JUNE, 1852.

In Baffin's Bay, working through the Ice on the Eastern Side; Melville Bay, etc.

	BL	ROMETE					8	TB	BRMOM	STEB.			1				WIND.		-	
Date.				b	pper Dec	ir.	;		bore.	H	ower L	Jeck.	Low	er Deck.						Weather.
	Noon.	Midnt.	Mean.	Mar.	Min.	Mean.	Bea.	Mar.	Min. N	ean.	fean A	Mean E	tows.	Main G	un Boc		irection.	For	ġ	
June 1	066-66	008-62	80.800	48-0	41.0	45-750	37-166		:	1	:		;	;	:	NNE, NE	calm		3 pc	
64	056-	30-050	-	48-0	49.0	45-250	36-333	:	;	:	:	:	:		:	NNE, cali	P, ENE.		100	
00 ·	-850	20.000	098.	48.0	9.9	45-750	33.666	:	1	:	:	:	:	:	:	Colm NR	www.		5 P P P P P P P P P P P P P P P P P P P	
**	028-	016.	-916-	47-0	0.04	47-016	106-28	:	;	:	:	:	;	1	1	NNW BE	NW.		be be	beg.
	000-02	000	040	0.00	1.00	86.625	36-750	: 1	:	:	: :	: :				SW, calm,	88	. 0 to	5 bc.	08.
	069-66	016-	199	0-64	41-0	43-833	38-208	1				:	:		:	Calm .	: :  :	•••••••••••••••••••••••••••••••••••••••	å.	
	-680	-200	149	0.89	19:97	51-683	10-641	:	:	;	1	÷	:	:	:	E, SE, ND	MN M		00	beq.oc.
•	000-08	090.08	30-010	42.0	36-0	37-415	37-833	:	:	:	:	:	:	:	:	NW, 6E,	AL DY D DD		- 10 C	ome.
8	000	008-65	20-798	45.0	39-0	41-125	38.416	1	:	:	:	:	:	:	:	Ka 9 '99	AND AND			boo.
=	29-650	-660	299.	42.0	32.6	38.463	140.98	:	:	:	;	:	:		:	Colm SR	MNM		5 po	-hoo
	DRL	099	200	28.0	0.10	010.10	000 000	:	:	:	:	:	:	:	:	Colm R. S.	R. W by N. W	NW 0 to	2 0.0	CB.
37	190	001	A01.	0.16	0.88	35-166	835-78	:	:	:	:		: :			WNW, cal		. 0 te	2 0.0	c.bc.ocm.o
19	97	.450	163	0.98	33.5	34.583	33-458					:	:	:	:	8, SSE		. 20	1 00	s.omd.bc.
16	-560	.480	-485	36.5	33-5	34-666	83·125	:	:	:	:	:	:	-	:	8W, 8, 89	M	3.	2 Po.	0 ms. cos.
11	-650	000.	.680	89-0	34.5	35-876	34-916	:	:	:	;	;	:	- :	:	WSW, W	calm, 15 by H			B. CO B.
8	-560	.450	+94-	36.0	34.0	34-958	32-916	:	:	:	:	:	:	:	:	a 'a 10 u	CBLIM, W .		000	.bao
61	008-	048	9/11.	29-0	34-0	85.468	230.022	1	:	:	;	:	:	•	:	IN AN A			4 00	an obte
3	001-02	076	096-	0.88	31-0	079.92	000.20	:	:	:	:	:		:	:	aller ma	WWW WWW			- ho of a
	R	061-06	20-114	24.2	21.0	2001.22	971.120	:	:	:	:	:	:	:	:	NNW Ca	n. NE by N	0 +0	5 0 0 P	C.B.
		201	not.	0.00	0.00	101010	170-12	:	:	:	:	:	:	:	:	NR SSW		14	6 p.f	OCM.R.
23	201	1001	tor.	0.00	9.7.6	01010	891-18	:	:	:	:		:			SSW. NE		. 1 to	2 bc.	bom.bf.
18	000		100	0.00	0.00	24-166	106-88	:	:	:	:	:	:			NE. S. cal	m. W. 8W	. 0 4	bf.	be.orm.
	010-	0000		0.98	85-0	289.58	83-666	:	:	:						8W. 8. W.	NW.	. 1 to	0 5 0 C	r.c.bc.
15	000-06	200	100.	1.15	1.18	606.88	32-666								:	NW.N.N	E, B	. 1 tc	be be	m.com.
18	-BEO	008-00	628.	0.88	0.65	81-833	31-583				. 1	-				Calm, NE	•	. 0 40	9 2 00	d.ocm.bem
8	004-	Current and	084-	0.88	1-68	179.88	32-083	2			-					NE, NW,	M8	. 1 4	2 be	m. o c m.
12	-650	Ves-	Ę	0.88	9.18	84.458	32-600				-					8W	•	. 1 to	2   bc.	bem.
3	3	8	110	2	-	-			1	:	:								1	
	00.100	001.00	001.00	0.04			10:5.03					-	10000	-		NTONET	OIR to SEA	W to SW	2	
	001.00	100	001.00	0.90		:	100.15	1	:	:	:	:	:	:	:	N to NW	0 8 to 8R 4	W to NV	60 A	
The second	110.00	005.00	100.00	:	0.12	40.004	100.10	:	:	:	:	:	:	:	:	E to NR	9 8 to 8W 5	Galm .	16	
THOME	NO.AZ	929.87	008.67			477.CO	020 40						-							

# JULY, 1852.

٠

# Melville Bay; Baffin's Bay.

	B	ROMET	BB.						THERM	OMETE	R.						Wind.		1
Date.				U	pper De	ck.	Marr		Shore		Lowe	Deck.	Lo	wer D	eck.	-		1	Weather.
1	Noon.	Midnt.	Mean.	Max.	Min.	Mean.	Ses.	Mar.	Min.	Mean.	Mean Dry.	Mean Wet.	Bows.	Main Mast.	Gun Room	Room.	Direction.	Force.	
July 1 2 8 4 6 6 7 7 8 9 11 12 13 14 15 14 15 16 16 16 16 16 18 19 20 21 22 23 25 25 29 30 31 Mar. Man. Man. Man.	29-640 -900 -900 -800 -870 -570 -559 -559 -559 -559 -559 -559 -830 -830 -900 -900 -750 -750 -900 -900 -950 -900 -950 -900 -950 -950 -920 -950	29-550 -730 -890 -720 -890 -720 -450 -450 -450 -530 -530 -530 -530 -530 -530 -530 -5	29-664 -730 -851 -746 -578 -545 -552 -555 -555 -5617 -512 -512 -512 -512 -512 -512 -512 -512	34.0 35.5 37.6 41.0 410.0 36.5 38.0 35.5 36.0 40.5 38.0 35.5 36.0 40.5 38.0 38.5 36.0 40.5 38.5 37.5 38.0 40.5 38.5 38.0 40.5 38.5 38.0 40.5 38.5 38.0 40.5 38.5 38.5 38.5 38.5 38.5 38.5 38.5 38	81.5 82.0 34.0 35.0 34.4 32.5 32.5 34.0 34.5 32.5 32.5 35.0	82-666 83-125 84-833 86-333 87-375 86-333 85-333 85-333 85-525 84-958 85-626 85-626 85-626 85-791 85-750 85-791 85-791 85-791 85-791 85-791 85-791 85-795 85-791 85-795 85-791 85-795 85-791 85-795 85-791 85-795 85-791 85-795 85-791 85-795 85-791 85-795 85-791 85-795 85-791 85-795 85-791 85-795 85-791 85-795 85-791 85-795 85-791 85-795 85-791 85-795	$\begin{array}{c} 31 \cdot 916 \\ 31 \cdot 541 \\ 32 \cdot 041 \\ 32 \cdot 041 \\ 32 \cdot 041 \\ 33 \cdot 083 \\ 33 \cdot 043 \\ 33 \cdot 083 \\ 34 \cdot 006 \\ 33 \cdot 458 \\ 33 \cdot 048 \\ 33 \cdot 041 \\ 35 \cdot 458 \\ 33 \cdot 058 \\ 33 \cdot$							•			SW, SSW SW, SSW SW, S South SW, SSW SW SSW SSW SSW SSW SSW SSW	1 to 2 2 to 4 2 to 4 2 to 4 2 to 4 2 to 5 2 to 5	bem.oms. oms.oc.oem, oem.be.oms. oms.be. be.e.om. em.com. com.com.s. com.s. com.be.oer. or.be.be. be.be. be.be. be.be. be.be. be.be. be.be. be.be. be.be. be.be. be.be. be.be. be.be. be. o.og.oeg. cgd.oc.oem.f. f.bef.be. be. be.f. f.bef.be. be. be.of.om.fd.ef. f.be.o. be.o. be.o. be.o. be. be.

AUGUST, 1852.

SEPTEMBER, 1852.

	m	LEONEX	ei					E	ONSUL	URTER.						-	WIND,		
Date.	-,		,	Б	pper Dec	it	Wan		Shore.		Lower ]	Deck.	Low	er Decl	-	1		Γ	Wanthan
1	NOOR	Midat	Mean.	Mar.	Min.	Mean.	Sea.	Max.	Min	fean.	Mean Dry.	Mean F	Sows. 3	Main R.	Gun B	pirit oom.	Direction. F	orce.	- IOTMIN LL
Sep. 1	29-620	074-68	141-62	87-0	18-0	96-416	80-500			1	-		-	1	1	T		1	
04	-760	002-	711-	0.96	0.12	228-06	301.08	:	:	:	:	:	:	:	:	:	NW, Calm, ESE, E 0	50 3	08.0m.
80	008-	-780	102.	0.00	0.66	000-00	30-100	:	:	:	:	:	:	:	:	:	E, NE 1	to 4	om.og.bo.
*	044-	092-	1014	0.66	0.91	000.01	100-00	:	:	:	:	-		:	:		East	-	be.
-	-020	-100	014-	99.90	0-00	000-00	005.08	:	1	;	:	:	•	:	:	:	E, NNE, calm 0	to 4	0 H
	008-	029.	-700	9-80	0.10	020-020	002.02	:	:	:	:	:	:	:	:		Calm	0	om.of.
-	80-100	026.	826-	0.90	0.00	929-10	002-00	:	:	:	:	:	:	:	:		Calm	2	oms. be.
- 00	001-	30-140	01110	0.96		16-201	000.12	:	;	;	:	:	:	:	:		Calm	0	be.e.
	99-980	000-	800-	0.12	4.4	102-11	229-12	:	:	:	:	:	:	:	:		Calm	0	
10	30-140	090-	100	0.91	0.8	10.933	S0.00	:	:	:	:	:	:	:	:		Calm, 5E 0	to 3	b.o.oe.
II	-162	021.	174	0.76	0-21	19-598	200.00	:	:	;	:	:	;	:	;		NE, E, calm, S 0	to 3	00.08.
12	010-	201.	130-	0.10	0-06	181.00	00.000	:	:	:	:	:	:	:	:	:	1) · · · · · · · · · · · · · · · · · · ·	to 2	s. c. bc.
15	026-65	020-020	090-06	0.10	0-66	120.00	300-00	;	:	;	:	÷	:	:	:		W, 88E, 8E 2	to 4	0.00.
14	-760	088.	808.	0.70	0.01	03-00	148.00	:	:	;	:	:	:	:	:	:	SK, S	to 6	0 6. 6 9.
15	Sh-010	098.	598.	9.60	10.1	291.10	00-750	:	:	:	:	:	:	:	:	:	8, calm 0	5	co.o.
16	098-65	080-	-	0-30	0.16	020-10	0000.00	:	:	:	:	:	:	:	:		Calm, SW, S 0	10 0	C.005.0.
17	006-	098.	646.	9.10	10-0	802-61	002-06	:	:	:	:	:	;	:	:	:	8, 5W, 5W by W 8	to 7	c4.05.
18	30-062	30-080	30-046	0.01	0.9	8-900	00.500	:	:	:	:	:	:	:	:	:	3W UY W, SW, WBW, W 3	to +	0 s. bc. oc. o.
10	29-990	020-	-015	15.0	19.0	14-055	220.00	:	:	:	:	:	:	:	:		M.W. W, BW 1	to 4	0.00.0.6.
8	-750	006-62	778-92	20-0	14.0	16-333	29-416	;	:	:	:	:	:	:	:	:		20	o. c. bc.
8	006-	008-	-813	19.0	10-0	13-181	29-318		:	:	:	:	:	:	:			8	3.00 m.
86	098.	006-	968.	0.11	8.0	9-950	29-350		:	:	:	:	:	:	:	:	1 · · · · · · · · · · · · · · · · · · ·	2	06.00.
8	089-	.780	147-	17.5	0.6	12-750	29-312	:	:	:	:	:	:	:	:	:	0 · · · · · · · · · · · · · · · ·	2	0 6. 0.
2	-680	099-	879.	18.0	1.0	13-625	009-66		:	:	2 2.23	12.0	:	:	:	:	A N N N	20	oo. ocq.
2	88	019.	·	0.8	0.2-	3.875	29-500				9-19	00.0			:		* · · · · · · · · · · · · ·	20	oog.bc.
2	08	089.	029	5.66	0.2	17-750	29-500	;			59-3 15	1.60					E. ENR	24	00.
-	0/x	0/2.	192-	22-0	0.88	30-583	29-500	:	;		56-3 5	3.00			-	-	East	24	
£8	200	014	098	0.88	18.0	51-333	29-500	;	1	1	59-3 5	00.4	:			0	3. calm. NR	20	08. D. O. OC.
	200	Be	195.	0.12	50-0	53-416	53-500	;	:	:	24-5 5	01-0	:				NE. SE		
8	Ret	N	561.	0.95	0.53	165-52	009-63	;	;	:	69-3 6	3.60	;	:	:		3E, 8, calm 0	14	
										-	-	-		-	-			-	
Mar.	80-160	30-170	:	37-0		;	31-333			-	-	-				~		-	
din N	012-02	28-870	00-810	1	1-0	10.160	112.65												
		110		:	:	CO#.01	140.67		-		***	~		~		-			
												-				-		ł	

OCTOBER, 1852.

Disk         Upper Dack.         Elser         Lower Deck.         Lower Deck.         Lower Deck.         Direction.         Protection.         Protectinththththtttttttttttttttttttttttttttt	* 1 5	B	ROWITS						Ta	ROMAN	STER.							WIND.		
Mon.         Mint.         Mar.         Min.         Mar.         Min.         Min. <thmin.< th="">         Min.         Min.         <th< th=""><th>Date.</th><th>2</th><th></th><th></th><th>D1</th><th>pper Deo</th><th></th><th></th><th></th><th>hore.</th><th>1</th><th>Ower D</th><th>eck.</th><th>Lowe</th><th>r Deck</th><th>-</th><th></th><th></th><th></th><th>Weather.</th></th<></thmin.<>	Date.	2			D1	pper Deo				hore.	1	Ower D	eck.	Lowe	r Deck	-				Weather.
Q.4.1         W.700         W.900         W.900 <th< th=""><th></th><th>Noon.</th><th>Midnt.</th><th>Mean</th><th>Max.</th><th>Wh.</th><th>Mean.</th><th>Sea.</th><th>Max.</th><th>Min. A</th><th>lean. D</th><th>Ty. W</th><th>fet. B</th><th>NWS. N</th><th>asin Et</th><th>un R</th><th>oon</th><th>Direction.</th><th>Force.</th><th></th></th<>		Noon.	Midnt.	Mean	Max.	Wh.	Mean.	Sea.	Max.	Min. A	lean. D	Ty. W	fet. B	NWS. N	asin Et	un R	oon	Direction.	Force.	
100         1700	Oct. 1	092-68	066-83	100-63	24-6	19-0	20-625	29-500	5-1-5	20-0	19-68-61	00-1	. 99-					8 <b>K</b> , S	2 to 6	be. c. 08d.
7.00       7.0	-	8	001-	242	23-0	0.9	12-636	29-500	24.9	0.9	14-18 6	33 64	8	:	:	:		8, 88W, calm	0 to 4	oq.bc.
710       70 <t< th=""><th></th><th>009</th><th>099</th><td>149-</td><td>0.0</td><td>â</td><td>896-9</td><td>000-67</td><td>0.0</td><td>3.0</td><td>6-33 6</td><td>0.53 6.</td><td>00.5</td><td>:</td><td>:</td><td>:</td><td>:</td><td>West</td><td>4 to 7</td><td>oc.ocq.ocg.</td></t<>		009	099	149-	0.0	â	896-9	000-67	0.0	3.0	6-33 6	0.53 6.	00.5	:	:	:	:	West	4 to 7	oc.ocq.ocg.
9000         9000         900         1900	**	Den.	0.0	2	0.1	2	205.5	000.62	2.	0.0	4.46	20.0	30	;	:	:	;	W. WNW, NW.	20.0	ogs.bc.
7.00         7.00 <th< th=""><th></th><th>000</th><th>000</th><td>0.0</td><td>0.0</td><td>0.0</td><td>014.4</td><td>000.87</td><td>2.0</td><td>0.2</td><td>0 00.0</td><td>00.5</td><td>200</td><td>:</td><td>:</td><td>:</td><td>:</td><td>· · · · · · · · · · · · ·</td><td>1 10 8</td><td>DC. 08. C.</td></th<>		000	000	0.0	0.0	0.0	014.4	000.87	2.0	0.2	0 00.0	00.5	200	:	:	:	:	· · · · · · · · · · · · ·	1 10 8	DC. 08. C.
97011         97014 <th< th=""><th>DE</th><th>000</th><th>000</th><td></td><td></td><td></td><td>1000-0</td><td>002.00</td><td>0.41</td><td>0.01</td><td>2 00.1-</td><td>00.1</td><td>00.0</td><td>:</td><td>:</td><td>:</td><td>:</td><td>WW, CHUR</td><td>20</td><td>00. pc.</td></th<>	DE	000	000				1000-0	002.00	0.41	0.01	2 00.1-	00.1	00.0	:	:	:	:	WW, CHUR	20	00. pc.
10         ****         5****         5***         5***	- 0	Shows	20-050	110-06		1.8	0.500	009-06	0.11-	- 0.01-	01 01 OT	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	80	:	:	;	:	WW min N		
11       ****       ****       ****       ****       *****       ******       ************************************		106.		181.		1	917-8-	009-08	0.0	0.0	A 102.0	30.1	200	:	:	;	:		* 01 0	
11       3500       450       4	2	413	068-	AAR.		0.91	-0-166	002-66	0.61	100	1 18.9	39.	99.	:	:	:	:	Marine Marin	0 10 8	
111       3300       340       140		097-	008-	61Y-			-0-875	29-500	0.22	10.01	15-60 5	4 99-	-33	:	:	:	:	Calm W NW N	1 11	o he
15       "250       <	2	-310	-460	395	0.1	0.8-	-4.250	009-66	1.0	0.8-	4.23 4	4 00.6	19			: :		N.NW	1 to 2	pe.
11       3703       1137       -560       -1170       1011       560       1170       1011       10010       1001       1001	13	.260	-250	908-	0-8	9.4-	-1-250	29-500	100	0.8-	1.00-1-	7.66 4	00			-		N.N.E.	9 to 4	o ocm hof
16       39933       7069       -1770       -205       -1970       130       5883       440       116       500       200       100	14	890.	·120	-137	0.8-	-16.5	102-11-	29-000	0.9-	-10.21-	10-16 4	+ 33 4	09-1				1 1	NE. calm	0 to 4	bef. be. o. m. b.
16         750         3889         -40         -155         -589         150         -56         583         440         116         780         589         440         116         780         589         440         116         780         589         560         560         440         115         -595         560         440         115         -70<	15	29-932	-050	-0.88	-17-0	-20.5	-19-500	000-65	-12.0	- 03-01-	17-94 4	1.33 34	3.83					NE.NW.	1 to 3	oc. bm. bem.
17       550       75	16	-760	29-820	29-894	0.4-	-15.5	-8-958	29-000	-3.0	-15-0	8.33 4	4-00-4	09.1		-			NW.	2 to 3	ben.cm.
18         768         769         759         560         579         560         560         560         560         560         560         760	11	089.	-692	889-	0-9-	-8.5	-7-250	29-000	0.*-	5.6-	6.00 4	8-00	1.66	:	-	:		NW, calm, 8	040 3	em. 0. 0m. c.
10       778       740       718       7900       1	8	-850	-628	879.	0.9-	-7-0	-6.063	29-000	4.0	10.8	5.60 4	7-50 4	2.16		:	:		8, calm	0 to 3	с. <b>п</b> .
301       3940       3940       395       3940       3950       3950       4950       10       2       105       15       7       45       10       2       105       10 </th <th>2</th> <th>149</th> <th>072-</th> <td>-718</td> <td>2.2</td> <td>-8-0</td> <td>-4-379</td> <td>000-62</td> <td>9.0</td> <td>9.9-</td> <td>2.27 4</td> <td>8-33 4</td> <td>1.33</td> <td>;</td> <td>;</td> <td>:</td> <td></td> <td>Calm, NW</td> <td>0 to 1</td> <td>п.оп.</td>	2	149	072-	-718	2.2	-8-0	-4-379	000-62	9.0	9.9-	2.27 4	8-33 4	1.33	;	;	:		Calm, NW	0 to 1	п.оп.
29.00       7300       730       1100	8	718	840	989	10-5	1.5	7-458	000.62	0.11	2.0	7-65 5	8-50 4	09-6	:	1	;	:	NW, N	1 to 3	om. bc.
89         9000         9013         940	28	200	028.	928.	13.0	0-9	10-166	000-62	13.5	1.5	9.83 5	5-50 4	00.0	:	:	:	:	N, NNE, NE	2 to 5	be.
R         Second	R 8	200	0.010-00	018.		0.9-	162-8	29-200	10 0	9.9-	+ 02.8-	9-66 4	99.9	:	:	;	:	NE, N	1 to 2	pe.
With State         With St	83	000.00	20.000		0.4-	0.71-	ezt.A-	Me az	0.0-	0.01-	+ 108.8-	1 00.t	0T.2	:	:	:	:	Vorta	1.1	DC. m.
960         970         961         970 <th>8</th> <th>- 683</th> <th>690.</th> <td>500-</td> <td></td> <td>-1</td> <td>100.6-</td> <td>000.00</td> <td>0.1</td> <td>0.1</td> <td>1 20.0</td> <td>1 00.0</td> <td>38</td> <td>:</td> <td>:</td> <td>:</td> <td>:</td> <td>· · · · · · · · · · · · · · · · ·</td> <td></td> <td>н.о.</td>	8	- 683	690.	500-		-1	100.6-	000.00	0.1	0.1	1 20.0	1 00.0	38	:	:	:	:	· · · · · · · · · · · · · · · · ·		н.о.
With         With <th< th=""><th>1 3</th><th>-</th><th>028.</th><td>198.</td><td></td><td>-8-</td><td>1.975</td><td>000-00</td><td>0.0</td><td></td><td>2.96</td><td>A 123.7</td><td>38</td><td>:</td><td>:</td><td>:</td><td>:</td><td></td><td>200</td><td>C.C.H.</td></th<>	1 3	-	028.	198.		-8-	1.975	000-00	0.0		2.96	A 123.7	38	:	:	:	:		200	C.C.H.
X8         Y80         X80         Y81	5	80-184	098.	010-08	10.0	0.9	228-8-	000.66	-8-0	2 1	T DU-T-	100	28	;	:	1	1		4 3 -	h ho
39         278         -400         -500         -500         -500         -200         -100         -500         -200         -100         -500         -500         -500         -100         -500         -500         -500         -500         -500         -100         -5	8	068-	80-290	818·	0.1-	0.2-	002.0	000-66	9.1-		12 69.0	14094	36-2	:	:.	:	1	West	1 40 0	
80 104 29-755 105 35 - 770 -1766 29-000 10 -670 -9.230 45-53 41:66 N.B. WNW, calm, NNW 9 40 5 0.5, N.B. WNW, calm, NNW 9 40 5 0.5, N.B. WNW, calm, NNW 9 25 0 5 0.5,	8	-978	00	088.	-2.0	-10-0	-5-500	000-62	-2.0	19.11-	12 128.9	1.58	99-		:			W. N. N hv W. NR	3 01	o he
-31 -389 30-383 -269 -40 -180 -12675 29-125 40 180 -1267 47.53 43.85 N.E. WNW, calm, NNW 0 to 5 0. b Max. 39-660 29-660 24-6 220-6 229-600 25-0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	8	101.	986-63	-088	8-0	0.2 -	999.1-	29-000	1.0	0.9-	2.30 4	4 82.	99.	_				NE	3 to 6	he osloot drift e
Miss.         39-450          24-5          29-600         28-560          29-600         28-560          20-600          41-53          41-53          41-53          11-40         50-600          20-600          21-60          21-60          21-60          41-53          41-53          21-40          21-40          41-53          21-40          21-40          41-53          21-40          21-40          21-40          21-40          21-40          21-40          21-40          21-40         21	8	688.	30-283	-268	0.4-	-18.0	-12.875	29-125	4.0	18.0 -	12-87 4	-33 4	3-83		:	:		NE, WNW, calm, NNW .	0 to 5	o.b.
Min. 29-560 29-56020-5 29-00020-21 29-21424-0 41-53 Mean 29-968 29-975 29-96520-211 29-2141-140 50-50	Max.	30-460	80-450	1	24-6			009-600	26-0		9	00.				-	-			
	Kin.	009-66	29-550	100.00	1	-20-5		29-000	:	-24.0	4	8			100		-			
				004.67	:	;	112.02-	617.AZ	:	:	10 AF.1-	har		-			-			

NOVEMBER, 1852.

	B	ATT NOT						Ę	RENON	IRTRB.						WISD.		
Date.			İ	โก	per Decl			20	hor	1	ower D.	eck.	Lower	Deck.	Bairi			Weather.
	Noon.	Midnt.	Mean.	Mar.	Min.	Mean.	Sea.	Mar.	Min. 3	fean. D	ry. W	ean Bo	W. en	ain Gu set. Root	n Room	Direction.	Force.	
Nev. 1	30-436	30-390	30-898	-15-0	0-61-	-17-416	29-166	-21.0	23.5	99-60	-33 40			_		WNW. NNR. calm	0 to 2	á
09	008	-280	192.	-18.0	0.96-	-22-375	29.000	- 18.0	- 0.92-	20-20 4	-25 39	-90				Calm. WNW. NW. NNE .	0 to 2	b c. o.
90	008-	183	981.	0.03-	-26.0	-23-458	20-166	-24.01	-28.0 -	24.06 45	1-16 41			;		Calm. NW	0 to 1	bc.b.
*	8	023.	696.	-20-0	-24-0	-21-875	29-250	-22.0	- 5-12-	25.46 4	68 09.1			-		Calm, NW	0 to 2	þ.
0	088-	-400	-386	-10-0	-18.0	-12.125	59-250	-10-01-	- 0.12-	13-80 4	1 00·1			:	:	NNE, 8, 9E, calm, NE	0 to 2	bc.o.
*	061.	088.	-813	-12.5	0.15-	- 21-000	000-62	-13.01-	- 28.0 -	11-11	01 09.5	-16	:	:	:	NE, NNE, N, NW by N .	1 45 5	o. b o. b.
~	-028	086-65	-034	-15-0	-24.0	162-81 -	29-000	-10.0	- 0.92-	19-27 4	-00 39	22	:	:	:	NW by N, NNE, calm, N .	0 to 5	m.b.bc.
80 4	29-736	188.	29-851	- 6.5	-20.0	-14-458	891.66	0.9 -	-19-6	15-84 4	1-50 37	8	:	:	:	NE, NNE, N, NW	4 to 6	be.e.cm.
-	188-	020	414	19-0	-10-0	-2-916	009.62	0.07	-10-0	+ 00.+-	1-35 36	23	:	:	:	N, NE, NNB, ENE	4 10 9	cm.om.m.qm.
2:	20-336	096-	20-047	Zero		-8-241	004.62	0.0	0.8-	-0-70 3	00 20		:	:	:	SE, ESE	9 to 10	qm.m.
10	\$29.	20-430	294	20	21.0	2010	DOG.67	0.1	1	1 199.0	3	2	:	:	:	H3F, 55E	ROII	m.qm.eq.om.oq.
	104	329.	200	0.0	Vero	001.0	000-00	20	0.4-	4 01.0		200	-	!	:		1010	od.com.bm.
3;	997.	058.	188.	13.0	0.00	000.0	DOC.62	0.21	0.1-	5 (M. 2	00.	3	:	;	1	336, 535	010	Dm. D. 0. 0m.
1;	9/q.	120	.453	12.6	-10-0	914.2	000.62	13.0	0.41-	+ 02.4-	27 99		:	:	;	36, 336	010	om.m.be.
32		715	202	0.9	-10.0	80.31	000.62	0.01	16.0	+ 00.4-	04 SS-		:	:	1	NE, ENE	1017	b c.
22	54.	055	418	18.0	10-0	110.41	00.87	0-02	12.0	¥ 00.11	00 00				:		9014	bc. c. m.
1	*IX.	955	667	0.61	18.0	295.91	002.67	21.0	18.0	19-10 B	10 55.		-	:	:	SK, BSE	0 0	ii.
-	AL.	797.	2	0.61	17-0	001.SI	000.67	0.8T	0.11	14.90 0	20 00	38	:	:	:	33E, calm	2010	H.
28	020.00	100	690.	13.0	0.01	000.01	002.00	0.11	0.21	10 19.41	00 00.0	200	:	:	:	555, 35	200	ä.
20		200.82	140.02	10.11		10.01	000-06	0.21	0.01	10 41 01	100		-	:	:		100	i i
18	808	120	100	0.01	10.01	6.750	00-520	-10.9-	19.61	9-85 4	101-16			:	:	SSF SF	4 40 8	
5	084.	005	84.	-8.0	-11.0	-6-833	000-62	-1.5	10.5	H 109-2-	54 88-	02-				SF. ENE	4 to 5	Po.
2	30-061	088.	568.	-8-0	-10.5	1150.2-	29-333	- 0.9-	0.11-	4 99.89-	-50 45	09.	:			ENE, N, NW, N by W	1 to 4	bc.m.o.
32	081.	30-120	30-115	2-0	0.1 -	162-3-	009-66	0.0	0.4 -	-3-63 4	·66 45		:	:	:	N by W, NW, 85E, 8E	0 to 2	o. be.
8	090-	.120	·108	9.0	00 -	-0-833	20.875	0.5	-11-0	-5-50 4	01- 99-8	-16			:	Calm, 8E, E, ENE	0 to 5	be. b. o. c.
5	20-702	29.883	29-853	4.0	- 20	1-833	29-500	4-5	- 1.5	1-00 50	14 00-4	-33 58	00 30		:	ENE, NE	29	c. 0.
8	•200	809.	-637	- 3.0	0-12-	-13.458	29-333	- 1.5 -	- 53.0 -	17-80 4	11 99-	00 00.	33 31		:	NE, NW	4 to 5	0.0q.be.
8	-685	¥89.	909.	-20.0	0.16-	-22.125	29-325	0.12-	- 26.6	T- 69.15	33 41	97 00.	33 30		:	NW, W	3 to 5	be.o.
80	-840	-810	LLL-	-20.0	-28.0	-24-208	29-250	- 0.02 -	- 28-2	27-50 4	00 38	-00 45	00 80	09	:	W, NW, WNW	2 to 3	be.o.
			-				1.0		1					-			ł	
Mar.	30-576	30-632	;	0-61	:	:	20.875	21.0			02.5		-				0200	
Min.	009-02	809-080	000008	:	0.12-	80V-T-	896-66	:	9-67-	E FA A	28-		-					
				:	:					-	-	-	-	_				

DECEMBER, 1852.

	BA	ELEMON						e	CHER MO	CITCLE.							WINDS.		
Date.		-		db	per Deck		,	80	hore.	E	wer D	eck.	Lower	- Deck.					Weather.
	Noon.	Midnt.	Mean.	Mar.	Min.	Mean.	Sea.	Mar.	Min.	Ican. D	W W	ean Be	M. SWO	ain Gust. Bo	un Bo	H H	Direction.	Force.	
T	00-063	010-00	90-019	04-500	89-000	98-708	000-66	0.00	34.5	1 00.73	-AR 20	150 45	88-		30	09-0	N.N.N.		o he
-	066	80-000	066	-18-500	-35-000	162-65-	29-166	- 12-0	-24-0-	33-38 4	-32	00-0	28	1		8	Calm, NW	0 to 3	b. bc.
-	140-08	910	30-048	-17-500	000-05-	-23-166	000-65	-16-0	- 31-5 -	4 11-92	8 99.1	36 45	99.5	1		88	Calm, ENE, WAW	200	be.
-	980	090	690	000-62-	-82-000	-30-958	29-300	0.66	- 9.98-	18.88	116 44	¥ 084	38			38	Calm. WNW. NE	0 to 1	b
-	050-02	-100	010	000-6 -	-30-000	-15-916	000-65	1 9-9	1.18-	18-36 4	1-66 4	600	99.	:	:	00-2	NE view wow	1 to 7	b. be.o.
- 80	006-	068-	868.	-19-500	-31-000	149-98-	20-000	-19-01-	- 10.1	27-50 39	00 36	101 -10	88		1	800	MNW WSW	100	o.b.
	198	198-	198-	-30-000	-34-000	-32-250	000-65	-30-0	-37-5	35-37 4	8-76 38	9-25 46	88	;		09-1	WNW WN WN	2 to 4	o.b.
27	028-	026.	916	000-08-	-88-000	-31-126	28-760	0.08-	10.98-0	35-80 4	00.1	¥ 88.	09.			0.00	WNW, NE. ENE	2 to 3	b. be.
12	086-	-888-	148.	-80-000	-87-500	-32.583	28-500	-31.8	- 40.0	36-46 4	3-16 4	7-83 44	-83	1	30	09-0	WNW, NW, calm	0 40	b. be.
13	098-	026.	-913	-31-500	-38.000	-34-583	29-000	-34.3	-40-3	38-46 4	1-33 8	9-83	S 22	100-0	S-00 30	000	NW, WNW, calm	0 to to	be.
12	80-869	101-08	101-08	000-62-	100-18-	979.42-	569-92	8.18-	20.0	4 08.22	- PO - S	4 200	001	1 91.1	10 00.	00-0	NE. W by S. calm. NWN	200	b
	014	-483	1994-	-34-000	-39.000	-30.606	28.838	-34.8	42.0	88.13 4	3.33 4	-00 t	·16 4	100 4	1.68 31	00-1	N, calm, NW	0 to 2	b. be.
1	690	9/2-00	-216	-30-600	-37-000	-84-125	000-62	8.18-	- 23.5	37-19 4	3-50 4	14 99.2	1.66 4	2-16 4	18 99-1	00-0	Celm, E, 88W.	0	bc. beq.o.
22	081·	80-130	186	-26.000	-27-500	-26-916	000.65	-26.0	- 28.6	27-25 4	1 01.5	5.00 45	4 92	3-50 4	1-41 31	38	SSE. BE. B	8 40	m. bem. be.b.
8	906-	003.	-192	-25-000	-29-000	167-72-	29-000	-26.5	-31.3 -	28.17 4	7-50 4	5-83 46	3-25 4	3-41 4	2-65 30	00-0	SE, 88E	1 to 5	b.bcq.bc.
3	080	201.	A91.	000-62-	- 89-000	-84-875	000-02	0.28-	- 87-0	87-71	8-00 4	# 00.1	4 99-5 17 199-1	1-00 +	200	89	NNR R NW	1 2 2	b. b.
8	20-670	061-02	29-720	-32-000	-39-000	-35-708	000-05	-37.0	40.8	38-75	9-50	1 98-8	4	1.33 3	9-6) 30	8	NW, calm, B	10	be.b.
2 2	PT8-	210.	989.	-21.000	-39-500	-29-968	000-62	0.22-	- 36-0	32.00 4	F 99-8	99.1	8-16 4 4 83-1	8.00 S	0-50 30	880	Calm RNR. WWW	2200	- 00- 00-
8	20-080	090	196	-33-000	-37-000	149.98-	29-000	-86-0	-40-5	39-75 4	- 00-E	6-33 4	38	1-20 4	3.25	800	WNW, calm, NNE, NNW	0 20	be. b.
5.8	20-985	20-030	100	-36.000	-39-000	-37-416	28-833	-37-0	-42.5	39.66	1-83 4	99.6	0-60 4	6-83 4	09-1	800	NNW, NW, calm	0 40 1	b.bc.
	8	0990	100	-26.000	-30.000	182.00-	000.65	- 56-0	-32.5	27.16 5	4 00-0	8-33 50	-16 4	* 00.1	2-33 3	100	SE, ESE	1 20 0	mq.om.em.beq.
87	552-	88	382	000 55-	-33.000	- 31-260	000-65	-32.0	-94.4	33-12 4	6-16 4	4 00.9	16 44	4-41 44	8 89-9	89	8, 85E, 8W	22	be.beq.eq.be.
									2	-	3	3			3				
N. H	14-56	28-580	11	- 7000	-41.000	::	29-300		1.99-	::	88	11	3-16 34	8-00 S	9-50 30	0-00			
Ment		624-62	556.65	1	:	-80-107	000- <b>6</b> 2	:	:	-36-61 4	9.82	4	1.32 4	3-75 4	4-15 3	0-75			

JANUARY, 1853.

	B	LOXET						H	HRENO	METER.							WIKD.		
Date.				DP	per Deci		Man		Shore.	-		Lowe	r Deck		-	initie .			Weather.
	Noon.	Midnt.	Mean.	Mar.	Min.	Mean.	Sea.	Mar.	Min.	Mean.	Jury.	Vet.	Sows.	Main Mast. B	Gun F	toom.	Direction.	Force.	
Jan 1	29-424	29-364	29-380	-24.0	-29-0	-26-500	28-75	-23-5	-31.5	-27-06	6.00	9 03.11	1.33	00.6	16-1	00-52	SE, E8E	1 to 3	m.oq.c.
09.9	458	138	439	0.61-	0.16-	-22-125	00.62	0.06-	-0.92-	-22-33 5	9 00-19	00.00	0.33	1 28.14	99.69	00.75	NW NF, Calm	0 to 3	c.cm.co.
•	018	1092	191.	0.28-	0.00-	-89-416	29-00	9.01	0.84-	-15.05	00.0	08-60	F 09-9	F-83.F	188.9	32-00	Calm, NW, NNW	0 to 1	be.b.
-	062	-825	808	-42-0	0.64-	-45.666	00.65	0-2+-	2.16-	-49-02 4	1-50 4	1 09-9	6-33 -4	1.83	3.75	09.18	NW, calm, W	0 40 1	b.be.m.e.
01	184-	202-	512	-34.6	-48.0	-87-958	29-50	-37-0	10.61-	-38.01	1		29.1	16.0	8-00 6-33	00-00	NW, Calm, W		be.b. c.
- 00	80-074	80-050	80.08	0.01-	0.94-	-43-208	00.60	19.97	-90-09-	-47-97			6-25 4	00.7	0.50	00·18	WW, WWW, WBW, SW .	1 to 4	b. bm. c. bc.
9	020-00	-082	240.	0.84-	0.99-	-61.750	29-50	5.64-	-56.0	-54-17	:	:	6 00.9	1 10.0	1.75	00.15	FNF calm, ENE. NNE.	0 40 1	e.be.b.
	108.	\$10-800	HAR.AZ	0.04	19.99-	-54.625	59.60	-53.5	0.00	20.92	: :		4 99-1	5.16 4	99.6	100-00	Calm, NE	0 to 1	b.be.bm.
5	1882	098.	1834	-42.0	-67-0	-50-875	00-62	-45.0	-62.5	-54-23	:	-	6-00 F	1.00	6-16	09-20	Calm, NNW, 88E, 8W.	0 10 3	bm.b.
18	966.	368.	.826	-42.0	-47.5	162.11.	00.65	-46-0	-000-	00.91-	:	:	F NL	1 80.9	99.99	06-63	SOE, SE, Calm, D, GW		bm. bc. m. b.
41	942.02	905-08	012-08	0.01	0.80-	0.0.18-	00.66	0.21-	0.20-	00-98	:		4 88.8	1 16.2	2.33	02.6	N. calm. SW. SE	0 40 6	b. oc. hm. od.
19	219-612	28-760	811-66	0.8	-11-0	-13-708	00-62	-12-0	-12.0	-12-96 4	2.50 4	1-50 4	8-50 4	F 15.5	7-25	00-62	SE, SSE, E	6 to 8	04.9.00.00G.
11	09/-	649.	.668	-13.5	-36.0	-22.125	29-00	-13-0	-35-0	-24.75	1 02.8	9 00-2	0.16 4	6.83 4	1-83	00.60	E, SE, 83E, calm, S.	0 to 6	00.000.0m.0.00.
82	942	192-	-756	-25.0	-40.0	149.18-	00-62	-21-0	0.01-	-33-70 4	- 16-91 - 95-8	F   00.0	100-2	8-18 -4	02.9	88.5	NNR. SW. WSW. calm	0 40 9	be hm b ob.
18	200	000	949	0.18-	0.98-	-40-916	80.65	19.18-	19.24	43.75	5.33 4	+ 08.4	+ 1.8-9	80.9	1-58	09-6	NE, 8 by E, 8, NW, W .	1 to 5	be, b. bmq.
18	003-	899.	-539	-38.0	0.9%-	-41-708	00-68	-40-0	-30.0	-11.36 4	6.00 4	1-06	3-83 4	1.33	99.6	00-62	NNW, NW, WNW	2 40 5	bmq.bcq.cq.o.
23	653	123.	999 999	0.25-	0.14	140.44-	00-66	0-08-	0.10-	01-11-	4 000	92-0	+ 58.4	2-91 4	6.4 6.5	02-60	NW. NE. calm. NNE. 8	0 40 6	be obe be one
12	30-140	30-066	30-065	-32.0	0.14-	-36-791	29-00	-32.0	-42-0	-37-20 4	P 09.9	- 09.S	1 89.9	3-06 4	5.33	02.80	S, SW, SW by 8, 89W, 83E	6 to 7	og.oeg.bm.
8	892.68	068-65	818-63	-30-0	-44.0	-85-166	29-00	-31.5	9.14-	-35-87	4-80 4	3.16 4	6-16 4	8.68	1.41	00-92	NF colm, NE	0 to 1	og.oc.bm.om.bo.
85	623	241	-125	0.98-	-450	-39.083	00.02	-39-0	0.9	+ 61-1+-	4 01.4	2.25	14-9	4-le F	3.41	00-6	8, calm, N, W.	0 40 8	b. be.co. bem.
8	-672	-676	199.	-32-0	-27-0	-35-916	00-62	-34.0	0-01-	-38-22 4	4-06 4	2-40 4	F 00.F	F 08-1	3.66	00-60	W. WW, W, WNW	1 to 3	bco.co.bm.bc.c.
8	896	346	-283	-23.0	-38.0	161-62-	00-62	0-12-	100	- 59-80	F 0F-91	4.80 4	61.9	116 4	1.16	00-62	WNW, 5, calm, NW, N	0 to 4	c.cm.om.omc.bc.
83	200	90 <del>1</del>	995	0.98-	-87-0	-33.166	80.62	-26.5	-37-8	-939-41	0.09.9	17-82 H	191.9	3.41 4	14-16	00-6	SE, SSE, SSW, ENE	1 50 4	com.om.o.bem.
Mar	ALE-08	80-819		0-0 -		1	05-62	0-51-		-4	00-1		1-33 4	00-6	3 16.1	12-50			
Nin.	896-68	942-05		::	-67-0	001.00	28-76	1 :	-62.5		13-50	44	19.83	1-33	1.50	00-62			
Hear	561-KX	Isl.nz	961.42	:	:	-90.10%	In Rt	:	:	ma	-	-	200	2	102	-			

FEBRUARY, 1853.

		THOMOS A	đ					f	I.R.R.MO.	METER.							WIMD.		
Date.	ľ.			D	pper Dec				Shore.	-		LOW	er Dec	k.					Weather.
	Noon.	Midut	Mean.	Mar.	Min.	Mean.	Sea.	Mar.	Min.	Mean.	Mes. Dry.	Wean F	Jows.	Main Mast. F	Gun F	100m	Direction.	Force.	
									1							100.00	N MN AN ANA ANA	1 40 8	4 H 1
Feb. I	216-67	200-02	216-62	-	0-00	916.72-	0.62	0.97-	0.0	04-92-	1 00.0	00.01	01.00	10-17	39.11	30.00	NE N calm Ehv N	0 40 2	be be.
1 02	008-	020-000	121.	0.96-	0.17	-35-041	0.62	19.86-	10.94	84-28	4 99.9	5-13 4	999.2	12:4	09-61	00-62	N, N by W, NE, calm, SE	0 to 2	bc.bm.om.oms.
-	019.	+19-	-576	0-0-0	-30-0	-25-833	59-0	-19-0	- 58.6	-25-75 4	6-00-6	¥ 08.9	99-1	12-83	H-16	00.82	8E, NNE, N, NE	1 to 3	com. bem.c. bm.
-	06	039-	119-	-17-0	-33.0	-22.208	29-0	-15.0	-35-0	-22-00	1.06 4	9 99.8	0-33	16.1	80.9	09.12	NE, N, ENE, N by E, NNE	1 to 3	b.c. bmc. co. bqm.
er	001-	-183	543	0.88-	-33-0	-27-206	0.62	0.221	-34.5	-28.83	8.66	4 91.8	81.0	99.6	20.93	30.00	NNW 88R 8 F. calm	10 E	om. pc.om. co.
- 00	808.	3008	116	198-0	0.86	928-96-	0.66	0.86-	0.28-	28.82	8.66.4	9 04.9	00.3	16-14	89-9	09-12	S. calm, NE, SE, S8E	0 to 3	be.e.be.bem.
	-300	-350	ISS.	-21.0	-39-0	a30-875	0.62	-27.0	-40-01-	- 32-92 4	7-10 4	4-26 4	7-83	16-91	80.11	00-12	88E, 8E by 8, NE, NNE .	1 to 5	oc. bc. bm. b.
2	208-62	190-	570	0.98-	-39-0	-34.000	20.0	- 51.2-	-43.0	-36-21 4	6-00-4	3.83 4	5.83	14.6	99.44	00.82	Calm, NE, N by W, NW, N	1 03 0	b. bc. bco. cod.
=;	30-120	011-63	888-62	1 5.5	0-88-1	-18-250	0.62	0.9 1	-33.0	-19.60	4.42	4 00.2	89.9	20.2	20.0	80.00	N, NE, 55, 365	1 01 0	bed. og. eogs. og.
	000	1000	2/2.00	0.4	0.911	206.6 -	0.62	1 2.0	-10.91-	0.00	4 06.0	4 07 H	38.8	00-0	80.5	38	NF calm	0 40 6	og con or hear
14	2008-	202	107	-	0.10	11.541	0.06	0.0	2.2.6	P 46-71	4 yr-8	4 96.9	0.50	91.2	99.11	00.82	NE. NW	1 to 6	beg.ock.be.og.
12	29-684	+11.	000	Tero	0.08-	19.083	0.68	- 10-1 -	0.68	14.42	9-20	6.23 4	99.9	00.9	99 /3	00-82	NE, E, ENE, NW, WLYN	0 40 8	beq.eq.coq.bq.
16	90-014	094.63	29-818	-27-0	-82.0	-29-416	0.62	-28.0	-34-0	-31-00 4	7-83 4	2.93 4	6-50	91.1	17.16	00·12	Calm, NW, SW	0 10	com.bc.b.bcm.
H	213.	30-182	30-202	-23.0	-81.0	-26.083	29.0	- 22.5	-36.0	-27-00 4	8.08 4	4-63 4	00.8	88.9	09-14	00-12	Calm, 88E, 8E	0 40 4	08.00. bem.be.
2	10	412.	142.	-17-0	-22.0	-18-915	50-0	-12-0	- 55.0	+ 1061-	01.6	+ 00.9	8.4	91.9	00.1	00.12	Colm Whe N colm S SW	4 0 0	be o bem oo
18	1	CONT.	C86-	0.01-	0.07-	AND 11-	0.00	2.10	2.12	V V1.15	A 98.4	4 69.6	10.5	00.5	88.91	00.92	SW. W. NW. F. calm	0 40 9	be.e.em.
15	210-02	-320	-265	0.68-	0.11	-001 10-	0.68	-39-0	46.5	42.38	4-53 4	1.13 4	3.75	0.50	10-33	09.92	Calm, N by E, W, NW	0 to 3	bc.c.oc.bm.
8	.648	29-650	29-664	-28.0	-42.0	-38.125	0.62	-36-0	-43.0	-40.75	4-70 4	12.16 4	99.7	80.11	99.14	55-00	N, NNW, NW, calm, 88W	0 20	bc.oc.bm.
2	802	.768	-736	-30.0	-37.0	-34.666	0.62	-34-0	-40-0	-37-56 4	4: 98.1	H-40 4	99.2	00.8	91.2	8.28	SSW, calm, nw	1 02 0	Dc. D.
\$2	292	500	128.	0.62-	-40-0	-35.500	0.0	0.97-	-41.0	00.12-	51.0	6 09.7	00.5	00.14	20.99	00.00	Colm RW NW N WNW		he em he hem
15	200	088.	-950	0.001	0.16-	007.10-	0.06	0.40-	0.24	100.00	5-83	10.20	00	5-16	00.5	00-55	W. NW. calm, 83E, 8	0 to 4	be.e. bem.com.
5	-0-03	008	916.	-87-0	0.14-	-39-750	0.66	-37.0	19.9	-39-02 4	5-50 4	2.00 4	01-11	14.16	41-33	32-00	S. S.E	2 to 4	bc, co. bm. cm.
	80-130	30-010	30-087	-240	-40.0	-36.750	0.63	-34.0	44.0	-37-77	96.96	13-76 4	00.2	13.66	45-25	35-00	8E, 8, 8 by W, calm	0 to 3	cm.bcm.oc.b.
1				•							_								
Mat.	30-670	30-650	80-617	- 2-0	:	;	0.62	5.2	:	:	90-11	:	32-00	16-13	00-84	35-00		œ	
Min.	189.68	20-624	20-646	:	-44.0	00.005	29-0	:	0-15-	00.50	1.43	:	00.21	0.00	1.33	25-00		3-93	
	ONT NO	oanno	TAT AC	:	:	010.07-	0.07	:	:	00 83	10.14	:	202	3	-	5		;	
		1								-	-		1						and the second se

MARCH, 1853.

	BA	NOMETE						F	URBNO	KETER.						_	WIND.		
Date.				ď	per Dec				hore.			Lowe	r Deck.						Weather.
	Noon.	Midnt.	Mean.	Mar.	Min.	Mean.	Sea.	MAT.	Min.	Mean.	Mean Dry.	Wet.	Sows. 3	fain B	Gun F	- unoom	Direction.	Force.	
Mar. 1	000-00	80-130	30-085	-25.0	0-83-0	-33-625	00-62	-24.0	43-0	34-85	3-73 3	06-90	0-00	80-08	3.18	34.0	Calm. N. S.E. 38E	0 to 9	b.c.och.oce.oe
-	916-	108-82	198-67	-19-0	0-00	-24-626	29-00	-16-0	-35.5	-22-60 4	1-90 3	89-63	38-00 3	16-61	1.33	34.0	88E, 8E, 8, 8W, WNW	2 to 8	oq.oc.be.bem.
e) .	20-310	SO-108	30-133	-43-0	-009-	-44-760	00-67	-37-0	0.0	46-27 4	8 96-04	81-13	80.00	9-25 4	09.1	0.45	WNW, NW, BW, W	1 to 3	bom.bc.b.bm.
•				-0.9-	0.89-	-49-416	00-62	-47.6	-21.2	- 22-83	09-11	06-69	02.10	09.11	16-65	0.65	NW, WNW, Calm, W.	0 10 2	be.bem.b.
		048	107	0.06	0.22-	-46.208	00-62	0.00	8.00-	67.20-	1.13	8.25	12.63 3	80.0	38.8	0.02	NW S. calm	2010	be hm
-	300	09-6-62	-027	-38.0	0.91-	-37-968	29.00	2982-	0.98-	41-54	1476 4	13-26	13-00	199.5	11-26	34.0	Calm, N	0.03	bc. bm. cm. om. b.
	948-62	30-020	-033	-31-0	-40.0	-35-250	29-00	-31.5	9.05	- 36-83	97-19	98.99	11-08	89.7	99-5	34-0	Calm, NE, N, ENE	0 40 8	be. b. bm. bem.
	30-000	066-67	066.62	-30.0	0.98-	1000.08-	00.62	0.82-	0.08-	S0.02	00.0	00.00	F 89-11	8 99.H	90.0	0.40	BNE, NAE, Cam, AW, AB	2010	DC. DB.
	30-110	80-08	120-08	0.88-	0.84-	-36-750	20-00	-34-6	19.0	139-13	1.83	5-23	F 08-14	3.83	2.33	0.5	Calm. WNW. NE	0 00 3	bo.bem.
13	170	0002-	.168	-29-0	0.01-	-36-416	29-00	-31-0	0.00	- 37-64	10-83 4	109-21	12-50 4	6:33	89.9	33-0	NE	1 404	be.beq.ogm.om.
8	360	628.	987	-18.0	-30.0	-25.416	29-00	-14.0	-33-0	-26-50 5	50-93 4	18-33	19-33	1-76 4	8.83	0.52	NR, SE, ESE	1 to 8	om.cs.beq.bes.
1	-368	0172-	882	-25.0	-33.0	-29-583	00.62	-23-5	-33-6	-28-70	8.03	01.9	10.03 H	80.7	89.9	0.55	ESE, SE, 5SE	6 to 10	cq.oq.oqm.
25	000	200	200	0.11-	0.06-	- 1- 008	00.62	0.91-	0.87-	27-8	82.5	00.0	4 99.9	F 10.0	38.2	0.00	Sor, SD, S by B	1 10 10	04.04.00.
11	29-333	29-860	29-962	0-61	19.2	13-750	29-50	21.5	9.9	14-71	9-70	00.8	\$0.83 ¥	1-33	89.9	0.8	NE by E, SE, 8 by E, 88E	1 10 8	0.00.05.089.000.
18	30-106	-930	188.	140	Zero	4.875	29-50	14-5	0.8 -	4-75	8-90 4	00.00	0.00	1-50 +	99-9	0.66	SSE, SE, S	3 to 9	be.bog.bg.og.
	007.	30-181	30-194	13.0	0.2	8.208	00.67	-12.0	0.0	4.94	52-00 4	00.6	8.60	1.88	89.1	0.45	BE, ESE, SW, E	3 to 6	bqm.c.co.bod.
3 5	200	988	679	0.66	0.01	18-168	00-62	0.91-	0.21	182-91	1 97-6	07-09	8-08-08	99.0	00.6	14.1	SE NNE colm SSE	1 10 1	b eq. co. b.
8	009	-524	619	19.0	10.0	12.791	29-00	0.55	9.1	13.46	1-53 4	08-21	11.60 4	11.2	3.33	0.1	SSE, S, calm	0 to 5	o.be.of.
នារ	¥25.	214.	£13	12.0	1.0	6.533	29-60	14.0	0.5	5.54	19.16	97-97	11-11	9 88.9	199.5	2.46	Calm, NNE, N. W by N .	0 to 3	be.em.o.ob.of.
33	248	97.	114.	2.0	-14.0	-0-938	29.00	5.0	-12.0	-8-17	91.9	58.2	F 90-2	89.7	00.0	0.10	WNW, Calm, NW, 3E.	0 to 2	of.b.bcm.oc.bc.
38	497-06	010.00	ACT.	24-	0.01-	- 3-043	00.00	0.7-	0.1	00.01	20.5	200	4 B()-0	11.6	191.8	0.72	SAF S calm		oc.mg.egs.ogs.
2	084.	-730	127.	0.0	•	0.750	09-62	0.0	1.5	1.12	80.11	0.73 3	1.58 4	2 00 5	0.33	13.0	S, SSE, SE, calm	100	be.oms.com.om.
8	98.	-750	944-	3.0	-14.0	173.8	29.50	0-6-	-15-0	+ ++	199.5	100.2	F 16-11	· 99.	1-33	32.5	Calm, NE	0 to 1	om.oc. bo.
88	182.	228.	948	0.9	-11-0	801.1-	29.20	8.8	0.81-	2 22.8-	5.00	80.5	199.97	7.18	0-16	0.00	Calm, SW, SE	0 to 1	be.co.cf.com.
82	30-080	30-000	30-003	0.0	0.76-	-14.106	09.62	000	0.97-	-16-40	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8.9	4 92.0	4 88.9	8-16	0.0	NE by N, N, NNE, NW	0 10 3	com. of. os. om.
Mar	20-200	30-570	012.02	0.00			02.06	0.76	-	•1	02.6		4 83-0	1 10-0	84.5	8.42			
Min	081-68	29-720	29-727	-	-53-0		00.62		-55.8	: :	02-6	1	6 89.4	9-35 3	8-33	2.2	; ; ;	2	
Mean	80-128	30-089	30-116	11	;	16-938	29.18	1	1	12-21-	08-29	;	H-12 4	4.26 4	2.42	9.5		2-0	
	1		-							-	-		-	1	-	1			

APRIL, 1853.

Winter Quarters, Northumberland Sound, 76<sup>5</sup> 52' N., 97° W.

10	BA	ETHINON.						E	(SERVO)	LTER.						Í	WIED			
Date.	-	-	Ι	D	per Dee	R.	Man		Shore.			LOWE	r Deck			Iniria				Weather.
	Noon.	Midat.	Mean.	Mar.	Min.	Mean.	Sca.	Mar.	Min.	Mean.	Mean Dry.	Mean B	M .smo	fain B	Gun H	floo	Direction.	-	Force.	
1988 499 200 200 200 200 200 200 200 200 200 2		80-13-1 90-13-2 90-13-2 90-13-2 90-13-2 90-14-2 90-	4110 4110 4110 4110 4110 4110 4110 4110	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		21:200 27:210 27:210 27:210 27:210 27:210 27:210 27:210 27:220 27:200 27:200 27:200 27:200	ន្លន្លន្លន្លន្លន្លន្លន្លន្លន្លន្លន្លន្លន	23359706490000000000000000000000000000000000	2000 200 2000 2	900 900 900 900 900 900 900 900	2000 200 200 200 200 200 200 200 200 20	8.28.27.3.3.4.23 2.28.28.28.28.2 4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4			2012 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	88888888888888888888888888888888888888	NW, N, eshn, W by Oshn, W SW Calm, W SW Calm, N, NE, ashn SBB, eshn NE, eshn, N, NE, RWW, N NE, ashn, N, NW, N NE, NW, NRW, N, N W NW, NRW, SNE W SW, SW, SW, SW W NW, NNW, WNW W SW, SW, W SW W SW, SW, SW W NW, NNW, SW W SW, SW W NW, NNW W NW, NNW W NW, NNW W NW, NNW WW, NNB, eshn, N WW, NNB, WW, N WW, NNB, eshn, N WW, NNB, eshn, N WW, NNB, eshn, N WW, N N WW, N WW, N WW, N N WW, N WW, N WW, N N WW, N WW, WW, N WW, N N WW, N WW, WW, N WW, N N WW, N WW, WW, WW, WW, WW, WW, WW	N N N N N N N N N N N N N N N N N N N	82330 8838 8338 8538 85 838 838 838 838 8-288 8888888 8487 8848 848 848 848 848 848	be. b. ob. b. be. oma.om. be. oum. oma.om. be. oom. be. be. be. be. be. be. be. be. be. be. be. om. ome. be. bem. be. om. ome. be. be. br>be. be. be. be. be. be. be. be. be. be. be. be. be. be. be. be. be.
	0-063	30-652 39-652 30-075	30-545 30-075	9 8 : :	- 29.92	199-8	89.55 29.55	9811	-27-0	-8-90	1 11	1000-00-00-00-00-00-00-00-00-00-00-00-00		8-66 5 2-66 1 1-39 1	8.988 8.9888 8.9888 8.988 8.988 8.988 8.988 8.988 8.988 8.988 8.988 8.988 8.98	1.400	1 1 1 1 1 1		8 88	

MAY, 1853.

bc.os.om.oms. oms.bcms.obc. bcs.bcm.bc. cq.omq.o.om. bcqm.bef.cqms. bcqm.ocqm. bc.boq. oc.o.oqm.bem. be.o.om.bef. bof.be.o.e. om. begr. be.oc. be.oms.b. b.bems.oe.om. om.o.oms.ofs. om. oms. bc. os. be.oc.om. bev. oms. bc. o. om. r. bc.oms.om. Weather. be.bem. bem.be.bov. b. be. ben. oc. bem.be.om. OO.OMS.OM. 0.08.0m. om.oms. bc.b.r. be.b. be. Force. A Construction of the second s WIND. 90 Courn, W. BW W. N. eaun, NW NW, W. eaun, NW NW, W. S. eaun, N. NE Courn, N. NE NW, NR, NNE, NNE NW, courn, B, BBE S. eaun S. S. eaun, B. BBE S. eaun, B. S. eaun, B. S. Direction. Bpirit Room. 35.00 34.50 34.50 34.50 34.50 35-00 33-33 58-83 47-33 52-72 Gun Boom. 64-20 Main Mast. 51-75 40-41 Lower Deck. 58°50 38°41 48°00 Mean Mean Bows 22.02 46-90 38-51 40-90 39-63 39-63 39-63 39-63 39-63 39-63 39-63 39-63 39-63 39-63 39-63 39-63 39-63 39-63 39-63 39-64 39-66 39-64 39-66 39-64 39-66 30-66 300-66 300-66 300-66 300-66 300-66 300-66 300-66 300-66 300-66 300-66 300-66 300-66 300-66 300-66 300-66 300-66 300-66 3 833 72228 47-50 50-00 82.99 92.79 92.79 92.79 92.79 61.75 \$ ģ ż ģ 2 t \$ ::: 11 11 111111 :: 111 111 ÷ 3 : ł : 1 1 : : 111 : 111 Mean. THERMOMETER. 14-73 :: Shore. Min. 12.0 .... : Mar. 0-63 25.5 20.5 20.5 20.5 20.5 20.5 20.5 ..... 23-0 23-0 0-0 0-0 0-0 0-0 0.89 Mean 29-500 Sea. Mean. 15-508 2,5375 6,7541 6,7541 7,560 7,560 7,560 7,560 7,560 7,560 7,750 1,7750 7,560 7,750 7, 10-833 8-458 8-458 2-916 3-208 3-208 3-208 Upper Deck. -6.00 Min. : Max. § : : -088-39-996 -742 -981 -981 122 Mean. ÷ BAROMETER. 30-500 29-480 29-997 Midnt. -130 087-90 087-0810 0810 30-075 345 29 90 90 90 90 90 90 1988 80-908 889-98 Noon. 30-450 22234 Mer. May 1 Date. 

JUNE, 1853.

•

Due, Image         Coppare Tolex. Torpare Tolex.         Coppare Tolex. Tolex         Due to the tolex         Due to the tolex         Due to the tolex         Due tolex <thdue th="" tolex<=""> <thdue th="" tolex<="">         D</thdue></thdue>		BA	RONGET						E	OKSER	CBTBB.						WIED.		
Non.         Math.	Date.			İ.	Б	pper Dec		;		Shore.	-		Lower	Deck.		Aniri			Weather.
June         June <th< th=""><th></th><th>Nooti.</th><th>Midnt.</th><th>Mean.</th><th>Max.</th><th>Atia.</th><th>Mean.</th><th>Mean Sea.</th><th>Max.</th><th>Min.</th><th>Ican. I</th><th>Ican Me</th><th>et. Bor</th><th>N. N.</th><th>uin Guu set. Roon</th><th>n Room</th><th>Direction.</th><th>Force.</th><th></th></th<>		Nooti.	Midnt.	Mean.	Max.	Atia.	Mean.	Mean Sea.	Max.	Min.	Ican. I	Ican Me	et. Bor	N. N.	uin Guu set. Roon	n Room	Direction.	Force.	
770         770 <td>1</td> <td>00.610</td> <td>00.500</td> <td>763-06</td> <td>83-000</td> <td>00-96</td> <td>28-583</td> <td>29-600</td> <td>34.0</td> <td>24.6</td> <td>1.68</td> <td></td> <td>58.</td> <td>10 43</td> <td>30 54-9</td> <td>0 36-00</td> <td>Calm. NNW, NW, N</td> <td>0 to 3</td> <td>be.oe.o.</td>	1	00.610	00.500	763-06	83-000	00-96	28-583	29-600	34.0	24.6	1.68		58.	10 43	30 54-9	0 36-00	Calm. NNW, NW, N	0 to 3	be.oe.o.
76         76<		009-	021-	801.	30-000	35.00	27-126	29-000	33.0	23-0	89.9			30 46	80 58.5	0 36-00	NNW, W, calm, SW, 8 .	0 to 5	oc.ocm.om.oms.
1         1	•••	180	-750	-138	81-500	54-00	000-15	29-500	0.86	52.0	80.92	:		-96 -97	1.92 09	0 36.50	8, 8 by E, 83W, 83E	3	cm.oms.om.bcm.
1         1	4	.950	8	568.	000.92	8.28	916.1%	009-A2	0.12	0.22	18.52	:		0	0.02 00	00.00	NE NNW RW	1 40 4	be or heme.
1         1	~	839	200	-	009-98	00-96	000.00	009-66	0.68	0.82	0.23	:	9	18	50 55-1 50	0 36.50	BW, WBW, NW, W, calm	4 92 0	omsf.oc.cm.oms.
9         96 </td <td></td> <td>.652</td> <td>.680</td> <td>3.9</td> <td>32.000</td> <td>00.12</td> <td>26-500</td> <td>30-000</td> <td>35.0</td> <td>0-02</td> <td>100.9</td> <td></td> <td>. 62-</td> <td>50 46:</td> <td>30 55-3</td> <td>0 37-00</td> <td>NE, W, NNE, N, NNW .</td> <td>1 to 3</td> <td>bc.oms.</td>		.652	.680	3.9	32.000	00.12	26-500	30-000	35.0	0-02	100.9		. 62-	50 46:	30 55-3	0 37-00	NE, W, NNE, N, NNW .	1 to 3	bc.oms.
0         756         750	- 00	809.	999.	089	33-500	28-00	80-125	80-000	31.0	26-0	19-14	:	-64	-96-	00 55-2	5 87-00	NNW, NE, calm	0 40 2	bc.omd.bcq.
10         773         774         775	•	089.	-640	.655	34-000	28.50	30-916	000-08	31.0	25-0	26.1	:	2:	44	60 54-5	00 22-00	NNW, WNW, Calle, 8, 5W	89	DC4.0C.UC.OMS.
11       1	9;	2	165	509	000.92	0.62	067.12	20-000	0.92	0.92	11.8	:		24	0.40 DC	37-00	NE calm N NE by N	0 40 5	oc.be.bea.
11         4771         1738         55399         5539         5539	12	2029-	9/9	200.	000-22	00.02	00-200	000-02	0.98	1 3.86	20	:	29	-92 F	2-64 00	0 37-00	NR. NNE. calm. NNW	0 40 5	be.bed.
11       778       579       578       578       579       57	101	200	010	100	0.0.92	38	026-08	000.18	0.82	1.40	16.8	:	47.	75 41	37 45-2	0 36-50	NNW. NW. SW. calm. W	0 to 2	be.bem.of.om.
11       4400       510       5400       3700 <t< td=""><td>1</td><td>P10</td><td>069-</td><td>100</td><td>36-500</td><td>89-00</td><td>84-291</td><td>31.500</td><td>39.0</td><td>81.0</td><td>199.6</td><td></td><td>47.</td><td>33 43</td><td>33 50-4</td><td>1 36-50</td><td>NE, WNW, NW, NNW .</td><td>1 to 4</td><td>om.oms.bc.bcm.</td></t<>	1	P10	069-	100	36-500	89-00	84-291	31.500	39.0	81.0	199.6		47.	33 43	33 50-4	1 36-50	NE, WNW, NW, NNW .	1 to 4	om.oms.bc.bcm.
11         150	12	097	-610	809	35.000	30-50	32.500	32-000	42.0	36.0	9-65		-19	60 46	66 50-1	0 36.00	NW, SW by W, W, NNW	1 to 4	oc.bem.oms.om.
11       110       10	16	-536	-645	8¥9.	35-000	29.50	31-500	82-500	33.0	0.12	9-35	:	-09	25 46	50 54-7	5 36-50	NNW, N, NW	1 to 7	odme.ocd.bo.
18       410       470       500       3570	11	009-	-690	-658	36-000	00-12	32-208	33.000	36-0	59.0	\$0.0t	:	121	14 18	8.99 91	1 37-00	NW, NNW, calm	040	oqms.oc.bc.ol.
90       700       770       8700 <td< td=""><td>18</td><td>518</td><td>024.</td><td>161</td><td>28-500</td><td>80.08</td><td>33-791</td><td>000.42</td><td>0.92</td><td>9.12</td><td>89.1</td><td>:</td><td></td><td>19</td><td>200 001</td><td>00.04 0</td><td>NE NNIV W NW</td><td>0 00 0</td><td>ho occ oom om</td></td<>	18	518	024.	161	28-500	80.08	33-791	000.42	0.92	9.12	89.1	:		19	200 001	00.04 0	NE NNIV W NW	0 00 0	ho occ oom om
1         3500         37	23	0.00	079-	909	000.06	80.08	23.208	000.78	0.25	0.17	20.1	:	292	-94 - 54	8.04 00	28.50	NW W SSE 8	1 1 1 1 1 1 1	0 m. 0. 0 c 0. 0 c.
910         920 <td>85</td> <td>83</td> <td>20</td> <td>010.</td> <td>000-88</td> <td>00-08</td> <td>301-18</td> <td>000-75</td> <td>0-08</td> <td>0.24</td> <td>100</td> <td>:</td> <td></td> <td>-LT 09</td> <td>87 50-9</td> <td>88.00</td> <td>South</td> <td>2 to 6</td> <td>omsq. 00q.</td>	85	83	20	010.	000-88	00-08	301-18	000-75	0-08	0.24	100	:		-LT 09	87 50-9	88.00	South	2 to 6	omsq. 00q.
58         960         970         971         874         875         874         875         874	18		-950	186-	35-000	32.00	82.875	84.000	34.0	9-66	0.46		-19	50 49	80 51-0	00-68 0	South	S to 7	oog.oo.eds.
St.         Wording         Wo	8	008	-870	-856	36-500	32-50	34-222	33.000	84-0	30-0	90.1		19 .	25 48	75 53-0	0 37-50	South	1 to 5	cqs.oc.ocs.oc.
35       1100       300180       45:00       35:00       31:5       31:6	2	000-00	-986	02.6-	42.000	34-00	38-916	33-250	0-0#	30-0 5	12-1	:	-09	62 49-1	62 51.5	0 39-50	S, calm, NE	0 40 3	od.om.be.beq.
27         130         140         150	26	·190	30-180	30-156	43.000	33-50	38.083	32.666	41.0	30.5	8.	:	- 48-	87 49-	87 63-7	02-02 9	Calm, NNE, NE	0 10 3	be.bed.bem.
R         Prime         Second	81	-130	180	181.	46-500	82-00	40.083	33-000	0.88	91.9	S8.1	:		12 51-	9.79 19	00.11 2	Color NE, NE, Calm	* · · ·	hy hom be very
West         710         657         357 <td>200</td> <td>000.00</td> <td>010-00</td> <td>000.00</td> <td>000.67</td> <td>00.20</td> <td>201.10</td> <td>020-88</td> <td>0.10</td> <td>0.10</td> <td>39.0</td> <td>:</td> <td>312</td> <td>-02 50</td> <td>0.65 05</td> <td>02-88-00</td> <td>NNW, NW, calm, WSW</td> <td>0 10 20</td> <td>be befoe of.</td>	200	000.00	010-00	000.00	000.67	00.20	201.10	020-88	0.10	0.10	39.0	:	312	-02 50	0.65 05	02-88-00	NNW, NW, calm, WSW	0 10 20	be befoe of.
30         661         650         85 600         35 666         25 0         35 75         57 57         58 50         17 50         70 50         20 50         17 50         70 50         10 50 <th10 50<="" th=""> <th1 50<="" th=""> <th1 50<="" th=""></th1></th1></th10>	88	1001 44		109.	000-02	00.25	37.975	000-88	0.48	2.00	1.64	:		102	1.55	00-88 0	Calm. NE. E by 8. NNE	0 to 6	of.oc.com.ocg.
Mean         30/190         30/190         46:500         11         42:0         11         42:0         11         46:00         11         46:50         11:00		1	089	-945	009.88	00.18	35.666	33-666	0.24	30.0	27.5		3-19	87 61-	0.79 07.0	0 40.50	NNE, NW, W, calm	0 to 3	com.bc.of.b.bcf
Mean         30-130         30-130														-					
Illin         39-460         29-510          21-00          20-0          20-0          20-0          46-0         41-37         45-0         31-40	Mat.	30-190	30-180	:	46.500	;	:	;	42-0	:	:		58:	30 51-	5.85 73	0 +1-50			
Men 24/28 28/30 28/30 92.021 91.000 23.04 23.04	-	29-460	29-610		:	21-00		0.00	:	0.07		:	-91	14 0	1.64 78	0 36-00			
	Mean	RAL-FA	nel.Az	061.63	:	:	172.72	009.12	:	;	10.8	:		18 10	1.00 44	00 00 8		5.41	

JULY, 1853.

Winter Quarters, Northumberland Sound, until the 14th.

1	Ξ.	ABOMBTI	÷					H	HERMO.	METER.							WIND.		
Date.				D	pper Dec	k.			hore.			Lowe	er Deck		-	-			Weather.
	Noon.	Midnt.	Mean.	Mar.	Mia.	Mean.	Sea.	Max.	Min.	dean.	Mean Dry.	Vet. I	Sows.	Main Iast. B	Jun R	oom.	Direction.	Force.	
July 1	29-684	29-664	29-686	39-0	32-0	35-833	33-500	13-00	32-00	35-79	35-79		0-62 5	1.75	4	0.50	W. calm. SW. SSW. WNW	0 40 4	hef he com
01 0	000	088-	\$28	42.0	33.0	36-166	33-250	00.11	00-25	35-99	35-92	10	09-09	01.10	+	1.00	NW by W. WNW, NW	0 to 4	bem bef. be.em.
	200	47A.	12A	20.2	34.0	35-208	32-625	39-00	33-001	34-42	34-42	:	3-37 3	0.62	+	00-0	Calm, B, S by W, SSE	0 to 8	c.ocq.comq.of.
* 14	082.	OLL.	226	0.24	0.02	28.000	1000.00	28.00	84-00	36-08	80-98	:	29-09	52.1		00-0	888, 8E	2 20 8	omq.bmq.beq.
	088-	028-	1018.	0.48	0.10	101.00	000.20	;	:	:	0 00.00		00.10	20.00	**	0.20	88c, 86, 88W	1 10 1	ocm.bcmq.oq.
	-850	898	920	0.17	0.75	87-768	80.750	:	:	:	00.02	00.00	2 20.0	200.1	:	00-1	85W, 8W, W5W		0m.0m8.0cf.
- 00	·666	-760	.736	41-0	36.5	38-083	33-625	: :	1	:	S 16-12	00.2	00.6	3.8		00-	Calm SSE SE by E SE S	0 10 9	comd. oc. bc.
	-510	069.	869.	40-5	36-0	39-000	33-250	1			37-66 3	00.1	00.1	3.50	4	3-50	8 by E. S. calm. E	0 to 3	com.oc.of.ord.
9;	95	-456	9/4	46.0	89-0	165-01	33-200		:	-	£2.70 3	20-15 P	8-12 6	3.00	+	09-8	E, NE, NE by E, 8	1 to 4	bc.ogm.cq.mgo.
19	017-	0/9	1/9.	41-0	2.22	35.125	33.166	:	:		38-92 3	8-14 5	2.26 6	1.25	+	00.1	8, 8W, calm, SW by W, W	0 to 2	be.of.oe.
201	000	090	19/	0.94	0.28	20.533	003-59	:	:	:	F 199-14	0+00	52.22	0-20	+	00.9	W, W9W	1 to 2	bc.cmg.cmq.
1	068.	010	240	0.00	0.00	112.00	001-00			:	6 01.01	20.1	29.2	29.7	4	09.9	W, calm, N	0 to 2	bc.b.
19	024.	064.	239		0.02	200.04	Wie zo	Imo	ILLOUI O	50	+ ne.14	00.1	00.9	10.0		38	N, Calm, NW, WNW	0 to 3	b.be.
16	-554	188	827.	20.5	0.28	114	209-18	63	steriy.	1.9	00.14	a 00.2	10.0	20.2		30.0	Calm, 35E, 5W	0 10 4	bc.cmr.
11	008.	*IL.	-746	48.0	0.75	87-611	80.500	:	-	:	20.75	8-50 5	1 13.0	12.0		39.	to the state of th	33	CULT. OF. OCT. OCH
8	-212	199.	-663	41.5	35.0	37-916	30-600	: :	: :	: :	37-75 3	6-75 6	5-12 5	1.12		00-	WW by W. NW. WNW	0 to 8	efd.co.bem.mo.
61	\$18.	-600	.476.	42-5	37-0	40-000	30-375				+ 00-It	0-20	¥ 18.1	8.75	+	00.5	WNW, SSE, SE	4 to 6	mg. cg. ogr. cmr.
20	200	089.	989.	43.0	33.0	37-000	30-633	:	:		39-00 3	8-00 4	1 18.6	00.2		2-50	SE, calm, 8, N by W .	0 to 4	oc. bc.
100	000	019.	619.	21.0	2.92	116-02	30-750	1	:	:	34-00 3	3.00 5	5.75	21-12		02.9	N by W, NW, WNW	3 to 6	bc.coq.com.
15	029	1059.	969.	0.98	0.00	016.20	203-18	;			00.55	B0.7	07.A	B.T		80.6	NW, W, Calm	0 20 30	com.oc.comf.
54	089-	009-	619.	0.12	0.68	841-458	80.338	:	1		00 00 00	100.4	1 01.1	01.0		1000	TOP AND OF AND AP	22	DC.CM.COMT.
3	-704	201-	325	36.5	88-0	34-458	32-250	: :	:	: :	36.00 3	2 09.1	2-50 5	3.12		00.5	Calm. N by W. SF. NNW	0 20	cqmr.om.cqu.
8	999.	004.	-694	35-0	32.5	84-166	31-000	In W	ellingt	3 10	36-00 8	5 00.5	2.00 4	91-1	*	00.9	NNW, calm	0 40 2	om.oem.ef.
28		619	209	38-0	36-0	110.78	30-750	5	annel.		87.00 3	2 00.23	4-25 4	00-6	+	00-9	Calm, 8SE	0 to 1	of. bem.om. be.
88	108.	020		0.90	0.40	001.00	004.02	:		:	35-00 3	1 00.15	el.9	0.0		00-9	Calm, NW	0 to 1	oc.bem.osf.of.
19	ALA	067-	ine .	0.25	1.10	121.20	000.10	:	:	:	00.22	00.25	1 21.0	29.02		09.9	NW 85	1 to 5	com.ocq.beq.bf.
20	-784	-790	-780	12.00	83-0 83-0	35-250	32-000	:	1	: :	50.66 S	2-20 5	3-37	30.02	4 4	38.9	88W. W. 8W	1 2 2 2 2	bem. bem. beq.
;								:					-					3	
Min.	29-314	018-63	::	0.09	26.5	: :	: :	:	:	:	92-99	: :	11-87	00-1-00		00-6			
Mean	29-668	£19-62	0/9-62	1	1	35.690	32-042	::		: :	36-51	1	33.35	11.1	::	4-73			
					1	1	1			-	-	-	-	-	-	-			

AUGUST, 1853.

In Wellington Channel and Port Refuge.

1	ā	THE MOST																	
Date.			2	Þ	pper Dec	ik.	Maan	8	hore.	-		Low	er Dec	k.		Briteit			Weather.
	Noon.	Midnt.	Mean.	Mar.	Nîn.	Mean,	Sea.	Mar.	Min. M	ean.	Mean Dry.	Mean Vet.	Bows.	Main Mast.	Gun Room.	Room.	Direction.	Force.	
Ang. 1	29-068	29-721	\$67.62	85-6	33-6	84-666	31-593	Welling	on Cha	nnel. 3	14-75	99.83	16.85	47-66	:	46.00	SW, WSW, Calm, SE	0 to 2	om.c.bc.o.
Ct of	023-	849.	-618	36-5	0.45	84-791	009-18	:	:	:	100	33.50	45.58	47-75	;	46:00	W. calm SSW. B.	0 40 3	om.o.oc.bc.f
-4	.630	844.	187	87.0	82.5	33-708	30-800	: :	: :	: :	3.00	33.00	50.25	50-00		47-00	8, 88, E, ENE, NNE	1 to 2	0. 0C. COT. Ofs.
0	-718	.630	240	9.75	9.08	32-736	000-66	:	:	:	32.00	32-00	21-33	51-46	:	16.50	NNE, WNW, NW by N	1 20	oms.bc.
01	008	084.	0/1.	0.12	9.12	23-088	000-66	:	:	:	00.55	59-62	50-58	92-95	:	43.50	NNW. NW. NW by R.	1 50 4	em.co.o.bc.
- 00	- 283-	.610	069.	34.0	32-0	32-916	000-62	: :		: :	32-50	32.50	11-19	80.09	: :	43.50	W by N, WNW, W	1 to 5	bc.com.ocq.
•	080.	000	269.	35.0	33.0	\$3-958 95.050	29-166	;	:	:	00.12	33.50	99-09	49-50	:	46.50	W, NW, calm, S	0 10 10	COM.OB.OMS.
25	194	700.	1908	42-0	20.0	36.166	29-000	:	:	:	69-5	20.92	27-61	18.58	:	45.50	Calm. 8. N. NB	0 40 2	be.o. oh. oc. e
13	-980	-988	848.	41-0	30.5	34-772	30-333	: :			91.9	21.12	09-61	16.84		44.00	NE, SE, caim, NW, E, N .	0 to 1	c.bc.
a;	064-	.820	068.	41.5	81.0	34-916	30.400	:	:		35-00	100	00.9	47.16	;	43.50	Calm, B, NE, W	0 40 3	b. be. oc. s. cor
412	200	018.	918.	0.92	0.97	000-98	30-626	:	:	:	00.22	195.72	00.00	01.61	:	13.50	RAF SE KNE R calm	0 10 2	be coms. nc.
19	-753	804.	-130	0.92	32.5	34.666	30.363	: :		1	52-M	00.11	00-02	19-25	• •	100	E. NE, ENE, 8W	2 to 4	oc.om.or.o.
11	.818	094-	699.	85-0	32.5	33-850	29-833		::	1 1	34-00	99.88	11.61	48.25	1	42.00	SW, NW, NE, ENE, E	240 9	0. C. 0 S. 0 q S.
81	989	526	262.	35.0	32.2	33-319	30-333	Port	Refuge		00.5	32.50	14.64	00.0	:	00.94	E, 85E, 8, 8W, W8W	3 40 7	od.ocs.om.ol
28		+9L.	200.	0.12	31.0	822-960	818.02	;	:	:	99.78	02.20	00.00	14.94	:	29.44	WSW, BW, BSW		0.DIO.010.01
15	928.	188.	828.	9.98	31.5	23-727	30.458	:	:	:	12.50	09.82	99-64	99-84	:	43-20	SSE. calm. N. NNE	0 10 5	bems.os.be.
8	000	968.	006.	37.0	31.5	34.083	30-208	: :		: :	99.1	02.16	89.65	48.66	: :	43-00	NNE, N, W, NW	1 to 7	bc.com.bcq.
8	068.	-850	198.	37.6	32-0	83-750	30-666	:	:	:	33-00	32.50	80.61	48-16	:	43-50	N, NW, calm	0 to 3	b.bc.om.of.o
29	008	084-	984.	36.5	33:0	34-916	31-208	:	:	:	12.5	00.55	21.8	16.17	:	13.00	SW, calm, SSW, SW by 9.	0 10 30	om.f. of. co.co
28	099.	2/0.	700	0.00	0.88	001.00	106-18	:	;	:	02.05	00.99	02.65	10.10	:	45-00	SAF SF FSF	1 10 2	com ome.om
5	089.	-613	109	38.0	1.12	37-090	31-400	: :		: 1	99.9	00-95	20-02	49.83	: :	44.50	SE by E. NE. E by N	-1 to 4	o.om.omf.oc
8	-710	069.	<b>789</b> .	37-5	32.0	84.550	31.625	: :			100-S	1.75	00-25	51-33	. :	44-00	NE, SE by E, E, SSE	1 to 4	com. c. cf. of.
8	-823	212	132	2.98	32-6	34.208	31-375	:	:	:	99.18	00.75	52.50	50-33	:	44.00	SSE, 8, calm, W, NW	0 to 3	00m.0m.co.0
85	*	816.	116.	82.9	6.22	27-333	1010-06	1	1	:	102.50	33-00	49-33	1.83	:	06.61	NNW N NW WW W	1 to 2	bem.o. be. be
10	3	No.	100	0.67	2.02	000.07	A10.62	:	:	1	00.67	00.62	CO.44	CO. 14	:	De	. M. M. Cauto, M. M. M. M.		
MAX.	29-914	080-080	:	42.0	00.5	• :	31-800	:	:	:	99-98	:	62.50	51.46	:	47-00	2		
Mean	121	125	29-719	::	1	33-798	30-136	::		: .:	11-02	33.43	19-61	18.84	: :	94:H			

SEPTEMBER, 1853.

-								-	OWNER	- TANK							.4514		
Date.1	-			'n	pper Det	ik.	N.C.		Shore.			LOW	er Dec	ند					Weather.
4	N NOOI	idnt. 1	(ean.	Mar.	Min.	Mean.	Sea.	Max.	Min.	Mean.	Mean Dry.	Mean Wet.	Bows.	Main Must.	Gun I	Room	Direction.	Force.	
lept. 1 2	9-760 25	-814 2	218-0	33-0	28.0	29-375	060-62	:	1	1	29-33	58.73	49-66	48-25		42-50	WSW, SW, WNW	1 to 4	be.o.e.
Q 90	008	092-	192-	0.52	0.02	167 10	805-66	:	:	:	00-55	58-50	18.55	18.14	:	38.99	Nhow NR hoF KNR, calm	1 10 2	c. co.
+	-990	018	.839	34.0	25.0	28-791	115-65		1		29.66	09.85	48.08	80.98		41.50	Calm, 8E, 8, 8W	0 to 1	oc.bc.om.
-	098-	-950	976.	31.0	0.92	914-86	29-208	;	;	:	52-33	99.95	48.08	48.58	:	41.50	NW, NE, calm, SW, SSW	0 0 3	be.oc.f.of.
00	24	1004 1019	64/.	0.02	9.02	17-966	201-66	:	:	:	00-27	99.92	100.9	44-50	:	33	WSW, SW, SSW, W by SV	1 60 0	com. oc. os. bcqs
- 00	1089	194	-475	18.5	0.6	15-181	59·166	: 1	: :	: :	100-91	12.30	91.94	14.54	: :	42:50	WSW. N. NNW. calm.88F	0 to 5	ogs.coms.bo.
8	034	199.	875.	15.5	5.9	8-298	39-136	1	1		8.50	1.00	46-16	46.00		42.00	NE, calm, ESE, SSE, SEbyS	0 to 3	be.bem.em.
21	320	.330	-340	18.5	0.9	10-666	29-000		:	:	10-50	09.6	89.44	41.41	:	13-00	SE, ESE, E, calm.	0 to 5	com.cm.bc.
12	148	283	120.	0.12	9.6	14.458	000-62	;	:	:	14-66	13.50	12.08	80.68	:	1.50	E, calm, FSE, W.	0 to 3	be.bem.
	000	100	100	0.01	0.11	002 41	MAN 87	:	:	;	50.41	00.21	01.04	00.14	:	00.14	Waw, Whits, BW, BW DY B	2 0 1	bc.cos.os.
1	099.	689.	573	0.86	10-01	004-16	000-66	:	:	:	88-10	00-10	80-97	10.02	:	30.00	W Waw sw saw	1 10 4	DC. CS. 08. 0 m8. 00
16	899	089	219.	19:00	17-0	19-416	000-62	: :	: :	: :	00-06	19-33	45-33	43.08	1	00-0	SSW. calm. NW	0 to 4	om he e os a os
16	56L.	Ę	11	18.5	12-0	16-250	28-937	: :	: :	: :	16.33	15-75	44.58	41.16	; ;	00-01	NW. W by N. W. SSW	1 to 4	bc.oc. bc. os.
11	046-	008	128.	19-0	14-0	16.916	29-000	:	:		12-00	199-91	43.50	40-88		30-50	SW, calm, NE, N, NNE .	0 to 3	08. co. o. bc.
8	18 666.	090-0	0-037	18.0	Zero	7-166	58.815	:	;	:	2.55	99.9	48-41	16-04	;	89-50	NNE, calm	0 to 1	be.bf.
	200	098.	8/8.6	0.91	20	10.350	001.97	:	:	:	10-65	10-32	02.24	89.04	:	00-68	Calm, 8W, WNW, N, NNE	0 to 3	bf. be. beq. b.
25	1004	1010	010	10.01		10-875	000.07	:	:	:	20.11	00.01	91-00	01.10	;	00-00	NW, CAUD, M.B.	1 01 0	00.0.
100	No 1820-0	000 -	0000	18-0	13-0	13-958	80.000	:	:	;	14.00	13.76	05.91	37-66	:	01-02	Celm W SW	0 10 0	be bem com o
23 23	9-820 25	-932 2	9-914	21.0	20-0	20-416	28-708				20.36	00-06	46-83	42-41	:	00-04	BW. 88W. 8 by E	1 to 5	be ac cos acs
24	-932	198.	-986	0.08	12.5	14-958	28.428	: :			12.00	14-66	16.84	43.66	: 1	00.68	SW by S. calm, NNE, S	0 to 4	or oc.com.om.
8	0-038 34	000-	666-	15.5	6	13-250	218.82	1	:	:	13.33	12-86	44-50	48-83	1	00.06	8, 8 by E, ESE, SSE, SEE, SE by S	2 to 4	be.beg.cog.com
21	889	8	666-	18-0	11:0	13-708	28-812	:	;	:	13.66	13-00	46-83	44.68	:	40-00	8, Sby E, E8E, SSE, SEby 8	2 to 4	be.eq.com.so.
100	8	C 080.	0-028	18.0		14.416	158.82	:	:	;	14.50	14-33	46.00	41.66		40-50	SE by 8, 8W, calm, BSE .	0 to 2	om.com.oc.bc.
000	0.050		100	0.21	0.0	012.0	001.02	:	:	;	00.1	01.0	67.0¥	00.12	00.99	00.62	386, 8, 88W, 8W by W .	1 to 3	be.os.cg.com.
198	625.	028	100	0.10	1	13-041	240.02	:	:	:	00.A	01.01	10.94	10.34	00.00	00.60	toth to an a bo bo	8 9	Dc.0cq.b.
	•	1	1	2				:	:	;	Bor	2		-	8			3	mhanhaamraa
Mar 34	1-050	POKA	-	64.0	•		00.547			~~~	00.00		10.60	10.01	-		2		
Min. 2	9-320 24	-330	: :	5	Tero	: :	28.499	:	:	:	00.4	:	91.85	38.66	;	00.02			
Mean 2	9-798 2	LaL	198-6	: :	:	100-21	28-943	: :	: :	: :	19-82	16-04	45.16	43-19	: :	99.04			
	-										-	-	-				10100000 00 0 0 0 0000 000000		

OCTOBER, 1853.

Disaster Bay, Wellington Channel, 75<sup>c</sup> 31' N., 92<sup>o</sup>10' W.

.

	Ħ	ABOMBY	B					E	OWSER	CETKE.						-	WIND.		
Date.				D	pper Dec	ię.			hore.	-		Lower	Deck.		-				Watches
	Noon.	Midnt.	Mean.	Max.	Min.	Mean.	Sea.	Max.	Min.	fean. 1	Try. W	Vet. B	W SWO	Isin ( ast. 3	HI HO	pirit oom	Direction.	Force.	. 1007940 H
Oct. 1	20-410	29-364	29-414	22-0	0.8	16-916	28.500	:	:		:		7-50 4	1.66	6-75 3	3-09-6	8, W8W, N, NW. W. 8W	1 to 10	
4 65	200	000	224	18-0	0.0	10.750	28-500	:	:	:	:		1.25 4	0-33	00.	00.8	NE, NNB, NNW, W	1 to 6	c.ocd.od. bemg.
	878	400	768.	14.0		097-0	009.86	:	:	:	;	**	1 00.0	4 16.9	00.5	00.0	WAW, W. WSW, BW.	2 to 8	oc.oms.osg.
0	-562	588. 588.	124.	12.0	1	6-750	28-500	:	1	:	: 1	1	3.50 4	299.4	5.68	39.9	R raim WNW Stu	0 10 10	ocq.omqs.bc.c.
01	978.00	004-	113	-	-2.0	1-500	28.500			: :		4	6-00 4	3-58 5	1-00	00.9	SW, ESE, calm, SW	0 to 2	bem he of ome
- 0	010-02	096.	498-	2.4	0.6-	914-1-	28-500	;	:	:	;		7-25 4	90.9	3-60 3	100	SW, cahn, WSW	0 to 3	om.oms.bc.f.
	312	907-00	102.	15.0	2.0	11-625	28-500	Rofer	a this d		:	**	4 99./	8-66 5	S 09.1	8.5	N, calm, SW, SE	0 to 2	om.ogs.oc.bc.
9	29-632	807.	STI-	23-0	13-0	19-772	28-500	the m	le distu	rbed			2.33	2-50 5	5 88.1	80.5	SR R SSR RSF SR he P	1 40 10	bem.b.bc.
	128	29-773	28-790	23-0	20-02	81-416	28-200	t	he ice.			65	8-25 3	1-58 4	8 09.9	3-00-	8E by E, SE, SSE	7 to 10	omo. beg. peqm.
a s	1002.	902-	104	9.92	21.0	22-916	28-500	:	;	;	:		9.66	2-40	6.41 3	3.00	SE, calm.	0 to 8	oqm.oc.oms.
1	·989	008	108.	29.62	0.61	20-416	58-583	:	:	:		**	01.0	0 22.0	5 91.6	00.0	8, 8E, B, NB	1 to 4	00.0m.bc.
15	W8.	-928	818.	19:53	22.0	162-22	28.800	:	:	:	:	:	1.82	9 123-1	010	00.0	caim, ob	0 10 1	bc.om.bem.
16	999	098-	.940	0.83	20.02	21.708	29-000		: :	: :	: :		0-16 4	9-50	14-3	00.9	E. SE. ENE. SSF	1 40 3	0.B.
10	118-	188.	-905	22-0	17.0	18-641	28.500	:	:	:	1	*	8.08	9 14-8	8-00 3	2-00	E, SE, 88W.	18.	o. f. oc.
98	30-050	180-06	P000	0.21	1.50	156-9	001.87	:	:	:	:	-	8.00 4	14.1	8-66 3	1-50	SSW, SSE, NE, calm	0 to 2	0 ms. oc. om.
8	-061	620.	680-	10.0	Zero	4-188	28.500	16.5	1.5	6-12			4 89.2	16.5	00.0	80.4	Calm N. NE NW. NW.	0 to 3	00. b.
28	83.	142	-137	10 1	-3.0	140-0-	28-500	0.2	- 2.0	0-83	:		9.16 30	8.50 5	3-00	3.00	Calm, NW, NE	0 to 1	be h hoo.
	200	501-	201.	0.7	0.0	B06-0-	28.500	-1-0	0.81	-4-39	:		8-83 4	0-08	3-00 3	3.00	N, calm, W, SW, NW	0 to 3	bc.oc.ocm.oms.
24	-010	29-950	29-968	10-5	0.8	894-6	28.500	0.6	0 10	00.2		• •	1 68.9	0 1R.0	2 09.5	00.5	WSW SW malan	1 10 8	oms.omqs.omcq.
33	001-00	30-100	30-110	0.8	-1-0	4-750	28-500	10.0	3.5	7.45		+	7-16 4	1.50 5	6.16 3	3.50	SW. E. calm	0 to 3	om c he o
Ra	TR.RZ	108.06	640.	3.0	0.5-	0-020	28-500	0. <b>†</b>	19-9-	1.81	:	<del>4</del> :	8-41 4	7.16 5	2.00 3	3-00-6	Calm, NNE, NE, E	0 to 2	om. co. be. bem.
18	-730	084	-182	Zero	11	-1-458	28.500		9-61-	10.8	:	44	- 26-1	6.10	1.91 3	2.50	NE, calm, SE, S	0 to 1	bc.cm.om.bcm.
8	810	049-	449-	0.2	-0.5	1.791	28-500	0.9-	- 11-0	1.20	: :		3-91 4	16.2	89.6	30.8	Calm. NR. FSR.	0 to 4	bc.omg.om.oc.
85	-618	989	982-	0.0	- 9-0	1-416	28-500	0.1	0.9 -	-2-25	;		1.16 4	2 98.2	5.00	02.5	Calm, NNW	0 10 2	om.com.bc.
							-	2	-	27	:	:	* 01	8	2 35	00.0	Camp, A.A.W	0 to 2	be.om.com.
Mar.	200.020	80-834	:	0-92		:	28-500	:	:	;	:	***	8.08 5	1.83 6	9-16 3	09-80			
Mean	29-951	29-848	198-62		:	9.508	28.500	: :	: :	: *	: :	रु <b>अ</b> : :	5-14 4	101 6	3-71 3	834			
												2		-		-			

NOVEMBER, 1853.

	BA	RIEWOR						F	UN SH	METER.							WIND.		•
Date.				U,	pper Dec			Ice.		Low	er Dec	E.		Upper					Weather.
	Noon.	Midnt.	Menn.	Mar.	Min.	Mean.	Max.	Min.	dean. E	tows.	Main Mast. 1	Gun.	Cabin.	Deck, H.W.	HOO	Hain Hold.	Direction.	Force.	
N 9888888888888888888888888888888888888	29-550 714- 715- 715- 700 700 700 700 700 700 700 700 700 70	20 650 6110	20 682 6126 6126 6126 6539 6539 6539 7449 7479 7479 7479 7479 7479 7479 74	и 4 ю 4 ю 9 ю 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	+ 100 +	70 70 70 70 70 70 70 70 70 70	21.0 21.0	7.88 1.1.21 1.1.21 1.1.21 1.1.21 1.1.21 1.1.21 1.1.22	889 889 889 889 889 889 889 889	2012 2012	82.14 82.15 84.00 84.00 84.00 84.00 84.00 85.15 84.00 85.15 84.00 85.15 84.00 85.15 84.00 85.15 84.00 85.15 85	44 5 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	22.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2	\$858999777779999888888888888888888888888		NNR, NNW, NR X, NE, NNW, NR XII, WAW, NNW, NNE XII, WAW, NNW, NNE NNR, calm, NNW, RW NNR, calm, NNW, ENE Solam, S. Calm, S. Calm, S. Sul, Sul, Sul, S. Sul,		om.be.com.om.g be.be.nom. be.be.nom. be.be.nom. om.nom.om.a. om.nom.om.a. om.nom.om. om.nom.om. om.nom. f. f. com.om. f. com.om. f. com.om. f. com.om. om.ben.mq. beq.ben.om. bec.bm.om. bec.ben.o. be.ben.o. be.ben.o. be.ben.o. be.ben.co. be.ben.co. be.ben.co. be.ben.co. be.ben.co. be.ben.co. be.ben.co. be.ben.co. be.ben.co. be.ben.co.
Min. Min.	80-232 29-368 29-766	80-220 29-330 29-777		9-0  Capetan li	-22:0	 - 7-408 d blatte.	7.0	-37-0		10-50 11-66 15-83	13.33 16.56	56-33 48-33 51-16	58-000 53-000 49-306	22-53	\$2-50 39-20				•

DECEMBER, 1853.

L	E I	AROMET	ä						THERMO	REFER							WIND.		
Date.				b	pper Dec	j.		Ice.	-	Lowe	r Decl			Tpper	Zmirit	Main			Westher.
2	Noon.	Midnt,	Mean.	Mar.	Min.	Mean.	Mar.	Min.	Mean. I	lows.	Main Iast. H	Gun	Cabin.	M.H.	Koon.	Hold.	Direction,	Force.	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20.650 50.770 50.770	20 640 7750 7750 7750 7750 7750 7750 7750 77	89-72 1412			-10'000 -10'000 -10'000 -15'750 -15'760 -15'760 -15'760 -19'756 -19'750 -10'750 -10'75	12200000000000000000000000000000000000	2300 2400 2500 2500 2500 2500 2500 2500 25	895.5886.5886.5886.5886.5886.5985.5886.5886	666947697469475759898966669875769494 6651889585853565889567688889895666889 86518898595883565889899898989898989 865189898998989898989898989898989898989898		0.88%2888888888282828288882928382828282828282	4 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			88888888888888888888888888888888888888	N, calm. SNE, SE, N Cam, SNE, SE, N S, BR, Radm. W. WSW WFW, calm, W. WSW WFW, calm, S. SS Calm, SNE, SS Calm, SNE, SS SE, SS, calm, SS SE, SS SE, SS SE, SS SS, r>SS, SS SS, SS SS, SS SS SS, SS SS, SS SS, SS SS, SS SS SS, SS SS, SS SS SS, SS SS SS SS SS SS SS SS SS SS SS SS SS		be bem, bar, bar, bar, bar, bar, bar, bar, bar
Mar. Min. Mean	80-500 29-400 29-884	30-442 29-650 29-868	59-800	0-51 : :	-27-0	-13-740	. : :		-28-08	3-116 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	8-26	64-16 1 17-33 3 19-93 4	9-000	91:53-19 12:53:18	52268	56.00 45.00 53.00	Sylrester Region.		

JANUARY, 1854.

	Weather.		om q. om q. os. b. b. cm. om q. o. b. b. b. b. cm. on b. b. b. cm. om bm. b. b. co. b. b. c. b. c. b. b. c. b. c. b. c.
		Force.	400000000 000000 0044000 00 333333333000333333303333330433 0400400000 00440044004000 00
WIND.	•	Direction.	E. ENE SB, calm, E, S SB, calm, E, S SSE, calm, S, SB W, calm, S, SB SSE, calm, S, SB SSE, calm, SE SSE, calm, SB SSE, calm, SB SSE, calm, SB Calm, SB SS, calm Calm, SB SSE, calm, SB SSE, calm, SB SSE, calm, SB SSE, calm, SB SSE, calm, SB SSE, calm, SSE SSE, r>SSE, calm, SSE SSE SSE SSE SSE SSE SSE SSE SSE SSE
		Eold.	
	T out of	Room	838 833 833 833 833 833 833 833 833 833
	Upper	Deck M.H.	22222222222222222222222222222222222222
		Cabin.	44 916 44 916 53 1500 53 1500 53 1500 53 1500 53 1500 54 155 55 151 55 151 55 150 55 151 55 155 1
	ck.	Gun Room.	192 202 202 202 202 202 202 202 202 202 2
в.	wer De	Main Mast.	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
OMBTB	2	Воиз	442 522 522 522 522 523 524 544 544 544 544 544 544 544
THREW		Mean.	ੑੑਫ਼ਫ਼ੑੑੑੑਫ਼ਫ਼ਖ਼ਫ਼
	Ice.	Min.	本4 
		Mar.	820 
	eck.		117716 177766 - 98756 - 98756 - 98416 - 98416
	Ipper De	Min.	
	5	Max.	
		Mean.	29-096 4044 4044 4000 4100
ROMBTS		Midnt.	29-650 590 590 590 590 590 590 590 5
BA		Noon.	
	Date.		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1

FEBRUARY, 1854.

BAROWETER.	ί <u>α</u>	on. Midnt. Mean. Max.	0.42         0.42         0.42         0.42         0.42           0.42         0.42         0.42         0.42         0.42           0.42         0.42         0.42         0.42         0.42           0.42         0.42         0.42         0.42         0.42           0.42         0.42         0.42         0.42         0.42           0.42         0.42         0.42         0.42         0.42           0.42         0.42         0.42         0.42         0.42           0.42         0.43         0.44         0.44         0.44           0.44         0.44         0.44         0.44         0.44           0.44         0.44         0.44         0.44         0.44           0.44         0.44         0.44         0.44         0.44           0.44         0.44         0.44         0.44         0.44           0.44         0.44         0.44         0.44         0.44           0.44         0.44         0.44         0.44         0.44           0.44         0.44         0.44         0.44         0.44           0.44         0.44         0.44         0.44	850 30-35011-5 100 29-090 29-751
	pper Deck.	Min. Mea	1946	-38-0
-		D. Mar.	88 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	-20-5
L	Ice.	Nia.	\$	-55-75
ONSER		Hean. I	88852555555555555555555555555555555555	4
ATER.	Low	lows.	444 12:03:32:03:32:04 12:03:32:33:32:04 12:03:32:33:32:04 12:03:32:33:32:04 12:03:32:33:32:04 12:03:32:33:32:04 12:03:32:33:32:05 12:03:32:35 12:03:32:35 12:03:32:35 12:03:32:35 12:03:32:35 12:03:32:35 12:03:32:35 12:03:3	
	er Deck	Main Main	4 4 4 4 4 4 4 4 4 4 4 4 4 4	1-38 1-38
		S III	44444444444444444444444444444444444444	H
		abin. I	66.633 66.633 66.633 66.633 66.633 66.633 66.633 66.633 66.633 66.633 66.633 66.633 66.633 66.633 66.633 74.166 74.166 77.1000 77.1000 77.1000 77.1000 77.1000 77.1000 77.1000 77.1000 77.1000 77.10000 77.10000000000	 
	pper	L.H.B	8821282323282828282828282828282828282828	2.98 2.98
100		di di di	86555565555555555555555555555555555555	80.9
	Vein	Plot		54.0
WIND.		Direction.	<ul> <li>a. calm. S. /li></ul>	
		Force.	00000000000000000000000000000000000000	
	Watha		bc. bem. b. b. bm. b. b. bm. b. b. bom. b. bom. c. coms. os. or d. coms. os. or be. b. br. b. b. bene, bem. om om. be. com. br. bem. om om. br. bem. br. b. br. b. b. b. b. b. bom.	

MARCH, 1854.

	R	TORIET	, i						THERM	MATER							WIND.		
-				D.	per Dec	K		Ice.	-	Low	er Dec	K		Upper					Weather.
17. Al.	Noon.	Midnt.	Men.	Mar	Min.	Mean.	Mar.	Min.	Mean.	BOWS.	Main Mast.	Gun Room.	Cabin.	Deck, M.H.	Boom.	Hold	Direction.	Force.	
			846 846 846 846 846 846 846 846		11111111111111111111111111111111111111	-10-260 -10-063 -21-375 -21-37	22222222222222222222222222222222222222	\$			444444 44444 888444 888444 88888 888888 888888	<b>\$</b> \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	400 000 000 000 000 000 000 000 000 000	88.588.888.999.998.998.998.888.888.899.988 88.588.888.888.888.999.999.999.898.888 88.588.888.888.888.888.999.999.999.998.998	÷*************************************	88888888888888888888888888888888888888	NW, SW, calm, SB BSW, calm, SW, calm, SSW, SB N, SW, NB, calm, SSW, S Calm, SE, RSE, W Calm, SE, RSE, W Calm, SB, calm, NNW, SSE, SB Calm, SB, calm, NNW, SSE, SB SSB, calm, NNW, SSE, SB SSB, SSW, SW SSB, SSW, SW SSB, SSW, SW SSB, SSB, SSB SSB, N by W, variable SSE, NW, calm, SSE, salm, S WW, calm, SSE, salm, NW SSW, calm, SSE, salm, NW WW, WW, WW, Wb SSE, calm, NWW, WW SSE, calm, NWW, WW SSE, calm, SSE, salm, SSE WW, salm, SSE S, SSE SSE, NW, calm, SSE S, SSE SSE, SSE SSE WW, SSE, SSE SSE, SSE SSE, SSE SSE, SSE SSE, SSE SSE, SSE SSE, SSE SSE SSE, SSE SSE SSE SSE SSE SSE SSE SSE SSE SSE	000000	beer, broe. brei bear, ba. brei bear, ba. brei bear, ba. brin, bar, bar, bar, brin, brei bear, bar, bar, bar, bar, bar, bar, bar, b
343	30-500 29-250 29-900	30-530 29-234 29-926		8::	-34:0	-19-969	-18.6	-49-62	-30-86	30-12	<b>14</b> .39	62-23	47-216	26-43	34-06	51-74			

APRIL, 1854.

MAY, 1854.

	BA	ROMET	đ					e	HERMO	MRTER.						-	WIND.		
Date.	-			h	pper Dec	ند		Ice.	-	Lowe	r Deck			pper	tinit.	Vain			Weather.
	Noon.	Midnt.	Meen.	Max.	Min.	Mean.	Max.	Min.	dean. B	N N	fain [ast. R	Gun C	abin.	M.H.	. HOO	Hold.	Direction.	Force.	
May 1	30-108	80-128	S0-110	13-5	-8.0	2.31	Zero -	-13-00	-7-00	6-0 4	12-0	57.5	00-99	:	2-52	44-0	Calm	0	ob.obem.m.o.
01 0	SIL-	-108	010-00	12.0	-6.0	9-0-	Zero	-13-00	00.1-	10-18	8.14	1.00	18.09	:	0.98	47-0	BE, S, NW	1 40 0	be.b.
-	1000-AZ	094-	VEL-	12-0		70.8	13.00	09-6	3.11	0.00	0.00	18.99	00-05	: :	0-65	0-02	Calm. NW. BE. NW. W	1 10 3	b. bc. bcm.
	-6e0	-516	189-	13.0	3.0	26-1	15.00	- 3.00	4.54	1.5	0.21	0-09	51-33		96-0	0.19	BW, NW	2 to 5	0.0 m.08.
0	189-	189	-799	10-5	9.6-	80.0	8.00	-10-00	-6-23	1-01	13.7	0-19	09-19		35.0	0.65	NW, WSW, 8SB	1 19 2	08.0.bc.
	000	000-06	910-08	0.0	0-9-	31	00.4	- 10.90	102.1	24	0.9	2.00	00.00	;	0.12	49-0	W, W, BW	10	0. b. h. om.
• •	010	066-	508.	0.11	4-0	2.8.9	100-01	1.00	20.9	0.10	2.5	24.8	21.12	:	0.78	20-02	E. ESF. SE	2 to 6	00.0.hm
9	171	29-980	190	17.0	0.2	10.12	15-00	1-00	6-16	9-04	13.0	56.3	19-53	: :	34.0	49-0	Calm, N	0 to 4	bc. bc. om.
H	-014	068-	29·885	11.0	0.9	8-50	13-00	2.00	09.9	1.8	5.04	20.09	48-00	;	34-0	0.14	MN	2 to 4	0 m. 08. 0 m8.
12	29-794	2.	*L.	0.11	<b>4</b> 0	1-43	15.00	3.00	4-96	9.01	1-1	52.0	12:53	:	34-0	10.01	SW, WNW, N	0 to 4	08.bc.
2	818-	2.	9/6	16.0	0.0	19.2	12:50	00-11-	8.1	1-92	1.9	0.03	24.14	1	0.12	0.0	N, NE, B	0 10 20	bc.c.
-	100000	20.200	000.00	0.91	20	0.11	COLOT	Zero.	100.0	0.05	0.2	0.4.0	00-21	:	0.40	0.00		0 00 1	bc.om.oc.
9#	000.00	000	COR. AZ	17.6	2.9	10.01	002-91	30.8	10.1	0.95	0.1	0.09	21.71	;	1.85	0.14	WNW calm N	0 40 5	be os.
11	80-040	20-050	30-035	0.08	13.0	15.68	20.00	0.9	3-75	0.0	9.6	0.99	09-11		0.48	0.24	NE. ESE	0 to 4	0.bc.
18	090-	10I.	114	0.16	5.0	12.11	20-00	. 2.50	8.63	100	-	0.99	18-42	1	0.15	0.24	S, calm, W	0 to 1	be. bm. o.
10	0/1.	021-	·183	16.0	4.0	8.58	17-00	Zero	3 62-1	0-1	-	23.5	27-61	:	34-0	0-24	8W, W	1 to 4	o.bc.co.
8	-250	-266	197.	14.0	0-2	10-46	18-50	00.9	0-52	;	:	45.6	09-91	:	33-0	12.0	NE, E, W	0 to 3	co.be.o.
28	200	062-	197	0.02	12:0	13-75	100-21	00-6	19-21	:	:	5.97	00.9	:	0.22	0	Calm, 5, 5.B	1 10 2	00. bc.
18	200	#TC.	121.	0.00		00-11	10.01	Cont.	0 20.5		0.0	19.15	14-43	:	0.00	0.92	NP P colm	3 4 4	bo b
3	-1001-	1080	080	34.5	0.8	17-64	28.50	00-9	8-01	0.00	0.0	1-19	18-33		33-0	0.58	NNE. SE. calm	0 to 5	b. be.
28	29-930	068-68	61-8-66	81.6	19-0	59-55	30-00	15.00	51-12	3.5	5.0	26.0	£7-50	:	0.75	35.0	Calm, SE	0 to 1	0. 80. 8.
8	008-	978	-878	36-0	19-0	19.92	33-50	16-00	80.02	9.9	37-2	0.75	10-95	;	36-0	37-0	Calm, SW, NW	0 to 2	08.0m.0m8.
1	000-02	30.108	20-127	0.82	14.0	62-12	09.52	10-00	11.8	9.9	8.5	8.09	0e.19	:	87-5	88-0	Calm, W, NNW	0 10 1	m.bc.
88	065	183	577	0.18	. 12.6	20-83	00.12	80.6	20-37	9.9	9.95	9.79	01.6	:	37.0	40-0	8W, calm, SW	0 to 5	bc.08.
RS	221.	201.	611.	0.92	0.02	16.90	00.17	00.1T	94-23	0.01	9.15	0.00	00.01	:	0.89	0.18	8, 83W, 8	2 10 8	omq.oq.ogs.
32	002-	010	000.	0.00	0.00	17 07	00.20	Jo ni	10.00	1.10	0.00	19.12	09-60	:	0.00	0.40	T ST SW	33	0.06
1 10 13	-	20.4		0.20	2	4	3	N et	20 02	0.00	2		20.00	;	> > >	2	· · · · · · · · · · · · · · · · · · ·	* *	0.00.00
Her.	80-826	30-314	:	85-0	1	i	33-00			~									
Min.	099-6%	80-040	20-041	:	- 8.2	0.70	:	00-61-	0.24	0.0.0	0-0	1.17	18-03	-	0.28	7.81			
	-	-		:	:	2	:	:	En o	000	0.00			:	-	-			

JUNE, 1854.

	B	CLEW OR			Des Des			Ina	THERE	TAN	er Dec	-			-	İ	WIND.	_		1 1 m
distant.	Noon.	Midat.	Meen.	Mar.	Min.	Mean.	Mar.	Kii.	Mean.	Bows.	Main Mast.	Gun	Cabin.	Upper Deck, I	spirit 1	fain Iold.	Direction.	Force,	Weather.	the state
		89-958 90-158	80.188 80.188 80.188 80.188 11111 11111 1111 11111 11111 111111	88865000 0000000000000000000000000000000	88888900000000000000000000000000000000		88888888888888888888888888888888888888	28883888888888888888888888888888888888	\$\$\$\$66667787786666666666666666666666666	88888888888888888888888888888888888888	44444 444444	800 800 800 800 800 800 800 800	12222222222222222222222222222222222222		88777888888888888888888877999999999999	844894444849434444844444444444444444444	BW, ealm, BSW B, ealm, BS WNW, SNW, ealm NNW, ealm NNW, ealm NNW, ealm NNW, ealm SNE, BS SNE SNE SNE SNE SNE SNE SNE SNE SNE SN	COUCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	bc.0q.0, oms om qs.0m bc. b. bc. bc. b. bc. oc.emq. bc. oc.qs.0mq. orqs.0mq. orqs.0mq. bc.0c.	
MOIGH	0-130	\$0-142 \$9-480 \$9-620		<b>*</b>			44.0		16-22	42.7	41-5	48-1	28.05	:	40-2	1:37				

JULY, 1854.

	BA	ROMBER						F	HERMO	METBR.							WIND.		
Data.			1	'n	pper Dec	j.		Ice.	-	Low	er Dec			pper					Weather.
	Noon.	Midnt.	Mean.	Mar.	Min.	Mean.	Max.	Min.	Mean. B	OWS.	fain fast, R	Gun.	abin. 1	Jeck, <sup>5</sup> d.H. B	H	old	Direction.	Force.	
J'un 1	29-550	29-766	187-02	0.8%	37-0	88-42	0-68	32.0	35.5	1.14	2-21	1.67	81·66		4.0	:	ESE, 8, SE by 8	2 to 8	oq.beq.
-	F18-	-730	-708	42.0	34-0	87-17	M	thdraw		48.1	14-1	52.3	19-92	:	4.5	;	SE, ES, WSW	8 to 8	ocq.boq.
00.	029.	089-	-547	0.98	0.00	36-21	:	1	1	8-99		8.19	97.19	:	0.0	:	Caim, E, SE		00.0mgs.00.
**		3		0.04	0.92	96.92	:	:	:	0.40	1.0	0.10	07.10	:	210	;	CHIM, OB, EOD	1 01 0	or oor oom
		201-	202-	0.84	0.10	50.90	1	:	:	1.00		0.23	- 00.19	:	2.0.9	:	KNF, calm. W	330	00.600.000.
		200	414·	48.0	0.55	86.58		: 1	: :	23.5	10	9.19	52-(18		0.9		Calm, W. calm.	040 1	oc.om.oms.
.00	-980	098	-857	0.18	32.0	34.67		:	1	62.1	9.9	9.99	53-00	-	0.9		NW, W, calm	0 to 2	oms.com.
	198-	058-	-836	0.18	83.0	34.58	:	:	:	9.19	0-20	8-19	51-08	*	5-0		WNW, calm, NW	0 to 1	om.com.om.
2	1889	008-	184.	41.0	85.0	82.28	;	;	:	1.29	8.4.9	21.3	49-75	:	0.0		Calm, N, NB	1 91 0	of. oc. od.
=;		2	519.	41-0	2	19-18	:	:	:	49-8	20.0	0.19	00.19	:	0.0	:	NE, calm	1 02 0	bc.oc.
1		989.	829.	0.14	0.12	8.10	:	:	:	49.6	2	9.09	24.43	:	0.0	;	W, 65 W, E5E	B 01 1	bendtromed.
3,3	2003.	2015	DAT.	20-04	0.00	10.00	:	:	;	0.14	10.0	0.85	21.64	:	10	:	RNF F	3 20	og.omg.om.
219	-750	TIS	1005.	0.28	32.0	34-96	1	:	:	46.5	10	9.15	41-75		0.7		W. S. SSW	1 to 5	omd.od.oeg.
16	084	365	878.	41.0	36-0	37-42				46.5	0.8	8.99	43-25		4.5		SSE, E. ESE	5 to 8	emq.ocq.ocqm.
11	.980	-370	188.	43.0	36-0	37.50	:	:	:	48.8	1.69	9.89	41-83	:	- 0.9		B	3 to 7	000.00.
18	80	000	184.	43.0	86-0	80-68	:	:	:	49.3	10.00	8.90	11.54	:	0.0	:	N.B	2 to 3	0000.00.08.
61	200	685	100	44.0	36.0	40-08	:	:	:	50.3	1.40	9.09	99.52	:	4.0	;	B	34	
Ra	000	000	9/8.	0.94	0.92	19.62	:	:	:	1.09	0.20	1.00	0.25	:	0.0	:	8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		
18	000	010	000	0.11	0.85	10.14	:	:	:	01.10	2 2	0.00	01-57	:					
183	.662	069-	202-	0.11	0.00	40-33	: :	:	:	6.19	8.6	27.3	42.16		2.0		NB	3 to 5	obea.be.
2	88L-	.750	-748	42.0	36.5	38-87	1	1		62.0	1.89	8.19	42-08	-	0.9		Calm, N	0 to 1	obc.ov.obe.
8	-768	-786	-753	0.9	36.0	37-71	:	:	:	54.7	2.0	24-2	10-25	:	0.9	:	8W, calm, N	0 to 1	bo.
82		-018	-624	42.0	85-0	88-56	:	:	:	54.8	9.90	24.50	09-04	:	0.9	:	NNE, B	1 20 3	obe.oc.
		411.	612.	9.14	0-12	12.98	:	:		0.00	0.90	0.99	22.25	:	0.0	:	W, N, Caim, DW	1 03 0	00.000.
88	-	ORI.	121.	41.0	0.15	20.12	:	:	:	0.99	0.00	0.00	67.14	:	0.4	:		3	000.00
88	000	190	828.	0.14	0.02	22.88	:	:	:	2.00	A	0.00	26.04	:	0.1	-		20	00.0
3	089	199	699.	46.0	87-0	62-04	: :	::	: :	62.6	80	1.10	11.14		÷		ESE, W	1 to 4	be.
Max.	29-896	29-900		48.0											-	-			
Min.	29-350	29-S65	: :	:	32.0					-			-10 	-					
Meen	829-628	29-686	29-684	:	:	88.12	:	:	:	48.4	23.5	24.8	46-19		1-1	-	*))		
A State of			-	-					-	-	-	-	5	-	I	-			

AUGUST, 1854.

3	er.			
	Weath		be be be be be be be be be be be concernent be be concernent be be be be be be be be be be be be be	
		Force.		
WIND.		Direction.	B. B. N B. S. R. B. B. S. R. B. B. S. R. B. S. B. S. R. B. S. B. S. R. B. S.	,
		Hold.		
		Room	*****	
	Upper	Deck. M.H.		
		Cabin.	\$	2
	ck.	Gun Room.	8.88 8.88 8.88 8.88 8.88 8.88 8.88 8.8	1
<b>58</b> .	wer De	Main Maet.	55555555555555555555555555555555555555	1
LAWOF	3	Bows	\$	1
THEFT		Mean.		
	Ice.	Min.	111111111111111111111	
		Mar.	1/11/11/11/11/11/11/11/11	
	ek.	Mean.	87.98 84.175 84.175 84.68 84.68 85.52 83.55 83.5	00.00
	pper De	Min.	888400 888500 88600 88600 8886000 8886000 8886000 8886000 8886000 8886000 8886000 8886000 8886000 8886000 8886000 8886000 8886000 8886000 8886000 88860000 88860000000000	28-0
	P	Max.	8889000 888900 888900 8880000 8880000 8880000 8880000 8880000 8880000 88800000000	0-8 <b>8</b> :
		Menn.	46-0 46-0 46-0 46-0 46-0 46-0 46-0 46-0	
LINOR		Midnt.	469 66 469 66 66 66 66 66 66 66 66 66 66 66 66 66	20-040
B		Noon.		089-68
	Date.			Xin.

# APPENDIX.

# G.

# Comparative Tables of Temperature, obtained from Arctic Voyages, 1819 to 1855.

These Tables were compiled from documents collected by me from private sources, as well as from the published Journals of Sir Edward Parry, on his voyages within Lancaster Sound.

In the course of my Narrative it will appear that I have long entertained the opinion connected with climates where the temperature descends much below the freezing-point, that there periodic depressions or low temperatures occur preceding, as well as following, the commonly termed winter, and sudden elevations also at apparently undue seasons.

Before I had more than suspected these matters to have any ground for discussion, I had relied sufficiently on my own opinion, to found my orders for sledge motions on the approaching spring travel of 1853; and as regarded other matters, as cutting out, taking down housings, etc., I had also formed distinct estimates of the dates for carrying out these special points of service. I then determined to construct these Tables, and was peculiarly struck with the coincidence of periods, etc., in confirmation of my views. I became more decisive in my orders for the period of starting, and I was able to estimate, from the mean temperatures of preceding years, when the cold weather should terminate.

I have already stated fully my views, as to particular periods of cold temperatures: thus, between the 1st and 10th November,\* 20th to 25th December, and 10th to 15th March, I expected very docided and

• In reference to the published Meteorological Tables for Lake Athabasca in 1843-4, situated in lat.  $58^{\circ}$  43' N., I notice November 12th,  $-6.8^{\circ}$ , plus signs preceding and following; December 12th,  $+6.5^{\circ}$ ; 14th,  $-22.9^{\circ}$ ; January 9th, 1844,  $-88^{\circ}$ ; March 9th,  $-17.60^{\circ}$ ; all according with those periods, or, as I imagine, dependent on the full or change of the moon nearest to those dates. In some years the period may be deranged by the date occurring seven days earlier or later.

#### APPENDIX.

severe cold, sufficient to guide me in securing my sledge crews from exposure to undue severity of climate. These matters may appear trivial, but it must occur to all intelligent minds that the onerous duties of command or of responsibility, to the thinking portion of the world, arc somewhat relieved by the studies of science.

Having constructed my Table, I was not a little surprised to find the peculiar coincidence throughout the whole range between 1819 and 1854,—thirty-five years. If the reader will run his pencil through the low temperatures at the periods which I have suggested, he perhaps will feel as much astonished as I was to find how slightly the lines deviate from that which would almost indicate precise seasons.

If these researches afforded no further value than occupation for the mind under such a species of captivity, it certainly had so far a beneficial result; but I thought that the question thus started, with the complete documents in my possession, might, at some future date, induce others to pursue this matter to a more satisfactory result. They are curious and interesting, and as such I have deemed them worthy of record. OCTOBER.

Mean. RESOLUTE, 1862. Melville Island, • 75° O N., 109° O W. 2 . . . 2000 200 2000 2 -17-0 Min. 0-08 Mar. 1 1 10-258 7,750 115,500 115,500 8,000 8,000 110,500 110,500 110,000 110,000 110,000 110,000 110,000 110,000 110,000 110,000 110,000 221,700 110,000 221,700 110,000 221,700 110,000 221,700 201,700 200,700 200,700 200,700 200,700 200,700 200, Mean. Assistance, 1868. Wellington Channel, 75° 31' N., 92° O W. -15.0 Min. Mar. 5.00 t Northumberland Bound, 76° 62' N., 97° 0' W. Mean. 1.40 1 - 5.5 - 11:5 - 6:0 - 21:0 0 Min. ŝ Max. 24-6 Mean. 9.0 Griffith Island, 4° 40 N., 85° 0' W. 1 -19.0 Min. 0-21 041 Mar. Mean. 2.6 ENTEEPEISE, 1848. Port Leopold, 3° 51' N., 30° 18' W. ¥ 1 ŧ -14.0 Min. 11 1 1 0.28 Mar. 200 1 1 10-85 Mean. ₩. HRCLA, 1824. Port Bowen, 14 N., 89° 0' V 1111 -12-0 Min. 0,000 1, 81.5 Mar. 8 1 8.46 Mean. Melville Ialand, 1 0-86-Min. 9.11 Mar. days Date. ....

NOVEMBER.

- 20-18 RESOLUTE, 1862. Melville Island, 75° O'N., 100° O'W. Mean. . -39.0 Min. 111-1-112-0 -10-0 -16-0 Max. - 7.583 - 7.583 - 7.583 - 7.583 - 7.5750 - 7.575 -18-333 Mean. Assistance, 1853. Wellington Channel, 75° 31' N., 92° O W. -37.0 Min. 4400 440 4400 4 0.1 Max. Assistance, 1852. Northumberland Sound, 76° 52' N., 97° O' W. Mean. 6.64 . -80.2 Min. 20-5 Mar. 1111111111111 644088458585 5045560559585 Mean. -13.15.2 RESOLUTE, 1850. Griffith Island, 74° 40' N., 95° C' W. 1 -31.0 Min. Mar. 13-0 Mean. - 8.5 7.5 7.5 - 16.1 - 17.2 - 17.3 - -1555 -14.5 **BNTERFRISE**, 1848. Port Leopold, 73° 61' N., 90° 18' W. -87-6 Min. 16-0 Max. 2 à 4-99 Mean. \* HECLA, 1824. Port Bowen, 1M N., 89° 0' V 1 -26.0 Min. 0-11 MAT. ê Mean. -20-60 Melville Island, -33-0 999544999 999544999 0-14-Min. 3 Max. 12000 -; -Dute. 8

? The signs not copied : probably the same as those of the 'Assistance,' 1852

.

DECEMBER

JANUARY

-86-58 Mean. RESOLUTE, 1853. Melville Island, 75° O' N., 109° O' W. - 55-0 Kin. -18.0 MAI. - 16.583 - 5.583 - 16.641 - 16 380 Assistance, 1854. Wellington Channel, 75° 31' N., 92° 0' W. Mean. -37--59-26 Min. 2400 - 241 - 2400 - 24 Max. -26-0 Assistance, 1953. Northumberland Sound, 76° 52' N., 97° 0' W. -40.37 Mean. 48.50 19 -41.0 -61-0 -42.0 -62.0 9.14--48.0 -40.0 Min. -45.0 -42--12-00 Mar. Mean. -31-0 00 00 10 RESOLUTE, 1851. Griffith Island, 74° 40' N., 95° 0' W. - 18:-2000 - 20 0.91-Min. Max. -14-6 0.6 1 Mean. -35.7 FOT Leopold. 73° 51' N., 90° 18' W. 444588844 -20-5 Min. 19-6 Max. . Mean. 16-88-A HECLA, 1825. Port Bowen, 14 N., 89° 0' V 2000 200 2000 2 -42.5 Min. -14.5 Mår. å -30.00 Mean. Meirile Island, 749 47' N., 111° 0' W. 0.14-Min. Max. 0.0 1 days Date. Jan. ....

FEBRUARY

RESOLUTE, 1853-64, Melville Island, 75° O'N., 100° O'W. Mean. 8-07--56-0 Min. Max. -22-0 750 85-500 84-741 Assistance, 1853-54, Wellington Channel, 75° 31' N., 92° 0' W. Mean. 742-04--55-76 Min. 20.5 Max. ASSISTANCE, 1852-53, Northumberland Sound 76° 52' N., 97° 0' W. Menn. 68-63-0.14-8444 8444
8444 8444 8444 8444 8444 8444 8444 8444
8444 8444 8444 8444 8444
8444 8444 8444 8444 8444
8444 8444 8444 8444 8444 8444 8444 8444 8444 8444 8444 8444 8444 8444 8444
8444 8444 8444 8444 8444
8444 8444 8444 8444 8444
8444 8444 8444 8444
8444 84444 84444
8444 84444
8444 84444
84444 84444
84444 8444 Min. Mar. 20 1 85.51 1.1.55 Mean. RESOLUTE, 1850-51, Griffith Island, 74° 40' N., 95° 0' W. -32-33.4 53.5 54.5 55.5 0.9 Min. 1 011 Max. 10 ÷ean. -85-2 EXTERPRISE, 1848-49, Port Leopold, 73° 51' N., 90° 18' W. × 0.09-Mia. -17-0 Max. -27-32 Mean. Fort Bowen, Port Bowen, 9° 14' N., 89° 0' W. A 12.0 Min. . 0.8 20 Mar. i -33-19 Mean. HECKA, 1819-20, Melville Island, 74° 47' N., 111° 0' W. 200 Min. ĩ 0-41 Mar. 1 Date. Menn Jan. 142

MARCH.

UTE, 195 fille Islau (., 109° 0	Min.	8284500000000000000000000000000000000000	-46-0
RESOLI Melv 75° 0' N	Max.	128-0-0-2838383-0-0-2838383-0-0-2838383-0-0-283838-0-0-283838-0-0-283838-0-0-283838-0-0-283838-0-0-283838-0-0-283838-0-0-28383-0-0-283838-0-283838-0-0-283838-0-28388-0-28388-0-28388-0-28388-0-28388-0-28388-0-28388-0-28388-0-28388-0-2838-0-28388-0-28388-0-28388-0-2838-0-283888-0-28388-0-28388-0-283888-0-28388-0-283888-0-283888-0-283888-0-283888-0-283888-0-283888-0-283888-0-2838888-0-283888-0-283888-0-288888-0-288888-0-288888-0-288888-0-288888-0-28888-0-288888-0-288888-0-288888-0-288888-0-288888-0-288888-0-288888-0-2888888-0-2888888-0-288888-0-288888-0-288888-000-288888888	-14.0
63-54, unbel, o' W.	Mean.	22,002 22,002 22,002 22,002 22,002 22,002 23,000 23,000 23,000 23,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000 22,000 23,000 24,000 23,000 24,0000 24,0000 24,0000 24,0000 24,0000 24,0000 24,0000 24,0000 24,0000 24,0000 24,0000 24,0000 24,0000 24,0000 24,0000 24,0000 24,0000 24,00000 24,0000000000	30-471
LTCE, 18 gton Chu N., 92°	Min.	**************************************	49.62
Assist. Wellin 75° 31'	Max.	1800 1800 1800 1800 1800 1800 1800 1800	12.5
852-53, 1 Sound, 0' W.	Mean.	88888888888888888888888888888888888888	12.21-
ANCE, It aberland N., 97°	Min.	222 222 222 222 222 222 222 222	9.99-
Assist Northun 76° 52'	Max.	8850 1800 1800	24.0
0-61, 1d, y'W.	Mean.	38-5 38-5 38-5 38-5 38-5 38-5 38-5 19-5 19-5 28-5 28-5 28-5 28-5 28-5 28-5 28-5 28	-95.7
CUTE, 185 fith Islar N., 95° (	M.n.	840 840 840 840 840 840 840 840 840 840	-44-5
RESOI Gri 74° 40	Max.	2000 200 2000 2	0.8 -
48-49, d, 8' W.	Mean.	280.2 280.2 280.2 10.4 11.0 10.4 10.	8.66-
PRISE, 18 rt Leopol N., 90° 1	Min.	8240 82400 82400 82400 82400 82400 82400 82400 82400 82400 820	0.19-
ENTER Pol	MAX.	245 245 245 245 245 245 245 245 25 25 25 25 25 25 25 25 25 25 25 25 25	8-0
25, 7 W.	Mean.	a a a a a a a a a a a a a a a a a a a	-28.37
tt, 1824- rt Bowen N., 89° 0	Min.	8.000 8.0000 8.00000 8.0000 8.0000000 8.00000 8.00000 8.00000000 8.0000000000	-47.5
20, HEC M, 73° 14'	MA.		0.6 -
	Mean.	22200 2200 200 2000 200 200 2000000	-18.10
tt, 1819- rille Islar N., 111°	Min.		0.05-
Hac Meh	Mar.	2800 2800 2800 2800 2800 2800 2800 2800	0-9
Å		です。 1999年の1997年01997年の1997年01997年01997年01997年01997年01997年01997年01997年01997年01997年01997年01997	Mean

APKIL.

1.9 BAIL. RESOLUTE, 1853. Melville Island, 75° O' N., 109° O' W 4 Ň . 36.0 Min. , ï Mar. 0.63 . 222333 22333 23 181.9 Mean. AssistANCE, 1854. Wellington Channel, 75° 31' N., 92° O' W. 1 02 Mia. -37-0 Max. ŝ 1 1 . 1853. I Sound, 0' W. 8-127 Mean. 1 Assistance, 18 Northunberland S 76° 52' N., 97° 0' 2000 - 100 -0-12-Min. 860 2670 2670 2670 2670 2670 2670 2670 2700 27700 2770 2770 2770 2770 2770 2770 2770 2770 2770 2770 17.5 Max. 7-81 Mean. Brsourre, 1851. Griffith Island, 4° 40' N., 95° 0' W. 1 0 Min. 30 1 0.85 Max. 140  $\begin{array}{c} -2.8\\$ Mean. 1.01-EXTERTRISE, 1849. Port Leopold, 73° 51' N., 90° 18' W. × 7-62 Min. ï 0.000 0.1 Max. 30 6.50 Mean. A ı HECLA, 1825. Port Bowen, 14 N., 89° 0' V -37-0 Min. 20.0 Max. ê 1 18-8 ean. × HECLA, 1820. Melville Island, P.47. N., 111° 0' W Ř 1 -32-0 Min. 15074 82.0 Max. 1 . 1 Mean Date.

· T	V	TAT
4		

	120 0, J	·M .0	N ' 85°	18 .92	·M .O c	26 "N /	9 .94	· M. O	. N. ' 820	**************************************		الم الم الم الم الم الم الم الم الم الم		14 .44 N	Date.					
Min. Mea	Max.	.авэМ	.niM	.zsM	Mean.	.aiN	Mar.	Mean.	.a:M	.1sM	Меяп.	Min.	.xeM	Mean.	.aiM	. <b>Л</b> .	Meen.	.aiM	.19K	
		8(F-6 9[6-95 9[2,9:25 9(2,9:25 902.91 8902.91 165-11 162-11 162-11 162-11 162-12 162-2 916-2 528.81 1916-2 528.81 916-2 528.81 916-2 916-9 910-9 910-9 916-2	0-61 16-0 15-0 15-0 16-0 10-0	2320 2320 2320 2320 2320 2320 2320 2320	000-01 000-00 000-00	0.0 138.0 14.0 14.0 15.0	0.91 0.92 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96	00-96 00-96 00-96 00-96 00-91 00-96 00-91 00-91 00-91 00-91 00-01 00-01 00-01 00-01 00-01 00-01 00-01 00-0 0 00-0 0 0-0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0 0-0 0 0 0-0 0 0-0 0 0-0 0 0 0 0-0 0 0 0-0 0 0 0 0 0-0 0 0 0 0 0-0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.9	0.25 0.25 9.45 9.45 0.95 1.5 0.95 0.95 1.5 0.05 1.5 0.05 1.5 0.05 1.5 0.05 1.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0		0.81 0.81 9.80 9.81 0.92 9.81 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.9	0.050 0.0500 0.0500 0.0500 0.0500 0.0500000000	86.9 86.9 86.9 86.9 86.0 86.0 86.0 86.0 86.0 86.0 86.0 86.0	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0.46 9.46 9.46 9.46 9.46 9.46 9.46 9.46 9	540 540 540 540 540 540 540 540		0.988 0.588 0.588 0.588 0.588 0.588 0.588 0.599 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.991 0.991 0.991 0.988 0.998 0.991 0.981 0.988 0.991 0.981 0.981 0.981 0.991 0.981 0.991 0.981 0.9910	12 00 12 22 24 25

RESOLUTE, Melville Is 75° O' N., 109	Max. Min.		
1854. Annel, o' W.	Mean.	88 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	27-940
STANCE, Igton Ch 'N., 92°	Min.	20000000000000000000000000000000000000	15.0
Assn Wellin 75° 31	Mar.		44.0
1853. 1 Sound, 0' W.	Mean.	\$64888888557785888888555898888888888888888	19.67
stancs, mberland	Min.	88888888888888888888888888888888888888	20-0
Assr Northu 78° 52	Max.	888.8888.99999999999999999999999999999	0.27
851. nd, 0' W.	Mean.	88888888888888888888888888888888888888	12.29
DLUTE, 1 fith Isla N., 95°	Min.	88888888888888888888888888888888888888	10-01
RES Gri 74° 40'	Max.	66666666666666666666666666666666666666	0.70
849. d, w.	Mean.		:
RFRIER, 1 rt Leopol N., 90° 1	Min.		:
EATE Po 73° 51'	Max.		:
W.	Mean.	E \$243888888888888888888888888888888888888	4
SCLA, 182 rt Bower N., 89° (	Min.	88888888888888888888888888888888888888	ł
H1 F6	Max.		
yw.	Mean.	88. 54. 54. 54. 54. 55. 55. 55. 55	
N., 111°	Min.	8	
Ha Mei 74° 47'	Max.	22222222222222222222222222222222222222	
Date.	. ]	Kan 200 200 200 200 200 200 200 200 200 20	

JUNE.

1853. Md, O' W.	Mean.	
ville Isl	Min.	•
RES Mel-	Max.	· ·
1854. bannel, o' W.	Mean.	22222222222222222222222222222222222222
STANCE, gton Cl	Min.	00000000000000000000000000000000000000
Mellin 75° 31	Msx.	888489484455744 99999999999999999999999999999999
1853. d Sound, o W.	Mean.	8 8 8 8 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
N., 97	Min.	866888 : : : : : : : : : : : : : : : : :
Assu Northui 76° 52	Max.	444488 ::::::::::::::::::::::::::::::::
351. nci, 0' W.	Mean.	8.5.8.8.2.9.5.8.5.8.4.8 8.5.8.2.9.5.9.5.8.5.8.4.8
fith Isla N. 95°	Min.	8758888888888888 6999999999999999999999999
RESC Gri 74° 40	Mar.	98888889994498889994 999999999999999999
1849. 1d, 18' W.	Mean.	11111111111111
ERFRISE, ort Leopo	Min.	11111111111111
ENTI Po 73° 51	Max.	11111111111111
25. Ø W.	Mean.	88888888888888888888888888888888888888
scLA, 18 ort Bowe	Min.	888 0000000000000000000000000000000000
H H 14 14	Max.	, 4448888444444444 66600050500055
o. o' W.	Mean.	<i>44446888446444444444444444444444444444</i>
SCLA, 182 Iville Ials N., 111°	Min.	1282 1292 129 129
H Men 74 47	Mat.	4840 4840 4850 4850 4850 7850 4850 4850 4850 4850 4850 4850 4850 4
Date.	54	919 8-92 8-98 8-99 8-99 8-99 8-99 8-99 8-9

JULY.

# ACCOUNT OF THE FISH.

## BY

# SIR JOHN RICHARDSON, C.B., F.R.S.,

HON. F.R.S.ED., FTC. ETC. ETC.

THE small collection of fish brought from Wellington Sound by Sir Edward Belcher is interesting from the locality in which it was formed,—high in respect of latitude, at a considerable distance from the Greenland shores, and still further removed from Behring's Straits. The families to which the specimens belong are among the characteristic forms of the northern seas, and their members are remarkable for their strong generic physiognomy, and consequently for the difficulty that naturalists experience in framing concise and distinctive phrases for the discrimination of the species.

The first group that we have to notice, the *Cottidæ*, sufficiently illustrate this remark. So strong is the family aspect of these small and familiar fish, that in the early progress of ichthyology the *Cottus gobio* and *C. scorpius* were supposed to be inhabitants of all the waters of the northern hemisphere. More minute observation has shown differences in specimens from distant localities; and we are now perhaps in danger of running into the opposite extreme, of unduly restricting the geographical ranges while we augment the numbers of the species. Fabricius, who until lately has been almost the sole authority for Greenland fish, describes three *Cotti* besides the *Cottus cataphractus*, which is the type of the genus Aspidophorus of Lacépède and Cuvier. Another Greenland species (Cottus porosus) is added in the 'Histoire des Poissons' (t. viii.) : and Professor Reinhardt, of Covenhagen, notices two others, Cottus uncinatus and Triglops Pingelii. Krover (Nat. Tidskr. N. Räkk.) subdivided the northern Cotti, making the Cottus tricuspis of Reinhardt, identified with C. gobio of Fabricius, the type of his genus Phobetor, which wants vomerine teeth, while his genus Icelus has palatine teeth, in addition to the dentition of the vomer and jaws. To it belong Cottus uncinatus and C. bicornis of Reinhardt. and a Spitzbergen species, Icelus hamatus (Kroyer). Mr. Girard, in a Monograph published in the 'Smithsonian Contributions to Knowledge. December, 1850,' has carried the dismemberment of Artedi's genus Cottus still further. To the marine species he has given the name of Acanthocottus, reserving the original generic appellation to the Cottus gobio and its numerous allics, inhabitants of fresh waters. The American species of Cottus, as restricted by Mr. Girard, are,-1. C. cognatus (Richardson), an inhabitant of Great Bear Lake, under the Arctic circle; 2. C. Richardsonii (Agassiz), taken on the northern coasts of Lake Superior; 3. C. Franklinii (Agassiz), frequenting the southern shores of the same great lake; 4. C. Alvordii (Girard), Fort Gratiot, Lake Huron; 5. C. formosus (Girard), Lake Ontario; 6. C. gracilis (Heckel, or Uranidea guiescens of Dekay), New England and New York; 7. C. gobioides (Girard), Lake Champlain; 8. C. boleoides (Girard), Vermont; 9. C. Bairdii (Girard), Mahoning River, Ohio; 10. C. Wilsoni (Girard), eastern tributaries of the Ohio : 11. C. viscosus (Haldeman), Eastern Pennsylvania and Maryland; 12. C. meridionalis (Girard), James River, Virginia.

I avail myself of this opportunity to remove a nominal species from the list of American fish. The *Cottus hexacornis* (Richardson) was found at the mouth of the Coppermine River in June, 1821, on Sir John Franklin's First Expedition; and a description of the recent fish was entered in my note-book at the time, but the specimens were lost during the calamitous





#### COTTIDÆ.

retreat of the Expedition from the coast. In writing out the Natural History Report, after my return to England, I misconstrued my brief record of the nasal spines, and by considering them to be similar, to the cranial tubercles, made a fictitious discrepancy with the characters of the common *Cottus quadricornis* of the northern seas. On revisiting the same coasts in 1849 I obtained more specimens and discovered my error; and, on a comparison of them with examples of the *C. quadricornis* in the British Museum, I found that, except in the greater size of the *hexacornis* and the more fully developed cranial tubercles, the species was the same. In the fish of Coronation Gulf the tubercles are not larger than those represented in the portrait of an Iceland specimen published in Gaimard's Atlas.

# COTTUS GLACIALIS (Richardson).

Radii: Br. 6; D. 10/--17; C. 15; A. 14; V. 1/3; P. 17.

PLATE XXIV., figs. 1, 2, 3, nat. size; fig. 4, magnified.

# Description.

The general aspect of this species approaches that of Cottus gobio of England, and is dissimilar to that of C. scorpio. Head broad and rather depressed, with an obtuse snout: its length is contained thrice and nearly a half in the total length of the fish, while its breadth at the occiput rather exceeds its height there. In profile, the back descends from the hind head without any gibbous rising at the first dorsal, such as that which characterizes C. porosus (C. et V. viii. p. 498). Body tapering, and tail at the setting on of the caudal slender. Armature :- Nasal spines moderately large, pungent. Superorbital ridges elevated and even, including a smooth furrow between them, and of their distal corners forming the anterior pair of small cranial tubercles. Immediately behind these tubercles rise another pair of ridges, scarcely so prominent, bounding a less hollow space and terminating in the posterior pair of still smaller tubercles. These four tubercles have little

prominence, being much enveloped in the skin, and ale neither rough nor spinous: their plan is represented in Plate II. fig. 2.

Preoperculum emitting the principal spine from the point where it is supported by the smooth rib of the second suborbitar. This spine is subulate and acute, rises above the axis of the fish at an angle of 45°, and does not reach to the edge of the gill-cover : from its base a shorter spine inclines slightly below the axis, and the proximal end of the preoperculum tapers so as to form a third small and bluntish spine, which stands just behind the angle of the lower jaw and has an inclination forwards and downwards; it is enveloped in loose integument. There are no other prominent points on the preoperculum. The bony operculum consists of a horizontal narrow piece or rib that tapers into a spine, whose point does not attain the membranous edge of the gill-cover, and of a slender descending limb, which joins a corresponding process of the suboperculum splintwise. Between the disc of the suboperculum and the main limb of the operculum there is a triangular fleshy space, and just behind the inferior preopercular spine the suboperculum emits a small pungent spine, directed downwards.\* A moderate-sized suprascapular spine lies parallel to the opercular one and immediately over it, completing the armature of the head.

The fins are rather large; their position may be ascertained by referring to fig. 1, wherein they are represented fully extended. All the rays of the anal and second dorsal are jointed. *Anus* placed under the third ray of the second dorsal.

Lateral line constructed, as in C. porosus, of a series of short cutaneous tubes, elevated above the skin, open at the

M. Valenciennes describes a spine as occupying nearly this position in *C. porosus*, but as belonging to the operculum. "L'opercule donne, comme à l'ordinaire, une épine de son angle supérieur; elle est courte et ne dépasse pas le bord membraneux; mais il en donne une autre très-pointue, de son angle inférieur près de sous-opercule."—C. ct V. viii. p. 499.

#### COTTIDÆ.

end, and having above and below them smaller pores, seemingly connected with the main line by tubular branchlets. The inferior row of marks in fig. 2 represent short cutaneous folds, corresponding to the points of the ribs. There are no scales nor bony plates on any parts of the skin.

The body is clouded, as represented in the figure, with bars on the fins; and there are many small white spots, just perceptible to the naked eye, scattered over the sides. A lens shows the dark places to be marked with crowded black dots. No teeth on the palate bones.

#### Dimensions.

Total length, including caudal , .			•			4.45 inches
Length of head to tip of operculum	•		•			1.30
Length from premaxillary (retracted) t	to	anus				1.80
Breadth of head at gill openings						0.20
Height of head there					•	0.65

This fish was taken in Northumberland Sound, in lat.  $76^{\circ}$  53' N., in nine fathoms water, on a gravelly bottom, the temperature of the air being at the time of capture 28° Fahr.

I have endeavoured to obtain specimens of the Cottus polaris of Sabine, discovered in abundance on the shores of North Georgia in pools of water left by the ebbing tide; but the search that was instituted, at my request, in the Museum of the Zoological Society and in the British Museum was without success. It appears however to be sufficiently characterized as distinct from C. glacialis by the small number of rays in the dorsals (6/-13), and the five rays in the ventrals, though in other respects there is no marked discrepancy between Colonel Sabine's description and the above of glacialis.

In many particulars C. porosus of M. Valenciennes, brought from Davis's Straits, answers to our fish, and but for the spine in the second dorsal, the inferior opercular spine, and especially the gibbous back particularized in his description, I should have considered them to be one species. I have seen neither figure nor specimen of C. porosus.

## PHOBETOR TRICUSPIS (Kroyer).

- Genus PHOBETOB, Kroyer, Naturhistorisk Tidskrift udgivet Henrik Kroyer, Kjöbenhavn, 1844–45. (Caret dentibus vomerinis, cæteroquin Cotti simile.)
- Cottus gobio, Fabricius, Fauna Grœnlandica, No. 115, p. 159, an. 1780.
- Cottus tricuspis, Reinhardt, Mus. Reg., et Graah, Reise Ostk. Grönl., 1832, p. 194; Reinhardt, Det Kongelige Danske Videnskabernes Selskabs, Kjöbenhavn, p. 52, An. 1832, et Ichthyologiske Bidrag til den Grönlandske Fauna af J. Reinhardt, Kjöbenhavn, An. 1837, No. 3, p. 35.
- Phobetor tricuspis, Kroyer, ut supra cit.; Reports on Ichthyol. for 1843-44, Ray Soc., pub. 1847, p. 555.
- Cottus Fabricii, Girard, Monograph in Smithsonian Contrib., Dec. 1851, No. 18, p. 59.
- Tricuspis, Gaimard, Voy. en Scandinavie, Ichth par Kroyer, pl. iv. (No letter-press.)

Radii : Br. 6-6; D. 11/-15; C. 118; A. 17; V. 1/3; P. 19.\*

PLATE XXIII., fig. 1-4, nat. size.

The Danish naturalists, who have the best means of knowing the fish described by Fabricius, have identified his gobio with the tricuspis of Professor Reinhardt. I have not however been able to obtain a detailed account of the species by any late writer, the above citations being in general brief remarks on the description in the 'Fauna Grœnlandica,' said by them to be imperfect. This description generally corresponds with our fish, but there are some parts of it which would have led me to consider the Greenland one a different species, were it not for Kroyer's figure above quoted, which, though evidently a bad drawing, is yet so like our Plate I. in essential.characters, that it would be unsafe to name them as distinct species. The doubts raised by the consideration of Fabricius's account arise first from his applying the word ha-

In the Fauna Graenland. the numbers are: B. 6; D. 10/-17; C.
12; A. 18; V. 3; P. 17; and in Kroyer's figure, D. 11/-16; C. 11; A. 18.



#### COTTIDÆ.

matus to the preopercular spine, which is not hooked, though it may be said to be barbed, like an Eskimo fishing-hook or fish-spear; secondly, as to the extent to which the scabrous osseous scales are distributed. According to him they form the lateral line, or run along it, and in some individuals exist also under the pectorals and behind the eves. In our specimen these scales cover the top of the head and nape, and spread less densely to the gill-cover : but the lateral line is beset by none. except just at its commencement. It is most likely a very variable character, depending partly or wholly on sex and season. Thirdly, he describes the first dorsal and pectorals as black, with pale lines; whereas in our fish the fine lines which cross the rays of these fins are black, the membrane being pale. The figure in the 'Voyage en Scandinavie' shows no scabrous scales at all, but the preopercular spine corresponds with our Plate, as does also the distribution of the dark parts of the body, the fins however being darker. As Kroyer could compare Gaimard's Iceland specimens with the Greenland ones in the Royal Museum of Copenhagen, we must consider their identity as established with the one we have figured, and which was captured in Hudson's Bay. The species is therefore spread widely through the northern seas, and is very plentiful at Spitzbergen, as well as on the Greenland coasts.

Its generic name of *Phobetor* ( $\phi o \beta \eta \tau \rho o \nu$ , quod metum incutit) has reference to the dread that fishermen entertain of wounds from its spines. It wants the vomerine teeth of *Cottus*, as well as the palatine ones of *Icelus*, having only the premaxillary and mandibular ones, and it has no opercular spine. The size likewise of its pectorals and of its fins generally is greater than is usual among the *Cotti*.

# Description.

General aspect, much like that of Cottus scorpius or C. bubalis, with lively colours, larger fins, rather more protractile jaws, and a somewhat smaller mouth. Length of the head less than the breadth at the preopercula, and equalling a third

353

of the total length of the fish, caudal included. The greatest height of the head is fully one-third less than its breadth; that part of the fish may be described therefore as depressed, and when viewed from above, the outline of the entire head is broadly ovate, while the body tapers regularly to the slender tail (fig. 2).

In profile, though the premaxillaries appear, from their slenderness and greater protrusion, more acute than is usual in the *Cotti*, the face from the eyes forward is obtuse: the curve of the dorsal line however is moderate and regular, its summit being under the first dorsal, and the descent to the orbits gentle.

Armature of the head .-- Nasal spines acute, conspicuous. The strongest and most peculiar spine arises from the angle of the preoperculum, where that bone is supported by the unarmed, smooth second suborbitar; it tapers and is subulate, and acute at the tip, which does not quite reach the margin of the gill membrane. Two small, acute snags, rise vertically from its upper side, the distal one being the largest of the two. Three short but conspicuous spinous points, standing at equal distances, belong to the lower limb of the preoperculum, two of them, directed downwards, being acute, and the third, which is concave, and forms the proximal apex of the bone, tending forwards; two conspicuous pores perforate the upper limb of the preoperculum, as represented in figure 2. The operculum differs from that of the Cotti in wanting both rib and spine. its apex being a thin obtuse plate of bone, covered by and edged in the recent fish with membrane. The suboperculum has however, as in many Cotte, a small spine pointing downwards from its lower angle, and the distal end of the interoperculum 'emits' a still smaller spine, directed towards the tail, across the subopercular one. I have not noticed this interopercular spine in any of the Cotti. The suprascapular is unarmed, though the blunt angle of the bone may be detected on searching, but the coracoid emits a minute spine from its distal edge above the pectoral fin. No orbital ridges exist, their usual site in the Cotti being filled in this fish by the

354

COTTIDÆ.

membrane of the eyes, but the space between the orbits is as usual concave. The postorbital tubercle on each side is small but conspicuous, and the occipital pair also exist, though they are not so isolated from the surrounding parts. All the four are finely furrowed, and through a lens appear cancellated, but are scarcely rough to the touch. The ridges connecting these tubercles are low, and enclose a slightly concave space, which, with the ridges themselves, is thickly covered by scabrous bony plates. Similar plates of different sizes exist on the gill-covers, temples, nape, and fore-part of the back, as represented in figure 2: there is also a row of smaller ones between the second dorsal and lateral line. The belly is soft and smooth throughout.

The *lateral line* is composed of a series of short, soft, raised tubes, and runs along the upper third of the back until it comes opposite to the last rays of the second dorsal and anal, when it makes a short deflection, and is continued through the middle of the remainder of the tail.

Fins in general large. The pectoral has much spread, an obliquely oval form when expanded, and reaches over the anterior third of the anal. From the seventh downwards the rays shorten rapidly, the lowest one having only about a sixth of the length of the longest ones. The *first dorsal*, commencing over the middle of the operculum, has its last ray over the anus: a short space divides it from the *second dorsal*, which is slightly higher, and has no spinous ray. The *anal* is also destitute of a spine, has shorter rays than the second dorsal, and goes a little nearer to the caudal. The spread of the caudal, as in the *Cotti*, is not great, though its rays are tolerably long. Three longish unbranched but jointed rays, and a spine of half their length, constitute the ventrals, whose tips go a little past the anus.

The lively colours of the recent fish have perished in the specimen after two years' maceration in spirits. The under surfaces of the head, body, and tail, are milk-white. We are indebted for the specimen to Dr. Rae, who caught it in the northern part of Hudson's Bay.

#### COTTIDÆ.

## Dimensions.

Total length of fish	, ca	aud	al i	incl	ude	d	•		•				5.60	inches.
Length from symph of gill-opening	ysi	s of	p	rem	axi	llar	ies	to	upp	er .	ang	le }	1.20	
Length from symph	ysi	s to	tij	oof	gr	cat	pre	ope	ercu	lar	spi	ne	1.20	
Length from symph	ysi	s to	) u	nus			٠.						2.51	
Length of pectorals						÷							1.20	
Length of ventrals					•						•		1.10	
Length of caudal				•		•				÷			0.84	

## GASTEROSTEUS INSCULPTUS.

(An varietas, an species propria?)

Radii: Br. 3-3; D. 1/-1/-1/9; A. 1/8; C. 126; P. 11; V. 1/1-1/1.

PLATE XXV., fig. 1, nat. size; fig. 2 and 3, magnified.

The three-spined Sticklebacks are generally spread over the northern hemisphere, being inhabitants of both the fresh and salt waters. On a cursory inspection it might appear to be a single species that is thus widely distributed, so well is the general aspect preserved in even distant localities; but Cuvier has named several forms as distinct, separating first one in which the posterior side scales are deficient, and secondly another with shorter spines. He has also described as peculiar two American species, which differ but slightly from their European representatives, and a minute comparison of specimens taken in places much less remote from each other, might discover differences sufficient greatly to multiply these species or varieties. Sir Edward Belcher has brought home a single specimen of that form, which possesses the complete number of side-plates and dorsal spines of the usual length, but which has a decidedly deeper body than its English representative : he obtained it in deep water in Northumberland Sound, at a distance from any fresh-water streams.

#### Description.

Having through the kindness of Dr. Baikie procured seven or eight three-spined *Gasterostei* from the Orkneys, some of them even larger than the Northumberland Sound one, I selected



for comparison one of exactly the same length with the latter. and placing them side by side, the greater depth of the Arctic fish was very apparent, but the only other differences I could detect consisted in the sculpturing of the opercular pieces and bony plates. In the Orkney fish the opercular bones are raved by fine furrows or rows of dots, depressed below a smooth, silvery surface, and their edges are nearly smooth. In the Northumberland Sound one, the rays are more strongly marked, and the preoperculum especially is ribbed with rough points, which, under a lens, give a finely denticulated edge to that bone, and also to the cheek plate. The nacry plate at the base of the pectoral is the same in all. On the pelvic bones and spines the sculpturing is much coarser in the Arctic fish, but the free dorsal spines and fins differ little. One of the Orkney specimens has the tip of the second dorsal spine more toothed, as well as dilated by two thin edges ; but the other specimens from the same locality have merely subulate tips to that spine. The Orkney and Hampshire specimens have one pectoral ray fewer. Some minute differences may be detected in the forms of the dorsal plates, which it would be difficult to make clear by a verbal description, for which I have therefore substituted a figure enlarged to twice the linear dimensions of the specimen.

Hampshire specimens appear smoother than the Orkney one, but I have not been able to obtain any of equal size for comparison.

# Dimensions.

Total length from tip of lower jaw to tip of caudal			3.40 inches.
From tip of mandible to gill-opening	•		1.30
From tip of mandible to anus . :		1.0	1.91
Height of body at the ventrals	•		0.74

## GUNNELLUS FASCIATUS (Bloch, sub Blennio).

Blennius fasciatus, Bloch, Schn., p. 165, et pl. 37, fig. 1.
Blennius gunnellus, Fabricius, Fauna Greenl., p. 149.
Gunnellus fasciatus, C. et V. ii. p. 441; Reinhardt, Bidrag til den Grönlandske Fauna, p. 40.

Gunnellus Groenlandicus, Reinhardt, C. et V. ii. p. 442, pl. 340.

Radii : Br. 5-5; D. 88; C. 19; V. 44 vel 45; P. 13; V. 1.

PLATE XXVII., nat. size.

Bloch stated that his *fasciatus* came from Tranquebar, and Professor Reinhardt, finding the *Blennius gunnellus* of Fabricius to differ in some respects from Bloch's description and figure of *fasciatus*, gave it the name of *Grænlandicus*, at the same time expressing doubts of the correctness of the habitat assigned by Bloch to his fish. For the same reasons the two specific names were retained in the 'Histoire des Poissons,' but Professor Reinhardt having in 1831 discovered Bloch's specimen in the Museum at Berlin, found it to be of the same species as that described by Fabricius, and therefore restored Bloch's name of *fasciatus*, which has the priority.

The Northumberland Sound specimen, figured of the natural size in Plate V., agrees in species with the *Graenlandicus* of Cuvier, as may be seen by comparing our plate with that in the 'Histoire des Poissons.' It is fully described in the text of that work, and we need not therefore enter into details here. In the character of its markings it has a resemblance to the *Gunnellus vulgaris*, so abundant on the Lincolnshire coast; both have cross bands, though the ground tints differ. There is also a difference in the dorsal spots, which in *vulgaris* are smaller, neater, round and black, and more exactly defined by a pale border. In this species also the two minute ventrals are distinct from one another, while in *fasciatus* a single minute papilla represents both\* (fig. 2).

## Dimensions.

Total length	•	•				•	8.16 inches.
Length to gill-opening	•		1.				0.78
Length to anus		•			•		4.10
Greatest height just before anus		•		1.5			0.90

\* On slitting up the skin round the ventral of *fasciatus* only a single, minute, elastic, round, subulate process was found, in which the rays, if any, could not be made out.

358





# LUMPENUS NUBILUS (Richardson).

# Radii : Br. 6-6; D. 63/; A. 1/42; C. 17; P. 16; V. 1/4-1/4. PLATE XXVIII., nat. size.

Professor Reinhardt, in his 'Ichthyologiske Bidrag til den Grönlandske Fauna,' briefly notices several Greenland Gunnelli, under the generic appellation of Clinus, following in this a former edition of the 'Règne Animal.' The typical species of the group is the Blennius lumpenus of Fabricius, which is the Gunnellus Fabricii of the 'Histoire des Poissons,' the authors of that work rejecting the epithet lumpenus on account of its having originated in an erroneous compilation. The same species is described and figured in Henrik Kroyer's 'Scandinaviens Fiske' (pl. xiv.) under the generic name of Lumpenus, which we have adopted, notwithstanding the objection made to it, since the group differs so much from the ribbon-formed Gunnelli as to need a distinctive appellation.

Not having access to examples of the Lumpeni enumerated by Professor Reinhardt, I am unable to compare Sir Edward Belcher's fish with them,—but a careful consideration of the Professor's notices lead me to the conclusion that it is a species not yet described. Though it greatly resembles Lumpenus Fabricii in its markings, and does not much differ from it in the number of its rays, it cannot be said to be round (teres), as Fabricius terms his fish, while, on the other hand, it is far from being compressed and comparatively high in the body, like Gunnellus vulgaris or G. fasciatus, and Kroyer's figure represents a more coarsely scaled fish than nubilus : moreover it wants the palatine teeth of Fabricius's lumpenus. Indeed L. gracilis is the only member of the group with which it agrees in having teeth neither on the vomer nor palatines;\*

\* Professor Reinhardt arranges the species according to their dentition, thus :--

a. Teeth on the palatines, Clinus lumpenus, C. medius.

b. Teeth on the palatines and vomer, C. aculeatus.

c. No teeth in either of these positions, C. gracilis.

but these two fish differ so much in the number of their finrays that they cannot well be brought into the same species.

# Description.

Form.—Body compressed, but not nearly so much so as that of G. vulgaris or fascialus,—the depth, excluding the dorsal, being so much less, that where it is greatest it does not exceed one-eleventh of the total length, caudal included, while in fasciatus the height is one-ninth of the length. The body is thicker than the head, and both back and belly are rounded anterior to the vent, the compression increasing rapidly in the tail.

Scales very small, round, so deeply imbedded as not to be readily seen, but numerous on the body, and more crowded on the tail. Lateral line straight, running at midheight, and consisting of a fine groove. It does not readily catch the eye, and has been omitted by the artist in the figure. No scales on the fins.

Teeth.—A series of acicular teeth arm the orifice of the mouth, standing rather widely on both jaws. On the premaxillaries there is, in addition, an interior band of very minute villiform ones, and near the symphysis of the mandible there is a cluster two or three deep. No forked tongue is perceptible, nor is there any projection from the hyoid bone meriting the name of tongue. No teeth exist on the vomer or palate borges. There is a small velum behind the premaxillaries. A small point of the gill-plate projects over the gill opening.

The gill opening is carried forward underneath (fig. 2), the gill membranes being inserted far forward between the limbs of the mandible into a very narrow isthmus, instead of crossing the throat immediately before the ventrals, and having a free edge, as in G. vulgaris and fasciatus. From these nubilus differs also in having six branchiostegous rays on each side, cylindrical, curved, and graduated.

Fins.—The fin membranes generally are more delicate than those of G. vulgaris and its near allies, not being enveloped in thick, but in translucent integument, so that the rays are

360

conspicuous: the dorsal and anal are received into grooves. and when lowered into them are invisible. Owing to the elasticity of the membrane these fins are not easily kept extended unless carefully pinned out, and on that account the rays are not readily reckoned. From that cause, the artist has represented too few rays in the dorsal of fig. 1. a mistake having been made in the enumeration. All the dorsal rays are spinous, the anterior ones being graduated,-and the first anal ray is simple, and either spinous or with obsolete joints. Both fins terminate near the caudal, but are scarcely joined to its base. The caudal has a slight tendency to the rhomboidal form, with the upper and under corners rounded off. Pectoral large, but falling more than its own length short of the arms. Ventrals small, slender, and pointed, composed of a short spine and two jointed rays, visible enough, with two others, very slender and shorter, looking like a single ray fissured to the base. All lie side by side, enveloped in a thickish white skin, without any intervening extensible membranc.

Markings.--Head and body mottled with a row of about twelve larger, irregular marks along the middle of the side, touching or passing over the lateral line : a series of oblique, faint, and ill-defined bars on the generally pale ground of the dorsal; better defined cross bars on the pectoral; anal pale; caudal obscurely barred. There are no traces of lines parallel to the lateral line, such as Professor Reinhardt mentions in his notice of *Clinus unimaculatus*. The want of eyed spots in the dorsal, and the lateral line continued to the caudal, distinguishes *nubilus* at first sight from *G. punctatus*: how far it differs from M. Pylaie's Newfoundland *Gunnellus*, mentioned in the 'Histoire des Poissons,' I am unable to say from the briefness of the notice.

# Dimensions.

Total length,	, ca	ud	al in	nch	ide	d	•								5.60 in	ches.
From tip of	max	rill	ary	syı	npl	hysis	s to	o p	oint	of	gil	1-fl:	ap		0.85	
From tip of	man	cill	ary	syl	npl	hysis	to	) 8	nus		•		3 <b>.</b> 3		2.15	
Height of he	ad	at	the	gil	l-pl	ates	8			•				2	0.45	
Width there	•	ł	•	•		•	•	•			÷	•			0.35	
VOL. II.						a' N								2	В	

Height at the m	idd	le c	of	the	bel	ly	•	•	•			0.21	inches.
Thickness .									•	•	•	0.29	
Length of cauda	1											0.20	
Length of pecto	rals						•	•				0.66	
Length of ventra	als	•		3	8	•		٠,	•	•	·	0.32	

# LYCODES MUCOSUS (Richardson).

Genus Lycodes, Reinhardt; Th. Aukwons (lupo similis).

Lycodes mucosus : PLATE XXVI., fig. 1-5, nat. size.

Radii : Br. 6-6; D. 84; C. 10; A. 64; V. 3; P. 18.

Professor Reinhardt became acquainted with this generic form in the year 1831, on examining a specimen taken from the stomach of a shark at Nennortalik, on the coast of West Greenland, in 60° of north latitude. Subsequently he obtained other examples from Fiskerness, lying under the sixty-third parallel; and in his 'Ichthyologiske Bidrag og Tillæg til den Grönlandske Fauna,' published at Copenhagen in 1837, he gave a detailed account of three species, viz. Lycodes Vahlii, L. reticulatus, and L. seminudus, with figures of the first two.\* These three species are more or less scaly, but Lycodes mucosus has no scales whatever : in this respect it agrees with the Blennius polaris obtained on the coast of North Georgia near the seventy-fifth parallel of latitude, during Sir Edward Parry's First Expedition. Captain (now Colonel) Salune does not enter into sufficient details to enable us to characterize polaris, but says enough to render it probable that it enters into the genus Lycodes, and if so it agrees with mucosus in being destitute of scales. + Through the kindness

\* Kroyer in his 'Scandinaviens Fiske' figures a Lycodes perspicilum which has a white spot close behind each eye and nine dark bands crossing the body: there are two varieties, which differ in the forms of the bands.

† The following abstract of Colonel Sabine's note contains the most essential particulars that he notices :- Blennius polaris, imberbis, pinna anali caudali dorsalique unitis. Length of the pectoral fin exceeding twice its breadth, having fifteen rays; ventral fins of two spines



of Dr. Gray search has been made both in the British Museum and in the collections of the Zoological Society for the specimens of this fish, but unfortunately in vain. The notices of *Blennius polaris* given in the subjoined foot-note show that it can scarcely be the same species with our *mucosus*, the markings of the two being very distinct.

## Description

## of a female specimen of L. mucosus.

In general appearance this fish has a considerable resemblance to the Zoarces viviparus, especially when both are enveloped in the thick mucus which they throw out copiously in dying. The head constitutes very nearly one-fourth of the total length of the fish, and its breadth just behind the eyes, where it is greatest, exceeds its height there by about onethird. The back equals the head in breadth, and the belly is more or less tumid according to its contents; but from the vent to the tip of the tail the compression is such that the distal half of the fish resembles the point of a straight sword. The anus is exactly in the middle of the total length, its border is tumid, and a small papilla projects from behind it.

Mandible shorter than the upper jaw. Orifice of the mouth tolerably large, but the cleft does not extend so far as the eye. A skinny lip borders the upper jaw, being attached to the premaxillaries. The mandibular lip is developed into a lobe on each side, but is wanting at the symphysis. A row of subulate teeth exists on the premaxillaries, mandible, and palatines: the row is double in front of the upper and lower jaws, and there is a round cluster on the vomer. The numbers and positions of the teeth are shown in figs. 4 and 5.

enclosed in a lax skin; upper jaw considerably longer than the under one, teeth conspicuous to the naked eye; no scales were detected by the microscope. Colour, a yellowish ground, lighter on the belly, with eleven large saddle-shaped markings across the back, the middle of these markings being much lighter than their edges, the whole back and sides marbled. No spots on the dorsal fin similar to those of *Blennius ocellatus*.

2 в 2

The roof of the *mouth* is furnished with acute longitudinal plaits of membrane, whose edges are set with soft, round papillæ. The upper and lower pharyngeals are armed with brush-like teeth, curved backwards, and the rakers of the branchial arches are round, sessile knobs, in two rows on each arch, also rough with minute teeth.

Lateral nostril on each side, forming a tubular projection close to the premaxillary: the mesial one is an open orifice like a pore. (See fig. 2.) There are many small mucous pores round the nostrils, and on the head and fore parts of the body, some of which are represented in the same figure. Eyes placed nearer to the end of the snout than to the gill-opening, and so high as to encroach on the profile of the face. Gillopening a vertical lateral slit; the membrane of the throat being continuous with that of the belly without any transverse fold or flap of the branchiostegous membrane. A row of open pores marks the limbs of the mandible. (See fig. 3.) The rudimentary ventrals are attached to the os hyoides between the lower angles of the gill-openings.

The *lateral line*, composed of open pores, descends from the suprascapular region behind the pectoral, keeping while in the ventral region nearly in the middle of the height, but running lower from the anus backwards; it cannot be traced quite to the middle point between the anus and the tip of the tail.

There are no scales. To be certain on this point, I carefully skinned a specimen of which I purposed to prepare the skeleton, and having dried the skin on glass, examined it with the microscope, without discovering any trace of a scale. This character alone is sufficient to distinguish it from the three members of the genus made known by Professor Reinhardt. It may therefore prove to be the type of a distinct division of the genus to which the *Blennius polaris* of Sabine, should it hereafter be rediscovered, may be found to belong.

Fins.—The pectorals when fully spread out have a broadly ovate form, approaching to the orbicular: their rays are branched at the tips. Owing to the thickness of the rather

364

lax skin, the rays of none of the fins can be accurately enumerated, but the numbers given at the beginning of this article were taken from the skeleton of a larger specimen than the one we have figured. The vertical fins unite at the point of the tail without any break or depression, such as that which the dorsal of Zoarces vivinarus exhibits posteriorly, and all the rays are articulated. They number in the aggregate 158, and the major part of the dorsal and anal ones are simple at the bottom and split at the tips, the divisions lying in close contact : towards the caudal the tips open a little, and the last rays are divided to the base : the caudal rays are smaller and more divided. The ten rays enumerated as caudal ones are those only which are attached to the two triangular interspinous bones, which do not terminate the spinal column evenly, but lie beneath its tip. Reinhardt describes the ventrals of his species as formed of four rays; but on a careful examination with the microscope I can detect only three torulose, jointed, tapering rays of equal length, with a minute cartilaginous support to the inner or anterior of the three. In preparing the skeleton, this part of the fish was unfortunately injured, but a dissection of one of the ventrals of the remaining specimen enabled me to ascertain its structure. When enveloped in the skin, the ventrals have considerable elasticity, and hence they may readily be confounded with spines.

Colour.—No memorandum was furnished to me of the tints of colour of the recent fish. The specimen that the figure was executed from was in a perfect condition, and does not appear as if any of its markings have been obliterated. It was probably put into spirits while yet alive, as its head was thrown back, as if it had died convulsed, and its body was covered by a thick layer of mucus. After twelve months' maceration in spirits the dark upper parts of the fish have a deep clove-brown colour, becoming almost black where it touches the white marks. The white extends over the lips, the under surface of the head, base of the pectoral, over the belly, and, with interruptions, along the base of much of the anal fin.