques, concave toward
the wind and bounded by vertical walls
one - two inches high. Much erosion
of the packed snow by the sand-blast
action of the driving hardened snow
particles. In many places saw little
cliffs 2-3 inches high, vertical toward
wind, with slopes at bottom like the
talus ~~of~~ slopes of a rock cliff but
with growth in opposite direction
- that is, they were caused by snow
particles driven against the
vertical walls. Layering action
of the wind on the snow evident

Some sastrugi had a shape like the head of a turtle, with overhanging front and beak under which a moat had been cut by erosion - thus:



After leaving the ridge of the present beach we counted eight more and higher, but less well developed, essentially parallel beaches. The ridge seems to be due to the shoving action of the ice foot. The inner beaches had been cut off and partly worn away toward the south by the scouring action of the summer streams coming from the glacier.

The front of the narrow part south of the nunatak is much steeper than the northern part of this glacier

Note on the freezing of the sea ice - Over and over again I observed that the surface water to a depth of two or three inches froze in plates or blades forming a velvety network of ice with water between the blades or plates. The light reflected from these gave a beautiful sheen to the surface. As we lay at anchor being frozen in, I noticed that the sea ice when two or three inches thick ~~and~~ was still mushy and flexible and not strong enough to walk or stand upon, very different from fresh water pond or lake ice. After it was even six inches thick the upper surface was wet and unfrozen on account of the salt mixed with it. The surface became dry and frozen when the temperature of the air remained at ~~about~~ 15 to 7 ~~F.~~ or lower. The freezing of the ~~sea~~ water forces much of the contained salts to the surface which accounts for this mushiness at temperatures much below the freezing point of ordinary sea water.

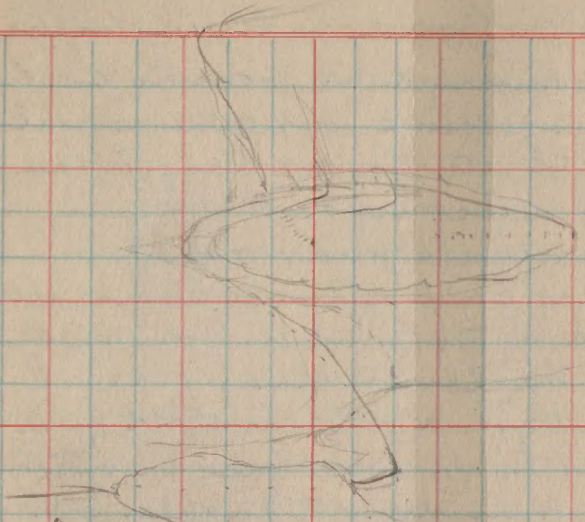
— With Sanquary —
Visit to S. glacier west Bay

30 X – 2000 paces across bay to head – Bar 700
+ 1000 paces to foot of glacier
+ 1100 " to upper nose of nunatak
Bar 1100 ft
Highest point of nunatak 1275 ft
+ 600 paces from nose –
Highest part of ridge shows much ledge in place Spec.
Several loose blocks of quartzite from elsewhere (NE?) are on the ridge showing former covering by the glacier Hornblende schist erratic on
A Trap dike direction about N – S crosses middle of ridge. Another was observed farther east in ridge. Both seem to have suffered from stress with the gneiss
Almost the whole crest of the ridge is formed of the jointed and fractured ledge in place
Specimens 590 – 594 gneiss; 595-7 dike
Good [illegible] seen in snow

After coming down to the glacier we passed around the western end of the nunatak, visited the front of the southern arm of the glacier and then ascended a hanging - and - piedmont glacier near the latter and returned to ship.

Base of northern nunatak and nunatak bar. = 775 ft. making nunatak 500 feet high above plain

At western end of nunatak a long narrow snowdrift descends to the plain from about 1/4 way up the rock slope of the nunatak. This drift seems to have been formed principally by the snow driving down from the southern branch of the glacier under the southeast storms and then to have had its northern part deeply eroded by the hard snow driven against it by the northeast winds. The lower two thirds or three quarters of the drift is composed of ice or icy snow. This ice evidently has been formed by the snow drift melting and settling under the influence of the summer sun. Blocks of ice have fallen from the mass on the north side and are now surrounded by moats in the snow of the plain



~~Looks as though it~~ to be a hanging glacier

The southern branch of the Cluett glacier is much steeper in front than ~~the~~ its northern branch. Its surface now is hardened snow. The front decreases in height from the nunatak to the cliff, apparently on account of the scouring action of the northeast wind and the drifting of the snow against the nunatak. Furthermore it seems likely that the swirling of the N.E. wind over the nunatak and against the cliff is the cause of the steepness of the front, and then back to N.W. due to foot of the little piedmont glacier

what was thought to be a hanging glacier coming down from the southern cliffs 200 yds ± west of the south branch of the Clnett glacier has a broad, high foot projecting on the plain and is therefore a piedmont glacier. The east side of this foot has been eroded by the wind driven snow from the Clnett glacier so as to show at its base a vertical ~~cliff~~ face 15-20 feet high. This face shows in the ice much sand, mingled with angular bits of rock, for six feet above the ground (the plain) on which it rests. Above the sandy ice the glacier shows many scattered angular ~~blocks~~ stones six to twelve inches and more across, projecting from the ice. The vertical face furthermore has been scooped out in shallow, wavy depressions which are polished and oily in appearance. Upper part of mass rounded + polished + grooved - shows two well marked thin bands of sand above the lower big one

31 - Oct -

Front of hanging - piedmont glacier faced are 1150 feet width along plain 650 feet of eastern portion of which is terminal moraine or marked by this moraine -

Glacier debouches 125 paces (315') out onto the plain as measured for me by Dr Sangrom

Front of southern branch Cluett glacier about 1500 ft long by my pacing (Jank had 650 paces) The glacier shows ~~solid~~ ice below thin snow & has ground moraine in it abundantly

Bar 600' Sea level 500'

√ 43 - 1 - 8/1 sec - Ice blocks & moats ~~on~~ at the north base of the snow and ice drift at the western end of the nunatak in Cluett glacier.

W. E.

Note. 31 October - Captain Pickels locates the "Cluett" in lat. 76°21' N. by observation.

61.

← One mile →

Tongue gl.

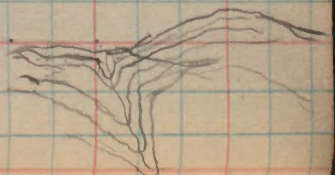
Snow drift glacier torrent

Cluett gl.
Snow summit

Elcblan gl.
(Corner)

Ice summit

× "Cluett"



Nov 27° 5:20

~~8~~ 25/10

√1 Nov. 43-2 Ice foot + tide mark on point ½ mi from ship (from T's track. 12:50 pm)

√43-3. 16/½ View SE from grotto 1½ mi from ship to show mts south of bay. After sunset

Specimens 598, 599 and 600 are from the ~~gn~~ strongly banded hornblendic (?) gneiss forming this grotto. No. 600 shows sigmoid flexure of a feldspathic lamella. Other parts of the rock are as strongly feldspathic in composition as 598 & 599 are hornblendic. The gneiss of this region evidently would repay careful study.

2 Nov.

√43.4. 45/01. 12:20 p.m. Sunset behr. Parker Snow Point & Conical Rock N.g.

√43-5. 11/10 seconds (after sunset. cloudy) Point showing sigmoid flexures and (other) in the gneiss. (Shutter failed to work properly) N.g.

3 Nov. Bold bluff extending for a mile or more westward from Soapstone Valley - 900-1000 feet high by estimate of Eickeman and myself - generally red gneiss with predominance of hornblendic bands near bottom. Broad trap dike ca 200 ft wide descends diagonally across face from valley to point and then rises again more abruptly from sealevel, forming a broad V which lies upon its side. Many tent shaped grottoes at sea level and above. A line of them 50-75 feet above the sea seems to indicate the locus of a former sea level (corresponding in height to the raised beaches at the head of the bay). Higher ones are to be seen, especially along a steeply inclined (70° ±) fault zone.

Approaching the second point, two miles from the valley and four miles from the head of the bay, one sees particularly beautiful banding in the gneiss, while near the point sigmoid flexures are pronounced.

4 Nov. Out along southeast shore of bay with Captain Comer in a snow-storm. Went up on and examined as well as I could in the dim light a mass of gneiss associated with a ~~basic~~ basic dike that projects into the bay, forming a promontory 100 yards wide, 30 ft high and 100 yards out in the water. Flattish top. Saw no signs of any encampments on top. Went also to the drift glacier further west. This mass is very local but ice is dense and blue. Formed apparently by a snow-drift in a small gulch. Old surfaces are marked by curved lines of sand which were blown upon them as mass was formed

8 Nov. 11 a.m. - clear. no sun.

9x 15, 1/1+1/2. 4/20 Men hauling karnatik load of ice from berg to ship for water supply

7:00

8 Nov. 9a-13°(min) 2p-10

8 Nov. Cloudless, brilliant day. Went with Jacquay toward glaciers. We separated on the plain at the head of the bay, he going to the Cluett glacier, while I went up the ridge between the Cluett and Comer glaciers and finally to the top of the mountain separating them. Ridge is covered with, or consists of, large and small angular fragments and bits down to gravel size of gneissoid rock with here and there an erratic ~~of granite(?)~~ on the surface. The disposition of material is hummocky and mohainal in character. Apparently these two glaciers have receded from a more advanced position. In contrast with the Cluett glacier, which is snow covered with here and there a patch of ice, the Comer glacier presents a surface of glare ice robins egg blue in color and its front is steep, rounding (convex) and precipitous. Front section shows flexure of ice layers beautifully marked by ground moraine material. Lateral moraines come around on north and south sides to form, when deposited, terminal moraines nearly as high as the front of the glacier

12 Nov. Friday. Clear day overhead. Low lying fog bank came in from sea and enveloped ship for an hour or so after noon but did not reach more than half way up the cliffs. Calm practically all day. Light wind on glaciers for a short time. Went with Ekblaw up northern arm of Cluett glacier nearly to upper nose of nunatak then turned northeastward and went on up to lateral moraine extending along northern side of glacier for a mile and a half or two miles. Turns at its western end & seems to form short terminal moraine which is nearly buried in snow. Decided that the real glacier probably ends near line drawn from western end of moraine southwestward to upper end of nunatak (which is 400 ft above sea, see p 73) and that the snow slope stretching from this line to the plain is the surface of an enormous drift. The moraine consists of angular fragments of gneiss. Descended the snow drift banked up on the north side of the moraine into the valley separating

Western ridge 650 ft above sea morning

moraine continues in detached ridges well up eastward to the ice cap.

it from the ridge rising between the Cluett and Corner glaciers. Crossed the hummocky lower middle portion of this, which Ekblaw agrees with me in thinking to show ice action. Then we went down into the valley separating this ridge from the southern lateral moraine of the Corner glacier and up onto that moraine. Saw nothing but gneiss. Followed the shallow depression between the upper part of the moraine and the ice down to the western end of the glacier. Ice shows beautiful overturned folds and thrust faults near its front, and therefore is to be considered an active glacier.

There I met Captain George Comeau, the ice pilot provided by the Museum and accepted by the Grenfell Association of America, owners of the vessel, for the proposed voyage. He had been in waiting for some days.

Not used

Parker Syndicate Bldg
Greenfield. 16 December 1918

87

President H. F. Osborn

American Mus. Nat. Hist., New York.

Dear Sir:

I beg to submit the following report of the voyage of the ~~S~~ auxiliary schooner "George B. Cluett" under charter to the American Museum of Natural History for the relief of the Crocker Land Expedition Party to bring back the members of the party and their collections and other property from Etah, North Greenland.

Acting under your instructions to take charge of this relief expedition, I left New York on 1 July and proceeded to Sydney, Nova Scotia, spending Tuesday, 6 July, with Admiral Peary at Eagle Island. He gave me several suggestions regarding plans. That evening I received word that the "Cluett" would not leave St. Anthony, N. F., until 10 July, but I wired her captain to hasten his departure and I went on to Sydney, where I arrived on the 8th. The "Cluett" did not leave St. Anthony until noon of the 10th, thus being delivered to us nine days later than ~~was~~ the date specified in her

charter party. On account of delays due to adverse weather, according to Captain Pickels's statement to me, she did not reach Sydney until noon of the 16th. Some repairs were then made on windlass and engine, our cargo was taken on board, a new crew was shipped and the vessel left Sydney for Etah at 6 p.m., 19 July, under engine power. Soon after 8 p.m. the engine refused to work, but the wind was fair and good and we proceeded without anxiety on my part. The engine was coaxed to run several hours during the night of 20-21 July, but on the 22d it was reported to be entirely out of commission with a crack in the hub of the fly wheel.

We reached Battle Harbor at 6 p.m., 25 July, just six days from Sydney instead of the three or three and one-half that the journey would have taken with the calm weather that we had, if the engine had been in good order when we started from Sydney and if the engineer had been competent. I understand now that it can be proved that the engine was ~~out of~~ radically out of order before the vessel reached St. Anthony. If this be true, the

owners violated the charter party in advance of the beginning of the voyage. Other violations will be mentioned later. Crude repairs to the flywheel were made by Captain Pickels and the engineer at the blacksmith shop at Battle Harbor, and we sailed for Greenland at 4 p.m., 26 July.

We averaged a fair run under sail as far as Godhavn, Disko Island, where we came to anchor at 1:30 am. 5 August, in a flat calm, having used the engine for several hours on gasoline to cross Disko Sound. It will not run on kerosene and but a small supply of gasoline was procured at Sydney. There ensued four days of flat calm, two of which we spent in Godhavn Harbor. Had the engine been in good order ~~we~~ we should have left there on the day of our arrival and proceeded under power up the coast. As it was, delayed by calm weather and light winds and having only one good breeze, we did not reach Upernivik till 7 p.m., 10 August. We stopped there for news of the Crocker Land party and information about the

ice in Melville Bay. We could not go ashore that evening on account of the wind, but the next day was calm, we got our information early in the morning and should have gotten away before noon had the engine been ~~unable for any~~ properly usable.

We left Upernivik under power at 6:10 a.m., 12 August, but changed to sails a half hour later, or as soon as we were clear of the islands. That afternoon we sighted the great ice pack We skirted along it north northeastward for four days till we were off Devil's Thumb, which is considered the southern limit of Melville Bay. At about 6 a.m. the following day, 17 August, the vessel was moored to a pan of ice in the pack and we began our drift across the Bay. Eighteen days later (4 September) we passed Cape York, the northern limit of Melville Bay, about 150 miles from Devil's Thumb. It then took us seven days to advance ~~to Conical~~ about 30 miles to Conical Rock. The following morning, 12 September, we rounded Cape Athol to go into North Star Bay, ~~and two days later the "Chantt" came to anchor~~

but the wind died out and we were held in the strait between the cape and Wostenholme Island.
~~Off the rock at the head of the bay. fifty miles from cape afloat~~

As may be seen by Captain Comer's report as ice-pilot, the original of which will be handed to you when I reach New York, Captain Pickels lacked competence and energy in contending with the ~~unusually~~ severe ice-conditions in Melville Bay and between Cape York and Conical Rock. Captain Comer states that Captain Pickels made no ~~adequate~~ preparation for a voyage of the kind that was ~~com~~ reasonably to be expected in visiting Etah; also that Captain Pickels showed ~~his~~ lack of knowledge, skill and proper energy in working the vessel through the ice of Melville Bay and off Cape York; furthermore that Captain Pickels never called upon him (Captain Comer), the recognized ice pilot of great experience with sailing vessels in arctic ice, for any advice or assistance when his counsel would or might of have been of use, but on the contrary resented and rejected all suggestions that Captain Comer ventured to make. This lack of proper tools and the failure to utilize the ice pilot seem to con-

stitute violations of the contract.

Off Cape Athol we met Peter Freuchen, Danish manager at Umenak of ~~Rasmussens~~ Knud Rasmussen's Committee with which the Museum has most cordial relations, in his kerosene power-boat the "Ingerlis", towing Rasmussen's chartered schooner the "Cap York" out of North Star Bay to start on her way southward. Mr. Freuchen offered to take me on to Etah to get those of the Crocker Land party who were to return and bring back a supply of gasoline ~~of the~~ for the "George B. Cluett", her supply of that material having been entirely inadequate to begin with and being now almost exhausted. I accepted his offer, put the Crocker Land mail and a few other things on board the "Ingerlis" and we started northward at 3:30 p.m. in calm weather. The "George B. Cluett" was to follow us, if the wind should be favorable in season, but four days of calm weather and light winds supervened and all that she could do was to work her way to the head of North Star Bay, where she anchored off Umenak on 14 September, and she

was not able to proceed farther north.

On our way to Etah, Mr. Frenchen and I stopped at the Kiatek on the south-eastern side of Northumberland ~~Island~~ 3 days to leave a victrola which Admiral Peary asked me to deliver to Ootah one of his North Polar companions. The stop should not have delayed us more than an hour, since the place was directly on our route, but proper care of our boat was not taken and we were left on the rocks by the receding tide, ~~and delayed~~ we lost another seven hours before we could get off and go on with our journey. The 13th, however, was a calm, beautiful day like the 12th and we made good progress until about 8 p.m., when our engine broke down, five or six hours run from our destination. Mr. Frenchen and his two Eskimo assistants then towed the heavy launch by means of the dingy, rowing five hours or more to reach a safe anchorage in Sonntag Bay. During the night, a northeasterly gale descended upon us and raged for 24 hours, keeping us at anchor most of the time and preventing our rounding Cape Alexander till about 4:30 o'clock of the morning of the 15th. We dropped anchor

off the Expedition headquarters at Etah at 6:45 o'clock the same morning.

I found Messrs. Ekblaw, Tanquary Green and Allen at the house. Messrs. Mac Millan and Smalle were at Nerke, forty miles south of Etah, hunting walrus for dog food. Dr. Hunt had left 24 hours before my arrival for a two or three week absence hunting caribou in the country east of Etah. All hope of the arrival of a ship this year had been given up two or three weeks before my arrival, and preparations were being made by the party for a third winter in the Arctic. A messenger was despatched immediately for Dr. Hunt, in the hope that he might be overtaken at his first camp, but the mission was unsuccessful, to our great regret. The Expedition headquarters is a commodious house and there was a reasonable supply of provisions on hand to enable the men to remain over with conservative use of the food, in connection with the fresh meat which had been and could be secured by hunting. There was plenty of fuel and oil for all purposes.

~~Heathing~~
~~bracing~~

for an attempt at Melville Bay, ~~and that one should be made in spite of the light wind and our broken engine.~~ The efforts that were made were not ~~made at the right times~~ or pushed as they should have been, and other opportunities were allowed to slip by unimproved.

One of the worst features of the whole enterprise and the one that now seems most liable to lead to serious consequences is the shortage of food supplies on board the "Cluny". When Captain Pickels was questioned in New York, Boston and North Sydney regarding supplies he said that he had plenty on board for a two year voyage. Having heard of this statement I did not inquire into the matter particularly, supposing everything to be all right

Lyman Abbott: "Reminiscences", The Outlook, 23 June, 1915, pp. 463, 464.
(Conclusion of article.)

I have faith in my fellow-men. I believe in their honesty of purpose and their competency of judgment. I have seen them take up great questions of National policy, one after another, and decide them aright, sometimes overriding their leaders in so doing. They have endured four years of terrible self-sacrifice in order to preserve the Nation intact and set it free from bondage; they have given away millions of acres of their lands to foreign immigrants who promised to dwell upon and cultivate them, recognizing the truth that the wealth of a nation consists not in its soil but in its people; they have denied themselves the right to purchase their goods in the cheapest market that they might make America an industrially independent Nation; they have voted to pay the Nation's debts in gold when, without breaking the letter of their bond, they could have saved millions of dollars by paying them in silver; they have taxed themselves year after year for an expensive system of public education, because they recognize the value to the Nation of brain power in its humblest and lowliest citizens; they have voted to carry on a war for the succor of a feeble neighbor, and have brushed aside impatiently the protests alike of materialists, who argued that it did not pay, and of timid idealists, who feared that it would convert the Republic into an empire; they have perceived the perils of the country in a growing plutocracy, and have entered on the task of bringing the aristocracy of wealth under the control of the democracy of industry. I have been personally, though not intimately, acquainted with eight Presidents—Grant, the soldier; Hayes, the peacemaker; Garfield, the orator; Cleveland, the administrator; McKinley, the cautious; Roosevelt, the courageous; Taft, the lawyer;

Wilson, the scholar. And I have known enough of other men in public life—Senators, Representatives, Governors, Mayors, and their subordinates—to know that while some politicians are unscrupulous self-seekers in America as in other countries, America has her share of public men as true, as pure, as self-denying, as are to be found anywhere in the world. My faith in my fellow-men has been strengthened by my lifelong study of our National life. The evils from which we have suffered have been caused, not by too great a trust, but by too great a distrust of the people; and I repeat again, as my well-considered conclusion from such life study, what I have often repeated in public speech: The remedy for the ills of democracy is more democracy.

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