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JOHN W. GABRIEL'S

EPITOMIZED

NAUTICAL ALMANAC

FOR

1882.



1883.

CONTAINING

ENLARGED LISTS OF DOMINION, BRITISH AND FOREIGN

LIGHT HOUSES,

SAILING DIRECTIONS FOR APPROACHES TO HALIFAX,

HARBOR AND PILOTAGE REGULATIONS,

WITH A VARIETY OF

GENERAL INFORMATION FOR THE USE OF MARINERS,

&c., &c., &c.

Entered according to Act of the Parliament of Canada, in the year one thousand eight hundred and eighty-two, by John W. Gabriel, in the office of the Minister of Agriculture.

HALIFAX, N. S. :

PUBLISHED BY JOHN W. GABRIEL, 17 BUCKINGHAM STREET,
1882.

WILLIAM MACNAE, PRINTER, 12 PRINCE STREET, HALIFAX, N. S.

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PHENOMENA-1882-3.-CONTINUED.)

H.	Stationary.	greatest Hel. Lat. N.	Inf. δ	greatest Hel. Lat. N.	Inf. δ	H.	Stationary.	greatest Hel. Lat. N.	Inf. δ	greatest Hel. Lat. N.	Inf. δ
Jan. 27.	stationary.					April 9.	stationary.				
31.	greatest Hel. Lat. N.					11.	greatest Hel. Lat. N.				
Feb. 4.	Inf. δ	0 44 N.				13.	greatest Hel. Lat. N.				
5.	greatest Hel. Lat. N.					15.	Inf. δ				
5.	Inf. δ					19.	greatest Hel. Lat. N.				
7.	greatest Hel. Lat. N.					22.	Inf. δ				
7.	Inf. δ					24.	greatest Hel. Lat. N.				
8.	greatest Hel. Lat. N.					26.	Inf. δ				
13.	greatest Hel. Lat. N.	6 4 S.				May. 1.	greatest Hel. Lat. N.				
13.	Inf. δ					1.	Inf. δ				
14.	greatest Hel. Lat. N.	1 22 S.				4.	greatest Hel. Lat. N.				
15.	Inf. δ					4.	Inf. δ				
15.	greatest Hel. Lat. N.	4 22 N.				4.	greatest Hel. Lat. N.				
17.	Inf. δ					6.	Inf. δ				
17.	greatest Hel. Lat. N.	1 40 S.				7.	greatest Hel. Lat. N.				
20.	Inf. δ					7.	Inf. δ				
20.	greatest Hel. Lat. N.	46 45 W.				10.	greatest Hel. Lat. N.				
23.	Inf. δ					—	greatest Hel. Lat. N.				
23.	greatest Hel. Lat. N.	2 48 N.				5.	Inf. δ				
Mar. 3.	Stationary.					5.	greatest Hel. Lat. N.				
3.	at greatest elong.					7.	Inf. δ				
5.	Stationary.					7.	greatest Hel. Lat. N.				
5.	at greatest elong.					9.	Inf. δ				
6.	Stationary.					9.	greatest Hel. Lat. N.				
6.	at greatest elong.					9.	Inf. δ				
7.	Stationary.					12.	greatest Hel. Lat. N.				
7.	at greatest elong.					18.	Inf. δ				
8.	Stationary.					18.	greatest Hel. Lat. N.				
8.	at greatest elong.					2.	Inf. δ				
11.	Stationary.					14.	greatest Hel. Lat. N.				
11.	at greatest elong.					19.	Inf. δ				
11.	Stationary.					20.	greatest Hel. Lat. N.				
11.	at greatest elong.					11.	Inf. δ				
12.	Stationary.					24.	greatest Hel. Lat. N.				
12.	at greatest elong.					7.	Inf. δ				
15.	Stationary.					26.	greatest Hel. Lat. N.				
15.	at greatest elong.					20.	Inf. δ				
17.	Stationary.					27.	greatest Hel. Lat. N.				
17.	at greatest elong.					8.	Inf. δ				
20.	Stationary.					27.	greatest Hel. Lat. N.				
20.	at greatest elong.					22.	Inf. δ				
20.	Stationary.					23.	greatest Hel. Lat. N.				
20.	at greatest elong.					1.	Inf. δ				
28.	Stationary.					2.	greatest Hel. Lat. N.				
28.	at greatest elong.					16.	Inf. δ				
31.	Stationary.					3.	greatest Hel. Lat. N.				
31.	at greatest elong.					1.	Inf. δ				
April 4.	Stationary.					3.	greatest Hel. Lat. N.				
4.	at greatest elong.					5.	Inf. δ				
5.	Stationary.					6.	greatest Hel. Lat. N.				
5.	at greatest elong.					9.	Inf. δ				
6.	Stationary.					7.	greatest Hel. Lat. N.				
6.	at greatest elong.					16.	Inf. δ				

☉'s disc.

The Next Transit of Venus.

The publisher of this Almanac has much pleasure in affording space for the following contribution from the pen of Col. A. W. DRAYSON, R. A., F. R. A. S., whose distinguished scientific reputation is a sufficient guarantee for the accuracy of the information he has kindly furnished.

When any observer wishes to know the local time at which the transit of Venus will commence, he must first ascertain the longitude of the locality at which he wishes to observe this transit.

This longitude may be obtained from any map. Or if the observer be at sea, he will know very closely what his longitude is on the 6th December, 1882.

He must then convert this longitude into time, in the following manner :

Suppose, for example, any person wishes to find at what time the transit will commence at Sandy Hook, New York; the longitude of Sandy Hook is $74^{\circ} 59' 8''$ West. First multiply $74^{\circ} 59' 8''$ by 4 (seconds of arc may be neglected, unless great accuracy is required), minutes of arc multiplied by 4 become seconds of time, and degrees of arc minutes of time.

Example :—

$$\begin{array}{r} 74^{\circ} \quad 59' \\ \hline \quad \quad \quad 4 \\ \hline 296 \text{ m., } 236 \text{ seconds.} \end{array}$$

That is,—4 h., 59 m., 56 s.

Consequently, $74^{\circ} 59'$ in arc equal 4h., 59m., 56s. in time.

New York is West of Greenwich, therefore the time at Greenwich is *before* the time at New York by 4h., 59m., 56s.

Consequently, as the transit will commence at 1h., 55m., 57s. Greenwich time, it will commence at New York 4h., 59m., 56s. earlier,—that is, at 8h., 56m., 1s. local time at Sandy Hook.

Example 2. For a locality East of Greenwich.

The same system is adopted as regards converting the longitude into time, and we will take Trieste, in East longitude $13^{\circ} 46'$:

$$13^{\circ} 46' \times 4 = 52 \text{ m., } 184 \text{ seconds ; that is to } 55 \text{ minutes, } 4 \text{ seconds.}$$

Trieste being to the East, the time at Trieste is 55m., 4s, different from Greenwich, so that when it is 1h., 55m., 57s. at Greenwich, it will be 1h., 55m., 57s. + 55m., 4s. at Trieste,—that is, at 2h., 51m., 1s. at Trieste the transit will commence.

The concise rule for finding the time of transit at any locality, may be thus expressed :

1st. Convert the longitude into time, as already explained.

2d. If the locality be East of Greenwich, add the time due to the longitude to 1h., 55m., 57s., and the sum will be the local time of transit at the given longitude.

If the locality be West of Greenwich, subtract the time due to the longitude from 1h., 55m., 57s., and the difference will be the local time of transit.

A leading New York paper remarks :—“When in 2004 the next transit of Venus after the coming one takes place, no human being who now treads the earth will be alive to see its passage. Nearly four generations of men will have lived and died before the brightest of the stars again passes between us and the sun when at one of her nodes. Observers will, therefore, witness an event to be remembered for a lifetime, and for this reason, independent of its scientific importance, the phenomenon will be eagerly anticipated.”

A Transit of VENUS across the SUN'S disc, Dec. 6, 1882, partly visible at Greenwich.

ELEMENTS.

	H.	M.	S.
Greenwich Mean time of ζ in R. A. Dec. 6.....	4	20	2.8
\odot 's and \ominus 's Right Ascension.....	16	52	43.16
\odot 's Declination	S. 22	44	12.5
\ominus 's Declination.....	S. 22	33	6.1
\odot 's Hourly Motion in R. A.....	W.	1	33.2
\ominus 's Hourly Motion in R. A.....	E.	2	44.0
\odot 's Hourly Motion in Declination.....	N.		49.3
\ominus 's Hourly Motion in Declination.....	S.		17.5
\odot 's Equatorial Horizontal Parallax.....			33.5
\ominus 's Equatorial Horizontal Parallax.....			9.0
\odot 's True Semidiameter { LEVERRIER, <i>Annales</i> , }			31.4
\ominus 's True Semidiameter { <i>Vol. VI., p. 40.</i> }	16		13.0

	Dec. 6,	H.	M.	S.	
External contact at Ingress.....	1	55	57		Mean Time at Greenwich.
Internal contact at Ingress.....	—	2	16	18	
Least distance of centres $10^{\circ} 41' 4''$	—	5	4	2	
Internal contact at Egress.....	—	7	51	46	
External contact at Egress.....	—	8	12	9	

Angle from { contact at Ingress 145° towards the E. } for direct image.
 North point { contact at Egress 114° towards the W. }

At the times of Ingress and Egress respectively, the Sun will be in the Zenith at the places whose positions are—

o	l		o
Longitude	31 10 W.	} of Greenwich.	Latitude
	36 15 W.		22 41 S.
	120 6 W.		22 41
	125 11 W.		22 43
			22 43 S.

See NAUTICAL ALMANAC for the year 1882, page 402.

Simple Rules for finding the Latitude by the Pole Star.

1st. Watch for the instant when a vertical line from the Pole Star passes through the third star from the tail of the Great Bear, and measure the altitude of the Pole Star at that instant, and correct this altitude for Refraction.

2nd. Take the Declination of the Pole Star, as given in the Nautical Almanac for the day, from 90° and call the remainder Polar Distance.

3rd. If the Great Bear be above the Pole Star, add the Polar distance to the altitude, and the sum = Latitude. If the Great Bear be below the Pole Star, subtract the Polar Distance from the altitude, and the remainder = Latitude.

Example January 1st, 1882—

Alt. of Pole Star corrected for refraction, $45^{\circ} 10'$.

Pole Star's decl'n given in Nautical Almanac 1st January, '82, $88^{\circ} 41' 12''$.

Polar distance, $1^{\circ} 18' 48''$. Great Bear below Pole Star.

Latitude $45^{\circ} 10' - 1^{\circ} 18' 48'' = 44^{\circ} 51' 12''$.

AT M

Date.	Oct.	Nov.
1	16	1 16
2	16	1 16
3	16	1 16
4	16	2 16
5	16	2 16
6	16	2 16
7	16	3 16
8	16	3 16
9	16	3 16
10	16	3 16
11	16	4 16
12	16	4 16
13	16	4 16
14	16	4 16
15	16	5 16
16	16	5 16
17	16	5 16
18	16	6 16
19	16	6 16
20	16	6 16
21	16	6 16
22	16	7 16
23	16	7 16
24	16	7 16
25	16	7 16
26	16	8 16
27	16	8 16
28	16	8 16
29	16	8 16
30	16	9 16
31	16	9 .

Chron
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POCKE
measuring
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JOHN

AT MEAN NOON, GREENWICH.

Sun's Semi-Diameter.—1882-83.

Date.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Ap'l.	May.	June.	July.	Aug.	Sept.
1	16 1	16 9	16 15	16 18	16 15	16 10	16 2	15 54	15 48	15 46	15 47	15 53
2	16 1	16 9	16 15	16 18	16 15	16 10	16 1	15 53	15 48	15 46	15 48	15 53
3	16 1	16 10	16 16	16 18	16 15	16 9	16 1	15 53	15 47	15 46	15 48	15 53
4	16 2	16 10	16 16	16 18	16 15	16 9	16 1	15 53	15 47	15 46	15 48	15 54
5	16 2	16 10	16 16	16 18	16 15	16 9	16 0	15 53	15 47	15 46	15 48	15 54
6	16 2	16 10	16 16	16 18	16 15	16 9	16 0	15 52	15 47	15 46	15 48	15 54
7	16 3	16 11	16 16	16 18	16 14	16 8	16 0	15 52	15 47	15 46	15 48	15 54
8	16 3	16 11	16 16	16 18	16 14	16 8	16 0	15 52	15 47	15 46	15 48	15 55
9	16 3	16 11	16 16	16 18	16 14	16 8	15 59	15 52	15 47	15 46	15 49	15 55
10	16 3	16 11	16 16	16 18	16 14	16 7	16 59	15 52	15 47	15 46	15 49	15 55
11	16 4	16 12	16 17	16 17	16 14	16 7	15 59	15 51	15 47	15 46	15 49	15 55
12	16 4	16 12	16 17	16 17	16 13	16 7	15 58	15 51	15 46	15 46	15 49	15 56
13	16 4	16 12	16 17	16 17	16 13	16 7	15 58	15 51	15 46	15 46	15 49	15 56
14	16 4	16 12	16 17	16 17	16 13	16 6	15 58	15 51	15 46	15 46	15 49	15 56
15	16 5	16 12	16 17	16 17	16 13	16 6	15 58	15 51	15 46	15 46	15 50	15 56
16	16 5	16 13	16 17	16 17	16 13	16 6	15 57	15 50	15 46	15 46	15 50	15 57
17	16 5	16 13	16 17	16 17	16 13	16 6	15 57	15 50	15 46	15 46	15 50	15 57
18	16 6	16 13	16 17	16 17	16 12	16 5	15 57	15 50	15 46	15 46	15 50	15 57
19	16 6	16 13	16 17	16 17	16 12	16 5	15 57	15 50	15 46	15 46	15 50	15 58
20	16 6	16 13	16 17	16 17	16 12	16 5	15 56	15 50	15 46	15 46	15 50	15 58
21	16 6	16 14	16 17	16 17	16 12	16 5	15 56	15 50	15 46	15 56	15 51	15 58
22	16 7	16 14	16 18	16 17	16 11	16 4	15 56	15 49	15 46	15 46	15 51	15 58
23	16 7	16 14	16 18	16 17	16 11	16 4	15 56	15 49	15 46	15 46	15 51	15 59
24	16 7	16 14	16 18	16 16	16 11	16 4	15 55	15 49	15 46	15 47	15 51	15 59
25	16 7	16 14	16 18	16 16	16 11	16 3	15 55	15 49	15 46	15 47	15 51	15 59
26	16 8	15 15	16 18	16 16	16 11	16 3	15 55	15 49	15 46	15 47	15 52	15 59
27	16 8	16 15	16 18	16 16	16 10	16 3	15 55	15 48	15 46	15 47	15 52	16 0
28	16 8	16 15	16 18	16 16	16 10	16 3	15 54	15 48	15 46	15 47	15 52	16 0
29	16 8	16 15	16 18	16 16	16 10	16 2	15 54	15 48	15 46	15 47	15 52	16 0
30	16 9	16 15	16 18	16 16	16 10	16 2	15 54	15 48	15 46	15 47	15 53	16 0
31	16 9	16 15	16 18	16 16	16 10	16 2	15 54	15 48	15 46	15 47	15 53	16 0

Chronometers, Watches and Nautical Instruments for sale and repaired in the best manner.

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JOHN W. GABRIEL, 17 Buckingham Street.

Apparent Right Ascension and Declination of

1882.

1883.

Day of Mo.	October.				November.				December.				January.				February.				March.				Day of Mo.
	R. A.		De. N.		R. A.		De. N.		R. A.		De. N.		R. A.		De. N.		R. A.		De. N.		R. A.		De. N.		
	H. M.	° /	H. M.	° /	H. M.	° /	H. M.	° /	H. M.	° /	H. M.	° /	H. M.	° /	H. M.	° /	H. M.	° /	H. M.	° /	H. M.	° /	H. M.	° /	
1	58 41	1 8	59 76	13 3	47 36	23 0	83 28	29 0	55 26	28 9	34 17	23 9	1												
2	58 75	2 2	59 48	13 7	46 64	23 3	82 43	29 1	54 49	28 8	33 69	23 7	2												
3	59 02	2 6	59 16	14 0	45 93	23 6	81 60	29 2	53 71	28 7	33 19	23 4	3												
4	59 22	2 9	58 82	14 4	45 26	23 8	80 80	29 2	52 89	28 6	32 66	23 2	4												
5	59 38	3 3	58 49	14 7	44 62	24 1	80 02	29 3	52 03	28 5	32 09	22 9	5												
6	59 49	3 6	58 18	15 1	44 01	24 4	79 22	29 3	51 11	28 4	31 47	22 6	6												
7	59 57	4 0	57 89	15 5	43 42	24 6	78 38	29 4	50 16	28 2	30 82	22 4	7												
8	59 63	4 4	57 63	15 8	42 84	24 9	77 49	29 4	49 19	28 1	30 19	22 1	8												
9	59 71	4 7	57 40	16 2	42 25	25 1	76 53	29 5	48 24	28 0	29 61	21 8	9												
10	59 81	5 1	57 19	16 5	41 64	25 3	75 52	29 5	47 35	27 8	29 10	21 5	10												
11	59 94	5 5	56 97	16 9	40 97	25 6	74 47	29 6	46 53	27 7	28 68	21 3	11												
12	60 10	5 8	56 74	17 2	40 24	25 8	73 42	29 6	45 79	27 5	28 35	21 0	12												
13	60 28	6 2	56 46	17 5	39 44	26 0	72 39	29 6	45 11	27 4	28 07	20 7	13												
14	60 47	6 6	56 13	17 9	38 58	26 2	71 41	29 6	44 45	27 2	27 79	20 4	14												
15	60 65	7 0	55 71	18 2	37 70	26 4	70 50	29 7	43 80	27 0	27 51	20 1	15												
16	60 81	7 3	55 24	18 6	36 81	26 6	69 65	29 7	43 12	26 8	27 19	19 8	16												
17	60 92	7 7	54 72	18 9	35 94	26 8	68 83	29 7	42 41	26 6	26 84	19 5	17												
18	60 98	8 1	54 16	19 2	35 13	27 0	68 03	29 7	41 65	26 4	26 46	19 2	18												
19	60 95	8 5	53 60	19 5	34 38	27 1	67 22	29 7	40 85	26 2	26 06	18 9	19												
20	60 86	8 8	53 07	19 8	33 36	27 3	66 36	29 7	40 05	26 0	25 65	18 6	20												
21	60 73	9 2	52 59	20 1	32 96	27 5	65 46	29 7	39 24	25 8	25 26	18 3	21												
22	60 58	9 6	52 15	20 4	32 25	27 6	64 50	29 6	38 44	25 6	24 90	18 0	22												
23	60 42	10 0	51 76	20 7	31 53	27 8	63 50	29 6	37 68	25 3	24 59	17 7	23												
24	60 30	10 3	51 38	21 0	30 74	28 0	62 47	29 6	36 96	25 1	24 34	17 4	24												
25	60 24	10 7	50 98	21 3	29 89	28 1	61 45	29 5	36 31	24 9	24 16	17 1	25												
26	60 23	11 1	50 53	21 6	28 98	28 3	60 44	29 5	35 71	24 6	24 04	16 8	26												
27	60 26	11 5	50 01	21 9	28 03	28 4	59 46	29 4	35 16	24 4	23 97	16 5	27												
28	60 28	11 9	49 42	22 2	27 04	28 5	58 53	29 3	34 66	24 2	23 92	16 2	28												
29	60 25	12 3	48 77	22 5	26 07	28 6	57 65	29 2	...	...	23 89	15 9	29										
30	60 16	12 6	48 08	22 8	25 11	28 7	56 82	29 1	...	...	23 84	15 6	30										
31	59 99	13 0	...	...	24 18	28 8	56 03	29 0	...	...	23 78	13 3	31								

* The hours and minutes of Right Ascension, and the degrees and minutes of Declination are placed at the heads of the columns as constants, and belong equally to all the numbers below them. This arrangement has rendered it necessary, in some instances, to continue the second beyond 60, as the width of the page would not permit of otherwise indicating change in the minutes.

Ursæ

Day of Mo.	R. A.		De. N.		Day of Mo.
	H. M.	° /	H. M.	° /	
	1	23 6	1 1	23 5		1 1	1
2	23 5	1 1	23 5	1 1	2
3	23 4	1 1	23 4	1 1	3
4	23 2	1 1	23 2	1 1	4
5	23 1	1 1	23 1	1 1	5
6	23 0	1 1	23 0	1 1	6
7	23 0	1 1	23 0	1 1	7
8	23 1	1 1	23 1	1 1	8
9	23 3	1 1	23 3	1 1	9
10	23 6	1 1	23 6	1 1	10
11	23 9	1 1	23 9	1 1	11
12	24 0	1 1	24 0	1 1	12
13	24 2	1 1	24 2	1 1	13
14	24 2	1 1	24 2	1 1	14
15	24 3	1 1	24 3	1 1	15
16	24 4	1 1	24 4	1 1	16
17	24 5	1 1	24 5	1 1	17
18	24 7	1 1	24 7	1 1	18
19	24 9	1 1	24 9	1 1	19
20	25 2	1 1	25 2	1 1	20
21	25 5	1 1	25 5	1 1	21
22	25 9	1 1	25 9	1 1	22
23	26 4	1 1	26 4	1 1	23
24	26 8	1 1	26 8	1 1	24
25	27 2	1 1	27 2	1 1	25
26	27 7	1 1	27 7	1 1	26
27	28 1	1 1	28 1	1 1	27
28	28 4	1 1	28 4	1 1	28
29	28 7	1 1	28 7	1 1	29
30	29 0	1 1	29 0	1 1	30
31	...	1 1	...	1 1	31

* On April the sidereal ... h 15m. 23.5 ... nsion 1h. 1

Ursæ Minoris [Polaris] for the Upper Transit at Greenwich.

1883.

Day of Mo.	April.		May.		June.		July.		August.		Septemb'r.		Day of Mo.
	R. A.	De. N.	R. A.	De. N.	R. A.	De. N.	R. A.	De. N.	R. A.	De. N.	R. A.	De. N.	
	H. M.	° ' "	H. M.	° ' "	H. M.	° ' "	H. M.	° ' "	H. M.	° ' "	H. M.	° ' "	
	1 15	88 41	1 15	88 40	1 15	88 40	1 16	88 40	1 16	88 41	1 17	88 41	
	S.	"	S.	"	S.	"	S.	"	S.	"	S.	"	
1	23 69	14 9	29 41	65 5	49 74	58 8	17 58	57 1	47 06	0 3	10 78	8 0	1
2	23 57	14 6	29 77	65 2	50 68	58 7	16 65	57 1	47 86	0 5	11 34	8 3	2
3	23 42	14 3	30 20	64 9	51 65	58 6	19 66	57 1	48 63	0 7	11 92	8 6	3
4	23 27	13 9	30 72	64 6	52 62	58 4	20 62	57 1	49 40	0 9	12 54	8 9	4
5	23 14	13 6	31 31	64 4	53 56	58 3	21 52	57 2	50 17	1 1	13 19	9 2	5
6	23 08	13 3	31 96	64 1	54 44	58 2	22 39	57 2	50 98	1 3	13 88	9 6	6
7	23 09	13 0	32 63	63 9	55 27	58 1	23 24	57 2	51 83	1 5	14 56	9 9	7
8	23 19	12 6	33 29	63 6	56 07	58 0	24 10	57 3	52 71	1 7	15 23	10 2	8
9	23 35	12 3	33 90	63 4	56 84	57 9	24 99	57 3	53 63	1 9	15 87	10 5	9
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13	24 21	10 7	36 00	62 4	60 15	57 5	28 97	57 7	57 32	2 8	17 86	11 8	13
14	24 29	10 4	36 52	62 2	61 09	57 4	30 04	57 8	58 16	3 0	18 22	12 2	14
15	24 37	10 1	37 07	62 0	62 08	57 4	31 11	57 9	58 94	3 3	18 58	12 5	15
16	24 46	9 8	37 69	61 7	63 09	57 3	32 17	58 0	59 66	3 5	18 96	12 9	16
17	24 59	9 5	38 36	61 5	64 13	57 3	33 18	58 1	60 33	3 8	19 38	13 2	17
18	24 76	9 2	39 08	61 3	65 17	57 2	34 14	58 2	60 98	4 0	19 86	13 6	18
19	24 97	8 9	39 85	61 1	66 19	57 2	35 05	58 3	61 63	4 3	20 38	14 0	19
20	25 25	8 6	40 65	60 9	67 17	57 1	35 91	58 4	62 33	4 5	20 93	14 3	20
21	25 59	8 3	41 48	60 7	68 10	57 1	36 73	57 5	63 08	4 8	21 46	14 7	21
22	25 98	8 0	42 30	60 5	68 99	57 1	37 55	58 7	63 88	5 1	21 95	15 1	22
23	26 41	7 7	43 10	60 3	69 84	57 1	38 39	58 8	64 71	5 3	22 37	15 5	23
24	26 85	7 4	43 87	60 1	70 67	57 0	39 28	59 0	65 56	5 6	22 73	15 9	24
25	27 29	7 2	44 60	60 0	71 51	57 0	40 23	59 1	66 39	5 9	23 02	16 2	25
26	27 71	6 9	45 29	59 8	72 39	57 0	41 22	59 3	67 17	6 2	23 26	16 5	26
27	28 11	6 6	45 96	59 6	73 32	57 0	42 26	59 4	67 89	6 5	23 47	16 9	27
28	28 47	6 3	46 62	59 4	74 32	57 0	43 31	59 6	68 54	6 8	23 67	17 2	28
29	28 79	6 0	47 31	59 3	75 38	57 0	44 33	59 7	69 14	7 1	23 89	17 6	29
30	29 09	5 8	48 06	59 1	76 48	57 0	45 30	59 9	69 70	7 4	24 14	18 0	30
31	...	...	48 86	59 0	...	...	46 21	60 1	70 24	7 7	...	...	31

* On April 10th this star will pass the meridian twice on the same day, in consequence of the sidereal day being shorter than the solar day. The first time its Right Ascension will be 1h 15m. 23.59s., and Declination 88° 41' 12"; and on the second its position will be Right Ascension 1h. 15m. 23.76s., and Declination 88° 41' 11.7".

BELL TELEPHONE COMPANY.

ANDREW ROBERTSON, President, Montreal.
C. P. SCLATER, Secretary-Treasurer.

C. F. SISE, Vice-Pres. & Manager, Montreal.
E. P. MOHR, Agent, Halifax.

DIRECTIONS FOR USING THE TELEPHONE.

TO CALL CENTRAL OFFICE.

Ring, then listen, without waiting for answer on bell.
While waiting for connection with another subscriber, listen at telephone.
Ring again when you have finished talking.
When Central Office calls, answer PROMPTLY on bell first, then speak at once.
The instruments cannot be used during a thunder storm.
Do not use instrument more than ten minutes at a time.
Do not ask operators to take down and forward messages to another subscriber.

TO COMMUNICATE WITH CENTRAL OFFICE,

Push in the button on the bell box and turn the handle once or twice round QUICKLY, then take up the telephone and listen for the voice of the operator at Central Office. Tell him what you want, speaking in an ORDINARY TONE, few inches away from the transmitter, and with telephone all the time at ear. If operator is busy and cannot answer quickly, hang up telephone for a minute and he will call you on bell.

When you desire to speak to another subscriber, tell operator, and wait with telephone at ear till you hear a voice, which will be that of the person you want if he answers the call. Then say who you are and proceed.

After you have finished a conversation with another subscriber and have replaced telephone on hook, push the button and ring the bell again, to notify Central Office to disconnect the lines. One of the two who have been talking must do this, and you will know if your correspondent has attended to it by hearing your bell ring at that time.

WHEN CENTRAL OFFICE CALLS YOU,

Push in button and ring bell, then take up telephone and speak first, as it may be that you are wanted by another subscriber who is waiting, while you are being called, to hear from you.

Please answer calls promptly. While you delay you are keeping the person who wishes to speak to you waiting with telephone at ear, and the operator at Central Office waiting for your answer.

Do not use the telephone more than ten minutes at a time, without first having had a special switch put in.

The Central Office operator cannot undertake to receive and repeat messages, but only to make connections between subscribers and to attend to such messenger service, &c., as the Office supplies.

Please report promptly to the Office any trouble with the wires or instruments.

When communication is desired with a telegraph office, please say which office is required.

Instruments are leased for subscribers use only. Non-subscribers will not be allowed to use this Telephone.

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Special a

Halifax steam Coffee and Spice Mills.

ESTABLISHED 1841.

W. H. SCHWARTZ & SONS,
Coffee and Spice Packers.

COFFEE!

Our great Specialty.

42 years before the Public.

"SCHWARTZ'S COFFEE"

Is a household word in Halifax.

"SCHWARTZ'S COFFEE, A."

Is the best Coffee for Ships stores put up in the Dominion.

SPICES, of every description, put up for the trade. **FINE TEAS.**

W. H. SCHWARTZ & SONS.

SALES ROOMS:

Barrington and Buckingham Streets, HALIFAX, N. S.



THOS. FORHAN & CO.,

Sail Makers. Ship Chandlers.

North side Collins' Wharf, HALIFAX, N. S.

Makers of Sails, Cork Fenders, Life Buoys, Life Belts; Grain Bags, Ox and Horse Slings, Bed Bottoms, Trunk Covers, Tents, Flags, etc.

WILLIAM McKERRON,

Notary Public and Conveyancer,

60 BEDFORD ROW, - - HALIFAX, N. S.

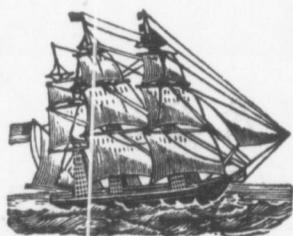
Special attention given to Marine business. **NO CHARGE**
FOR CONSULTATION.

Medal Awarded at Centennial.

NOVA SCOTIA BREWERY.

(ESTABLISHED 1820.)

ALEXANDER KEITH & SON,
BREWERS AND MALTSTERS
HALIFAX, N. S.



**WM. STAIRS, SON &
MORROW,**

George St. & Bedford Row, and
Water Street, Halifax.

DEALERS IN

SHIP CHANDLERY AND HARDWARE,

Wire Rope, Cordage, Canvas, Cotton Duck,
Paints, Oils, Iron, Nails, etc., etc.

*SOLE AGENTS for THE MUNTZ METAL CO.
THE MT. VERNON COTTON DUCK CO.*

HAVE ALWAYS ON HAND:

**A full stock of the Dartmouth
Ropeworks' Manufactures.**

M

STAR'S

a1 Cruris...

a Virginis (

Ursæ Maj

B Centauri...

a Bootis (Ar

a2 Centauri...

a Libræ....

B Ursæ Min

a Coronæ...

a Serpenti...

a Scorpii (An

a Trianguli A

a Ophiuchi...

Draconis...

a Lyræ (Vega)

a Pavonis....

a Cygni.....

Pegasi....

a Gruis.....

a Pis. Aus. (Fo

a Pegasi (Mar

MEAN PLACES OF STARS

FOR

JANUARY, 1883.

STAR'S NAME.	Mag	Right Ascension.	Annual Variation.	Declination.	Annual Variation
		h. m. s.	s.	° ' "	"
<i>a</i> 1 Crusis.....	1	12 20 5.827	+3.2890	-62 27 0.89	-19.996
<i>a</i> Virginis (<i>Spica</i>).....	1	13 19 1.725	3.1516	-10 33 0.92	18.912
Ursæ Majoris.....	2	13 42 55.833	2.3710	+49 53 50.61	18.094
<i>B</i> Centauri.....	1	13 55 34.519	4.1779	-59 48 28.01	17.613
<i>a</i> Bootis (<i>Arcturus</i>)....	1	14 10 19.503	2.7341	+19 47 32.98	18.826
<i>a</i> 2 Centauri.....	1	14 31 39.161	4.0094	-60 21 14.15	15.379
<i>a</i> Libræ.....	2.3	14 44 24.400	+3.3101	-15 33 17.21	15.170
<i>B</i> Ursæ Minoris.....	2	14 51 3.470	-0.2350	+74 38 0.15	14.752
<i>a</i> Coronæ.....	2	15 29 44.079	2.5390	+27 6 33.39	12.295
<i>a</i> Serpentis.....	2.3	15 38 30.309	2.9516	+6 47 40.29	11.558
<i>a</i> Scorpii (<i>Antares</i>)....	1.2	16 22 14.060	3.6697	-26 10 15.83	8.325
<i>a</i> Trianguli Australis...	2	16 36 17.199	6.2959	-68 48 37.49	7.190
<i>a</i> Ophiuchi.....	2	17 29 30.131	2.7791	+12 38 46.84	2.859
Draconis.....	2.3	17 53 53.351	1.3921	+51 30 10.26	-0.573
<i>a</i> Lyræ (<i>Vega</i>).....	1	18 32 58.614	2.0304	+38 40 31.09	3.156
<i>a</i> Pavonis.....	2	20 16 23.014	4.7813	-57 6 29.28	11.201
<i>a</i> Cygni.....	2.1	20 37 26.553	2.0417	+44 51 45.72	12.719
Pegasi.....	2.3	21 38 26.407	2.9481	+9 20 20.38	16.350
<i>a</i> Gruis.....	2	22 0 51.173	3.8061	-47 31 36.91	17.248
<i>a</i> Pis. Aus. (<i>Fomalhaut</i>)	1.2	22 51 10.909	3.3248	-30 14 32.23	18.976
<i>a</i> Pegasi (<i>Markab</i>)....	2	22 58 55.944	2.9839	+14 34 33.71	19.326

1882. At Greenwich OCTOBER. Apparent Noon. 1882											
DATE.	THE SUN'S			Var.	Equation of Time to be subtracted from Apparent Time.	Var.	CHRONOMETER of G. M. T.				
	Apparent Declination.			in hour.		in hour.	H.	MIN.	SEC.	THS.	
	°	'	"	"	m.	s.					
Sun.	1	S. 3	15	0.9	58.24	10 21.14	0.798	1			
Mon.	2	3	38	17.7	58.15	10 40.13	0.784	2			
Tues.	3	4	1	32.2	58.05	10 58.79	0.770	3			
Wed.	4	4	24	43.9	57.93	11 17.10	0.755	4			
Thur.	5	4	47	52.6	57.79	11 35.03	0.739	5			
Fri.	6	5	10	57.8	57.64	11 52.58	0.723	6			
Sat.	7	5	33	59.1	57.47	12 9.73	0.706	7			
Sun.	8	5	56	56.2	57.28	12 26.45	0.687	8			
Mon.	9	6	19	48.6	57.08	12 42.72	0.669	9			
Tues.	10	6	42	36.1	56.87	12 58.54	0.649	10			
Wed.	11	7	5	18.2	56.63	13 13.88	0.629	11			
Thur.	12	7	27	54.5	56.39	13 28.73	0.608	12			
Fri.	13	7	50	24.7	56.12	13 43.07	0.587	13			
Sat.	14	8	12	48.4	55.84	15 56.89	0.564	14			
Sun.	15	8	35	5.1	55.54	14 10.16	0.541	15			
Mon.	16	8	57	14.5	55.23	14 22.88	0.518	16			
Tues.	17	9	19	16.2	54.90	14 35.03	0.494	17			
Wed.	18	9	41	9.7	54.55	14 46.60	0.470	18			
Thur.	19	10	2	54.7	54.19	14 57.57	0.444	19			
Fri.	20	10	24	50.9	53.81	15 7.93	0.419	20			
Sat.	21	10	45	57.7	53.41	15 17.67	0.393	21			
Sun.	22	11	7	14.8	53.00	15 26.77	0.366	22			
Mon.	23	11	28	21.8	52.57	15 35.22	0.338	23			
Tues.	24	11	49	18.4	52.13	15 42.99	0.309	24			
Wed.	25	12	10	4.1	51.67	15 50.06	0.280	25			
Thur.	26	12	30	38.6	51.20	15 56.42	0.250	26			
Fri.	27	12	51	1.6	50.71	16 2.04	0.219	27			
Sat.	28	13	11	12.6	50.20	16 6.91	0.187	28			
Sun.	29	13	31	11.3	49.68	16 11.01	0.155	29			
Mon.	30	13	50	57.2	49.14	16 14.33	0.122	30			
Tues.	31	S. 14	10	30.0	48.58	16 16.85	0.088	31			

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1882

ETER
of G. M. T.

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1882. At Greenwich NOVEMBER. Apparent Noon. 1882.												
DATE.	THE SUN'S			Var. in 1 hour.	Equation of Time, to be Subtracted from Apparent Time.		Var. in 1 hour.	CHRONOMETER.				
	Apparent Declination.				m.	s.		of G. M. T.				
	°	'	"	"				H.	MIN.	SEC.	THS.	
Wed.	1	S. 14	29	49.2	48.01	16	18.56	0.054	1			
Thur.	2	14	48	54.4	47.42	16	19.45	0.020	2			
Fri.	3	15	7	45.3	46.81	16	19.52	0.014	3			
Sat.	4	15	26	21.4	46.19	16	18.76	0.049	4			
Sun.	5	15	44	42.2	45.54	16	17.15	0.085	5			
Mon.	6	16	2	47.4	44.88	16	14.70	0.120	6			
Tues.	7	16	20	36.6	44.21	16	11.41	0.155	7			
Wed.	8	16	38	9.4	43.51	16	7.26	0.191	8			
Thur.	9	16	55	25.2	42.80	16	2.25	0.226	9			
Fri.	10	17	12	23.8	42.07	15	56.39	0.262	10			
Sat.	11	17	29	4.6	41.32	15	49.67	0.298	11			
Sun.	12	17	45	27.4	40.56	15	42.11	0.333	12			
Mon.	13	18	1	31.7	39.79	15	33.70	0.368	13			
Tues.	14	18	17	17.1	38.99	15	24.45	0.403	14			
Wed.	15	18	32	43.1	38.18	15	14.37	0.437	15			
Thur.	16	18	47	49.5	37.35	15	3.46	0.471	16			
Fri.	17	19	2	35.7	36.50	14	51.74	0.505	17			
Sat.	18	19	17	1.5	35.64	14	39.21	0.539	18			
Sun.	19	19	31	6.4	34.76	14	25.87	0.572	19			
Mon.	20	19	44	50.0	33.87	14	11.74	0.605	20			
Tues.	21	19	58	12.1	32.96	13	56.82	0.638	21			
Wed.	22	20	11	12.2	32.04	13	41.12	0.670	22			
Thur.	23	20	23	50.0	31.10	13	24.64	0.703	23			
Fri.	24	20	36	5.2	30.16	13	7.39	0.735	24			
Sat.	25	20	47	57.5	29.19	12	49.37	0.766	25			
Sun.	26	20	59	26.4	28.21	12	30.60	0.797	26			
Mon.	27	21	10	31.7	27.22	12	11.09	0.828	27			
Tues.	28	21	21	13.2	26.22	11	50.85	0.858	28			
Wed.	29	21	31	30.4	25.20	11	29.89	0.887	29			
Thur.	30	S. 21	41	23.0	24.17	11	8.24	0.916	30			
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Jan. 1882.

METER.
of G. M. T.

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1883. At Greenwich **JANUARY.** Apparent Noon. 1883.

DATE.	THE SUN'S			Var. in 1 hour.	Equation of Time to be added to Apparent Time.	Var. in 1 hour.	CHRONOMETER of G. M. T.						
	Apparent Declination.						m.	s.	s.	H.	MIN.	SEC.	THS.
	°	'	"										
Mon.	1	S. 23	0 50.0	12.39	3 45.10	1.182	3						
Tues.	2	22 55	38.9	13.53	4 13.32	1.169	4						
Wed.	3	22 50	0.4	14.67	4 41.20	1.154	5						
Thur.	4	22 43	54.6	15.81	5 8.72	1.139	6						
Fri.	5	22 37	21.7	16.93	5 35.85	1.121	7						
Sat.	6	22 30	21.9	18.05	6 2.55	1.103	8						
Sun.	7	22 22	55.4	19.16	6 28.80	1.083	9						
Mon.	8	22 15	2.4	20.25	6 54.55	1.062	10						
Tues.	9	22 6	43.3	21.34	7 19.78	1.040	11						
Wed.	10	21 57	58.2	22.41	7 44.46	1.016	12						
Thur.	11	21 48	47.4	23.48	8 8.56	0.991	13						
Fri.	12	21 39	11.3	24.53	8 32.05	0.965	14						
Sat.	13	21 29	10.1	25.57	8 54.90	0.939	15						
Sun.	14	21 18	44.0	26.60	9 17.10	0.911	16						
Mon.	15	21 7	53.3	27.61	9 38.61	0.882	17						
Tues.	16	20 56	38.5	28.61	9 59.42	0.852	18						
Wed.	17	20 44	59.8	29.60	10 19.52	0.823	19						
Thur.	18	20 32	57.5	30.58	10 38.90	0.792	20						
Fri.	19	20 20	31.9	31.54	10 57.53	0.760	21						
Sat.	20	20 7	43.5	32.49	11 15.40	0.729	22						
Sun.	21	19 54	32.5	33.42	11 32.51	0.697	23						
Mon.	22	19 40	59.2	34.34	11 48.85	0.665	24						
Tues.	23	19 27	4.0	35.25	12 4.41	0.632	25						
Wed.	24	19 12	47.3	36.14	12 19.18	0.599	26						
Thur.	25	18 58	9.5	37.01	12 33.16	0.566	27						
Fri.	26	18 43	10.9	37.87	12 46.34	0.533	28						
Sat.	27	18 27	51.8	38.71	12 58.72	0.499	29						
Sun.	28	18 12	12.6	39.54	13 10.31	0.466	30						
Mon.	29	17 56	13.7	40.36	13 21.09	0.433	31						
Tues.	30	17 39	55.5	41.15	13 31.07	0.399							
Wed.	31	S. 17 23	18.4	41.93	13 40.25	0.366							

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1883. At Greenwich **FEBRUARY.** Apparent Noon. 1883.

DATE.	THE SUN'S			Var. in hour.	Equation of Time to be added to Apparent Time.	Var. in hour.	CHRONOMETER.				
	Apparent.						of G. M. T.				
	Declination.						H.	MIN.	SEC.	THS.	
		°	'	"	m.	s.	1				
Thur.	1	S. 17	6	22.8	42.69	13 48.63	0.333	2			
Fri.	2	16	49	9.1	43.44	13 56.21	0.299	3			
Sat.	3	16	31	37.7	44.17	14 2.98	0.266	4			
Sun.	4	16	13	49.0	44.88	14 8.96	0.232	5			
Mon.	5	15	55	43.5	45.57	14 14.13	0.199	6			
Tues.	6	15	37	21.6	46.24	14 18.50	0.165	7			
Wed.	7	15	18	43.8	46.90	14 22.07	0.132	8			
Thur.	8	14	59	50.5	47.54	14 24.84	0.099	9			
Fri.	9	14	40	42.0	48.16	14 26.80	0.065	10			
Sat.	10	14	21	19.0	48.76	14 27.96	0.032	11			
Sun.	11	14	1	41.7	49.34	14 28.34	0.001	12			
Mon.	12	13	41	50.6	49.91	14 27.93	0.033	13			
Tues.	13	13	21	46.1	50.46	14 26.74	0.066	14			
Wed.	14	13	1	28.7	50.99	14 24.78	0.097	15			
Thur.	15	12	40	58.7	51.50	14 22.07	0.129	16			
Fri.	16	12	20	16.6	52.00	14 18.61	0.159	17			
Sat.	17	11	59	22.8	52.48	14 14.42	0.189	18			
Sun.	18	11	38	17.7	52.94	14 9.52	0.219	19			
Mon.	19	11	17	1.7	53.39	14 3.91	0.248	20			
Tues.	20	10	55	35.1	53.82	13 57.62	0.276	21			
Wed.	21	10	33	58.5	54.23	13 50.66	0.304	22			
Thur.	22	10	12	12.1	54.63	13 43.05	0.330	23			
Fri.	23	9	50	16.3	55.01	13 34.82	0.356	24			
Sat.	24	9	28	11.6	55.37	13 25.97	0.381	25			
Sun.	25	9	5	58.4	55.72	13 16.53	0.405	26			
Mon.	26	8	43	36.9	56.06	13 6.53	0.428	27			
Tues.	27	8	21	7.6	56.38	12 55.97	0.451	28			
Wed.	28	S. 7	58	30.9	56.68	12 44.89	0.472	29			
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OL. 1883.

ETER.

of G. M. T.

SEC. THS.

Date.	LATITUDE.	LONGITUDE.	Remarks.
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1883. At Greenwich **MARCH.** Apparent Noon. 1883.

DATE.	THE SUN'S		Var. in 1 hour.	Equation of Time to be added to Apparent Time.		Var. in 1 hour.	CHRONOMETER of G. M. T.			
	Apparent. Declination.			m.	s.		s.	1	2	3	4
	°	'	"			H.				
Thur.	1	S. 7 35 47.1	56.96	12	33.30	0.493				
Fri.	2	7 12 56.8	57.23	12	21.21	0.513				
Sat.	3	6 50 0.2	57.48	12	8.66	0.532				
Sun.	4	6 26 57.8	57.71	11	55.65	0.551				
Mon.	5	6 3 49.9	57.93	11	42.20	0.569				
Tues.	6	5 40 37.0	58.13	11	28.33	0.586				
Wed.	7	5 17 19.6	58.31	11	14.06	0.603				
Thur.	8	4 53 57.9	58.48	10	59.40	0.619				
Fri.	9	4 30 32.5	58.63	10	44.36	0.634				
Sat.	10	4 7 3.6	58.76	10	28.96	0.649				
Sun.	11	3 43 31.8	58.88	10	13.22	0.663				
Mon.	12	3 19 57.4	58.98	9	57.16	0.676				
Tues.	13	2 56 20.8	59.06	9	40.79	0.688				
Wed.	14	2 32 42.3	59.13	9	24.12	0.700				
Thur.	15	2 9 2.4	59.19	9	7.19	0.711				
Fri.	16	1 45 21.4	59.22	8	50.00	0.721				
Sat.	17	1 21 39.7	59.25	8	32.58	0.730				
Sun.	18	0 57 57.6	59.25	8	14.94	0.739				
Mon.	19	0 34 15.6	59.24	7	57.11	0.746				
Tues.	20	S. 0 10 33.9	59.22	7	39.12	0.753				
Wed.	21	N. 0 13 7.1	59.19	7	20.98	0.758				
Thur.	22	0 36 47.1	59.14	7	2.72	0.763				
Fri.	23	1 0 25.7	59.07	6	44.36	0.766				
Sat.	24	1 24 2.5	58.99	6	25.93	0.769				
Sun.	25	1 47 37.3	58.90	6	7.45	0.771				
Mon.	26	2 11 9.8	58.80	5	48.94	0.771				
Tues.	27	2 34 39.5	58.67	5	30.43	0.771				
Wed.	28	2 58 6.1	58.54	5	11.94	0.769				
Thur.	29	3 21 29.4	58.39	4	53.50	0.767				
Fri.	30	3 44 48.9	58.23	4	35.12	0.764				
Sat.	31	N. 4 8 4.3	58.05	4	16.83	0.760				

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METER
of G. M. T.

SEC. THS.

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1883. At Greenwich		MAY.			Apparent Noon. 1883.						
DATE.	THE SUN'S			Var.	Equation of Time, to be Subtracted from Apparent Time.	Var.	CHRONOMETER.				
	Apparent Declination.			in 1 hour.		in 1 hour.	of G. M. T.				
	o	'	"	"	m.	s.		H.	MIN.	SEC.	THS.
Tues.	1	N. 15	3	21.7	45.42	3 0.29	0.315	1			
Wed.	2	15	21	24.3	44.79	3 7.58	0.292	2			
Thur.	3	15	39	11.8	44.16	3 14.31	0.268	3			
Fri.	4	15	56	43.8	43.50	3 20.46	0.245	4			
Sat.	5	16	14	0.0	42.84	3 26.05	0.221	5			
Sun.	6	16	31	0.0	42.16	3 31.06	0.197	6			
Mon.	7	16	47	43.7	41.47	3 35.51	0.174	7			
Tues.	8	17	4	10.6	40.76	3 39.39	0.150	8			
Wed.	9	17	20	20.4	40.05	3 42.70	0.126	9			
Thur.	10	17	36	12.9	39.32	3 45.45	0.103	10			
Fri.	11	17	51	47.7	38.58	3 47.64	0.080	11			
Sat.	12	18	7	4.5	37.82	3 49.27	0.056	12			
Sun.	13	18	22	3.1	37.05	3 50.35	0.034	13			
Mon.	14	18	36	43.1	36.27	3 50.88	0.011	14			
Tues.	15	18	51	4.3	35.49	3 50.86	0.012	15			
Wed.	16	19	5	6.4	34.68	3 50.29	0.035	16			
Thur.	17	19	18	49.0	33.87	3 49.16	0.058	17			
Fri.	18	19	32	12.0	33.05	3 47.49	0.081	18			
Sat.	19	19	45	15.2	32.21	3 45.27	0.104	19			
Sun.	20	19	57	58.2	31.37	3 42.51	0.126	20			
Mon.	21	20	10	20.8	30.51	3 39.21	0.149	21			
Tues.	22	20	22	22.8	29.65	3 35.37	0.171	22			
Wed.	23	20	34	3.9	28.77	3 31.01	0.193	23			
Thur.	24	20	45	23.9	27.89	3 26.11	0.215	24			
Fri.	25	20	56	22.6	27.00	3 20.69	0.236	25			
Sat.	26	21	6	59.7	26.09	3 14.76	0.257	26			
Sun.	27	21	17	15.0	25.18	3 8.33	0.278	27			
Mon.	28	21	27	8.3	24.26	3 1.41	0.298	28			
Tues.	29	21	36	39.4	23.33	2 54.01	0.318	29			
Wed.	30	21	45	48.0	22.39	2 46.14	0.337	30			
Thur.	31	N. 21	54	34.0	21.44	2 37.81	0.356	31			

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1883.		At Greenwich		JUNE.		Apparent Noon.		1883.		
DATE.	THE SUN'S			Var. in hour.	Equation of Time to be subtracted from added to Apparent Time.	Var. in hour.	CHRONOMETER.			
	Apparent. Declination.						of G. M. T.			
	°	'	"	"	m.	s.	H.	MIN.	SEC.	THS.
Fri.	1	N. 22	2 57.1	20.49	2	29.04	1			
Sat.	2	22 10	57.3	19.52	2	19.85	2			
Sun.	3	22 18	34.2	18.55	2	10.25	3			
Mon.	4	22 25	47.8	17.58	2	0.27	4			
Tues.	5	22 32	37.9	16.60	1	49.93	5			
Wed.	6	22 39	4.4	15.61	1	39.25	6			
Thur.	7	22 45	7.1	14.61	1	28.27	7			
Fri.	8	22 50	45.8	13.61	1	17.01	8			
Sat.	9	22 56	0.5	12.61	1	5.49	9			
Sun.	10	23 0	51.0	11.60	0	53.74	10			
Mon.	11	23 5	17.3	10.59	0	41.77	11			
Tues.	12	23 9	19.1	9.57	0	29.62	12			
Wed.	13	23 12	56.5	8.55	0	17.29	13			
Thur.	14	23 16	9.3	7.52	0	4.82	14			
Fri.	15	23 18	57.5	6.49	0	7.78	15			
Sat.	16	23 21	21.0	5.46	0	20.48	16			
Sun.	17	23 23	19.8	4.44	0	33.27	17			
Mon.	18	23 24	53.9	3.40	0	46.13	18			
Tues.	19	23 26	3.2	2.37	0	59.03	19			
Wed.	20	23 26	47.7	1.34	1	11.95	20			
Thur.	21	23 27	7.4	0.31	1	24.88	21			
Fri.	22	23 27	2.4	0.73	1	37.80	22			
Sat.	23	23 26	32.5	1.76	1	50.67	23			
Sun.	24	23 25	37.9	2.79	2	3.49	24			
Mon.	25	23 24	18.4	3.83	2	16.22	25			
Tues.	26	23 22	34.2	4.86	2	28.86	26			
Wed.	27	23 20	25.3	5.89	2	41.38	27			
Thur.	28	23 17	51.7	6.91	2	53.77	28			
Fri.	29	23 14	53.5	7.93	3	5.99	29			
Sat.	30	N. 23	11 30.9	8.95	3	18.03	30			
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1883.		At Greenwich		JULY.		Apparent Noon.		1883.				
DATE.	THE SUN'S			Var. in 1 hour.	Equation of Time to be added to Apparent Time.	Var. in 1 hour.	CHRONOMETER.					
	Apparent. Declination.						of G. M. T.					
	°	'	"	"	m.	s.	s.	H.	MIN.	SEC.	THS.	
Sun.	1	N. 23	7	43.8	9.97	3	29.87	0.489				
Mon.	2	23	3	32.5	10.98	3	41.48	0.478				
Tues.	3	22	58	57.0	11.98	3	52.82	0.467				
Wed.	4	22	53	57.4	12.98	4	3.88	0.454				
Thur.	5	22	48	34.0	13.97	4	14.62	0.441				
Fri.	6	22	42	46.8	14.96	4	25.03	0.426				
Sat.	7	22	36	35.9	15.94	4	35.07	0.410				
Sun.	8	22	30	1.6	16.91	4	44.73	0.394				
Mon.	9	22	23	4.0	17.88	4	53.98	0.376				
Tues.	10	22	15	43.2	18.85	5	2.80	0.359				
Wed.	11	22	7	59.4	19.80	5	11.19	0.340				
Thur.	12	21	59	52.8	20.75	5	19.12	0.320				
Fri.	13	21	51	23.6	21.68	5	26.57	0.300				
Sat.	14	21	42	32.0	22.61	5	33.54	0.280				
Sun.	15	21	33	18.2	23.53	5	40.01	0.259				
Mon.	16	21	23	42.4	24.44	5	45.97	0.237				
Tues.	17	21	13	44.8	25.35	5	51.40	0.215				
Wed.	18	21	3	25.6	26.25	5	56.31	0.193				
Thur.	19	20	52	45.0	27.13	6	0.67	0.170				
Fri.	20	20	41	43.3	28.00	6	4.48	0.147				
Sat.	21	20	30	20.8	28.87	6	7.74	0.124				
Sun.	22	20	18	37.5	29.73	6	10.44	0.101				
Mon.	23	20	6	33.8	30.58	6	12.58	0.078				
Tues.	24	19	54	9.8	31.42	6	14.16	0.054				
Wed.	25	19	41	25.8	32.24	6	15.17	0.030				
Thur.	26	19	28	22.1	33.06	6	15.61	0.006				
Fri.	27	19	14	59.0	33.86	6	15.48	0.017				
Sat.	28	19	1	16.6	34.66	6	14.78	0.041				
Sun.	29	18	47	15.4	35.44	6	13.51	0.065				
Mon.	30	18	32	55.5	36.21	6	11.65	0.090				
Tues.	31	N. 18	18	17.3	36.96	6	9.20	0.115				

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1883. At Greenwich **AUGUST.** Apparent Noon. 1883.

DATE.	THE SUN'S			Var. in 1 hour.	Equation of Time, to be added to		Var. in 1 hour.	CHRONOMETER.			
	Apparent Declination.				Subtracted from Apparent Time.			of G. M. T.			
	°	'	"	"	m.	s.	s.	H.	MIN.	SEC.	THS.
Wed.	1	N. 18	3 21.2	37.71	6	6.15	0.139	1			
Thur.	2	17 48	7.3	38.44	6	2.51	0.164	2			
Fri.	3	17 32	36.1	39.16	5	58.27	0.190	3			
Sat.	4	17 16	47.8	39.86	5	53.41	0.215	4			
Sun.	5	17 0	42.6	40.56	5	47.95	0.240	5			
Mon.	6	16 44	21.0	41.24	5	41.88	0.265	6			
Tues.	7	16 27	43.3	41.90	5	35.21	0.291	7			
Wed.	8	16 10	49.6	42.56	5	27.93	0.316	8			
Thur.	9	15 53	40.4	43.20	5	20.05	0.341	9			
Fri.	10	15 36	15.9	43.83	5	11.58	0.365	10			
Sat.	11	15 18	36.5	44.44	5	2.53	0.389	11			
Sun.	12	15 0	42.5	45.05	4	52.89	0.414	12			
Mon.	13	14 42	34.1	45.64	4	42.68	0.437	13			
Tues.	14	14 24	11.8	46.22	4	31.90	0.461	14			
Wed.	15	14 5	35.7	46.78	4	20.57	0.483	15			
Thur.	16	13 46	46.3	47.33	4	8.70	0.506	16			
Fri.	17	13 27	43.7	47.87	3	56.30	0.528	17			
Sat.	18	13 8	28.3	48.40	3	43.38	0.549	18			
Sun.	19	12 49	0.5	48.91	3	29.95	0.570	19			
Mon.	20	12 29	20.4	49.42	3	16.04	0.589	20			
Tues.	21	12 9	28.3	49.91	3	1.66	0.609	21			
Wed.	22	11 49	24.6	50.39	2	46.83	0.627	22			
Thur.	23	11 29	9.5	50.86	2	31.57	0.644	23			
Fri.	24	11 8	43.4	51.31	2	15.90	0.661	24			
Sat.	25	10 48	6.6	51.75	1	59.82	0.678	25			
Sun.	26	10 27	19.4	52.18	1	43.36	0.694	26			
Mon.	27	10 6	22.2	52.59	1	26.53	0.709	27			
Tues.	28	9 45	15.2	52.99	1	9.33	0.724	28			
Wed.	29	9 23	58.9	53.37	0	51.79	0.738	29			
Thur.	30	9 2	33.6	53.74	0	33.90	0.752	30			
Fri.	31	N. 8 40	59.6	54.09	0	15.69	0.765	31			

Ellenwood's A
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Famish Gut, N
Fear Cape, U.
Ferolle Cove,
Ferolle Harbo
Fish Head, Gr
Fundy
Flat Island Co
Fleur de Lis H
Florida Cape,
Fogo Island, M
Folly Point, P
Bay Fundy
Francois Bay,
Frechette Islan
Freshwater Bay
Funk Island,

Gander Bay, N
Gaspé Basin, G
George Cape,
George Port, B
George, St Har
Georgetown, U
Gloucester Ha
Good Bay, Nf
Goodbourn Rive
Goose Bay, Nf
Grand Harbor,
Bay Fundy
Grand Passage,
Grand Rustico,
Grande-digue, 1
Great St. Law.
Green Island,
Green's Harbo
Grigust Bays,
Grindstone Isla
Guysborough,

Habitants Harb
Halifax Harbo
Hants Harbor,
Harbour Grace,
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Hauke Isle, Bay
Hawke Bay, Nf
Hearts Content,
Hillsborough Ri
Holmes Hole, U
Horton Bluff, B

Island, (Country
Isle-au-Coudres,

1883.

METER.

of G. M. T.

SEC. THS.

	H. M.		H. M.
Ellenwood's Anchorage, Bay of Fundy	...add 2 5	Ipswich, U. S.	...add 3 37
Escumenac Point, Gulf St Lawrence	...sub 3 39	Jeboque, Bay Fundy	...add 2 15
Fall River, U. S.	...add 0 22	Jedore, N. S.	...sub 0 34
Famish Gut, Nfld	...add 0 15	John, St, N.B., Bay Fundy	...add 3 32
Fear Cape, U. S.	...sub 0 49	John's, St, Newfoundland	...sub 0 19
Ferolle Cove, Nfld.	...add 3 1	Journalman Island, N.B.	...add 1 41
Ferolle Harbour, Old, Nfld.	...add 1 39	Kegashka Bay, Gulf St. Law.	...add 2 56
Fish Head, Grand Manan, Bay Fundy	...add 3 27	Kings Cove, Nfld.	...sub 3 34
Flat Island Cove, Nfld.	...add 0 38	Kirpon Harbour, Nfld.	...sub 0 44
Fleur de Lis Harbour, Nfld.	...sub 0 34	La Hune Bay, Nfld.	...add 0 51
Florida Cape, U. S.	...add 0 47	La Poile Bay, "	...add 1 11
Fogo Island, Nfld.	...sub 0 29	Lamalin, "	...add 1 26
Folly Point, Petitcodiac River, Bay Fundy	...add 4 0	Lark Harb'r, "	...add 2 48
Francois Bay, Nfld.	...add 0 51	Lawn, Great and Little, Nfld.	...add 0 26
Frechette Island, R. St Law	...add 0 11	Lawrence, St Harbour, Nfld.	...add 0 41
Freshwater Bay, Nfld.	...sub 0 19	La Have, N. S.	...add 0 2
Funk Island, "	...sub 0 49	Lunenburg, Spindlers Cove	...
Gander Bay, Nfld.	...add 0 6	Lepreau, Bay Fundy	...add 3 29
Gaspé Basin, Gulf St Law	...sub 5 9	L'Etang Harbour, Bay Fundy	...add 3 30
George Cape, N. S.	...add 1 26	Liscomb Harbour, N. S.	...add 0 11
George Port, Bay Fundy	...add 3 28	Little Metis, Gulf St Law	...sub 5 39
George, St Harbor, Nfld	...add 2 14	Little Natashquan	...add 3 11
Georgetown, U. S.	...add 0 51	Little Port, Nfld.	...add 2 53
Gloucester Harbour, U. S.	...add 3 15	Little Placentia, Nfld.	...add 0 9
Good Bay, Nfld.	...add 2 51	Little River, Nfld.	...add 0 51
Goodbout River, Gulf St. Law.	sub 5 57	Little Tancook Island, N.S.	sub 0 6
Goose Bay, Nfld.	...sub 0 27	Liverpool Bay, N. S.	...add 0 1
Grand Harbor, Grand Manan, Bay Fundy	...add 3 18	Louisburg Harbour, C. B.	...add 0 11
Grand Passage, Bay Fundy	...add 2 54	Lunaire, St, Bay, Nfld.	...sub 0 43
Grand Rustico, P. E. I.	...sub 1 9	Lynn Harbour, U.S.	...add 3 20
Grande-digue, Madame I, C.B.	add 0 6	Mabou River, C. B.	...add 1 11
Great St. Law. Harbour, Nfld.	add 0 41	Machias, Seal Is, Bay Fundy	...add 3 16
Green Island, River St Law.	sub 5 4	Nagdalen Islands, "	...add 0 31
Green's Harbour, Nfld.	...sub 1 5	Magdalen River, R. St. Law	...sub 6 34
Grigust Bays, "	...sub 0 49	Mahone Bay, N. S.	...add 0 11
Grindstone Island, Bay Fundy.	add 3 58	Manicouago R., R. St. Law.	...sub 5 34
Guysborough, N. S.	...add 0 31	Maquereau Port, G. St. Law.	...sub 5 49
Habitants Harbor, C. B.	...add 0 31	Marblehead, U. S.	...add 3 41
Halifax Harbor, N. S.	... 0 0	Margaret's, St, Bay, N. S.	...sub 0 2
Hants Harbor, Nfld.	...sub 0 36	Margaret's, Nfld.	...add 1 39
Harbour Grace, Nfld.	...sub 0 24	Mary, Cape St, Nfld.	...add 0 41
Harbour, Island, N. S.	...sub 0 9	Matan River, Gulf St Law.	...sub 5 34
Hatteras, Cape, U. S.	...add 1 11	May, Cape, U. S.	...add 0 30
Hauke Isle, Bay Fundy	...add 3 32	Menadieu Cape, C. B.	...add 0 26
Hawke Bay, Nfld.	...add 3 11	Merigomish, N.S.	...add 2 17
Hearts Content, Nfld.	...sub 0 19	Medway, Port, N. S.	...add 0 1
Hillsborough River, P. E. I.	...add 2 56	Mingan Harbour, G. St Law.	...sub 6 33
Holmes Hole, U. S.	...add 3 54	Minimegash, P. E. I.	...add 4 19
Horton Bluff, Bay Fundy	...sub 7 19	Miquelon Road, Mfld.	...add 0 44
Island, (Country) Harb'r, N. S.	sub 0 9	Miramichi (Bar), Gulf St Law.	...sub 2 19
Isle-au-Coudres, R. St. Law.	sub 3 24	Miscou, Gulf St Lawrence	...sub 5 19
		Moncton (Railway), Bay of Fundy	...sub 7 34
		Monts, Point de, G. St. Law.	...sub 7 49
		Mount Louis Bay, R. St. Law.	sub 5 49
		Mouton, Port, N. S.	...add 0 5

	H. M.		H. M.
Nantucket, United States	sub 7 25	Roche Cape, River St. Law.	add 1 41
Negro Harbour, N. S.	add 0 23	Sable Cape (Clarke's Harbour), Bay Fundy	add 1 9
Neuf, Port, Gulf St. Lawrence	sub 5 39	Sable Island, N. side, N. S.	sub 0 19
Neuf, Port, River St. Law.	add 0 41	Sable Island, S. side, N. S.	sub 1 19
New Bedford (entrance), Unit- ed States	add 0 8	Sacred Bay, Newfoundland	sub 0 26
New Haven, United States	add 3 27	Saguenay, Chicoutimi, Gulf St. Lawrence	sub 3 38
New Perlican Harbour, Nfld.	sub 0 19	Saguenay, Tadousac, Gulf St. Lawrence	sub 5 4
New York, United States	add 0 24	Salem, United States	add 3 24
Newburyport, United States	add 3 33	Sandy Cove, E., Bay Fundy	add 2 44
Nicholas St., Harbour, Gulf St. Lawrence	sub 5 54	Sandy Cove, W., Bay Fundy	add 2 58
Noel Bay, Bay Fundy	sub 7 8	Sandy Hook, United States	sub 0 20
North Cape, C. B.	add 0 11	Seal Cove, Grand Manan, Bay Fundy	add 3 5
North Harbour, Nfld.	add 0 11	Seal Island, Cape Sable, Bay Fundy	add 2 0
Oderin, Nfld.	add 0 17	Seldom-come-by, Nfld.	sub 0 36
Orleans Island, River St. Law.	sub 2 9	Seven Islands, Bay, Gulf St. Lawrence	sub 0 36
Parrsboro', Bay of Fundy	sub 7 32	Sheet Harbour, N. S.	add 0 17
Paul, St., Gulf St. Lawrence	add 0 11	Shelburne, N. S.	add 0 15
Peter, St., Bay, C. B.	sub 0 19	Sheldrake Is., Gulf St. Law.	sub 1 49
Peter, St., Harbour, P. E. I.	add 0 41	Ship Harbour, N. S.	add 0 9
Petit Passage, Bay Fundy	add 2 52	Shippigan, Gulf St. Lawrence	sub 4 7
Petit Port, B. of Islands, Nfld.	add 2 53	Smith Sound, Nfld.	sub 0 41
Philadelphia, United States	sub 6 31	Spaniard's Bay, Nfld.	sub 0 4
Pictou Harbour, N. S.	add 2 11	Spencer's Anchorage, B. Fundy	add 3 53
Pierre Strait, Nfld.	add 0 44	Spicer's Cove, Bay Fundy	add 3 46
Pillars, River St. Lawrence	sub 2 49	Sydney Harbour, C. B.	add 1 11
Placentia, Nfld.	add 1 26	Tatamagouche, N. S.	add 2 11
Plymouth, United States	add 3 30	Tracadie Harbor, N. S.	sub 0 19
Pomquet, N. S.	add 1 26	Trepassey, Nfld.	sub 0 16
Pool's Harbour, Nfld.	sub 0 49	Trinity Bay (Bull's Is.), Nfld.	sub 0 27
Port-au-Choit, Nfld.	add 2 58	Trinity Harbour, Nfld.	sub 0 39
Port Hood, C. B.	add 1 11	Triton Harbour	sub 0 19
Portland, United States	add 3 36	Turner C., P. E. I.	sub 1 39
Poulamente Bay, Madame Is., C. B.	add 0 1	Verte Bay, N. S.	add 2 11
Prospect River, N. S.	sub 0 6	Vin Harbour, Gulf St. Law.	sub 2 4
Providence, United States	add 0 27	Wallace Harbour, N. S.	add 2 41
Provincetown, U. S.	add 3 33	Wapitagan Harbour, Gulf St. Lawrence	add 2 41
Pubnico (Beach Pt.), B. Fundy	add 1 36	Washington Navy Yard, U. S.	sub 0 6
Pugwash Harbour, N. S.	add 2 41	West Quoddy, Bay Fundy	add 3 23
Quaco, Bay Fundy	add 3 46	Whitehaven, N. S.	add 0 11
Quebec, River St. Lawrence	sub 1 11	Wilmington, United States	add 1 17
Race, Cape, Newfoundland	sub 0 19	Yarmouth, N. S.	add 2 20
Random Head Harbour, Nfld.	sub 0 19	York Harbour, Nfld.	add 2 48
Recontré Bay (the Cove), Nfld.	add 1 6		
Richibucto River, Gulf St. Law.	sub 4 19		
Richmond, United States	sub 3 21		
Richmond Harbour, P. E. I.	sub 1 49		
Restigouche River, Campbell- town, Gulf St. Lawrence	sub 3 49		

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LIGHT-HOUSES, FOG-SIGNALS, &c.,

OF THE

DOMINION OF CANADA.

UNDER THE CHARGE OF THE DEPARTMENT OF
MARINE AND FISHERIES.

All the Lights below Quebec, on the River St. Lawrence, including Pointe De Monts, Cape Chatte and Egg Island, are extinguished on the 10th December; and those in the Gulf of St. Lawrence, Straits of Belle Isle, Northumberland Straits, Prince Edward Island and Gut of Canso, are extinguished on the 20th December (with the exception of the Light on Bird Rock, which is kept burning till the 31st December), and lighted on the 1st April of each year.

The Lights in the Bay of Fundy, and on the Southern and Eastern Coasts of Nova Scotia, the Light on S. W. point of St. Paul's Island, and all the British Columbia Lights, are exhibited all the year round.

The Lights above Quebec, and on the Lakes, are shown during the season of navigation.

ABBREVIATIONS AND EXPLANATIONS.

LIGHTS.—F., *Fixed*, or Steady; Fl., *Flashing*, showing five or more flashes or eclipses, alternately, in a minute; F. & Fl., *Fixed* light, with a white or red *flash* in addition (preceded and followed by a short eclipse) at intervals of 2, 3, or 4 minutes; Rev., *Revolving*, light gradually increasing to full effect and decreasing to eclipse, at equal intervals of 1, 2, or 3 minutes, but occasionally as often as three times in a minute; Int., *Intermittent*, suddenly appearing in view, remaining visible for a certain time, and then as suddenly eclipsed for a shorter time; Alt., *Alternating*, red and white light alternately, at equal intervals, without any intervening eclipse.

H. M.
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rbour),

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...sub 5 4

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ndy...add 2 44

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ces...sub 0 20

, Bay

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ILLUMINATING APPARATUS.—C., *Catoptric*, or by metallic reflectors. D., *Dioptric*, or by refracting lenses, numbered from the first to the sixth order.

The Bearings are Magnetic, *and are given from seaward.*

The given distances from which the lights are visible, are calculated from a height of fifteen feet above the sea; the elevation of the lights being in all cases taken as *above high water.*

The geographical positions of the lights are approximate.

LABRADOR.

BELLE ISLE.—1. Straits of Belle Isle, extreme S. point of Island, lat. $51^{\circ} 53'$ N., lon. $55^{\circ} 22' 15''$ W., F. white light, D. 1, visible 28 miles, height 470 feet; structure white, circular, clapboarded, 62 feet high. Lighted 1858. Visible from about N. W. by N., round by S. to E. A fog gun is fired once in every half hour.

..... 2. About 300 feet lower than main light; F. white C. light, visible 17 miles, height 128 ft., structure white, square, wood, 31 ft. high. Lighted 1880. Depot of provisions for shipwrecked mariners.

AMOUR POINT, S. E. side of Forteau Bay, lat $51^{\circ} 27' 35''$, lon. $56^{\circ} 50' 55''$, F. white light, D. 2, visible 18 miles, 155 ft. high, structure white, circular 109 ft. high. Lighted 1855. Fog whistle sounds for 10 seconds in each minute.

GREENLY ISLAND, on S. W. part of Island, Straits of Belle Isle, lat. $51^{\circ} 22' 35''$, lon. $57^{\circ} 10' 50''$, rev. red and white light, C. white $\frac{1}{2}$ min., red $\frac{1}{2}$ min., white $\frac{1}{2}$ min., eclipse $\frac{1}{2}$ min.,—revolution 3 minutes, visible 15 miles, height 100 ft., fawn, octagonal wooden tower, 78 ft. high, with dwelling attached. Lighted 1878. Fog gun fired every half hour.

NEWFOUNDLAND.

CAPE BAULD, northernmost point of Newfoundland. Light-house to be erected.

CAPE NORMAN, Straits of Belle Isle, lat. $51^{\circ} 38' N.$, lon. $55^{\circ} 53' 40'' W.$, rev. white C. light, every 2 minutes, height 138 ft., visible 20 miles, structure white, hexagonal, 40 feet high. Lighted 1871. Visible from all points of approach seaward.

POINT RICH, Straits of Belle Isle, lat $50^{\circ} 41' 50'' N.$, lon. $57^{\circ} 27' 40'' W.$, white Fl., C. light, every 15 seconds, height 130 feet, visible 18 miles, structure white, hexagonal, 40 ft. high. Lighted 1871. Visible from all points of approach seaward.

CAPE RAY, on W. side of cape, lat. $47^{\circ} 37' N.$, lon. $59^{\circ} 18' W.$ Fl. white C. light, every 10 seconds, height 110 ft., visible 20 miles, structure white hexagonal, 41 ft. high. Lighted 1871. At a long distance looks like a fixed white light. A steam fog horn gives a blast of 10 seconds in each minute.

GULF OF ST. LAWRENCE.

ST. PAUL'S ISLAND, on rock off N. E. point of Island, lat. $47^{\circ} 13' 50'' N.$, lon. $60^{\circ} 8' 20'' W.$, white light, F. D. 3, height 140 ft., visible 20 miles, structure white, octagonal, wood, 40 ft. high. Lighted 1839. Obscured between N. by E. $\frac{1}{2}$ E., and E. N. E.

ST. PAUL W., rev. wh. white, octagonal, S. S. E. to V. Cove, about each minute.

BIRD ROCK white light, octagonal, with white, half hour.

ENTRY ISLAND. lon. $61^{\circ} 41'$ high, white, from all points of high lands of

AMHERST 61° 58' W., gonial. Lighted

ETANG DU 30'' N. lon. high, structure sounds a blast

CARLETON white C. light ed 1872.

PASPEBIAC white C. light Lighted 1870

MAQUERE alt. red and white, square

CAPE DE rev. white C wood, with station.

PERCE, on light, 138 ft. ed 1874.

GASPE, O F. red C. light

GASPE BA lat $48^{\circ} 50' 4$ white 35 ft., fore and whi

GASPE CA high, visible Lighted 187 interval of 5

CAPE ROS D. 1, 136 ft high. Light signal station

HEATH P W., F. white a red horizon

ST. PAUL'S ISLAND, S. W. point of Island, lat. $47^{\circ} 11' 20''$ N., lon. $60^{\circ} 9' 40''$ W., rev. white, D. 3 light every minute, 140 ft. high, visible 20 miles, structure white, octagonal, wood, 40 ft. high. Lighted 1831. Obscured when bearing from S. S. E. to $W\frac{1}{2}$ N. A fog whistle on the S. side of the Island, S. W. of Atlantic Cove, about a half mile from the Humane Establishment, sounds for 5 seconds in each minute.

BIRD ROCK, Magdalen Islands, lat. $47^{\circ} 50' 40''$ N., lon. $61^{\circ} 8' 20''$ W., F. white light, D. 2, 140 ft. high, vis. 21 miles, structure 50 ft. high, white, hexagonal, with white dwelling near tower. Lighted 1870. A fog gun is fired every half hour. Marine telegraph and signal station.

ENTRY ISLAND, on S. E. side of Island, Magdalen Islands, lat. $47^{\circ} 16' 30''$ N., lon. $61^{\circ} 41' 20''$ W., F. red C. light, vis. 12 miles, 90 ft. high, structure 28 feet high, white, square, wood, with dwelling attached. Lighted 1874. Light seen from all points, except from E. S. E., round to N., where it is intercepted by the high lands of the Island.

AMHERST ISLAND, S. point of Island, Magdalen Islands, lat. $47^{\circ} 13'$ N., lon. $61^{\circ} 58'$ W., alt. red and white, C. light, every 30 seconds, structure white, hexagonal. Lighted 1871. Marine telegraph and signal station.

ETANG DU NORD, W. side of Grindstone Island, Magdalen Islands, lat. $47^{\circ} 23' 30''$ N., lon. $61^{\circ} 57'$ W., rev. white C. light every $\frac{1}{2}$ min., vis. 20 miles, 200 ft. high, structure white, square, 28 ft. high. Lighted 1874. A steam fog whistle sounds a blast of 8 seconds duration in every half minute.

CARLETON POINT, Bay of Chaleur, lat. $48^{\circ} 5' 15''$ N., lon. $66^{\circ} 7'$ W., F. white C. light, 32 ft. high, vis. 12 miles, structure white, wood, 28 ft. high. Lighted 1872.

PASPEBIAC, near extremity of Spit, lat. $48^{\circ} 0' 54''$ N., lon. $65^{\circ} 14' 20''$ W., F. white C. light, vis. 13 miles, 35 ft. high, structure square, white, wood, 54 ft. high. Lighted 1870.

MAQUEREAU POINT, Bay of Chaleur, lat. $48^{\circ} 12' 30''$ N. lon. $64^{\circ} 46' 12''$ W., alt. red and white C. light, every minute, vis. 12 miles, 56 ft. high, structure white, square 27 ft. high. Lighted 1874. Marine telegraph and signal station.

CAPE DESPAIR, Bay of Chaleur, lat. $48^{\circ} 25' 40''$ N., lon. $64^{\circ} 18' 20''$ W., rev. white C. light every $\frac{1}{2}$ min., 90 ft. high, vis. 15 miles, structure white, square, wood, with red roof, 18 ft. high. Lighted 1874. Marine telegraph and signal station.

PERCE, on Whitehead Cape, lat. $48^{\circ} 30' 30''$ N., lon. $64^{\circ} 13'$ W., F. white C. light, 138 ft. high, vis. 13 miles, structure white, square, wood, 20 ft. high. Lighted 1874.

GASPE, O'Hara Point Wharf, Basin, lat. $48^{\circ} 49' 53''$ N., lon. $64^{\circ} 31' 41''$ W., F. red C. light.

GASPE BAY LIGHT SHIP, at Sandy Beach Point, moored off extreme of Spit, lat. $48^{\circ} 50' 45''$ N., lon. $64^{\circ} 24' 30''$ W., 2 red and white C. lights, red 29 ft., and white 35 ft., from deck, painted red, with "Light Vessel" on her side. Red on fore and white on mainmast. Lighted 1871.

GASPE CAPE, lat. $48^{\circ} 45' 15''$ N., lon. $64^{\circ} 9' 15''$ W., F. red C. light, 350 ft. high, visible 12 miles, structure square, wood, 30 ft. high, with dwelling attached. Lighted 1873. A steam fog whistle sounds for 10 sec. in each min., leaving an interval of 50 sec. between each blast.

CAPE ROSIER, on Cape, lat. $48^{\circ} 51' 57''$ N., lon. $64^{\circ} 12'$ W., F. white light, D. 1, 136 ft. high, vis. 16 miles, structure white, circular, clapboarded, 112 ft. high. Lighted 1858. A fog gun is fired every half hour. Marine telegraph and signal station.

HEATH POINT, E. end Anticosti Island, lat. $49^{\circ} 5' 20''$ N., lon. $61^{\circ} 42' 30''$ W., F. white C. light, 110 ft. high, vis. 15 miles, structure 90 ft. high, white, with a red horizontal band, circular, faced and clapboarded. Lighted 1835. The

Lighthouse is always kept open to the southward of Cormorant Point. Visible between bearings S. W. by W. to E. Depot of provisions here for shipwrecked seamen. A fog gun is fired every half hour. Marine telegraph and signal station.

BAGOT'S BLUFF, $\frac{3}{4}$ mile W. from S. point, Anticosti Island, lat. $49^{\circ} 4' N.$, lon. $62^{\circ} 15' 10'' W.$ Fl. white C. light every 20 sec. 75 feet high, vis. 14 miles, structure white, with a red vertical stripe, hexagonal, 54 ft. high. Lighted 1871. A fog whistle 100 yards E. of light-house sounds for 10 sec. in every min. Marine telegraph and signal station.

SOUTH W. POINT, Anticosti Island, lat. $49^{\circ} 23' 45'' N.$, lon. $63^{\circ} 35' 46'' W.$, rev. white C. light every minute, 100 ft. high, vis. 15 miles, structure 75 ft. high, white, with 2 red horizontal bands, circular, faced and clapboarded. Lighted 1831. Vis. between bearings of N. N. W., round by southward to S. E. by E. Marine telegraph and signal station.

WEST POINT, extreme W. point, Anticosti Island, lat. $49^{\circ} 52' 30'' N.$, lon. $64^{\circ} 31' 40'' W.$ F white light, D 2, 112 ft. high, vis. 15 miles, structure 109 ft. high, white with two red vertical stripes, circular, clapboarded. Lighted 1858. A fog gun is fired every half hour. Marine telegraph and signal station.

FAME POINT, County of Gaspé, South coast, lat. $49^{\circ} 6' 48'' N.$, lon. $64^{\circ} 36' 20'' W.$ F. and Fl. C. light, white with red flashes, 20 sec., 200 ft. high, vis. 20 miles, structure 50 ft. high, white, with a black horizontal band, square, wood. Lighted 1880. Marine telegraph and signal station.

CAPE MAGDALEN, on Cape, lat. $49^{\circ} 15' 40'' N.$, lon. $65^{\circ} 19' 30'' W.$, alt. red and white C light, every 2 min., vis. red 15, white 20 miles, 147 ft. high, structure white, with a black vertical stripe, hexagonal, 54 ft. high. Lighted 1871. Marine telegraph and signal station.

MARTIN RIVER, on S. shore, Gaspé County, lat. $49^{\circ} 13' 25'' N.$, lon. $66^{\circ} 9' W.$ F white C light, vis. 17 miles, 125 ft. high, structure white, with two black horizontal bands, square, wood, with dwelling attached, 54 ft. high. Lighted 1876. Marine telegraph and signal station.

SEVEN ISLANDS, on Carousal Island, lat. $50^{\circ} 5' 40'' N.$, lon. $66^{\circ} 22' 44'' W.$, F white C light, vis. 20 miles, 200 ft. high, structure white, with a red horizontal band, square, wood, with dwelling attached, 39 ft. high. Lighted 1870, re-erected 1875.

POINT STE. ANNE, 11 miles E. from Cape Chatte light, lat. $49^{\circ} 8' 20'' N.$, lon. $66^{\circ} 33' 30'' W.$ Lighted 1881. Fog horn sounds a blast of 8 secs. in every min.

CAPE CHATTE, N. E. point of Cape, lat. $49^{\circ} 5' 55'' N.$, lon. $66^{\circ} 45' 29'' W.$, rev. white C. light, every 30 sec., vis. 18 miles, 120 ft. high, structure white, with two black vertical stripes, square, wood, 26 ft. high. Lighted 1871, re-erected 1875. Visible from all points of approach seaward. Marine telegraph and signal station.

EGG ISLAND, 200 yards from S. end of Island, lat. $49^{\circ} 38' N.$, lon. $61^{\circ} 10' W.$, rev. white C. light, every $1\frac{1}{2}$ min., vis. 15 miles, 70 ft. high, structure white, with a red vertical stripe, octagonal, surmounting dwelling, 35 ft. high. Lighted 1871.

POINT DE MONTS, about $1\frac{1}{4}$ mile N. E. of Point, lat. $49^{\circ} 19' 35'' N.$, lon. $67^{\circ} 21' 55'' W.$, F. white C. light, 100 feet high, vis. 15 miles, structure 75 feet high, white, with 2 red horizontal bands, circular, clapboarded. Lighted 1830. A fog gun is fired every half hour.

MATANE, County of Rimouski, lat. $48^{\circ} 52' N.$, lon. $67^{\circ} 33' W.$, F. white C. light, 65 feet high, vis. 10 miles, structure 28 feet high, white, with a black cross, square, wood, with dwelling attached, 28 feet high. Lighted 1873. Marine telegraph and signal station.

LITTLE METIS POINT, lat. $48^{\circ} 41' 10'' N.$, lon. $68^{\circ} 2' 30'' W.$, alt. red and white C. light every minute, vis. 15 miles, 56 ft. high, structure white, square, with red roof, and dwelling attached, 40 ft. high. Lighted 1874. Marine telegraph and signal station.

MANICOUAGAN LIGHTSHIP, 4 miles from land, the E. peninsula bearing N. E.,

and the W. N., lon. 68° deck, each on stern. D an interval of

FATHER I C. light, 43 square. Lig

PORT NE light, vis. 15 wood, 27 ft.

BIQUET I White C. lig circular, clap

RED ISLA $20^{\circ} W.$ 2 34 and 22 ft Lighted 187 to the N. of tion. A ste

RED ISLE C. light, vis Lighted 184

LARK IS white C. lig Lighted 187 minute.

These ten lights lead through the Channel to Chicoutimi Harbor.

1st Rang N., lon. 70 40, lower 26

2nd Rang white C lig 27 ft. high.

3rd Rang white C lig 25 ft. high.

4th Rang white C lig 26 ft. high.

5th Rang white C lig 26 ft. high.

CHICOUT

GREEN I F. white C. 40 ft. high.

Visible be-
wrecked sea-
station.

49° 4' N.,
vis. 14 miles,
lighted 1871.
Marine

35' 46" W.,
e 75 ft. high,
lighted 1831.
E. Marine

N., lon. 64°
109 ft. high,
858. A fog

lon. 64° 36'
high, vis. 20
square, wood.

W., alt. red
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71. Marine

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61° 10' W.,
white, with
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N., lon. 67,
5 feet high,
30. A fog

. white C.
black cross,
Marine tele-

alt. red and
square, with
e telegraph

ing N. E.,

and the W. peninsula bearing W. N. W., moored in 25 fathoms water, lat. 49° 2' N., lon. 68° 15' W., 2 F. white D. lights, one 27 ft. and the other 24 ft. from deck, each vis. 12 miles, vessel painted black, with "Manicouagan, Quebec," on stern. Lighted 1872. A fog whistle sounds a blast of 8 seconds' duration, with an interval of 8 sec., and then a blast of 8 sec., with an interval of 2 min. 20 sec.

FATHER POINT, Rimouski, lat. 48° 31' 25" N., lon. 68° 27' 40" W., F. white C. light, 43 ft. high, vis. 10 miles, structure white, with a black horizontal band, square. Lighted 1859. Pilots stationed here. Marine telegraph and signal station.

RIVER ST. LAWRENCE CONTINUED.

PORT NEUF, Saguenay County, lat. 48° 37' N., lon. 69° 6' W. F. white C. light, vis. 15 miles, 40 ft. high, structure white, with two red vertical stripes, square, wood, 27 ft. high. Lighted 1873.

BIQUET ISLAND, near centre of Island, lat. 48° 25' 18" N., lon. 68° 53' 20" W. White C. light, rev. every 2 minutes, vis. 17 miles, 112 feet high, structure white, circular, clapboarded, 65 ft. high. Lighted 1844. A fog gun is fired every half hour.

RED ISLAND LIGHTSHIP, N. E. from Island, lat. 48° 6' 30" N., lon. 69° 30' 20" W. 2 F. white lights, one C. on fore and other D. on mainmast, vis. 12 miles, 34 and 22 ft. high, ship red, with words "Red Island Lightship" on each side. Lighted 1871. Moored in 10 fathoms water N. E. from Red Island, a little open to the N. of Hare Island, with a red buoy lying about ½ mile in a W. S. W. direction. A steam fog whistle on the lightship sounds 10 seconds in every minute.

RED ISLET, on centre of Islet, lat. 48° 4' 20" N., lon. 69° 32' 56" W. F. red C. light, vis. 12 miles, 75 ft. high, structure grey, stone, circular, 51 feet high. Lighted 1848.

LARK ISLET, entrance to Saguenay, lat. 48° 5' 30" N., lon. 69° 40' W. F. white C. light, vis. 10 miles. 35 ft. high, structure white, square, wood, 29 ft. high. Lighted 1872. A fog trumpet at light station sounds a blast of 20 seconds in every minute.

SAGUENAY RIVER.

1st Range, on S. side of river, entrance to Chicoutimi Harbor, lat. 48° 26' 52" N., lon. 70° 58' 9" W., 2 F. white C. lights, 303 yards apart, vis. 5 miles, upper 40, lower 26 ft. high, structures 43 and 26 ft. high. Lighted 1873.

2nd Range, on N. side of river, lat. 48° 27' 46" N., lon. 70° 58' 38" W., 2 F. white C. lights, 255 yards apart, vis. 4 miles, 41 and 25 feet high, structures 40 and 27 ft. high. Lighted 1873.

3rd Range, on N. side of river, lat. 48° 27' 57" N., lon. 70° 59' 58" W., 2 F. white C. lights, 208 yards apart, vis. 3 miles, 41 and 29 ft. high, structures 40 and 25 ft. high. Lighted 1873.

4th Range, on N. side of river, lat. 48° 27' 41" N., lon. 71° 0' 39" W., 2 F. white C. lights, 238 yards apart, vis. 3 miles, 40 and 22 ft. high, structures 40 and 26 ft. high. Lighted 1873.

5th Range, on S. side of river, lat. 48° 26' 27" N., lon. 71° 1' 32" W., 2 F. white C. lights, 128 yards apart, vis. 2½ miles, 59 and 40 ft. high, structures 27 and 26 ft. high. Lighted 1873.

CHICOUTIMI WHARF, F. white light.

These ten lights lead through the Channel to Chicoutimi Harbor.

RIVER ST. LAWRENCE.

GREEN ISLAND, on N. point of Islet, lat. 48° 3' 17" N., lon. 69° 25' 10" W. F. white C. light, vis. 13 miles, 60 ft. high, structure white, octagonal, clapboarded, 40 ft. high. Lighted 1809. A fog gun is fired every half hour.

BRANDY POTS, 84 yards from S. E. end of Islet, lat. $47^{\circ} 52' 30''$ N., lon. $69^{\circ} 40' 50''$ W. F. white light, D. 4th ord., vis. 10 miles, 78 feet high, structure drab color, brick, 39 feet high. Lighted 1862.

LONG PILGRIMS, 40 yards W. of centre of Island, and 108 yards S. from water's edge, lat. $47^{\circ} 43' 15''$ N., lon. $69^{\circ} 44' 20''$ W. F. white D. Light, 4th ord., vis. 12 miles. 180 ft. high, structure drab color, brick, 39 ft. high. Lighted 1862.

GRAND ISLE, KAMOURASKA, 240 yards from N. E. end of Island, 160 yards from water's edge, lat. $47^{\circ} 38' 20''$ N., lon. $69^{\circ} 51' 40''$ W., rev. white C. light, greatest brilliancy once a minute, vis. 18 miles, 166 feet high, structure wood, 39 ft. high. Lighted 1862.

LOWER TRAVERSE LIGHTSHIP, N. E. of St. Roch shoals, lat. $47^{\circ} 22' 10''$ N., lon. $70^{\circ} 14' 50''$ W. 2 F. white D. lights, one light 4 ft. higher than the other, vis. 10 miles each, ship red, with words "Traverse Lightship" in white letters on each side. Two masts, 27 and 23 feet above deck. Lighted 1836. A red ball on the mainmast will be lowered, and one light only shown, if from any cause the Lightship shall move from her station. A steam fog whistle placed on Lightship sounds 12 seconds in each minute, with an interval of 48 seconds.

UPPER TRAVERSE LIGHTSHIP, N. W. edge of St. Roch Shoals, lat. $47^{\circ} 19' 50''$ N., lon. $70^{\circ} 16' W.$, two F. white C. lights, main light 8 feet higher than the other, each visible 6 miles. Lighted 1871. Should the vessel be out of place, the light on the foremast alone will be exhibited, and during the day the ball on the foremast head will be taken down. A bell tolls during thick weather, fogs and snow storms.

STONE PILLAR, 100 yards from S. point of Islet, lat. $47^{\circ} 12' 25''$ N., lon. $70^{\circ} 21' 26''$ W., rev. white C. light, every $1\frac{1}{2}$ minute, visible 13 miles, 68 ft. high, structure white, conical, stone, 38 feet high. Lighted 1843.

CRANE ISLAND, $1\frac{1}{2}$ mile from W. point of Island, lat. $47^{\circ} 3' 30''$ N., lon. $70^{\circ} 32' 30''$ W., F. white C. light, vis. 10 miles, 44 ft. high, structure wood, 37 ft high. Lighted 1862.

BELLECHASSE, E. end of Island, lat. $46^{\circ} 56' N.$, lon. $70^{\circ} 46' W.$, F. white C. light, vis. 13 miles, 70 ft. high, structure wood, 30 ft. high. Lighted 1862.

PORT ST. JOHN, on a wharf, Island of Orleans, lat. $46^{\circ} 55' 20''$ N., lon. $70^{\circ} 53' 30''$ W., rev. white C. light, every 30 sec., vis. 15 miles, 27 ft. high, structure white, square, wood, 23 ft. high. Lighted 1874.

POINT ST. LAWRENCE, Island of Orleans. lat. $46^{\circ} 51' 50''$ N., lon. $71^{\circ} 2' 40''$ W., F. white C. light, vis. 8 miles, 38 ft. high, structure white, wood. Lighted 1869.

MONTREAL, on Albert Pier, lat. $45^{\circ} 30' 47''$ N., lon. $73^{\circ} 33' 19''$ W., 2 F. red C. lights, back light 73 yards S. $\frac{1}{4}$ S. from front light, each vis. 4 miles, front 36 ft., back 29 ft. high, structures white, octagonal, wood, front 31 ft., back 21 ft. high. Lighted 1830. Indicate the deepest channel to and from the harbor.

NEW BRUNSWICK.

GULF OF ST. LAWRENCE.

CAMPBELLTON RANGE LIGHTS—1. Pier beside railway wharf, Restigouche River, lat. $48^{\circ} 0' 50''$ N, lon. $66^{\circ} 39' 40''$ W., F. white C. light, vis. 9 miles, 24 ft. high, structure white. square, wood, 22 ft. high. Lighted 1879. 2. On Moffat's wharf, F. white C. light, vis. 9 miles, 24 ft. high, structure white, square, wood, 22 ft. high. Lighted 1879.

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OAK POINT—I. Restigouche River, front light, lat. $48^{\circ} 2' 40''$ N., lon. $66^{\circ} 36' 30''$ W., F. white C. light, vis. 11 miles, 40 ft. high, structure white square, wood, 22 ft. high. 2. Back light, F. white C., vis. 12 miles, 45 ft. high, structure 22 ft. high. Lighted 1879. In range, guide across the Traverse.

DALHOUSIE RANGE LIGHTS—I. On public wharf, Restigouche River, lat. $48^{\circ} 4' 40''$ N., lon. $66^{\circ} 22' 30''$ W., F. white C. light, vis. 9 miles, 24 ft. high, structure white, square, wood, 22 ft. high. 2. On Montgomery Island, F. white C. light, vis. 9 miles, 27 ft. high, structure white, square, wood, 22 ft. high. Lighted 1879.

DALHOUSIE, S. side of entrance to harbor, lat. $48^{\circ} 3' 45''$ N., lon. $66^{\circ} 20' 50''$ W., F. white C. light, 49 ft. high, vis. 13 miles, structure 33 ft. high, white, square, wood. Lighted 1870. Seen from all points of approach.

HERON ISLAND, Chaleur Bay, lat. 48° N., lon. $66^{\circ} 8' W.$, F. white C. light, 66 ft. high, vis. 15 miles, structure 20 ft. high, white, square, wood. Lighted 1875. Visible from all points seaward.

PÉTIT ROCHER, on Elm Tree Point, lat. $47^{\circ} 48' 39''$ N., lon. $65^{\circ} 43' 13''$ W., F. white C. light, vis. 12 miles, 36 ft. high, structure white, square, wood, 31 ft. high. Lighted 1879.

BATHURST, on Caron's Point, lat. $47^{\circ} 39' 10''$ N., lon. $68^{\circ} 36' 40''$ W., 2 C. lights, one F. white, vis. 10 miles, one F. red, 43 ft. high, vis. 14 miles, structures, one white, wood, one red and white striped, square, wood. Lighted 1871, the latter rebuilt 1878. Range Lights, to guide vessels into the harbor.

CARAQUET, on Island, Bay of Chaleur, lat. $47^{\circ} 49' 40''$ N., lon. $65^{\circ} 54' W.$, F. white C. light, visible 14 miles, 52 ft. high, white square tower on dwelling, 48 ft. high. Lighted 1870.

POKESUDIE, N. E. point of Island, lat. $47^{\circ} 49' 10''$ N., lon. $64^{\circ} 44' 40''$ W., F. white C. light, visible 11 miles, 41 feet high, structure white, square, wood, 34 feet high. Lighted 1881.

GOOSE LAKE, W. side of Miscou Island, lat. $47^{\circ} 55' 43''$ N., lon. $64^{\circ} 35' 40''$ W., white C. light, rev. every minute, visible 10 miles, 40 feet high, structure white, square, wood, 28 ft. high. Lighted 1875. Complete revolution every two minutes.

SHIPPEGAN, I. On Alexander Point, N. E. of entrance to gully, lat. $47^{\circ} 43' 30''$ N., lon. $64^{\circ} 39' 25''$ W., F. white C. light, 32 ft. high, vis. 11 miles, structure white, square, wood, 30 ft. high. Lighted 1872, removed 1880. 2. Also, Range light, 484 ft. S. W. by W. from main light, F. white D. light, 22 ft. high, lantern on pole 20 ft. high. The lights range with buoy outside bar, at entrance to gully.

MISCOU ISLAND, Birch Point, lat. $48^{\circ} 1' N.$, lon. $64^{\circ} 29' 25'' W.$, F. red C. light, 79 ft. high, vis. 12 miles, structure 74 ft. high, white, octagonal, wood. Lighted 1856. A steam fog whistle, placed in the year 1875, and situated 107 yds. E. from lighthouse, sounds a blast of 5 seconds' duration every half minute.

POKEMOCHE, lat. $47^{\circ} 40' 5''$ N., lon. $64^{\circ} 45' 5''$ W., F. green C light, visible 8 miles, 35 feet high, structure white, square, wood, with dwelling attached, 37 feet high. Lighted 1876.

NORTH TRACADIE, one on N. side of gully, the other outside of bar, lat. $47^{\circ} 33' 14''$ N., lon. $64^{\circ} 51' 35''$ W., 2 F. white C. lights, vis. 12 miles, 32 and 17 ft. high, structures white, square, wood, 30 and 14 feet high. Lighted 1872 and 1875. Coast and harbor range lights.

SOUTH TRACADIE, I. N. side of gully, lat. $47^{\circ} 30' N.$, lon. $64^{\circ} 52' 10'' W.$ F. white C. light, vis. 8 miles, 20 ft. high, structure white, square, open frame, 19 ft. high. Lighted 1877. 2. Also, back light, F. red C., 166 yards N. from front light, vis. 8 miles, 26 ft. high, structure red, square, wood, 26 ft. high. Lighted 1877. Vessels crossing the bar from sea should steer N., keeping the lights in range. Width of bar, 2 cable lengths.

TABUSINTAC, I. Crab Island, lat. $47^{\circ} 18' 54''$ N., lon. $64^{\circ} 59' 30''$ W. F. red C. light, 32 ft. high, vis. 7 miles, structure white, square, wood, 33 ft. high. Lighted 1873. 2. Also, Range light, 150 ft. S. $\frac{1}{2}$ W. from main light, F. white C., vis. 3 miles, 23 ft. high. Lantern on pole 20 ft. high. Lighted 1873. Coast and harbor range lights.

NEGUAC, lat. $47^{\circ} 17' 47''$ N., lon. $65^{\circ} 3' 20''$ W. 2 F. white C. lights, 32 ft. high, vis. 11 miles, structure white, square, wood, 30 ft. high. Lighted 1873. Coast and harbor range lights, situated N. E. side of gully.

HAY ISLAND, near E. end of Island, lat. $47^{\circ} 14' 10''$ N., lon. $65^{\circ} 3' 40''$ W. F. white C. light, 23 ft. high, vis. 10 miles, lantern on mast, with red shed at base, 15 ft. high. Also, F. white C. light, 210 feet from front light, 30 ft. high, vis. 11 miles, structure white, square, wood, 21 feet high. Lighted 1881. Range lights, to enable vessels seeking shelter to clear the point of the shoal off the E. end of the Island.

PORTAGE ISLAND, on S. point of Island, lat. $47^{\circ} 9' 50''$ N., lon. $65^{\circ} 2' 40''$ W. F. white C. light, 46 ft. high, vis. 12 miles, structure white, square, wood, 42 ft. high. Lighted 1869.

OAK POINT, Miramichi Bay, lat. $47^{\circ} 7' 40''$ N., lon. $65^{\circ} 15' 10''$ W. 2 F. white C. lights, half mile apart, 40 and 60 feet high, vis. 10 miles, structures white, wood. Lighted 1869. Range lights.

SHELDRAKE ISLAND, Miramichi Bay, lat. $47^{\circ} 6' 50''$ N., lon. $65^{\circ} 18' W.$, 2 F. white C. lights, $\frac{1}{4}$ mile apart, 48 ft. high, vis. 9 miles. Lighted 1873. Range lights.

GRANT'S BEACH, Miramichi Bay, lat. $47^{\circ} 5' 30''$ N., lon. $65^{\circ} 28' 10''$ W. 2 F. white C. lights, bearing S. W. and N. E. from each other, vis. 10 miles, 120 and 140 ft. high. Lighted 1869. Range lights.

MIDDLE ISLAND, Miramichi River, lat. $47^{\circ} 0' 3''$ N., lon. $65^{\circ} 19' 9''$ W. F. white C. light, 45 ft. high. Lighted 1874. Range lights.

FOX ISLAND, N. W. Point, lat. $47^{\circ} 8' 5''$ N., lon. $65^{\circ} 2' 20''$ W. F. white lights, vis. 8 miles. No. 1, 50 ft. high, 100 ft. from northernmost point of Island, lantern on mast, with white shed at base, 40 ft. high, removed 1881. No. 2, 46 ft. high, 1,051 ft. S. E. $\frac{1}{2}$ E. from No. 1, lantern on mast 38 ft. high, with white shed at base, removed 1881. No. 3, 36 ft. high, 954 ft. S. W. from No 1, lantern on mast 28 ft. high, with white shed at base. Lighted 1881. Nos. 1 and 2, in line, range N. W. $\frac{1}{2}$ N. into the old Horseshoe Channel; Nos. 1 and 3, in line, range N. E. through Portage Island Channel; Nos. 2 and 3, in line, range W. by N., to the upper buoy of Horseshoe Shoal.

FOX ISLAND, E. end, lat. $47^{\circ} 6' 50''$ N., lon. $65^{\circ} 0' 10''$ W. 2 F. white C. lights, 30 ft. high, vis. 10 miles, structure white, wood. Lighted 1872. Range lights, to guide vessels through the Swashway Channel.

MIRAMICHI BAY LIGHTSHIP, Horseshoe Bar, between Fox and Portage Islands, lat. $47^{\circ} 8' N.$, lon. $65^{\circ} 3' W.$ F. red C. light, 35 ft. high, vis. 8 miles. Lighted 1873. A schooner-rigged ship.

PRESTON BEACH, Miramichi Bay, lat. $47^{\circ} 4' 50''$ N., lon. $65^{\circ} 54' 40''$ W. 2 F. white C. lights, 55 and 66 ft. high, vis. 10 miles. Lighted 1869. Range lights.

ESCUMINAC, on Point, lat. $47^{\circ} 4' 32''$ N., lon. $64^{\circ} 47' 30''$ W. F. white light, D. 3, vis. 14 miles, 70 ft. high, structure white, wood, 58 ft. high. Lighted 1841. A steam fog whistle, situated 100 yards W. of the lighthouse, sounds 10 seconds in each minute.

RICHIBUCTO HARBOR, I. On outside of bank, S. beach, lat. $46^{\circ} 42' 45''$ N., lon. $64^{\circ} 46' 10''$ W. F. white C. light, 40 ft. high, vis. 12 miles, structure white, square, wood, 33 ft. high, dwelling attached. 2. Also, 102 yards W. by S. $\frac{1}{2}$ S.

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RICHIBUCTO HEAD, on headland, lat. $46^{\circ} 39' 40''$ N., lon. $64^{\circ} 42' 30''$ W., F. white light, D. 4, 70 ft. high, vis. 14 miles, structure white, square, 50 ft. high. Lighted 1864.

BUCTOUCHE, on Dixon's Point, lat. $46^{\circ} 27' 40''$ N., lon. $64^{\circ} 38' 50''$ W., F. white C. light, 36 ft. high, vis. 11 miles, structure white, square, wood, 30 ft. high. Lighted 1881. Also, 1,050 ft. N. W. by W. from front light, F. white C. light, 41 ft. high, vis. 12 miles, structure white, square, wood, 34 ft. high. Lighted 1881. Range lights, built on line of former day beacons, to guide into Buctouche harbor.

CASSIE'S POINT, on point, lat. $46^{\circ} 19' 15''$ N., lon. $64^{\circ} 30' 20''$ W., white C. light, rev. every $\frac{1}{2}$ minute, 40 ft. high, visible 14 miles, structure white, square, wood, 27 ft. high. Lighted 1872.

SHEDIAC ISLAND, lat. $46^{\circ} 15' 20''$ N., lon. $64^{\circ} 31' 50''$ W., 2 F. white C. lights, 48 & 56 ft. high, vis. 10 miles, structure white. Lighted 1869. Beacons.

SHEDIAC HARBOR, Duchêne Wharf, lat. $46^{\circ} 14' 20''$ N., lon. $64^{\circ} 31' W.$, F. white C. light on a pole, visible 6 miles, 15 feet high. Lighted 1860. Not under Marine department.

JOURIMAIN, on cape, lat. $46^{\circ} 10' N.$, lon. $63^{\circ} 48' 30'' W.$, Fl. white C. light, 10 sec. vis. 14 miles, 72 ft. high, structure white, octagonal, 45 ft. high. Lighted 1870, changed 1878. Visible from S. E. round by N. to W.

PRINCE EDWARD ISLAND.

NORTH POINT, on point, lat. $47^{\circ} 3' 46''$ N., lon. $63^{\circ} 49' 10'' W.$, white C. light, rev. every minute, 80 ft. high, vis. 14 miles, structure white, octagonal, 60 ft. high. Lighted 1866, changed 1875.

WEST POINT, on sand beach, lat. $46^{\circ} 37' 30''$ N., lon. $64^{\circ} 23' 10'' W.$, rev. red and white C. light, one red and three white flashes in $1\frac{1}{2}$ min. Greatest brilliancy every $22\frac{1}{2}$ sec., 66 ft. high, vis. 13 miles, structure broad red and white horizontal bands, square, wood, 67 ft. high. Lighted 1876.

CAPE EGMONT, to be erected.

SUMMERSIDE, Railway wharf, Bedeque Bay, lat. $46^{\circ} 23' 25''$ N., lon. $63^{\circ} 47' 30'' W.$, F. white C. light, 33 ft. high, vis. 10 miles, structure square, tower on roof of railway freight shed, 30 ft. high. Lighted 1856, rebuilt 1877.

INDIAN POINT, E. edge of shoal, on S. side of channel in Bedeque Bay, lat. $46^{\circ} 22' 40''$ N., lon. $63^{\circ} 48' 50'' W.$, F. C. light, white with red arc, 48 ft. high, vis. 13 miles, structure, white octagonal, wood, on a circular stone pier, 42 ft. high. Lighted 1881. Red between N. N. E. $\frac{1}{2}$ E. and N. E. $\frac{1}{2}$ E. only. It is proposed to change the arrangement of the red arc during the coming season.

SEA COW HEAD, or Salutation Head, lat. $46^{\circ} 19' 10''$ N., lon. $73^{\circ} 48' 20'' W.$, F. white C. light, 88 ft. high, vis. 15 miles, structure white, octagonal, 60 ft. high. Lighted 1863.

CRAPAUD, W. end of bridge, at head of harbor, lat. $46^{\circ} 13' N.$, lon. $64^{\circ} 8' W.$, F. white and blue C. light, 41 ft. high, vis. 3 miles, structure white, square, wood, erected 1879. Inner range light F. white. The two lights in range, will lead to can buoy on Cameron's Reef and cask buoy at the entrance to the basin, protected by Tryon Bar, where is good anchorage. At entrance to dredged channel is another cask buoy whence the channel to the wharf is straight and marked by spar buoys and bushes.

ST. PETER'S ISLAND, Hillsborough Bay, westernmost point of Island, lat. $46^{\circ} 7' 10''$ N., lon. $63^{\circ} 11' 40''$ W., F. white C. light, 46 feet high, vis. 12 miles, structure white, square, wood, 38 ft. high. Lighted 1881. To be changed to fixed red on opening of navigation. ~~Is this light changed to revolving light?~~

BLOCKHOUSE POINT, at W. side of entrance to Charlottetown Harbor, lat. $46^{\circ} 11' 36''$ N., lon. $63^{\circ} 7' 28''$ W. 2 F. C. lights in one tower, 21 ft. apart vertical, up. white, 56 ft. high, vis. 12 miles, lower red, 35 ft. high, vis. 3 miles, structure white, square, wood, 42 ft. high, with dwelling and signal mast attached. Lighted 1851, rebuilt 1876. Lower light a streak from a window of the tower, showing only towards the bell buoy. Vessels entering, on coming into this streak, should steer for the light until they make the bell buoy; they should then steer N. by E. $\frac{3}{4}$ E. for $2\frac{1}{2}$ miles, when the port buoy will be made; they should then steer for the entrance to the harbor N. $\frac{1}{2}$ E.

ORWELL HARBOR, at Brush wharf, F. red C. light, 28 ft. high, vis. 8 miles, structure white, square, wood, 22 ft. high. Erected 1879. Light shows S. W.

POINT PRIM, S. E. extremity of Hillsborough Bay, 100 yards from the point, lat. $46^{\circ} 3' 10''$ N., lon. $63^{\circ} 2' W.$, F. white C. light, 68 ft. high, vis. 12 miles, structure white, circular, brick, 55 ft. high. Lighted 1846. Bell buoy on E. side of channel, black buoy on W. side $2\frac{1}{4}$ N. by E. $\frac{3}{4}$ E. from bell buoy harborward.

WOOD ISLAND, off S. point, lat. $45^{\circ} 57' 22''$ N., lon. $62^{\circ} 44' 30''$ W., F. white light, D. 4, 80 ft. high, vis. 15 miles, structure white, square, wood, 40 ft. high, with dwelling attached. Lighted 1876.

LITTLE SANDS, about a mile E. of Little Sands Village, lat. $45^{\circ} 57' 53''$ N., lon. $62^{\circ} 39' W.$, F. red C. light, 50 ft. high, vis. 5 miles, in gable window of a house, 20 ft. high. Lighted 1877. For guidance of fishing boats.

CAPE BEAR, on the headland, lat. $46^{\circ} 0' 35''$ N., lon. $52^{\circ} 27' 15''$ W., red C. light, rev. every 30 sec., 74 ft. high, vis. 12 miles, structure white, square, wood, 46 ft. high, with dwelling attached. Lighted 1881.

MURRAY HARBOR, on edge of sand bar, S. side of harbor, lat. $46^{\circ} 1' 28''$ N., lon. $62^{\circ} 28' 25''$ W., F. white C. light, 33 ft. high, vis. 8 miles, structure white, square, wood, 30 ft. high. Lighted 1869, rebuilt 1879.

... 2, on mainland, about a mile W. by S. from front light, F. white C. light, 57 ft. high, vis. 10 miles, structure white, square, wood, 40 ft. high. In one, these range lights show the channel to the outer buoy.

PANMURE HEAD, S. E. extremity of Cardigan Bay, lat. $46^{\circ} 8' 55''$ N., lon. $62^{\circ} 27' 40''$ W., F. white C. light, 96 ft. high, vis. 16 miles, structure white, octagonal, wood, 50 ft. high. Lighted 1853. This light should be kept open off Terras Point, to clear reef off Cape Bear.

GEORGETOWN, St. Andrew Point, lat. $46^{\circ} 9' 57''$ N., lon. $62^{\circ} 31' 23''$ W., F. red C. light seaward, 36 ft. high, vis. 10 miles, structure white, square, wood, 20 ft. high. Lighted 1868.

SOURIS EAST, Knight's Point, 300 feet S. E. of breakwater, lat. $46^{\circ} 20' 50''$ N., lon. $62^{\circ} 14' 30''$ W. F. white light with red streak, D. 4, 85 ft. high, vis. 15 miles, structure white, square, wood, 45 ft. high, dwelling attached. Lighted 1880. Vessels open red streak when light bears S. E. by S. They are then inside breakwater, and by rounding up and keeping the red light open, will come to safe anchorage off the head of Railway wharf.

EAST POINT, 200 yards inshore from S. part of point, lat. $46^{\circ} 27' 9''$ N., lon. $61^{\circ} 58' 15''$ W. White C. light, rev. every 3 min., 130 ft. high, vis. 17 miles, structure white, octagonal, wood, 60 ft. high. Lighted 1867, changed 1878.

ST. PETERS, I. On outer end of breakwater, lat. $46^{\circ} 26' 30''$ N., lon. $62^{\circ} 44' 30''$ W. F. white C. light, 34 ft. high, vis. 6 miles, structure white, square,

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wood, 35 ft. high. Lighted 1865. 2. On sand beach, 126 yards S. W. by S. from front light, F. white C. light, 32 ft. high, vis. 6 miles, structure white, square, open frame, 33 ft. high. Buildings erected 1879. Range lights, to lead into harbor.

SAVAGE HARBOR, Range lights to be erected.

TRACADIE, on beach, W. side of channel, 233 yds. N. E. by N. from back light, lat. $46^{\circ} 25' 20''$ N., lon. $63^{\circ} 2' 30''$ W. 2 F. red C. lights, 30 and 19 ft. high, vis. 10 and 9 miles, structures open square frame-work, 32 and 21 ft. high, lantern white. Lighted 1876. In one, lead through channel over the bar.

SOUTH OR LITTLE RUSTICO, S. E. end of Robinson's Sound, about 3 miles S. E. of Grand Rustico, lat. $46^{\circ} 26' 25''$ N., lon. $63^{\circ} 13' 38''$ W. 2 F. white C. lights, 26 and 17 feet high, vis. 6 miles, on masts 22 and 14 feet high. Lighted 1875. In one, lead through channel at entrance to harbor.

COVE HEAD, Range lights, 225 feet apart. 2 F. lights, vis. 3 miles, back light white, 33 feet high, front one blue, 23 feet high, lanterns on masts, 27 and 17 feet high. Lighted 1879.

NORTH OR GRAND RUSTICO, W. side of entrance to harbor, lat. $46^{\circ} 27' 28''$ N., lon. $63^{\circ} 17'$ W. 2 F. C. lights in one tower, 16 ft. apart vertically, upper white, vis. 10 miles, 40 ft. high, lower red, vis. 3 miles, 24 feet high, structure 35 ft. high, white, square, wood, with dwelling attached. Lighted 1876. The lower light is a streak shown from a window, 16 feet below the main light, and can be seen by vessels only when they are in range with the channel.

NEW LONDON, I. W. side of entrance to Granville Harbor, lat. $46^{\circ} 31' 10''$ N., lon. $63^{\circ} 28' 45''$ W. F. red C. light, 40 ft. high, vis. 10 miles, structure white, square, wood, 35 ft. high, with dwelling attached. Lighted 1876. 2. Also, F. white Range light, 500 ft. N. E. of main light, 24 ft. high, vis. 3 miles, structure white, square, open frame, 21 ft. high. Lighted 1879. The two lights, in range, show the entrance to the harbor.

FISH ISLAND, entrance to Malpeque, or Richmond Bay, on inside of Island, lat. $46^{\circ} 34' 44''$ N., lon. $63^{\circ} 42' 29''$ W., 2 F. white C. lights, 400 yds. apart, E. by S., and W. by N., 50 ft. high, vis. 12 miles, structure white, square, wood, 46 ft. high, with dwelling attached. Lighted 1856, rebuilt 1876. Also, open frame work, lantern white, light vis. 6 miles, 18 ft. high. The main light is a sea light. The smaller one, in range with it, shows the channel over the bar.

LITTLE CHANNEL, or Conway Inlet, N. side, lat. $46^{\circ} 40'$ N., lon. $63^{\circ} 52' 40''$ W., 2 F. white C. lights, 66 yds. apart, 26 & 16 ft. high, vis. 10 & 8 miles, structures white, square, wood, 30 ft. high, and open frame work 20 feet high, lantern white. Lighted 1872, rebuilt 1876. In one, lead through channel at entrance to harbor.

CASCUMPEC, S. W. part of Sandy Island, lat. $46^{\circ} 48' 22''$ N., lon. $64^{\circ} 2' 15''$ W. 2 F. C. lights, 218 yds. apart E. by S. and W. by N., main white, vis. 12 miles, 45 feet high, range red, 18 ft. high, vis. 6 miles, structure main white, square, wood, 41 ft. high, with dwelling attached, range open frame work, lantern white, 22 ft. high. Lighted 1856, rebuilt 1876.

BIG TIGNISH, on beach, at inner end of N. breakwater pier, lat. $46^{\circ} 57' 35''$ N., lon. $63^{\circ} 59' 20''$ W., F. white C. light, 35 ft. high, vis. 11 miles, structure white, with a black horizontal band, square, wood, 33 ft. high. Lighted 1877, building 1881. Replaces range lights.

NOVA SCOTIA.

GULF OF ST. LAWRENCE.

PUGWASH, in harbor, lat. $45^{\circ} 52' 30''$ N., lon. $63^{\circ} 40' 20''$ W., F. red C. light, 48 feet high, vis. 8 miles, structure white, square, 44 ft. high. Lighted 1871. Shows a white light towards harbor.

MULLIN POINT, N, side of entrance to Wallace Harbor, Cumberland County, lat. $45^{\circ} 49' 45''$ N., lon. $63^{\circ} 25' 15''$ W., 2. F. C. lights, one white, one red, 39 ft. high, vis. 11 miles, structure white, square, wood, 25 ft. high. Lighted 1873. Red light shown from window in keeper's dwelling. Two lights, in one, from a range to lead across bar and in channel up to Mullin's Point.

AMET ISLAND, centre of Island, Northumberland Straits, lat. $45^{\circ} 50' 15''$ N., lon. $63^{\circ} 10' 10''$ W. F. white C. light, 44 ft. high, vis. 10 miles, structure white, square, wood, 26 ft. high. Lighted 1868. Visible round horizon.

CARIBOU ISLAND, N. E. part of Island, lat. $45^{\circ} 46'$ N., lon. $62^{\circ} 42' 20''$ W. White C. light, rev. every minute, 35 ft. high, vis. 10 miles, structure white, square, 26 ft. high. Lighted 1868.

PICTOU, I. S. point of entrance to harbor, lat. $45^{\circ} 41' 30''$ N., lon. $62^{\circ} 39' 30''$ W. 2. F. C. lights, vertical, 25 ft. apart, upper white, vis. 11 miles, 65 ft. high, lower red, structure striped red and white vertically, octagonal, wood, 55 feet high. Lighted 1834. Lighted when navigation is open. A small red light is seen below lantern; by keeping lights W. S. W., vessels clear the E. reefs off Pictou Island. 2. Also in tower of new Customs House, lat. $45^{\circ} 40' 50''$, lon. $62^{\circ} 42' 10''$. F. white C. light, 60 feet high, vis. 8 miles. Lighted 1878. In range with lights at entrance to harbor, leads through the channel up to the bar.

PICTOU ISLAND, S. E. point, lat. $45^{\circ} 49' 10''$ N., lon. $62^{\circ} 30' 30''$ W. F. white C. light. 52 ft. high, vis. 12 miles, structure white, square. Lighted 1853.

CAPE ST. GEORGE, N. side of Cape, lat. $45^{\circ} 52' 30''$ N., lon. $61^{\circ} 54' 40''$ W., white C. light, rev. every $\frac{1}{2}$ minute, 350 ft. high, vis. 25 miles, structure white, square, 39 ft. high. Lighted 1861.

POMQUET ISLAND OR BAYFIELD, N. E. end of Island, in St. George's Bay, lat. $45^{\circ} 39' 40''$ N., lon. $61^{\circ} 44' 30''$ W., F. red C. light, 50 ft. high, vis. 9 miles, structure white, square, 23 ft. high. Lighted 1868. Obscured on easterly bearings.

HARBOR AU BOUCHE, on S. W. shore of Harbor, lat. $45^{\circ} 41'$ N., lon. $61^{\circ} 31' 15''$ W., F. white C. light, 36 ft. high, vis. 9 miles, structure white, square, wood, 32 ft. high. Lighted 1879. 2. Also, 473 yds. S. W. $\frac{3}{4}$ S. from front light, F. red C. light, 107 ft. high, vis. 9 miles. Range lights, to lead through dredged channel over the bar.

NORTH CANSO, N. entrance, W. side, 120 yds. in shore, lat. $45^{\circ} 41' 40''$ N., lon. $61^{\circ} 29' 10''$ W., F. white C. light 110 feet high, vis. 18 miles, structure white, square, wood, lantern on dwelling, 35 feet high. Lighted 1842. There is a good anchorage under the light when the wind is off shore.

CAPE BRETON ISLAND.

PORT HOOD, S. E. side of entrance to harbor, lat. 46° N., lon. $61^{\circ} 31' 40''$ W., F. C. lights, red N., white S., 55 ft. high, vis. 10 miles, structure white, square. Lighted 1854.

MARGAREE, Summit or middle of Sea Wolf Island, lat. $46^{\circ} 21' 30''$ N., lon. 61°

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15° 30' W., F. white C. light, 298 ft. high, vis. 21 miles, structure white, square. Lighted 1854. To vessels in dangerous proximity to the Island the light may become obscured by the abrupt cliffs on the sides of the Island.

CHETICAMP, near S. end of Island, lat. 46° 36' 30" N., lon. 61° 3' 10" W., white C. light, rev. every 45 sec., 149 ft. high, vis. 20 miles, structure white, square, wood, 24 ft. high. Lighted 1872.

CAPE NORTH, $\frac{2}{3}$ mile S. E. from Money Point, lat. 47° 1' 45" N., lon. 60° 23' 15" W., red and white C. light, rev. every 45 sec., 74 ft. high, vis. 15 miles, structure white, square, wood, 26 ft. high. Lighted 1875. Coast light. Makes a complete revolution every $1\frac{1}{2}$ minute.

INGONISH, on Island, lat. 48° 41' 20" N., lon. 60° 20' W., F. white light, D. 5, 237 ft. high, vis. 20 miles, structure white, square, 40 ft. high. Lighted 1871.

INGONISH HARBOR, To be erected.

ST. ANN HARBOR, on the N. point of beach, lat. 46° 17' 30" N., lon. 60° 32' 15" W., F. white C. light, 24 ft. high, vis. 8 miles, structure white, 30 ft. high. Lighted 1871, rebuilt 1881. To mark entrance to harbor.

BIRD ISLAND, Ciboux Island, $\frac{1}{3}$ mile from N. end, lat. 46° 23' 10" N., lon. 60° 22' 30" W., red C. light, rev. every minute, 77 ft. high, vis. 14 miles, structure white, octagonal, 33 ft. high. Lighted 1863.

MCKENZIE POINT, N. side of Bras d'Or Lake, about 2 miles S. W. of Port Bevis, lat. 46° 7' 15" N., lon. 60° 39' W., F. white C. light, 95 ft. high, vis. 11 miles, structure white, square, wood. Lighted 1874. For guiding vessels through Bras d'Or Lake.

KIDSTON ISLAND, on the N. E. point, at entrance to Baddeck Harbor, N. side of Bras d'Or Lake, lat. 46° 5' 58" N., lon. 60° 44' 20" W., F. red C. light, 31 ft. high, vis. 7 miles, structure white, square, wood. Lighted 1875.

LITTLE NARROWS, at eastern entrance, lat. 46° N., lon. 60° 58' 25" W., F. white C. light, 40 ft. high, vis. 10 miles, structure white, square, wood, 35 ft. high. Lighted 1881.

GRAND NARROWS, on Uniacke Point, N. side of channel, Barra Straits, lat. 45° 58' N., lon. 60° 48' W., F. white C. light, 29 ft. high, vis. 10 miles, structure white, square, wood, 20 ft. high. Lighted 1874. For guiding vessels through Barra Straits and navigating the Little and Great Bras d'Or Lakes.

CAPE GEORGE, S. side of Bras d'Or Lake, W. side of entrance to St. Peter's Inlet, lat. 45° 44' 28" N., lon. 60° 48' 20" W., F. white C. light, 50 ft. high, vis. 12 miles, structure white, square, wood, 20 ft. high. Lighted 1875. To guide vessels through St. Peter's Inlet.

BLACK ROCK POINT, S. side of entrance to Big Bras d'Or, lat. 46° 18' 30" N., lon. 60° 23' 30" W., F. white C. light, 45 ft. high, structure white cross on red ground, square, wood, 23 ft. high. Lighted 1868.

POINT ACONI, on high cape, N. side of entrance to Little Bras d'Or, lat. 46° 20' 30" N., lon. 60° 17' 10" W., F. red C. light, 91 ft. high, vis. 11 miles, structure white, square, wood, 20 ft. high. Lighted 1874. For guiding vessels into Little Bras d'Or.

SYDNEY BAR, on W. end of S. bar, lat. 46° 12' 40" N., lon. 60° 12' 40" W., F. red C. light, 30 ft. high, vis. 10 miles, structure white, square, wood, 20 ft. high. Lighted 1872.

LOW POINT, Flat Point, E. side of Spanish Bay, lat. 46° 16' 30" N., lon. 60° 7' 30" W., F. white C. light, 70 ft. high, vis. 14 miles, structure vertical red and white stripes, octagonal, 51 ft. high. Lighted 1832. Marine telegraph and signal station.

LINGAN HEAD, N. side of entrance to Bridgeport Harbor, lat. $46^{\circ} 14' 10''$ N., lon. $60^{\circ} 2' 40''$ W., F. red C. light, 50 ft. high, vis. 10 miles, structure white, square, wood, 20 ft. high. Lighted 1874.

FLINT ISLAND, on Island, lat. $46^{\circ} 11' N.$, lon. $59^{\circ} 46' 50'' W.$, white C. light, rev. every 15 sec., 65 ft. high, vis. 12 miles, structure white, octagonal, 43 ft. high. Lighted 1856. Visible around horizon.

MAINADIEU, on S. side of W. point of Scatterie Island, lat. $46^{\circ} 0' 30'' N.$, lon. $59^{\circ} 47' 30'' W.$, F. red C. light, 90 ft. high, structure white, square, wood, 40 ft. high. Lighted 1871.

SCATTERIE, N. E. point of Trap Rock, lat. $46^{\circ} 2' 15'' N.$, lon. $59^{\circ} 40' 15'' W.$, rev. white C. light, visible a minute, eclipsed half a minute, 90 feet high, vis. 15 miles, structure white, octagonal, 70 ft. high. Lighted 1839. The light should never be brought to bear to eastward of N. N. E., or to southward of S. S. W., nor approached nearer than $1\frac{1}{2}$ mile. Boat here to render assistance. Fog whistle sounds two blasts of 5 seconds, with an interval of 10 seconds in every minute.

LOUISBURG, N. side of entrance to harbor, 120 yards inshore of point, lat. $45^{\circ} 54' 30'' N.$, lon. $59^{\circ} 57' 15'' W.$ F. white C. light, 85 ft. high, vis. 16 miles, structure white, with a black vertical stripe on dwelling, 35 ft. high. Lighted 1842. Automatic whistle buoy, moored in 30 fathoms, $1\frac{3}{8}$ mile S. E. $\frac{1}{4}$ E. from light-house. From this buoy a course N. W. by W. will clear the broad shoal, and lead to the fairway of Louisburg Harbor.

GUION ISLAND, about 230 yds from W. end of Island, lat. $45^{\circ} 46' 10'' N.$, lon. $60^{\circ} 6' 20'' W.$, red C. light, rev. 30 sec., 74 ft. high, structure white, square, 54 ft. high, with dwelling attached. Lighted 1877.

SAINT ESPRIT ISLAND, E. end of Island, lat. $45^{\circ} 37' 30'' N.$, lon. $60^{\circ} 29' 20'' W.$ White C. light, rev. 30 sec., 78 ft. high, vis. 14 miles, structure white, with two red bands, square, wood, with dwelling attached, 55 ft. high. Lighted 1880. Bad Neighbor Shoal, S. W. $\frac{3}{4}$ W., $1\frac{1}{2}$ mile from this light, is not more than 12 ft. below water.

JEROME POINT, St. Peter's Bay, to be erected.

NOVA SCOTIA—(Continued).

OUETIQUE ISLAND, on S. point. lat. $45^{\circ} 36' 40'' N.$, lon. $60^{\circ} 57' 15'' W.$ F. red C. light, 78 feet high, vis. 9 miles, structure white, square, wood, 28 ft. high, with dwelling attached. Lighted 1874. For guiding vessels through Lennox Passage.

CAPE LA RONDE, W. side of entrance to Peter's Bay, lat. $45^{\circ} 34' 45'' N.$, lon. $60^{\circ} 53' W.$ F. white C. light, 92 ft. high, vis. 14 miles, structure white, square, wood, 28 ft. high, with dwelling attached. Lighted 1874. For guiding vessels into St. Peter's Bay.

GREEN ISLAND, summit of Island, lat. $45^{\circ} 28' 50'' N.$, lon. $60^{\circ} 53' 40'' W.$ Rev. red and white C. light, alternate every 45 seconds, 70 ft. high, vis. 14 miles, structure white, square, wood, 31 ft. high, light in centre of keeper's dwelling. Lighted 1865. Visible round horizon.

PETITDEGRAT, on Big Arrow Island, S. E. of Madame Island, lat. $44^{\circ} 29' 54'' N.$, lon. $60^{\circ} 57' 30'' W.$ F. red C. light, 38 ft. high, vis. 10 miles, structure white, square, 31 ft. high, with dwelling attached. Lighted 1877.

ARICHAT, Marache Point, S. entrance to Madame Island, lat. $45^{\circ} 29' N.$, lon. $61^{\circ} 1' 50'' W.$ F. white C. light, 34 ft. high, vis. 8 miles, structure white, square, wood, 25 ft. high. Lighted 1851.

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JERSEYMAN ISLAND, Arichat Harbor, lat. $45^{\circ} 30' 20''$ N., lon. $61^{\circ} 3' W.$ F. red C. light, 39 ft. high, vis. 11 miles, structure white, square, wood, 28 feet high. Lighted 1872. There is a range beacon on the S. E. point of Jerseyman Island that marks Hautfond Shoal, off entrance to Arichat Harbor.

CREIGHTON'S HEAD, on the N. extremity, lat. $45^{\circ} 30' 40''$ N., lon. $61^{\circ} 6' W.$ White C. light, rev. every 40 sec., 29 ft. high, vis. 10 miles, structure white, square, wood, 20 ft. high. Lighted 1874. For guiding vessels into Little or West Arichat.

POINT TUPPER, Ship Harbor, or Port Hawkesbury, lat. $45^{\circ} 36' 40''$ N., lon. $61^{\circ} 22' W.$ F. red C. light, 44 ft. high, vis. 7 miles, structure white, square, 24 ft. high. Lighted 1870. In consequence of the intervention of the land on the S. side, can only be seen 3 miles in that direction.

SAND POINT, on Eddy Point, S. entrance, lat. $45^{\circ} 31' 30''$ N., lon. $61^{\circ} 14' 40'' W.$ 2 F. white C. lights, horizontal, 24 ft. apart, 25 ft. high, each, vis. 8 miles, structure white, with a black diamond, square, wood. Lighted 1851. Lights in windows at each end of building.

GUYSBOROUGH HARBOR, W. side of entrance, near Peart Point, Chedabucto Bay, lat. $45^{\circ} 22' 50''$ N., lon. $61^{\circ} 29' 10'' W.$ F. white C. light, 30 ft. high, vis. 8 miles, structure white, square, wood, 20 ft. high. Lighted 1864.

CROW HARBOR, on Rook Island, Chedabucto Bay, to be erected.

CANSO HARBOR, on Hart or Cutler Island, lat. $45^{\circ} 21' N.$, lon. $60^{\circ} 58' 30'' W.$ F. red C. light, 42 ft. high, vis. 12 miles, structure white, square, wood, 28 ft. high. Lighted 1872.

SABLE ISLAND, $1\frac{1}{2}$ mile from E. end, lat. $43^{\circ} 58' 30''$ N., lon. $59^{\circ} 46' W.$, F. white light, D. 2, 128 ft. high, vis. 18 miles, structure white and brown alternately, octagonal, 86 ft. high. Lighted 1873.

SABLE ISLAND, W. end, lat. $43^{\circ} 57' N.$, lon. $60^{\circ} 8' W.$, rev. white C. light, 3 flashes at intervals of $\frac{1}{2}$ minute, then a cessation of light during $1\frac{1}{2}$ minute, 123 ft. high, vis. 18 miles, structure white, octagonal, wood, 98 ft. high. Lighted '73.

CRANBERRY ISLAND, N. part of Island, off Canso Cape, lat. $45^{\circ} 19' 50''$ N., lon. $60^{\circ} 55' 30'' W.$, 2 F. white C. lights, in one tower, vertically, 35 ft. apart, 75 & 40 ft. high, vis. 12 & 9 miles, temporary skeleton tower, 60 ft. high. Lighted 1815, rebuilt 1881. Lighthouse and fog-whistle destroyed by fire. Fog-whistle temporarily discontinued. An automatic signal buoy in 20 fathoms, $1\frac{1}{2}$ mile E. S.E. from Grimes' Shoal, off Cape Canso.

WHITEHEAD ISLAND, S.W. extremity of Island, Guysboro' County, lat. $45^{\circ} 12' N.$, lon. $61^{\circ} 8' 15'' W.$, white C. light rev. every 20 sec., 55 ft. high, vis. 11 miles, structure pyramidal, wood, 35 ft. high, octagonal lantern. Lighted 1854. Light not totally obscured during the eclipse; 10 seconds duration of flash, and 10 seconds eclipse.

THREE TOP ISLAND, S.E. point of Island, entrance to Whitehaven, lat. $45^{\circ} 12' 40''$ N., lon. $61^{\circ} 9' 40'' W.$, F. white C. light, 48 ft. high, vis. 11 miles, structure white, square, wood, 32 ft. high, with dwelling attached. Lighted 1879. To guide vessels into Whitehaven. To point out dangers on N. side of W. passage, light is obstructed when bearing to eastward of N.E. by E. Visible from all other points except where intercepted by high land of Whitehead Island.

TORBAY, on eastern point of Berry Head, W. side of entrance to Bay, Guysboro' County, lat. $45^{\circ} 11' 37''$ N., lon. $61^{\circ} 18' 35'' W.$, F. red and white C. light, 51 ft. high, vis. 10 miles, structure white, with vertical red stripes, wood, 36 ft. high. Lighted 1876. Shows red to seaward, white to northward into bay and towards Molasses Harbor. Top of lantern painted black.

COUNTRY HARBOR, on Green Island, Guysboro' County, lat. $45^{\circ} 6' 15''$ N. lon. $61^{\circ} 32' 30'' W.$, F. white C. light, 51 ft. high, vis. 14 to 16 miles, structure white, square, wood, 28 ft. high. Coast light, and to guide vessels frequenting Country and Fisherman's Harbors. Lighted 1873.

ISAAC HARBOR, on Holly Point, W. side of entrance to harbor, lat. $45^{\circ} 10' 15''$ N., lon. $61^{\circ} 39' W.$, 2 F. white C. lights, vertically, 20 ft. apart, highest 80 ft., vis. 9 miles, structure white, square, wood, 20 ft. high. Lighted 1874.

WEDGE ISLAND, mouth of St. Mary's River, lat. $45^{\circ} 0' 35'' N.$, lon. $61^{\circ} 52' 35'' W.$, rev. red C. light, shows 1 minute in 3 minutes, 71 ft. high, vis. 12 miles, structure white, square, wood, 44 ft. high, with dwelling attached. Lighted 1879.

LISCOMB, on Island, lat. $44^{\circ} 59' 20'' N.$, lon. $61^{\circ} 57' 50'' W.$ Alt. red and white C. light every 2 min., 64 ft. high, vis. 15 miles, structure white, square, wood, 28 ft. high. Lighted 1872.

BEAVER ISLAND, S. E. part of East Beaver or William Island, lat. $44^{\circ} 48' 10'' N.$, lon. $62^{\circ} 20' 30'' W.$ Rev. white C. light, every 2 min., 70 ft. high, vis. 12 miles, structure white, with two black balls to seaward, S.S.W., 35 ft. high. Lighted 1846. On dwelling.

SHEET ROCK, entrance to Sheet Harbor, lat. $44^{\circ} 49' 55'' N.$, lon. $62^{\circ} 29' 40'' W.$ Rev. red C. light, every 40 sec., 75 ft. high, vis. 10 miles, structure white, square, wood, 41 ft. high, with dwelling attached. Lighted 1879. Light seen from N. W. $\frac{3}{4}$ W., round by N. to N.E. by E. $\frac{3}{4}$ E. Rock lies nearly in mid-channel of harbor entrance, its western end, partly awash, distant 350 yards from lighthouse.

POPE'S HARBOR, on W. point of Harbor Island, lat. $44^{\circ} 47' 40'' N.$, lon. $62^{\circ} 38' 50'' W.$ F. red C. light, 45 ft. high, vis. 9 miles, structure white, square, wood, 37 ft. high, with dwelling attached. Lighted 1877.

EGG ISLAND, centre of Island, lat. $44^{\circ} 39' 50'' N.$, lon. $62^{\circ} 51' 32'' W.$ Alt. red and white C. light, every minute, 80 ft. high, vis. 15 miles, structure black and white vertical stripes on seaward side, octagonal, wood, 45 feet high. Lighted 1865. Visible around horizon.

JEDDORE ROCK, on summit of rock, about 22 miles E. of Halifax, lat. $44^{\circ} 0' 45'' N.$, lon. $63^{\circ} 0' 22'' W.$ F. red C. light, 86 ft. high, vis. 12 miles, structure white, square, wood, 50 ft. high, dwelling attached. Lighted 1881.

DEVIL ISLAND, on S. point of Island, lat. $44^{\circ} 34' 50'' N.$, lon. $63^{\circ} 27' 15'' W.$ 2 F. white C. lights, E. $\frac{3}{4}$ N., and W. $\frac{3}{4}$ S., 175 yards apart, E. 59 ft. high, W. 52 feet, vis 13 miles, structures 53 and 45 feet high, both white, octagonal, wood. Lighted E. 1877, W. 1852. Pilots are stationed here. The eastern light, open to southward of western, clears to southward of Thrumcap Shoal.

MEAGHER BEACH, Sherbrook Tower, E. side of entrance to Halifax Harbor, lat. $44^{\circ} 36' N.$, lon. $63^{\circ} 31' 50'' W.$ F. white C. light, 58 ft. high, vis. 12 miles, structure white, with red roof, granite, 48 ft. high. Lighted 1815. When Sambro light bears W. S. W., this light should not be brought to the westward of N., which clears the Thrumcap Shoal. A fog bell here strikes 7 times in each minute.

GEORGE ISLAND, on W. side of Island, in Halifax Harbor, lat. $44^{\circ} 38' 30'' N.$, lon. $63^{\circ} 33' 20'' W.$ 2 F. white C. lights, 20 ft. apart, vertically, 50 and 30 ft. high, structure drab, square, wood, 21 ft. high. Lighted 1876. Lights show seaward on S., into harbor on N. side. On W. side upper light only seen. Vessels passing Meagher's Beach entering harbor to keep the light on starboard bow. These lights open to westward of Meagher Beach, to clear the westward of Thrumcap Shoal.

CHEBUCTO HEAD, W. side of entrance to Halifax Harbor, lat. $44^{\circ} 30' 20'' N.$, lon. $63^{\circ} 30' 50'' W.$ White C. light, rev. every minute, 132 ft. high, vis. 18 miles, structure white, square, wood, 22 ft. high. Lighted 1872. Automatic signal buoy in lat. $44^{\circ} 31' 42'' N.$, lon. $63^{\circ} 29' 28'' W.$, in 21 fathoms water, N. E. $\frac{1}{2}$ E., $\frac{1}{8}$ mile from Chebucto Head, sounds a 10-inch whistle. Similar buoy in lat. N., $44^{\circ} 28' 25''$ lon. W. $63^{\circ} 22' 10''$, in 36 fathoms. From this buoy Sambro Island light bears W. $\frac{1}{2}$, N. $8\frac{1}{2}$ miles. Devil's Island, N. $\frac{7}{8}$, W. $7\frac{1}{2}$ miles, and the inner signal buoy N. W. $\frac{1}{2}$ N., 6 miles.

SAMBRO, middle of Island, lat. $44^{\circ} 26' 10'' N.$, lon. $63^{\circ} 33' 30'' W.$ F. white

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light, D. 2, 115 feet high, vis. 20 miles, structure white, octagonal, 60 feet high. Lighted 1758. A steam fog-whistle, erected on S. side of island, and elevated 90 feet above high water, sounds each minute a blast of 10 seconds duration.

BETTY ISLAND, on Brig Point, near Prospect, lat. $44^{\circ} 26' 22''$ N., lon. $63^{\circ} 45' 54''$ W. Rev. red C. light, greatest brilliancy every 2 minutes, 75 ft. high, vis. 14 miles, structure white, with 2 horizontal red bands, square, wood, 54 ft. high, dwelling attached. Lighted 1875. Coast light.

PEGGY POINT, E. side of entrance to Margaret's Bay, lat. $44^{\circ} 29' 30''$ N., lon. $63^{\circ} 55''$ W. F. red C. light, 65 feet high, structure white, square, 26 feet high. Lighted 1868. Lantern on dwelling.

MARGARET'S BAY, on Green Island, Lunenburg County, lat. $44^{\circ} 23'$ N., lon. $64^{\circ} 2' 45''$ W. Alt. red and white C. light, every $\frac{1}{2}$ minute, structure white, square, wood, 28 ft. high, with dwelling attached. Coast light.

CHESTER, OR EAST IRONBOUND ISLAND, a little to eastward of centre of Island, in Mahone Bay, lat. $44^{\circ} 26' 10''$ N., lon. $64^{\circ} 4' 50''$ W. F. white C. light, 150 ft. high, vis. 16 miles, structure white, oblong tower on dwelling, wood lantern, 46 ft. high. Lighted 1871. Seen from all points of approach; the lantern alone is visible, building hidden by trees.

WESTHAVER ISLAND, to be erected.

HOBSON'S NOSE, Mahone Bay, lat. $44^{\circ} 25'$ N., lon. $64^{\circ} 13' 46''$ W. F. red C. light, 68 ft. high, vis. 11 miles, structure white, square, wood, 29 ft. high. Lighted 1872.

CROSS ISLAND, E. point, Lunenburg Bay, lat. $44^{\circ} 18' 45''$ N., lon. $64^{\circ} 10'$ W. 2 white C. lights vertical, 35 ft. apart, upper int., bright 45 sec., dark 15 sec., 100 ft. high, vis. 14 miles, lower F., 65 ft. high, vis. 6 miles, structure red, octagonal base, 58 ft. high. Lighted 1832. Pilots resort here, and vessels may take refuge in case of necessity. Fog-horn sounds 10 sec. in every $1\frac{1}{2}$ minute.

BATTERY POINT, Lunenburg, lat. $44^{\circ} 21' 45''$ W., lon. $64^{\circ} 17' 30''$ W. F. white C. light, 50 ft. high, vis. 11 miles, structure white, square tower on dwelling, 24 ft. high. Lighted 1864.

WEST IRONBOUND ISLAND, near Cape Lahave, mouth of Lahave River, lat. $44^{\circ} 13' 45''$ N., lon. $64^{\circ} 16' 20''$ W. White C. light, rev. every 30 sec., 72 ft. high, vis. 13 miles, structure white, square, 29 ft. high. Lighted 1855. Near edge of cliff, 40 ft. high.

LAHAVE, on Fort Point, lat. $44^{\circ} 17' 20''$ N., lon. $64^{\circ} 21'$ W. F. red C. light, 48 ft. high, vis. 8 miles, structure white, square, wood, 35 ft. high. Lighted 1876.

MOSER ISLAND, on Island, W. side of entrance to Lahave River, lat. $44^{\circ} 14' 15''$ N., lon. $64^{\circ} 18' 50''$ W. F. red C. light, 55 ft. high, vis. 8 miles, structure white, square, 26 ft. high. Lighted 1868.

MEDWAY HEAD, Port Medway, W. side of entrance, lat. $44^{\circ} 6' 10''$ N., lon. $64^{\circ} 32' 15''$ W. F. white C. light, 44 ft. high, vis. 10 miles, structure white, square, with black square, seaward, 23 feet high. Lighted 1851. Like a dwelling house.

COFFIN ISLAND, S. point, Liverpool Bay, lat. $44^{\circ} 2'$ N., lon. $64^{\circ} 37' 30''$ W. Rev. white C. light, every two min. light 30 sec., dark 90 sec., 65 ft. high, vis. 16 miles, structure horizontal stripes, red and white, 8 in number, octagonal, 50 ft. high. Lighted 1812.

BROOKLYN PIER, on end of breakwater, Liverpool, lat. $44^{\circ} 2' 40''$ N., lon. $64^{\circ} 41' 30''$ W. F. white C. light, 32 ft. high, vis. 10 miles, structure white, square, wood, 33 ft. high. Building 1878. Shows red towards harbor.

FORT POINT, Liverpool Bay, S. entrance, lat. $44^{\circ} 2' 30''$ N., lon. $64^{\circ} 42' 20''$ W. F. red C. light, 30 ft. high, vis. 7 miles, structure white, square, 17 ft. high. Lighted 1855. Left on port side when entering the harbor.

F. white

PORT MOUTON, N.E. point, Spectacle Island, Queen's County, lat. $43^{\circ} 55' N.$, lon. $64^{\circ} 48' W.$ F. red C. light, 47 ft. high, vis. 11 miles, structure square, wood, 20 ft. high. Lighted 1873. For guiding vessels into harbor.

LITTLE HOPE, nearly on centre of Island, lat. $43^{\circ} 48' 30'' N.$, lon. $64^{\circ} 47' 15'' W.$ Red C. light, rev. every min., 40 ft. high, vis. 12 miles, structure white, square, 26 ft. high. Lighted 1865. Centre of keeper's dwelling; visible around horizon.

PORT HEBERT, on Shingle Point, E. side of harbor, lat. $43^{\circ} 48' 40'' N.$, lon. $64^{\circ} 55' 30'' W.$ F. red C. light, 33 ft. high, vis. 10 miles, structure white, square, wood, 29 ft. high. Lighted 1872.

CARTER ISLAND, Rugged Island Harbor, lat. $43^{\circ} 42' 15'' N.$, lon. $65^{\circ} 5' 30'' W.$, F. red light, 66 ft. high, vis. 11 miles, structure white, square, wood, 29 ft. high. Lighted 1872.

RUGGED ISLAND HARBOR, Gull Rock, lat. $43^{\circ} 39' 15'' N.$, lon. $65^{\circ} 5' 50'' W.$ F. white C. light, 56 ft. high, vis. 10 miles, structure white, square, 31 ft. high. Lighted 1853.

SAND SPIT, at E. side of entrance to Shelburne Harbor, lat. $43^{\circ} 41' 25'' N.$, lon. $65^{\circ} 19' 28'' W.$ F. red C. light, 47 ft. high, vis. 10 miles, structure white, square, wood, on pier, 44 ft. high. Rebuilt 1880.

CAPE ROSEWAY, near S.E. point of MacNutt Island, Shelburne Harbor, lat. $43^{\circ} 37' 15'' N.$, lon. $65^{\circ} 15' 45'' W.$ 2 F. white C. lights, vertical, 55 ft. apart, upper 120, lower 65 ft. high, vis. upper 18 miles, lower 10 miles, structure black and white vertical stripes, octagonal, 77 ft. high. Lighted 1788, repaired 1858.

NEGRO ISLAND, on N. side, lat. $43^{\circ} 30' 54'' N.$, lon. $65^{\circ} 28' 58'' W.$ Rev. red and white C. light, every min., 48 ft. high, vis. 12 miles, structure white, square, wood, 29 ft. high. Lighted 1872. For guiding vessels in and out of Clyde River or Negro Harbor.

BACCARO, on W. side of entrance to Barrington Harbor, lat. $43^{\circ} 26' 54'' N.$, lon. $65^{\circ} 28' 12'' W.$ F. red C. light, 49 ft. high, vis. 10 miles, structure white, square, with black ball seaward, 35 ft. high. Lighted 1850.

BARRINGTON EAST BAY LIGHTSHIP, lat. $43^{\circ} 31' 5'' N.$, lon. $65^{\circ} 34' 25'' N.$ F. white light, hull and spars painted red, with word "Barrington" in white letters on both sides, 30 ft. above deck. Lighted 1875. Moored in 6 fathoms, Wessex' Ledge, S. W. by W. $\frac{1}{2}$ W., $\frac{3}{8}$ mile; Baccaro light, S. S. E. $\frac{3}{4}$ E. 6 3-16 miles; Bantam Rocks, S. by E. $\frac{7}{8}$ E., $6\frac{1}{2}$ miles. To guide into Barrington Bay and through Barrington Passage.

CAPE SABLE, on Cape, lat. $43^{\circ} 23' 19'' N.$, lon. $65^{\circ} 37' 11'' W.$ Rev. white C. light, bright 15 sec., dark 25 sec., 53 ft. high, vis. 12 miles, structure white, octagonal, 50 ft. high. Lighted 1861. A steam fog-whistle on Southern point of Cape, elevated about 40 ft. above high water, sounds a blast of 10 seconds' duration in each minute.

STODDARD ISLAND, on N. W. Point of Island, lat. $43^{\circ} 28' 30'' N.$, lon. $65^{\circ} 43' 10'' W.$ F. red C. light, 22 ft. high, vis. 9 miles, structure white, small square tower. To guide vessels into the anchorage of Stoddard Harbor and Shag Harbor Sound.

BON PORTAGE ISLAND, on S. point, lat. $43^{\circ} 27' 16'' N.$, lon. $65^{\circ} 44' 39'' W.$ Rev. red C. light, every minute, 46 ft. high, vis. 12 miles, structure white, square, wood, 28 ft. high. Lighted 1874. For guiding vessels into Barrington, West Bay and Shag Harbor.

SEAL ISLAND, S. point, $\frac{1}{8}$ mile inland, lat. $43^{\circ} 23' 34'' N.$, lon. $66^{\circ} 0' 52'' W.$ F. white light, D. 2, 98 ft. high, vis. 18 miles, structure white, octagonal, 60 ft. high. Lighted 1830. The Blond Rock lies S. by W., $3\frac{1}{3}$ miles from lighthouse. A fog-whistle near lighthouse sounds in each minute, a blast of 5 sec. duration, and after an interval of 5 sec. another blast of 5 sec.

PUBLIC mark, lat. vis. 8 miles of St. John from any before it call till further

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PUBNICO HARBOR, Beach Point, E. side of entrance, 120 yards from low water mark, lat. $43^{\circ} 35' 45''$ N., lon. $65^{\circ} 46' 54''$ W. F. white C. light, 28 ft. high, vis. 8 miles, structure white, square, 20 ft. high. Lighted 1854. Open westward of St. John's Island, bearing N. E. by N., clears the ledge; in making harbor from any other direction, the light must be brought to the northward of E. N. E. before it can be steered for to avoid shoal spot off St. Ann's Point. Discontinued till further notice.

ARGYLE, on S. point of Whitehead Island, Yarmouth County, lat. $43^{\circ} 39' 40''$ N., lon. $65^{\circ} 52' 4''$ W. F. red C. light, 115 ft. high, vis. 12 miles, structure white, square, wood, with dwelling attached, 28 ft. high. Lighted 1874. For guiding vessels into Argyle harbor.

TUSKET RIVER, Big Fish Island, S. W. Point, lat. $43^{\circ} 42' 10''$ lon. $65^{\circ} 57' 15''$ W. 2 F. white C. lights, horizontal, 8 yds. apart, 50 ft. high, vis. 12 miles, structure white, square, wood, 23 ft. high. Lighted 1864. Visible seaward, in windows each end of a dwelling house.

PEASE'S ISLAND, on S. point, one of the Tasket Islands, lat. $43^{\circ} 37' 35''$ N., lon. $66^{\circ} 1' 40''$ W. 2 C. lights, 16 ft. apart vertically, upper rev. red and white, each color visible 15 sec.; 45 sec. between flashes, 56 ft. high, vis. 12 miles, lower F. red, 40 ft. high, vis. 4 miles, structure white, square, wood, dwelling attached, 42 ft. high. Lighted 1879. Upper sea light, vis. from all points of approach from southward; also through Schooner and Ellenwood Passages. Lower, to mark channel between Old Man and Old Woman Rocks. Visible only between bearings W. by N. $\frac{1}{2}$ N., and N. W. by W.

YARMOUTH OR CAPE FOURCHU, E. cape, S. point, lat. $43^{\circ} 47' 28''$ N., lon. $66^{\circ} 9' 21''$ W. Int. white C. light; light $1\frac{1}{4}$ min, dark $\frac{1}{2}$ min., 117 ft. high, vis. 18 miles, structure vertical stripes, red and white, octagonal tower, 59 feet high. Lighted 1839. Fog-whistle on W. side sounds 10 seconds in every minute.

BAY OF FUNDY.

BUNKER'S ISLAND, on end of reef off S. W. point of Island, E. side of entrance to Yarmouth Harbor, lat. $43^{\circ} 48' 30''$ N., lon. $66^{\circ} 8' 45''$ W. F. red C. light, 27 ft. high, vis. 10 miles, the lantern on a dwelling house, built on a wooden pier. Lighted 1874. To guide vessels into harbor. Visible from southward, between N. E. by N., and N. $\frac{3}{4}$ E. Also, over Stanwood's Beach, when bearing from S. $\frac{1}{2}$ E. to S. E. $\frac{1}{2}$ E., but cannot be run for on those bearings, only entrance to harbor being through Yarmouth Sound and round Cape East.

CAPE ST. MARY, E. side of bay, lat. $44^{\circ} 5' 20''$ W., lon. $66^{\circ} 12' 40''$ W. Alt. red and white C. light every 30 sec., 103 ft. high, vis. 17 miles, structure white, octagonal, 43 ft. high. Lighted 1868.

METEGHAN RIVER, at extreme end of breakwater, lat. $44^{\circ} 13' 43''$ N., lon. $66^{\circ} 8' 12''$ W. F. green C. light, 23 ft. high, vis. 6 miles, structure vertical red stripes on seaward side, lantern painted black, 21 ft. high. Lighted 1875. Beacon for guiding vessels into river. Must be left on starboard hand and passed close aboard. Tide leaves breakwater one hour before low water.

CHURCH POINT, E. side of St. Mary's Bay, Digby County, lat. $44^{\circ} 19' 55''$ N., lon. $66^{\circ} 7' 35''$ W. F. red C. light, 36 ft. high, vis. 10 miles, structure white, square, wood, 20 ft. high. Lighted 1874. For guarding against dangers in vicinity of Church Point.

SISSIBOO, S. side of entrance to river, lat. $44^{\circ} 26' 30''$ W., lon. $66^{\circ} 1' 15''$ W. F. white C. light, 36 ft. high, vis. 8 miles, structure white, square, wood, 33 ft. high. Lighted 1870.

WESTPORT, Peter's Island, entrance to Grand Passage, lat. $44^{\circ} 15' 30''$ N., lon. $66^{\circ} 20' 20''$ W. 2 F. white C. lights, horizontal, 24 ft. apart, each 40 ft. high, vis.

10 miles, structures white, square, each 15 ft. high. Lighted 1850. Visible from the northward between the bearings of S. by W. and S.S.W., and from the southward between the bearings of N.E. by E. and N.N.W. $\frac{1}{4}$ W.

BRIER ISLAND, N.W. point, lat. $44^{\circ} 14' 57''$ N., lon. $66^{\circ} 23' 30''$ W. F. white C. light, 92 ft. high, vis. 13 miles, structure white, octagonal, 55 ft. high. Lighted 1809. A steam fog-whistle on N.W. of Brier Island, south-side of light-house, sounds 3 blasts of 4 sec. duration, with intervals of 4 sec. between them, in each minute.

BOAR'S HEAD, 17 yards from edge of cliff, lat. $44^{\circ} 24' 16''$ N., lon. $66^{\circ} 13'$ W. Alt. red and white C. light, every min., 70 ft. high, vis. 14 miles, structure white, square. Lighted 1864. On S. entrance to Petit Passage.

POINT PRIM, S. point of entrance to Annapolis Basin, lat. $44^{\circ} 41' 34''$ N., lon. $65^{\circ} 47' 20''$ W. F. white C. light, 76 ft. high, vis. 13 miles, structure vertical red and white stripes, square tower, 22 ft. high. Lighted 1817. Fog-whistle on Prim Point, sounds 8 sec. in each minute.

PORT WILLIAMS OR MARSHALL COVE, S. shore, lat. $44^{\circ} 56' 52''$ N., lon. $65^{\circ} 16' W.$ 2 F. white C. lights, vertical, 22 ft. apart, upper 92 ft. lower 70 ft. high, vis. 10 miles, structure white, square, 22 ft. high. Lighted 1859. Lantern on top of dwelling; lower light in bow window, visible from W.S.W. round N. to E.N.E.

MARGARETVILLE, on extremity of point, S. shore, lat. $45^{\circ} 2' 57''$ N., lon. $65^{\circ} 4' W.$ F. red C. light, 30 ft. high, vis. 8 miles, structure horizontal white and black stripes, square, 22 feet high. Lighted 1859. Visible from W.S.W. round N. to E.N.E.

ISLE HAUTE, on highest point, lat. $45^{\circ} 14' 55''$ N., lon. $65^{\circ} 0' 45''$ W. Int. white C. light, 40 sec. in every min., 365 ft. high, vis. 20 miles, structure white, square, wood, dwelling attached, almost hidden by trees, 53 ft. high. Lighted 1878.

BLACKROCK, S. shore, lat. $45^{\circ} 10' 10''$ N., lon. $64^{\circ} 46' W.$ F. white C. light, 45 ft. high, vis. 12 miles, structure white, square, 35 ft. high. Lighted 1848. Light on top of dwelling, visible from all points of approach.

CAPE D'OR FOG-WHISTLE, on extreme point, opposite side of channel from Blackrock. Sounds during thick weather for 6 sec. in every 30 seconds.

KINGSFORT, on Oak Point Pier, lat. $45^{\circ} 9' 30''$ N., lon. $64^{\circ} 21' 45''$ W. F. white C. light, 30 ft. high, vis. 8 miles, structure upper enclosed part white, open frame, brown, 26 ft. high. Lighted 1878. Visible from S. W. $\frac{1}{2}$ W. round by E. to N.W. by W. $\frac{3}{4}$ W.

HORTON, on Bluff, W. side of Avon River, lat. $45^{\circ} 6' 15''$ N., lon. $64^{\circ} 13' 30''$ W. F. white C. light, 92 ft. high, vis. 20 miles, structure white, square, 20 ft. high. Lighted 1851. Light in window.

WALTON HARBOR, Basin of Minas, Hants County, lat. $45^{\circ} 14' N.$, lon. $64^{\circ} 0' 45'' W.$ F. red C. light, 60 ft. high, vis. 10 miles, structure white, square, wood, 20 ft. high. Lighted 1873.

BURNTCOAT, Basin of Minas, N. W. extremity of head, S. shore, lat. $45^{\circ} 18' 40''$ N., lon. $63^{\circ} 48' 30''$ W. F. white C. light, 75 ft. high, vis. 13 miles, structure white, square, with lantern on dwelling, 35 ft. high. Lighted 1859. On dwelling, visible from all points of approach.

SPENCER POINT, on N. shore, Cobequid Bay, lat. $45^{\circ} 23' 30''$ N., lon. $63^{\circ} 37' W.$ F. white C. light, 35 ft. high, vis. 6 miles, window in a building, 20 ft. high. Lighted 1863.

PARRSBORO', OR PARTRIDGE ISLAND, W. side of river, lat. $45^{\circ} 23' N.$, lon. $64^{\circ} 19' W.$ F. white C. light, 37 ft. high, vis. 9 miles, structure white, square, with lantern on dwelling, 32 ft. high. Lighted 1852.

APPLE RIVER, on Cape Capston, or Hetty Point, N. entrance, lat. $45^{\circ} 28' 20''$ N., lon. $64^{\circ} 51' 30''$ W. F. white C. light, 64 ft. high, vis. 12 miles, structure white, oblong, with tower, 45 ft. high. Lighted 1870. Re-built about 33 yards S. S. E. from old one.

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NEW BRUNSWICK.

BAY OF FUNDY—(Continued).

HILLSBOROUGH WHARF, Petitcodiac River, lat. $45^{\circ} 55' 15''$ N., lon. $64^{\circ} 37' 45''$ W. F. white C. light, 14 ft. high, vis. 5 miles, structure open frame, 22 feet high. Lighted 1875. To guide vessels going up the river and to the coal and plaster wharves.

GRINDSTONE, W. part of Island, lat. $45^{\circ} 43' 13''$ N., lon. $64^{\circ} 37' 25''$ W. F. white C. light, 60 ft. high, vis. 12 miles, structure white, octagonal, wood. Lighted 1854. Visible from N.E. by E. round by N. to E. by S., or 315° Cape Enrage Lighthouse, S.W. by W. $\frac{1}{2}$ W., about 10 miles. In thick weather a trumpet sounds 4 blasts in every minute.

CAPE ENRAGE, Pitch of cape, lat. $45^{\circ} 35' 34''$ N., lon. $64^{\circ} 46' 55''$ W. F. white light, D. 4, 120 ft. high, vis. 15 miles, structure white, square, 23 ft. high. Lighted 1840. Visible between the bearings of N.W. round by S. to N.E. A steam fog-whistle, 150 ft. N.E. from the lighthouse, sounds 4 seconds in each minute.

QUACO, on west head, St. Martin's, lat. $45^{\circ} 19' 20''$ N., lon. $65^{\circ} 31' 55''$ W. F. white light, 80 ft. high, vis. 6 miles, lantern on a mast, with shed at foot, 20 ft. high. Lighted 1835. Temporary light to replace that on the rock destroyed by fire. Tower to be rebuilt on the headland.

CAPE SPENCER, Pitch of cape, lat. $45^{\circ} 12' 30''$ N., lon. $65^{\circ} 54'$ W. Alt. red and white C. light, every 45 sec., 207 ft. high, vis. 20 miles, structure white, square building, with tower, 35 ft. high. Lighted 1873. Visible between the bearings from E.S.E. round by S. to W.N.W. Partridge Island light bearing by compass N.W. by W. $\frac{1}{2}$ W. northerly, distant $6\frac{1}{2}$ miles.

PARTRIDGE ISLAND, St. John Harbor, lat. $45^{\circ} 14' 20''$ N., lon. $66^{\circ} 3' 20''$ W. F. white C. light, 119 ft. high, vis. 20 miles, structure vertical red and white stripes, 40 ft. high. Lighted 1791. In foggy weather a steam whistle sounds for 10 seconds every minute. A bell buoy near E. side of Partridge Island Reef.

NEGRO POINT, on the end of Government breakwater, W. entrance to Port of St. John, lat. $45^{\circ} 14' 25''$ N., lon. $66^{\circ} 4' 4''$ W. F. red C. light, 36 ft. high, vis. 8 miles, structure temporarily from pole, 35 ft. high. Lighted 1878. Tower taken down pending repairs to breakwater. Dependence cannot always be placed on temporary light, and approach dangerous during storms.

ST. JOHN HARBOR, lat. $45^{\circ} 15' 10''$ N., lon. $66^{\circ} 3' 40''$ W. F. white light, D. 4, 35 ft. high, vis. 10 miles, structure vertical red and white stripes, 15 ft. high. Lighted 1828.

RIVER ST. JOHN.

GREEN HEAD, lat. $45^{\circ} 18' 18''$ N., lon. $66^{\circ} 7' 20''$ W. F. white C. light, vis. 10 miles, 105 ft. high. Lighted 1869.

SAND POINT, lat. $45^{\circ} 22'$ N., lon. $66^{\circ} 11'$ W. F. white C. light, vis. 10 miles, 50 ft. high. Lighted 1869.

BELYEA'S POINT.

OAK POINT, lat. $45^{\circ} 32'$ N., lon. $66^{\circ} 6'$ W. F. white C. light, vis. 10 miles, 50 feet high. Lighted 1869.

MUSQUASH ISLAND, 1. Washadamoak Lake, Queen's County, lat. $45^{\circ} 42'$ N., lon. $66^{\circ} 7'$ W. F. white C. light, 26 ft. high, brown open frame-work, lantern white. Lighted 1875.

HENDRY FARM, 2. Washadamoak Lake, Queen's County, lat. $45^{\circ} 42'$ N., lon. $66^{\circ} 7'$ W. F. white C. light, 30 ft. high. Lighted 1875. In coming down, the

two lights to be kept in range until opposite N. W. end of Hog Island, whence a southerly course to be kept to foot of Musquash Island. In going up, the two lights to be brought in range opposite N. W. end of Hog Island, and kept in range until within half a mile of the light on Hendry Farm.

NO MAN'S FRIEND, lat. $45^{\circ} 47' N.$, lon. $66^{\circ} 7' 30'' W.$ F. white C. light, vis. 10 miles, structure white. Lighted 1869.

OROMOCTO SHOAL, lat. $45^{\circ} 53' N.$, lon. $66^{\circ} 27' W.$ F. white C. light, vis. 10 miles, 54 ft. high. Lighted 1869.

WILMOT BLUFF, lat. $45^{\circ} 56' N.$, lon. $66^{\circ} 30' W.$ F. white C. light, vis. 10 miles, 104 ft. high. Lighted 1869.

COX POINT, Grand Lake, lat. $46^{\circ} 2' N.$, lon. $66^{\circ} 1' W.$ F. white C. light, vis. 10 miles, 20 ft. high, structure white. Lighted 1869.

McMANN'S POINT, Newcastle, Grand Lake, lat. $46^{\circ} 4' N.$, lon. $66^{\circ} 2' W.$ F. white C. light, vis. 10 miles, 28 ft. high, structure white, square, wood, 26 ft. high. Lighted 1876.

ROBERTSON POINT, Grand Lake, lat. $45^{\circ} 53' N.$, lon. $60^{\circ} 13' W.$ F. white C. light, vis. 10 miles, 16 ft. high, structure white, square, wood, 16 ft. high. Lighted 1873.

FANJOY POINT, Grand Lake, lat. $45^{\circ} 55' 10'' N.$, lon. $60^{\circ} 4' W.$ F. white C. light, vis. 10 miles, 16 ft. high, structure white, square, wood, 16 ft. high. Lighted 1873.

HACKERST POINT, Salmon River, Grand Lake, F. white light, structure white, square, wood.

BAY OF FUNDY.

MUSQUASH, E. side of entrance, lat. $45^{\circ} 8' 35'' N.$, lon. $66^{\circ} 14' 30'' W.$ F. C. light, green seaward, white to harbor, 112 ft. high, vis. 10 miles, structure white, square, wood, with dwelling attached, 40 ft. high. Lighted 1879. An automatic signal buoy moored in 30 fathoms, $1\frac{1}{2}$ mile S. from light, and S. W. from Split Rock. Lat. N. $45^{\circ} 7' 15''$; lon. W. $66^{\circ} 13' 50''$.

LEPREAU, on point, lat. $45^{\circ} 3' 40'' N.$, lon. $66^{\circ} 27' 39'' W.$ 2 F. white C. lights, vertical, 27 ft. apart, upper 81, lower 53 ft. high, vis. 15 miles, structure striped horizontally red and white, octagonal, 31 ft. high. Lighted 1831. Visible between the bearings of W.N.W. around by S. to E. by N. Fog-whistle gives each minute two blasts of 5 sec. duration, with an interval of 5 sec. between them.

DREW'S HEAD, on W. side of Beaver Harbor, Charlotte County, lat. $45^{\circ} 3' 45'' N.$, lon. $66^{\circ} 44' W.$ F. white C. light, 45 ft. high, vis. 10 miles, structure white, square, wood, 36 ft. high. Lighted 1875. Seen at all points, between eastern and western heads of harbor.

PEA POINT, E. side of entrance to l'Etang Harbor, lat. $45^{\circ} 2' 20'' N.$, lon. $66^{\circ} 48' 40'' W.$ F. green C. light, 51 ft. high, vis. 10 miles, structure white, square, wood, with dwelling attached, 31 ft. high. Lighted 1878. Visible from E. round by S. to N.

BLISS ISLAND, W. end of Island, S. side of western entrance to Bliss Harbor, lat. $45^{\circ} 1' 15'' N.$, lon. $66^{\circ} 51' W.$ F. red C. light, 45 ft. high, vis. 12 miles. structure white, square, wood, 30 ft. high. Lighted 1871.

LETITE PASSAGE, on Mascabin Point, lat. $45^{\circ} 2' 20'' N.$, lon. $66^{\circ} 53' 30'' W.$ A fog-trumpet sounds blasts of 7 seconds, with intervals of 30 seconds between them.

MIDJIC BLUFF, Passamaquoddy Bay, Charlotte County, lat. $45^{\circ} 6' 53'' N.$, lon. $66^{\circ} 54' 30'' W.$ F. white C. light, 130 ft. high, vis. 15 miles, structure white, square, wood, lantern brown, 29 ft. high. Lighted 1876. A bar extends E. N. E.

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PORT ST. ANDREWS, 1, on sand reef at E. entrance, lat. $45^{\circ} 3' 45''$ N., lon. $67^{\circ} 0' 50''$ W. F. white C. light, 40 ft. high, vis. 10 miles, structure white, square, wood, on a framed pier, 10 ft. high. Lighted 1875. To guide to all ports in inner bay, and to vessels going up the River St Croix from Letite Passage or West Quoddy. There is only a depth of 4 ft. of water on the N. W. extension of the reef towards mainland. 2. N. point of entrance, lat. $45^{\circ} 4' 10''$ N., lon. $67^{\circ} 2' 50''$ W. F. white C. light, 42 ft. high, vis. 10 miles, structure white, octagonal, 22 ft. high. Lighted 1833. Visible between the bearings of N. W. by N. and S. E. by S.

SPRUCE POINT, St. Croix River, Charlotte County, lat. $45^{\circ} 10' N.$, lon. $67^{\circ} 11' W.$ F. white C. light, 32 ft. high, structure white, square, 28 ft. high. Lighted 1876. The course from Spruce Point to ballast ground is E. by S. $\frac{1}{2}$ S., distance 2 miles. From Spruce Point to Mark Point, W. N. W., distance 2 miles. A vessel after leaving Doucet Island, to clear the reef, should steer N. until the Spruce Point light bears N. W. by W., and thence take a W. N. W. course.

MARK POINT, St. Croix River, Charlotte County, lat. $45^{\circ} 10' 10'' N.$, lon. $67^{\circ} 12' 30'' W.$ F. white C. light, 32 ft. high, structure white, square, 28 ft. high. Lighted 1876.

CAMPOBELLO ISLAND, N. point of Head Harbor, lat. $44^{\circ} 57' 40'' N.$, lon. $66^{\circ} 54' 10'' W.$ F. white C. light, 64 ft. high, vis. 15 miles, structure white, with red cross, octagonal tower, 34 ft. high. Lighted 1829. Fog-trumpet sounds blasts of 8 sec. duration, with intervals of 35 sec. between them.

SOUTH-WEST WOLF ISLAND, on S. E. point of the Island, lat. $44^{\circ} 56' 30'' N.$, lon. $66^{\circ} 44' 10'' W.$ Rev. white C. light, every $1\frac{1}{2}$ min., 111 ft. high, vis. 17 to 20 miles, structure white, square, wood, 35 ft. high. Lighted 1871. Lantern on dwelling, visible from all points of approach.

SWALLOW TAIL, N.E. part of Grand Manan, lat. $44^{\circ} 45' 52'' N.$, lon. $64^{\circ} 44' W.$ F. white C. light, 148 ft. high, vis. 17 miles, structure white, octagonal, wood, 50 ft. high. Lighted 1860. Visible between the bearings of S.W. round by S. to N.W. A steam fog-whistle on extreme N.W. head of Grand Manan, 80 ft. above high water, sounds blasts of 4 sec. duration, with intervals of 16 sec. between them.

GRAND HARBOR, Grand Manan, lat. $44^{\circ} 40' 2'' N.$, lon. $66^{\circ} 45' 5'' W.$ F. white C. light, 40 ft. high, vis. 11 miles, structure white, square, wood, with dwelling attached, 32 ft. high. Lighted 1879. Visible from all points seaward.

SOUTH-WEST HEAD, Grand Manan, lat. $44^{\circ} 36' N.$, lon. $66^{\circ} 54' 16'' W.$ Rev. red and white C. light, 3 red flashes, 40 sec., eclipse 20 sec., 3 white flashes, 40 sec., eclipse 20 sec., 2 min., 200 ft. high, vis. 24 miles, structure white, square, wood, with dwelling attached, 43 ft. high. Lighted 1880.

OLD PROPRIETOR LEDGE, to the S. E. of Grand Manan Island, lat. $44^{\circ} 33' 10'' N.$, lon. $66^{\circ} 40' W.$ Erected 1875. A spindle beacon, painted red, a cage elevated 31 feet above high water mark; in clear weather should be seen 8 or 10 miles.

GANNET ROCK, on Rock, lat. $44^{\circ} 0' 38'' N.$, lon. $66^{\circ} 47' W.$ Int. white light, D. 4, light 45 sec., eclipse $5\frac{1}{4}$ sec., flash $4\frac{1}{2}$ sec., eclipse $5\frac{1}{4}$ sec., in every 60 sec, 66 ft. high, vis. 12 miles, structure vertical black and white stripes, octagonal tower, 41 ft. high. Lighted 1831. A gun is fired to answer signals during fogs and snow-storms. Dangerous rocks extend 4 miles eastward of the lighthouse.

MACHIAS SEAL ISLAND, 1. Near middle of Island, lat. $44^{\circ} 30' 7'' N.$, lon. $67^{\circ} 6' 13'' W.$ F. white light, D. 2, 54 ft. high, vis. 15 miles, structure white, 36 ft. high. Lighted 1832. In range will lead $4\frac{3}{4}$ miles S. of Murr Ledges. 2. Also 64 yds. S. E. from other, F. white light, D. 3, 66 ft. high, vis. 14 miles, structure white, octagonal, wood, 53 ft. high. Lighted 1832, rebuilt 1878. A fog-whistle sounds 5 seconds in each half minute.

MANITOBA.

LAKE WINNIPEG LIGHTSHIP, mouth of Red River, lat. $50^{\circ} 25' 10''$ N., lon. $96^{\circ} 48' W.$ F. white D. light, 21 ft. high, vis. 10 miles, structure white, with small tower amidships. Lighted 1880.

BRITISH COLUMBIA.

BEREN ISLAND, western entrance to Victoria Harbor, lat. $48^{\circ} 25' 24''$ N., lon. $125^{\circ} 24' W.$ F. blue C. light 44 ft. high, vis. 7 miles, structure white, square, wood, 30 ft. high. Lighted 1876. Light bears from Brothia Ledge bell buoy N. N. W., $\frac{1}{2} W.$

ENTRANCE ISLAND, Nanaimo, Straits of Georgia, lat. $49^{\circ} 12' 50''$ N., lon. $123^{\circ} 48' 45'' W.$ F. white C. light, 65 ft. high, vis. 14 miles, structure white, square, wood, with dwelling attached, 50 ft. high. Lighted 1876. To indicate entrance to Departure Bay and Nanaimo Harbor, as well as for the general purposes of navigation.

RACE ROCKS, in Straits of De Fuca, lat. $48^{\circ} 17' 45''$ N., lon. $123^{\circ} 32' W.$ Fl. white light, D. 2, every 10 sec., 118 ft. high, vis. 18 miles, structure alternate black and white horizontal bands, circular, stone, 105 ft. high. Lighted 1861. A 12-inch steam fog-whistle sounds blasts of 5 sec., with intervals of 1 min. and 12 sec.

FISGARD, on a rock, at entrance to Esquimalt Harbor, lat. $48^{\circ} 26' N.$, lon. $123^{\circ} 27' 15'' W.$ F. white light, D. 4, 67 ft. high, vis. 12 miles, structure white brick, and red brick dwelling, 56 ft. high. Lighted 1861. Shows red in the harbor, and when approaching too close to either shore.

FRASER RIVER LIGHTSHIP, on S. Sand Head, at entrance to river, lat. $49^{\circ} 3' 50''$ N., lon. $123^{\circ} 16' 40'' W.$ F. white light, 70 ft. high, vis. 9 miles, red hull, with ball at the light mast head. Lighted 1865. To be replaced by lighthouse on iron piles, now under construction.

POINT ATKINSON, N. W. entrance to English Bay and Burrard inlet, lat. $49^{\circ} 19' 42''$ N., lon. $123^{\circ} 15' 54'' W.$ Rev. white C. light every minute, 119 ft. high, vis. 15 miles, structure white, square, wood, 49 ft. high. Lighted 1875. Visible from the entrance to Burrard Inlet to an E. by N. $\frac{3}{4}$ N. bearing. Should not be brought to bear to westward of N. by vessels in the Straits, as this bearing will only lead clear of Sturgeon Bank, off Fraser River. A coast light, and to indicate entrance to Burrard Inlet.

CAPE BEALE, S. E. point of entrance to Barclay Sound, on W. Coast of Vancouver Island, lat. $48^{\circ} 47' 48''$ N., lon. $125^{\circ} 12' 52'' W.$ Rev. white C. light every 30 sec., 164 ft. high, vis. 19 miles, structure light stone color, square, with detached oblong dwelling, 35 ft. high. Lighted 1874. Visible from an easterly bearing parallel with the coast round to W by N. $\frac{1}{2}$ N. The light should not be brought to bear to the eastward of E. $\frac{1}{2}$ N., as foul ground extends off the entrances to Barclay Sound. Mariners should not attempt to enter the Sound without local knowledge or a pilot.

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THE ADMIRALTY LIST OF LIGHTS
 IN THE
 WEST INDIA ISLANDS & ADJACENT COASTS.

CORRECTED TO THE 31ST DECEMBER, 1881.

ABBREVIATIONS AND EXPLANATIONS.

LIGHTS.—F., Fixed, or Steady. Fl., Flashing. Showing flashes at short intervals, or groups of flashes at regular intervals. Rev., Revolving. Light gradually increasing to full effect, then decreasing to eclipse. (*At short distances and in clear weather, a faint continuous light may be observed.*) F. and Fl., Fixed light, with addition of white or colored flashes, preceded and followed by a short eclipse. Int., Intermittent, or Occ., Occulting. A light suddenly and totally eclipsed. When light between eclipses visible less than 30 seconds, term occulting applied. When light visible longer than half a minute, term intermittent applied. Alt., Alternating. Red and white light alternately, at equal intervals, without any intervening eclipse.

Da., Danish.	E., English.	Pan., Panama.	Spa., Spanish.
Du., Dutch.	Fr. French.	N.G., Nueva Grenada.	V., Venezuela.

ILLUMINATING APPARATUS.—C., Catoptric or by metallic reflectors. D., Dioptric, or by refracting lenses. Ord., Order or class of apparatus, numbered from the first to the sixth order.

The bearings are magnetic, *and are given from seaward.* The given distances from which the lights are visible are calculated for a height of fifteen feet above the sea, the elevation of the lights being generally taken as above high water. *The geographical positions of the lights must be considered as approximate.*

WEST INDIA ISLANDS, &c.

BARBADOS I. (E.) 1. Ragged point, 300 yards within, east entrance of the Island, lat. $13^{\circ} 10' N.$, lon. $59^{\circ} 26' W.$ White rev. light, every 2 minutes, D. 2nd ord., visible 21 miles, 213 ft. high, structure round, white coral stone, 97 ft. high. Lighted 1875. On account of the prevailing strong current running westward on to the Cobblers, a cluster of dangerous rocks, $2\frac{1}{2}$ miles to the south-east of Ragged point, mariners are cautioned in closing the land to keep well to the north-eastward of the light.

. . . . 2. South point, 200 yards from the shore, lat. $13^{\circ} 3' N.$, lon. $59^{\circ} 31' W.$ Red rev. C. light, 3rd ord., 1 minute, vis. 18 miles, 145 ft. high, structure alternate red and white bands, 90 ft. high. Lighted 1852. Does not show until it bears to the westward of S. W. by W., and should be kept well open in order to clear the Cobbler reefs.

. . . . 3. Carlisle Bay, Needham point, lat. $13^{\circ} 5' N.$, lon. $59^{\circ} 36' W.$ F. red D. light when bearing north of east, white south of east, 30 ft. high, vis. 8 miles. Lighted 1850. Indifferent light. Reported to show *white* in all directions.

. . . . 4. Lower wharf, Carenage, Bridgetown. F. red light. To mark entrance to Carenage.

TOBAGO, I. (E.) Scarborough, Bacolet or Red point, lat. $11^{\circ} 10' N.$, lon. $60^{\circ} 44' W.$ F. white D. light, vis. 12 miles, 115 ft. high. Pentagonal tower, white, 57 ft. high. Lighted 1842. Visible between the bearings of W. S. W. and N. E. by E. When the mail steamer is expected, two *red* leading lights are shown from two white beacons 83 yards apart, at the west end of the lower town of Scarborough.

TRINIDAD I. (E.) 1.—Icacos point, the S. W. extremity. F. white light, vis. 5 miles, 39 ft. high, white mast.

. . . . 2. Port Espana, on jetty, lat. $10^{\circ} 39' N.$, lon. $61^{\circ} 31' W.$ F. white D. light, 4th ord., vis. 10 miles, 50 ft. high, hexagonal tower, 43 ft. high. Lighted 1841. Visible between the bearings of N. E. by N., and S. E.

GRENADA, Fort George, lat. $12^{\circ} N.$, lon. $61^{\circ} 45' W.$ F. white light, vis. 3 to 4 miles, flagstaff. Lighted 1877.

ST. VINCENT I. (E.) Fort Charlotte, lat. $13^{\circ} 9' N.$, lon. $61^{\circ} 14' W.$ F. white light, vis. 6 miles, 640 ft. high. Lighted 1858.

ST. LUCIA I. (E.) 1.—Tapion Battery, south side of entrance to Castries Harbor, lat. $14^{\circ} 1' N.$, lon. $61^{\circ} 1' W.$, F. red light, vis. 3 miles, 80 ft. high. Lighted 1843. For mail steamer when expected.

. . . . 2. Vielle Ville shoal. F. red light, red perch. Lighted 1868. For mail steamer when expected.

. . . . 3. Cocoa Nut shoal. F. green light, perch. Lighted 1868.

MARTINIQUE I. (Fr.)—1. Point des Nègres, in the fort, lat. $14^{\circ} 36' N.$, lon. $61^{\circ} 9' W.$, F. white light, vis. 11 miles, 62 ft. high, red mast 15 ft. high. Lighted 1855.

. . . . 2. S. W. part of fort St. Louis. F. red and white lights, visible 3 miles, 131 ft. high. *Red* seaward from E. S. E. to S. W. The buoy at the southern extremity of St. Louis bank exhibits a *white* light, and the buoy at the southeast extremity a *red* light, at the arrival or departure of the mails or when required.

. . . . 3. Fort de Frances. F. white electric light. Lighted 1880. When mail steamers are expected.

. . . . 4. St. Marthe point, St. Pierre, lat. $14^{\circ} 44' N.$, lon. $61^{\circ} 11' W.$, F. white light. Lighted 1860.

. . . . 5. Westward of former, colored sectors, F., vis. 5 miles. Lighted 1860. *Red* to the northward, *blue* to the westward, and *green* to the southward. The *white* and *blue* lights in line lead to the anchorage.

. . . . 6. Edge of the bank St. Pierre bay, F. white light, visible 2 miles. Lighted 1860. Lighted on the day the mail is expected, and for three nights after, if not arrived.

. . . . 7. Caravelle peninsula, Caracoli mount, $\frac{1}{4}$ of a mile inland, lat. 14°

46' N., lon. white tower

DOMINIC 24' W, F. 1

GUADAL N., lon. 61' ture 75 ft.

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vis. 7 miles

Lighted 186

ANTIGUA light, vis. 1 1875. The clears Hurst

MARIAGA light, vis. 7 1

MONTSERI a light from

ST. CHRIS 43' W. F. r Lighted 1846

ST. MART vis. 8 miles,

SOMBRERO point, lat. 18 vis. 20 miles Lighted 1868

VIRGIN IS lat. $18^{\circ} 19' N$ high, structur

SANTA CR lon. $64^{\circ} 53'$ light. Lighte

PUERTO RI 7' W., F. & F 171 ft. high, s sec. duration.

39' W. F. rec

HAITI OR S alt. red and w Lighted 1853. pended upon.

46' N., lon. 60° 53' W., F. white light, D. 1st ord., visible 12 miles, 410 ft. high, white tower. Lighted 1862. Illuminating apparatus out of repair.

DOMINICA I. (E.), Roseau bay, extremity of mole, lat. 15° 17' N, lon. 61° 24' W, F. red light on a flagstaff. Lighted 1867. When mail steamer is expected.

GUADALOUPE I. (Fr.) 1. Petite Terre, 202 yds. from eastern part, lat. 16° 10' N., lon. 61° 5' W. F. white light, D. 3rd ord., vis. 15 miles, 108 ft. high, structure 75 ft.

. . . . 2. Gozier islet, lat. 16° 12' N., lon. 61° 29' W. F. white light.
. . . . 3. Manroux islet, lat. 16° 13' N., lon. 61° 31' W. F. white light, lantern.

. . . . 4. Pointe-a-Pitre, white light. When the mail is expected a *red* light is exhibited at the outer buoy; a *white* light at the buoy marking the reef at Cassan island, and from a beacon on the shoal opposite Fouillole; and *green* lights at the buoys on the starboard side of the channel, and at the mooring buoy.

. . . . 5. Port le Moule, lat. 16° 20' N., lon. 61° 20' W. F. white light, vis. 7 miles. Lighted 1858.

. . . . 6. Basse Terre on mole, lat. 16° N., lon. 61° 45' W. F. red. Lighted 1865.

ANTIGUA I. (E.) Sandy island, lat. 17° 7' N., lon. 61° 54' W. F. white C. light, vis. 13 miles, 56 ft. high, black wooden structure, 53 ft. high. Lighted 1875. The light bearing on S.S.W. clears Diamond bank, and bearing N. by E., clears Hurst and Irish banks and shoals to the southward.

MARIAGALANTE I., Grand Bourg, lat. 15° 54' N., lon. 61° 17' W. F. white light, vis. 7 miles, 45 ft. high. Lighted 1867.

MONTSERAT I. (E.) on beach, at Plymouth, lat. 16° 42' N., lon. 62° 13' W., a light from a lantern is shown when a mail steamer is expected.

ST. CHRISTOPHER I. (E.), on beach, at Basse Terre, lat. 17° 18' N., lon. 62° 43' W. F. red light, vis. 4 miles, 37 ft. high, structure wooden frame, 33 ft. high. Lighted 1846.

ST. MARTIN ISLAND, Old fort of Amsterdam, Grande Bay. F. white light, vis. 8 miles, 150 ft. high. Lighted 1875.

SOMBRERO I. (E.) on the east side of the island one-third its length from south point, lat. 18° 36' N., lon. 63° 28' W., rev. white light one minute, D. 2nd ord., vis. 20 miles, 150 ft. high, structure red, open iron frame work, 132 ft. high. Lighted 1868.

VIRGIN ISLANDS (Da.) St. Thomas, east side of entrance, Mohlenfels point, lat. 18° 19' N., lon. 64° 55' W. F. white light, D. 5th ord., vis. 12 miles, 118 ft. high, structure white. Lighted 1844.

SANTA CRUZ OR ST. CROIX ISLAND (Da.) 1. Frederickstad fort, lat. 17° 43' N., lon. 64° 53' W. F. white light, vis. 4 miles. Lighted 1857.

. . . . 2. Christianstad fort, lat. 17° 45' N., lon. 64° 41' W. F. white light. Lighted 1857.

PUERTO RICO I. (S.) 1. Morro point, port San Juan, lat. 18° 29' N., lon. 66° 7' W., F. & Fl. light, C. D. 3rd ord., white with flash, one minute, vis. 18 miles, 171 ft. high, structure white, octagonal, iron. Lighted 1876. The flash is of 5 sec. duration.

. . . . 2. Pier head, Mayagues bay, F. red light. Harbor lights.

. . . . 3. On harbor master's office, port Ponce, lat. 17° 59' N., lon. 66° 39' W. F. red light, vis. 12 miles, 39 ft. high, small tower. Lighted 1880.

HAITI OR SAN DOMINGO I. San Jose fort, lat. 18° 28' N., lon. 69° 52' W., alt. red and white, rev. one min., 4th ord., vis. 15 miles, 95 ft. high, cupola white. Lighted 1853. None of the lights at the island of San Domingo are to be depended upon.

HAITI, 2. N. W. extreme of centre Arcadins islet, lat. $18^{\circ} 47' N.$, lon. $72^{\circ} 38' W.$ F. white light, 5th ord., vis. 9 miles, 36 ft. high, structure circular, white, 31 ft. high. Lighted 1880. Obscured by trees from N. $\frac{1}{4}$ W., to N. $\frac{3}{4}$ E.

3. Lamentin point, Port au Prince, lat. $18^{\circ} 33' N.$, lon. $72^{\circ} 25' W.$, rev. red light, half minute, 3rd. ord., vis. 15 miles, 97 ft. high, structure circular, white, 93 ft. high. Lighted 1880. A red flash every half min.

PLATA PORT, S.S.E. 350 yds. from extremity of east entrance point, lat. $19^{\circ} 49' N.$, lon. $70^{\circ} 41' W.$, white rev. light, 4th ord., 20 sec., vis. 14 miles, 137 ft. high, structure octagonal, 60 ft. high. Lighted 1879.

JAMAICA, 1. Morant point, lat. $17^{\circ} 55' N.$, lon. $76^{\circ} 12' W.$, white rev. light 1 min., vis. 15 miles, 115 ft. high, white iron tower, 96 ft. high. Lighted 1842. Visible when bearing from about N.N.E. $\frac{1}{2}$ E. through west to S.E. by S.

2. Port Royal, Plum point, 66 yds. northward of point, lat. $17^{\circ} 56' N.$, lon. $76^{\circ} 47' W.$, red and white F. light vis. 12 miles, 68 ft. high, structure white. Lighted 1854. Red between the bearings of N.W. by W. $\frac{3}{4}$ W., and N. $\frac{1}{2}$ E. White from N. $\frac{1}{2}$ E. through east to S. E. Obscured westward of N.W. by W. $\frac{3}{4}$ W.

3. Port Royal, Fort Augusta, lat. $17^{\circ} 58' N.$, lon. $76^{\circ} 52' W.$ F. red and white light, 40 ft. high, structure single lamp suspended from the beacon. The white light visible to the south and west, and the red to the eastward.

4. Port Antonio, Folly point, F. white light, structure scaffold. Lighted 1881. Occasional light, when steamers are expected.

CUBA AND BAHAMA ISLANDS.

PORT GUANTANAMO, Angles of mole head, lat. $20^{\circ} 1' N.$, lon. $75^{\circ} 16' W.$, 2 F. lights, lanterns. Lighted 1881. One lantern has two white and two red glasses; the other two white and two green glasses, the colored glasses being turned towards the bay. The red light marks the northern and the green light the southern angle, thus indicating the sides as well as the head of the mole.

CUBA WITH ITS ISLANDS.

SANTIAGO DE CUBA (Spa.), 100 yds. east of the Morro castle, lat. $19^{\circ} 58' N.$, lon. $75^{\circ} 54' W.$, white rev. light, 2 min., D. 4th ord., vis. 15 miles, 226 ft. high, structure white, iron, 20 ft. high. Lighted 1861.

CAPE CRUZ, on Cape, lat. $19^{\circ} 50' N.$, lon. $77^{\circ} 44' W.$, F. & Fl. light, D. 2nd ord., 3 min., white with red flash, vis. 16 miles, 114 ft. high, structure stone. Lighted 1871. Keeper's dwelling, yellow.

PORT XAGUA, or CIENFUEGOS, Colorado, east point of entrance, lat. $22^{\circ} 1' N.$, lon. $80^{\circ} 30' W.$ F. & Fl., 2 min., D. 3rd ord., white, with flash, vis. 14 miles, 81 ft. high, structure Villa Nueva thereon, 45 ft. high. Lighted 1851.

COCHINOS BAY, North part of Cay Piedras, lat. $21^{\circ} 58' N.$, lon. $81^{\circ} 3' W.$ F. white light, D. 4th ord., vis. 7 miles, 30 ft. high, structure brown, 26 ft. high. Lighted 1863. Over Keeper's dwelling.

BATABANO, lat. $22^{\circ} 41' N.$, lon. $82^{\circ} 18' W.$ F. white light, vis. 3 miles, 31 ft. high, lantern on mast. Lighted 1854.

ISLE OF PINES, lat. $21^{\circ} 26' N.$, lon. $83^{\circ} 6' W.$, rev. light, D. 2nd ord., vis. 16 miles. Proposed.

SAN ANTONIO (Spa.) on cape, lat. $21^{\circ} 53' N.$, lon. $84^{\circ} 58' W.$ White rev. light, D. 2nd ord., half min., vis. 20 miles, 117 ft. high, structure Roncali thereon. 107 ft. high. Lighted 1863.

JUTIAS, on cay, lat. $22^{\circ} 43' N.$, lon. $84^{\circ} 6' W.$ F. & Fl. light, D. 2nd ord. Proposed.

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COBERNADORA, on point, lat. 23° N., lon. $83^{\circ} 13'$ W., rev. light, vis. 15 miles, D. 2nd. ord., 110 ft. high. Proposed.

HAVANA, Morro castle, east side of entrance, lat. $23^{\circ} 9'$ N., lon. $82^{\circ} 22'$ W., white rev. light, half min., D. 1st ord., vis. 21 miles, 144 ft. high, structure O'Donnell thereon, stone color, 70 ft. high. Lighted 1845. The light is extinguished for 10 minutes after midnight to clean and trim the lamps.

SANTA CRUZ PORT, at entrance, lat. $23^{\circ} 9'$ N., lon. 82° W. F. light. Proposed.

GUANOS, on point, lat. $23^{\circ} 9'$ N., lon. $81^{\circ} 42'$ W. Rev. light, one minute, 93 ft. high, D. 3rd ord. Proposed.

CARDENAS BAY, I. Piedras cay, lat. $23^{\circ} 14'$ N., lon. $81^{\circ} 7'$ W. F. & Fl. 2 min., white light with red flash, D. 4th ord., vis. 15 miles, 74 ft. high, tower on house, white, 67 ft. high. Lighted 1857.

2. Cay Diana, lat. $23^{\circ} 10'$ N., lon. $81^{\circ} 7'$ W. F. white light, vis. 7 miles, 43 ft. high, structure iron column. Lighted 1862.

CRUZ DEL PADRE CAY, on reef, $\frac{3}{4}$ of a mile N.E. of cay, lat. $27^{\circ} 17'$ N., lon. $80^{\circ} 54'$ W. F. white light, D. 4th ord. vis. 10 miles, 49 ft. high, structure conical, white, 46 ft. high. Not to be depended on.

BAHIA DE CADIZ, N. E. part of cay, lat. $23^{\circ} 12'$ North, lon. $80^{\circ} 29'$ W., rev. white light, 1 min., D. 1st ord., vis. 24 miles, 175 ft. high, structure iron, white, 159 ft. high. Lighted 1862.

PORT SAGUA LA GRANDE, N.W. point of Hicacal cay, lat. $23^{\circ} 4'$ N., lon. $80^{\circ} 4'$ W. F. white D. light, vis. 8 miles, 55 ft. high, structure mast on dwelling. Lighted 1872. The keeper's dwelling has red doors and windows, and eastward of it there are a few huts.

PAREDON GRANDE CAY, North part of cay, lat. $22^{\circ} 29'$ N., lon. $78^{\circ} 10'$ W. F. & Fl. light, D. 1st ord., white with flash 1 min., vis. 16 miles, 159 ft. high, structure iron, white, with a brown base, 127 ft. high. Lighted 1859.

NUEVITAS HARBOR, I. Barlovento point, lat. $21^{\circ} 37'$ N., lon. $77^{\circ} 5'$ W. F. white light, D. 6th ord., vis. 9 miles, 49 ft. high, on white mast from centre of building, 44 ft. high. Lighted 1864. Keeper's dwelling is quadrangular, yellow.

2. Maternillos point, lat. $21^{\circ} 40'$ N., lon. $77^{\circ} 9'$ W. F. and Fl. light, white with flash 1 minute, D. 1st ord., vis. 23 miles, 173 ft. high, structure white, Colon thereon, 170 ft. high. Lighted 1850.

LUCRECIA, on point, lat. $21^{\circ} 5'$ N., lon. $75^{\circ} 38'$ W., rev. red light, 1 min., D. 2nd ord., vis. 15 miles, 112 ft. high, structure stone, white. Lighted 1868.

BARACOA, 250 yds. E.S.E. of Barlovento point, lat. $20^{\circ} 22'$ N., lon. $74^{\circ} 30'$ W. F. white D. light, vis. 12 miles, 48 ft. high, structure iron column, 29 ft. high. Lighted 1870. On keeper's dwelling.

CAPE MAYSI, E. point of Cuba, lat. $20^{\circ} 15'$ N., lon. $74^{\circ} 10'$ W. F. white light, D. 2nd ord., vis. 17 miles, 128 ft. high, tower circular, lease octagonal. Lighted 1862.

BAHAMA ISLANDS.

LOBOS CAY (E), on cay, lat. $22^{\circ} 22'$ N., lon. $77^{\circ} 35'$ W., F. white D light, 1st ord., vis. 16 miles, 146 ft. high, structure circular iron, broad, black, 7 in No and white, 6 No., bands, lantern white, 150 ft. high. Lighted 1860. Base surrounded by keeper's dwelling.

CAY SAL BANK, North elbow, Double-headed shot cays, lat. $23^{\circ} 56'$ N., lon. $80^{\circ} 28'$ W. F. white D. light, 2nd order, vis. 15 miles, 97 ft. high, structure, stone, conical tower, white and red upper part, 58 ft. high. Lighted 1839, renewed 1866. Not visible bearing S.W. $\frac{1}{4}$ W., being intercepted by Water cay when three leagues distant.

GUN CAY, near south point, lat. $25^{\circ} 34' N.$, lon. $79^{\circ} 19' W.$ Red rev. light $1\frac{1}{2}$ min., C. 2nd ord., vis. 12 miles, 80 ft. high, conical tower, 70 ft. high, upper part red, lower white, lantern white. Lighted 1836. Not seen between the bearings of S. by W. $\frac{3}{4}$ W., and S. $\frac{3}{4}$ E., being intercepted by the Bemini isles when 8 miles distant.

GREAT ISAAC, on the island, lat. $26^{\circ} 2' N.$, lon. $79^{\circ} 6' W.$ Rev. white light, $\frac{1}{2}$ min., C. 1st ord., vis. 16 mtes, 158 feet high, structure 145 ft. high, iron, with broad red bands, 8 in No., and white 7 in No., horizontal bands, lantern white. Lighted 1859. Eclipses not total within 6 miles.

GREAT STIRRUP CAY (E), 600 yards from east end of cay, lat. $25^{\circ} 50' N.$, lon. $77^{\circ} 54' W.$ F. white D. light, 3rd ord., vis. 12 miles, 81 ft. high, structure circular, 5 bands, red and white alternately, 46 ft. high. Lighted 1863. Visible from seaward from about N.W. by W. through west and south to about N.E.

NASSAU HARBOR, West point Hog Island, lat. $25^{\circ} 6' N.$, lon. $77^{\circ} 22' W.$ F. white C. light, 1st ord., vis. 10 miles, 68 ft. high, conical stone tower, white, 58 ft. high. Lighted 1816. It is stated that this light is seen at a greater distance than that given. Not visible between N. N. E. and N. N. W. $\frac{1}{2}$ W. *In consequence of the lantern being defective, the light is, at a distance of about 6 miles, totally obscured between the bearings of S. 30° E. and S. 34° E., also between S. 56° W. and S. 66° W., and that the light is only dimly visible between the bearings of South and S. $1\frac{1}{2}^{\circ}$ E., also between S. 12° W., and S. 15° W.* A red light is exhibited at Hog Island, from a flagstaff on the point near the lighthouse, whenever the state of bar at the entrance of Nassau harbor is impassable or dangerous.

ATHOL ISLAND, cupola of quarantine officer's dwelling, lat. $25^{\circ} 5' N.$, lon. $77^{\circ} 17' W.$ F. white light. Lighted 1875. Visible between N. N. W. $\frac{1}{4}$ W. and W., and W. by N. $\frac{3}{4}$ N.

ABACO, I. About 4 cables northward of Hole in Wall, lat. $25^{\circ} 51' N.$, lon. $77^{\circ} 11' W.$ White rev. light, 1 min., C. 1st ord., vis. 20 miles, 160 ft. high, conical stone tower, white lower part, and red upper part, lantern white, 85 ft. high. Lighted 1836. Visible from seaward from S. W. to E. S. E.

2. Little Guana or Elbow cay, $\frac{3}{4}$ of a mile inland, lat. $26^{\circ} 31' N.$, lon. $76^{\circ} 58' W.$ F. white D. light, 1st ord., vis. 15 miles, 123 ft. high, structure circular, with red and white bands, lantern white, 77 ft. high. Lighted 1863.

CROOKED I. PASSAGE, I. Bird Rock, lat. $22^{\circ} 51' N.$, lon. $74^{\circ} 22' W.$ Rev. white light, $1\frac{1}{2}$ min., C. 2nd ord., vis. 17 miles, 120 ft. high, structure conical; stone faced with blue bricks, 112 ft. high. Lighted 1876. Vessels approaching Bird Rock are cautioned to attend to its bearing, as the encircling reef on the north side of Crooked Island terminates in a direction N. by W. $\frac{1}{2}$ W., and nearly one mile distant from the light-tower. The currents northward of Crooked Island are variable.

2. Castle Island, 270 yards within S. W. part, lat. $22^{\circ} 7' N.$, lon. $74^{\circ} 21' W.$ F. white D. light, 2nd ord., vis. 17 miles, 123 ft. high, structure conical; 3 bands of red brick, 114 ft. high. Lighted 1868. Illuminates 330°

INAGUA GREAT I, 2 miles to the N. W. of S. W. point, lat. $20^{\circ} 56' N.$, lon. $73^{\circ} 41' W.$ White rev. light, 1 min., D. 2nd ord., vis. 17 miles, 120 ft. high, conical building, with two white and two red bands, 114 ft. high. Lighted 1870.

TURKS ISLAND, 400 yards S. W. $\frac{1}{2}$ W. from N. extremity of island, lat. $21^{\circ} 31' N.$, lon. $71^{\circ} 8' W.$ White C. Fl. light, half minute, vis. 15 miles, 108 ft. high, structure white, iron, circular, 60 ft. high. Lighted 1845.

FLORIDA REEFS.

[In the List of Lights on the Coast of Florida, Texas, Alabama, Mississippi, &c., the Height of Centre of Lantern is above Mean Sea Level; and Height of Building, from Base to Centre of Lantern.]

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DRY TORTUGAS, (U.S.) I. Fort Jefferson, Garden cay, lat. $24^{\circ} 38' N.$, lon. $82^{\circ} 53' W.$ F. white light, D. 4th ord., vis. 13 miles, 65 ft. high, structure brown. Lighted 1825.

. . . . 2. Loggerhead cay, lat. $24^{\circ} 38' N.$, lon. $82^{\circ} 56' W.$ F. white light, D. 1st ord., vis. 19 miles, 152 feet high, structure, lower part white, upper part black, 150 ft. high. Lighted 1858.

CAY WEST, I. Southern edge of town, lat. $24^{\circ} 33' N.$, lon. $81^{\circ} 48' W.$ F. white light, D. 3rd ord., vis. 14 miles, 72 ft. high, structure white, 60 ft. high. Lighted 1847.

. . . . 2. North-west passage, lat. $24^{\circ} 37' N.$, lon. $81^{\circ} 54' W.$ F. white light, D. 4th ord., 50 ft. high, structure white, on piles. Lighted 1854.

SAND CAY, on a small sand and shell Islet, $7\frac{1}{4}$ miles from Cay West lighthouse, lat. $24^{\circ} 27' N.$, lon. $81^{\circ} 53' W.$ F. and Fl. light, 2 min., D. 1st ord., white with flash, vis. 17 miles, 110 ft. high, structure brown, on piles, lantern white, 121 ft. high. Lighted 1853. It shows for the space of one minute a clear steady light; in every alternate minute there is a brilliant flash of 10 seconds' duration, preceded and followed by eclipses of 25 seconds' duration.

AMERICAN SHOAL, in 6 feet, 67 yards north-west of beacon B., lat. $24^{\circ} 31' N.$, lon. $81^{\circ} 31' W.$ Fl. white light, five seconds, D. 1st ord., vis. 16 miles, 110 feet high, structure brown, on piles, 115 ft. high. Lighted 1880.

SOMBRERO CAY, on Sombrero shoal, lat. $24^{\circ} 38' N.$, lon. $81^{\circ} 7' W.$ F. white light, D. 1st ord., vis. 19 miles, 144 ft. high, structure dark brown, lantern white, 149 ft. high. Lighted 1857. The structure resembles that on Alligator reef.

ALLIGATOR REEF, in 5 feet water, near N. E. part of the reef, lat. $24^{\circ} 51' N.$, lon. $80^{\circ} 37' W.$ Fl. white and red light, D. 1st ord., 5 sec, vis. 18 miles, 143 ft. high, structure white, lantern black. Lighted 1873. Every third flash is red.

CARYSFORT REEF, on reef, near edge of Gulf Stream, lat. $25^{\circ} 13' N.$, lon. $80^{\circ} 13' W.$ Fl. white light, D. 1st ord., half minute, vis. 17 miles, 106 ft. high, structure brown, on piles, 112 ft. high, lantern white. Lighted 1852.

FOWEY ROCKS, on rocks, in 5 feet water, lat. $25^{\circ} 35' N.$, lon. $80^{\circ} 6' W.$ F. white light, D. 1st ord., vis. 16 miles, 111 ft. high, structure dark brown, on piles 115 ft. high. Lighted 1878. Keeper's dwelling white.

JUPITER INLET, between Jupiter Inlet and Gilbert bar, lat. $26^{\circ} 55' N.$, lon. $80^{\circ} 5' W.$ F. and Fl. light, $1\frac{1}{2}$ minute, D. 1st ord., white with flash, vis. 19 miles, 146 ft. high, structure red brick, 101 ft. ft. high. Lighted 1860. The flashes are preceded and followed by partial eclipses.

CAPE CANAVERAL, on N. E. part of the cape, lat. $28^{\circ} 28' N.$, lon. $80^{\circ} 32' W.$ Fl. white light, 1 min., D. 1st ord., vis. 18 miles, 139 ft. high, structure black and white, horizontal bands, 134 ft. high. Lighted 1842. The old light tower near is white.

GUAYANA COAST.

CAYENNE (Fr.) I. Summit of hospital on Royale islet, Salut islets, lat. $5^{\circ} 17' N.$, lon. $52^{\circ} 35' W.$ F. white C. light, vis. 13 miles, 197 ft. high. Lighted 1864.

. . . . 2. *Enfant Perdu*, a rock 6 miles northward of Cayenne, lat. $5^{\circ} 3' N.$, lon. $52^{\circ} 21' W.$ F. white C. light, vis. 7 miles, 61 ft. high, structure wood framework. Lighted 1864.

. . . . 3. *Cépérou* fort, lat. $4^{\circ} 56' N.$, lon. $52^{\circ} 20' W.$ F. white C light, vis. 10 miles, 130 ft. high. Lighted 1862. The *white* and *green* lights in one S. E. by S., leads over *Aimable* rock, which is avoided by keeping to westward of this line.

. . . . 4. Jetty, end of. F. red. C. light, 39 ft. high. Lighted 1862.

CAYENNE. 5. N. W. angle of Infantry barracks, lat. $4^{\circ} 56' N.$, lon. $52^{\circ} 19' W.$ F. green light, vis. 8 miles, 69 ft. high. Lighted 1850. Obscured westward of S. W. $\frac{1}{4}$ S.

MARONI RIVER, 1. West side of entrance (D.), lat. $5^{\circ} 45' N.$, lon. $54^{\circ} 3' W.$ F. white D. light, 4th ord., vis. 10 miles, 75 ft. high, structure white pyramid, 70 feet high. Lighted 1871. Visible from W. $\frac{3}{4}$ S to S $\frac{3}{4}$ E.

2. East side of entrance, (Fr.), lat. $5^{\circ} 42' N.$, lon. $53^{\circ} 58' W.$ F. white D. light, 4th ord., vis. 10 miles, 75 ft. high. Lighted 1871. Visible from E. by N. to W. by S.

SURINAM, (Du.) Light-vessel, in 14 ft. $3\frac{3}{4}$ miles N. W. of Brams point, lat. $6^{\circ} 1' N.$, lon. $55^{\circ} 14' W.$ F. white D. light, 6th ord., vis. 10 miles, 25 ft. high, yellow ball on foremost. Lighted 1858. *Surinam* on sides. Position not to be depended on.

BERBICE (E.), Light-vessel, moored in 22 feet, N. E. by N., 9 miles from St. Andrew point, lat. $6^{\circ} 29' N.$, lon. $57^{\circ} 24' W.$ F. white light, vis. 10 miles, 30 ft. high, structure red, roofed over. Lighted 1850. *Berbice* on each side, and carries a white flag with a red ball in the centre. A sloop pilot boat cruises outside the Bar, and carries a white flag with "pilot" inscribed thereon.

DEMERARA (E.), 1. Light-vessel, in 19 ft., with Georgetown lighthouse bearing S. S. W. $\frac{1}{2}$ W., distant 12 miles, lat. $6^{\circ} 59' N.$, lon. $58^{\circ} 5' W.$ F. white light, vis. 12 miles, 30 ft. high, structure red, with one mast about 60 ft. high, and a blue flag by day. Lighted 1844. *Guiana* on her sides. Pilots for Demerara and Essequibo rivers are on board.

2. Georgetown, east side of entrance, lat. $6^{\circ} 49' N.$, lon. $58^{\circ} 5' W.$ White light, D. 4th ord., rev. 1 min., vis. 16 miles, 103 ft. high, octagonal tower, red and white vertical, 100 ft. high. Lighted 1829.

3. In same tower, F. red light, vis. 3 miles. Lighted 1878. Visible from S. by E. to S. E., to indicate to vessels being westward and clear of break-water.

TIERRA FIRME COAST.

ORINOCO RIVER, ENTRANCE. Light-vessel, on bar. Lighted 1875. *Withdrawn.*

TRINIDAD (E.) 1. Icacos point, the S. W. extremity. F. white light, vis. 5 miles, 39 ft. high, white mast.

2. Port of Spain, on jetty, lat. $10^{\circ} 39' N.$, lon. $61^{\circ} 31' W.$ F. white D. light, 4th ord., vis. 10 miles, 50 ft. high, hexagonal tower, 43 ft. high. Lighted 1841.

TOBAGO (E.), Scarborough Bacolet, or Red point, lat. $11^{\circ} 10' N.$, lon. $60^{\circ} 44' W.$ F. white light, vis. 12 miles, 115 ft. high, pentagonal tower, white, 57 feet high. Lighted 1842. Visible between the bearings of W. S. W. through north, and N. E. by E. Two red leading lights are shown from the Lower town of Scarborough when mail steamers are expected.

CUMANA, tower on Custom-house, lat. $10^{\circ} 28' N.$, lon. $64^{\circ} 13' W.$ F. white light, vis. 5 miles. *Proposed to be exhibited in 1877.*

PUERTO CABELLO, Brava fort, lat. $10^{\circ} 30' N.$, lon. $68^{\circ} W.$ Fl. light, red and white alternately, 30 sec., vis. 14 miles, 79 ft. high, structure quadrangular. Lighted 1864.

LOS ROQUES, on the northeast hill (150 ft. high) of El Roque, lat. $11^{\circ} 58' N.$, lon. $66^{\circ} 38' W.$ Rev. white light, 1 min., D. 3rd ord., vis. 15 miles, 208 ft. high. Lighted 1875. Reported to be irregular in its action from defect in revolving apparatus.

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BURN AYRE (Du.), 1. Lacre, south point of the island, lat. $12^{\circ} 2' N.$, lon. $68^{\circ} 22' W.$ F. white C. light, 2nd ord., vis. 12 miles, 85 ft. high, structure white, with vertical red stripes, 75 ft. high. *Lantern destroyed by storm Sept. 1877. Temporary light exhibited.*

2. Orange battery, at El Puerto, lat. $12^{\circ} 10' N.$, lon. $68^{\circ} 19' W.$ F. white light, vis. 3 miles, 29 ft. high, structure yellow, square. Lighted 1881. Visible from S. $2^{\circ} E.$, through east to N. $2^{\circ} W.$ In line with a light shown from a standard, 10 feet high, at the extremity of the landing stage, indicates the anchorage.

GULF OF MEXICO.

LITTLE CURACAO (Du.), centre of island, lat. $12^{\circ} 2' N.$, lon. $68^{\circ} 38' W.$ White F. and Fl. light, 1 min., D. 4th ord., 14 miles, 75 ft. high, structure white, lantern blue, with red top. Lighted 1850. The flash of 6 seconds' duration, preceded by an eclipse of 7 seconds.

GREAT CURACAO ISLAND (Du.), Sta Ana harbor, Rif fort, lat. $12^{\circ} 6' N.$, lon. $68^{\circ} 55' W.$ F. white light. Lighted 1850.

ORUBA ISLAND, 1. Point del Cerrito Colorado, E. point of island, lat. $12^{\circ} 24' N.$, lon. $69^{\circ} 56' W.$ F. white light, vis. 9 miles, 130 ft. high, structure iron frame. Lighted 1881. Temporary light.

2. Orangetown, or Pta. Caballos, lat. $12^{\circ} 29' N.$, lon. $70^{\circ} 7' W.$ F. white light, vis. 4 miles. Lighted 1876.

CUMAREBO BAY, lat. $11^{\circ} 30' N.$, lon. $69^{\circ} 25' W.$ F. white light. Lighted 1874. This is a private light, and its exhibition uncertain. Manzanilla point bears N. E. by E. $\frac{1}{2} E.$, 5 miles from it.

SAVANILLA, Cupino beach, lat. $11^{\circ} N.$, lon. $74^{\circ} 58' W.$ White rev. light, 2 min., vis. 16 miles, 5th ord., 98 ft. high. Lighted 1872. The light is not visible when bearing southward of S. E. $\frac{3}{4} S$

MARACAYBO, Zapara island, lat. $10^{\circ} 58' N.$, lon. $71^{\circ} 40' W.$ F. light, vis. 6 miles, 30 ft. high, stone tower. *Building.*

SANTA MARTA, Summit of the Morro, lat. $11^{\circ} 15' N.$, lon. $74^{\circ} 16' W.$ F. white light, vis. 24 miles, 328 feet high.

COLON, OR NAVY BAY (Pan.), N. W. part of Manzanillo island, Colon, or Aspinwall, lat. $9^{\circ} 23' N.$, lon. $79^{\circ} 53' W.$ F. white light, vis. 10 miles, D. 5th ord., 60 ft. high, wood, open white building, 60 ft. high. Lighted 1852. Reported not to be visible beyond 6 miles.

LIMON PORT, on Grape cay, lat. $10^{\circ} N.$, lon. $83^{\circ} 2' W.$ F. white D. light, vis. 6 to 8 miles, 60 ft. high. Lighted 1879. Said to be hidden by trees on some bearings.

TRUXILLO BAY, Cape Honduras, lat. $16^{\circ} 1' N.$, lon. $86^{\circ} 3' W.$ F. white light, 30 ft. high. Lighted 1870. Truxillo lighthouse, having been destroyed by a hurricane in 1875, a temporary light, vis. only 4 miles, is now exhibited.

BONACCO ISLAND, on cay XII., lat. $16^{\circ} 26' N.$, lon. $85^{\circ} 54' W.$ F. white and red light, on mast, vis. 6 miles. *Red* towards the anchorage. Proposed to be changed to white.

COXEN ROAD, Westward of Government house, Roatan island, lat. $16^{\circ} 18' N.$, lon. $86^{\circ} 35' W.$ F. white light, vis. 4 miles, 85 ft. high, structure white, square, black top, 15 ft. high. Lighted 1875.

COXEN CAY, on cay. F. white light, vis. 14 miles.

UTILLA ISLAND, Eastern reef, East harbor. F. white light, vis. 4 miles, small wood building. Not to be depended on.

HALF-MOON CAY (E.), S. E. point, lat. $17^{\circ} 12' N.$, lon. $87^{\circ} 32' W.$ F. white C. light, 2nd ord., vis. 18 miles, 70 ft. high, iron tower, white, 80 ft. high. Lighted 1821.

BOKEL CAY, on cay, lat. $17^{\circ} 9' N.$, lon. $87^{\circ} 56' W.$ 2 F. white and red D. lights, horizontal, vis. white 8 miles, red 5 miles, 60 ft. high, flagstaff 75 ft. high, with a yard on which the lights are displayed. Lighted 1868.

BELIZE (E.) 1. English cay, south side of channel, lat. $17^{\circ} 19' N.$, lon. $88^{\circ} 4' W.$ F. white light, 45 ft. high, D. 6th ord., vis. 7 miles, white mast. Lighted 1846.

. . . . 2. Custom house flagstaff. F. white light, D. 6th ord. Lighted 1863.

TERNEFF CAYS (E.), Mauger cay, $1\frac{1}{2}$ mile within north end reef, lat. $17^{\circ} 37' N.$, lon. $87^{\circ} 46' W.$ 3 F. white lights, in a triangle, D. 4th ord., vis. 13 miles, upper 53 ft. high, two 49 ft., structure white, 57 ft. high. Lighted 1846, new 1868. The lights can be seen above the trees from all points of the compass, but the light-house is seen from seaward only from N.E. to S.W. by W. Beyond a distance of 4 to 6 miles the lights show us one light, but within that distance three distinct lights are visible between the bearings of West and South. In a north-west and south-east direction the lights are in line, and appear as one light.

MEXICO.

PROGRESSO, Custom-house, lat. $21^{\circ} 17' N.$, lon. $89^{\circ} 39' W.$ F. white light, 4th ord., vis. 12 miles, 57 ft. high, lamp on N.E. corner of square white building, 50 ft. high.

SISAL, on castle, lat. $21^{\circ} 10' N.$, lon. $90^{\circ} 3' W.$ F. white light, vis. 10 miles, 60 ft. high, building 56 ft. high. Lighted 1852.

CELESTUN, lat. $20^{\circ} 51' N.$, lon. $90^{\circ} 25' W.$ F. white light, vis. 10 miles. Lighted 1880.

CAMPECHE, lat. $19^{\circ} 50' N.$, lon. $90^{\circ} 33' W.$ F. white light, vis. 14 miles, 95 ft. high. Lighted 1864.

TERMINOS DE LAGUNA, XICALANGO ISLAND, Indian village, lat. $18^{\circ} 8' N.$, lon. $91^{\circ} 55' W.$, white rev. light, half minute, vis. 14 miles, D. 2nd. ord., 100 ft. high, structure circular, white lantern, red and white upper part. Lighted 1856.

GOATZACOALCOS RIVER, old look-out tower, west side of entrance, half a mile from beach, lat. $18^{\circ} 12' N.$, lon. $94^{\circ} 17' W.$ F. white light, vis. 12 miles. Lighted 1860, impd. 1869.

VERA CRUZ, 1. San Juan de Ulloa fort, west part, lat. $19^{\circ} 12' N.$, $96^{\circ} 8' W.$, white rev. light, 45 sec., vis. 15 miles, 80 ft. high, structure white, 60 ft. high.

. . . . 2. Convent of San Francisco, lat. $19^{\circ} 11' N.$, lon. $96^{\circ} 9' W.$ F. & Fl. light, D. 4th ord., white with flash 1 min., vis. 15 miles, 102 ft. high, structure blue, with white stripes at upper part. Lighted 1872.

TAMPICO, North point of entrance, lat. $22^{\circ} 17' N.$, lon. $97^{\circ} 47' W.$ F. white light, vis. 15 miles. Lighted 1865. This light is said to be visible only 7 or 8 miles.

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TEXAS.

BRAZOS SANTIAGO, I. Isabel point, lat. $26^{\circ} 5' N.$, lon. $97^{\circ} 12' W.$ F. & Fl. light, 1 min. D. 3rd. ord., white with flash, vis. 15 miles, 82 ft. high, structure white, 57 ft. high. Lighted 1852.

2. South end of Padre island, lat. $26^{\circ} 4' N.$, lon. $97^{\circ} 9' W.$ F. white D. light, 4th ord., vis. 13 miles, 60 ft. high, structure hexagonal, slate color, on piles, 61 ft. high. Lighted 1879.

ARANSAS PASS, Low island, inside of Aransas pass, lat. $27^{\circ} 52' N.$, lon. $97^{\circ} 3' W.$ F. white D. light, 4th ord., vis. 13 miles, 60 ft. high, structure octagonal, brown, 55 ft. high. Lighted 1855. The light, when bearing N.W. $\frac{1}{2}$ W., will be visible between the two points of the pass.

MATAGORDA BAY.

HALF-MOON REEF, South extremity of reef, lat. $28^{\circ} 33' N.$, lon. $96^{\circ} 15' W.$ F. red D. light, 6th ord., vis. 11 miles, 35 ft. high, structure white, 40 ft. high. Lighted 1858. Fog-horn every five minutes.

MATAGORDA, East end of Matagorda island, entrance to the bay, lat. $28^{\circ} 20' N.$, lon. $96^{\circ} 25' W.$ Fl. white light, $1\frac{1}{2}$ min., D. 3rd ord., visible 15 miles, 91 ft. high, structure black truncated cone, 84 ft. high. Lighted 1852.

GALVESTON BAY.

GALVESTON LIGHT VESSEL, in 28 ft. inside the bar, lat. $29^{\circ} 21' N.$, lon. $94^{\circ} 43' W.$ F. red light, vis. 12 miles, 48 ft. high, structure straw color. Lighted 1849. *Galveston* on sides, "28" on stern. Fog-bell and horn.

BOLIVAR POINT, North side of entrance to Galveston bay, lat. $29^{\circ} 22' N.$, lon. $94^{\circ} 46' W.$ F. white D. light, 3rd ord., vis. 17 miles, 117 ft. high, structure white and black horizontal bands, 110 ft. high. Lighted 1852.

FORT POINT, south entrance to bay, lat. $29^{\circ} 20' N.$, lon. $94^{\circ} 46' W.$ F. white and red light, 45 ft. high, structure hexagonal, on piles, white. Lighted 1881. Vis. from S. W. by W., through south, to N. N. E. One red ray on Turn buoy, about a mile westward of the light-vessel, another red ray on Galveston wharves.

HALF-MOON SHOAL between Pelican island and Dollar point, lat. $29^{\circ} 24' N.$, lon. $94^{\circ} 51' W.$ F. white D. light, 5th ord., vis. 11 miles, 38 ft. high, structure iron piles, white. Lighted 1854. Fog bell, one stroke every 20 seconds.

RED FISH BAR. To mark channel across Red Fish bar, lat. $29^{\circ} 31' N.$, lon. $94^{\circ} 52' W.$ F. white D. light, 6th ord., vis. 11 miles, 38 ft. high, structure white, lantern black. Lighted 1854. Fog bell, two strokes in succession at intervals of 30 seconds.

MISSISSIPPI AND LOUISIANA.

SABINE PASS, Brant point, east side of entrance to river, lat. $29^{\circ} 44' N.$, lon. $93^{\circ} 50' W.$ F. and Fl. white D. light, 3rd ord., $1\frac{1}{2}$ minute, vis. 15 miles, 85 feet high, structure white, octagonal, 75 ft. high. Lighted 1856.

CALCASIEU RIVER, at entrance, on west bank of pass, lat. $29^{\circ} 46' N.$, lon. $93^{\circ} 17' W.$ F. white D. light, 4th ord., vis. 13 miles, 57 ft. high, structure black, on screw piles, 53 ft. high. Lighted 1876.

TRINITY SHOAL, Light-vessel in $3\frac{1}{4}$ fathoms, $1\frac{1}{2}$ mile northward of shoal, lat. $29^{\circ} 12' N.$, lon. $92^{\circ} 14' W.$ F. white light, vis. 11 miles, 40 ft. high, vessel red, schooner-rigged, circular day-marks at mast-heads. Lighted 1881. *Trinity shoal* on sides, No. 43 on stern. Fog whistle giving blasts of 4 sec. every min.

S.W. REEF, in 3 ft. water, at entrance of Atchafalaya bay, lat. $29^{\circ} 23' N.$, lon. $91^{\circ} 29' W$. F. white D. light, 4th ord. vis. 13 miles, 56 ft. high, structure screw piles, black, 60 ft. high. Lighted 1859. In thick or foggy weather a fog whistle will give blasts of 10 seconds duration, at intervals of 30 seconds.

SHIP SHOAL, in 10 ft. water, 11 miles S. S. W. of Raccoon point, lat. $28^{\circ} 55' N.$, lon. $91^{\circ} 5' W$. Fl. white light, half minute, D. 2nd ord., vis. 17 miles, 115 ft. high, structure black, screw piles, 125 ft. high. Lighted 1859. Fog bell.

TIMBALIER, in 7 ft. water, near the east end of the island, lat. $29^{\circ} 1' N.$, lon. $90^{\circ} 18' W$. F. and Fl. light, 1 min., white, with red flash, D. 2nd ord., vis. 16 miles, 111 ft. high, structure black, 118 ft. high. Lighted 1856.

BARRATARIA BAY, west end of Grande Terre island, lat. $29^{\circ} 17' N.$, lon. $89^{\circ} 57' W$. F. white D. light, 4th ord., vis. 13 miles, 60 feet high, structure white, 55 ft. high. Lighted 1864.

MISSISSIPPI RIVER.

SOUTH-WEST PASS, on west side, on a low, marshy island, lat. $28^{\circ} 58' N.$, lon. $89^{\circ} 24' W$. F. white D. light, 1st ord., vis. 17 miles, 128 ft. high, structure black, 126 ft. high. Lighted 1831.

HEAD OF PASSES, Deer island, at the junctions of the south and S. W. passes, lat. $29^{\circ} 9' N.$, lon. $89^{\circ} 15' W$. F. white D. light, 5th ord, vis. 11 miles, 37 feet high, structure white, 36 ft. high. Lighted 1852. On keeper's dwelling. Fog bell giving two blows and one blow alternately, at intervals of 10 and 20 seconds. A red light on east jetty and a white light on west jetty, at upper entrance to south pass.

SOUTH PASS, west side of pass, lat. $29^{\circ} 1' N.$, lon. $89^{\circ} 10' W$. Fl. white light, 5 sec., C. D. 1st ord., vis. 16 miles, 107 ft. high, structure red. Lighted 1831, 1881. A red light is shown 200 yards inside eastern jetty, and a white light 200 yards inside western jetty,

PASSE A L'OUTRE, Middle ground island, north side entrance, lat. $29^{\circ} 12' N.$, lon. $89^{\circ} 2' W$. F. and Fl. D. light, 3rd ord. 45 sec., white, with flash, vis. 14 miles, 70 ft. high, structure circular, black, 70 ft. high. Lighted 1855.

CHANDELEUR ISLAND, north end of island, lat. $30^{\circ} 3' N.$, lon. $88^{\circ} 53' W$. F. white D. light, 4th ord., vis. 13 miles, 58 ft. high, structure white, 56 ft. high. Lighted 1848.

LAKE PONTCHARTRAIN.

MANCHAC PASS, between lakes Maurepas and Pontchartrain, lat. $30^{\circ} 18' N.$, lon. $90^{\circ} 13' W$. F. white D. light, 5th ord., vis. 11 miles, 32 ft. high, structure white, 30 ft. high. Lighted 1837.

TCHFUNCTI RIVER, near Madisonville, lat. $30^{\circ} 23' N.$, lon. $90^{\circ} 6' W$. F. white D. light, 5th ord., vis. 12 miles, 48 ft. high, structure white, 43 ft. high. Lighted 1837.

NEW CANAL, entrance 5 miles north of New Orleans, $30^{\circ} 2' N.$, lon. $90^{\circ} 7' W$. F. white D. light, 5th ord., vis. 11 miles, 33 ft. high, structure white, 28 ft. high. Lighted 1838. On keeper's dwelling.

BAYOU, St. John, 5 miles north of New Orleans, lat. $30^{\circ} 2' N.$, lon. $90^{\circ} 5' W$. F. white D. light, 6th ord., vis. 12 miles, 39 ft. high, structure white, 28 ft. high. Lighted 1811. Cylindrical column on screw piles.

PONTCHARTRAIN PORT, near east end of railway, lat. $30^{\circ} 2' N.$, lon. $90^{\circ} 4' W$. F. & Fl. light, D 5th ord., $1\frac{1}{2}$ min., white with flash, vis. 11 miles, 42 ft. high, structure white, 36 ft. high. Lighted 1838.

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POINT AUX HERBES, near entrance of point, lat. $30^{\circ} 9' N.$, lon. $89^{\circ} 51' W.$ F. red D. light, 5th ord., vis. 11 miles, 40 ft. high, structure straw color, 38 ft. high. Lighted 1875. On keeper's dwelling.

WEST RIGOLETS, at the entrance to lake Pontchartrain, lat. $30^{\circ} 11' N.$, lon. $89^{\circ} 45' W.$ F. white D. light, 5th ord., vis. 11 miles, 30 ft. high, structure white. Lighted 1855. On keeper's dwelling.

ST. JOSEPH ISLAND, entrance to lake Borgne, lat. $30^{\circ} 11' N.$, lon. $89^{\circ} 26' W.$ F. white D. light, 5th ord., vis. 11 miles, 35 ft. high, structure white, 34 ft. high. Lighted 1865.

MERRILL SHELL BANK, between Cat., St. Joseph, and Grand islands, lat. $30^{\circ} 14' N.$, lon. $89^{\circ} 14' W.$ F. white D. light, 4th ord., vis. 12 miles, 45 ft. high, structure screw piles, 51 ft. high. Lighted 1860. Fog-bell; one blow at intervals of 20 seconds.

PASS CHRISTIAN, on the main land $6\frac{1}{2}$ miles N.W. of Cat island, lat. $30^{\circ} 19' N.$, lon. $89^{\circ} 15' W.$ F. white D. light, 5th ord., vis. 12 miles, 42 ft. high, structure white, 30 ft. high. Lighted 1831.

CAT ISLAND, Western point, lat. $30^{\circ} 14' N.$, lon. $89^{\circ} 10' W.$ F. & Fl. D. light, 5th ord., white, with flash $1\frac{1}{2}$ min., vis. 12 miles, 45 ft. high, structure white on screw piles, 40 ft. high. Lighted 1831.

BILOXI, West of western entrance to bay, lat. $30^{\circ} 24' N.$, lon. $88^{\circ} 54' W.$ F. white D. light, 5th ord., vis. 13 miles, 62 ft. high, structure white, 48 ft. high. Lighted 1848.

SHIP ISLAND, West end, lat. $30^{\circ} 13' N.$, lon. $88^{\circ} 58' W.$ F. red D. light, 4th ord., vis. 13 miles, 55 ft. high, structure white, 50 ft. high. Lighted 1853.

EAST PASCAGOULA RIVER, West side of river mouth, lat. $30^{\circ} 21' N.$, lon. $88^{\circ} 34' W.$ F. white D. light, 5th ord., vis. 11 miles, 38 ft. high, structure white, 35 ft. high. Lighted 1854. On keeper's dwelling.

ROUND ISLAND, South end of Pascagoula, lat. $30^{\circ} 17' N.$, lon. $88^{\circ} 35' W.$ F. white D. light, 4th ord., vis. 12 miles, 51 ft. high, structure white, 45 ft. high. Lighted 1833. Hidden by woods from N.W. by N. $\frac{1}{4}$ N. through north to N.E. by E. $\frac{3}{4}$ E.

HORN ISLAND, 500 yards from east end, lat. $30^{\circ} 13' N.$, lon. $88^{\circ} 31' W.$ F. & Fl. white light with red flash, 1 min., D. 4th ord., vis. 12 miles, 43 ft. high, structure white, lantern black, 41 ft. high. Lighted 1874. Fog-bell giving one blow every 15 seconds.

ALABAMA.

MOBILE POINT, on point, east side of entrance to the bay, lat. $30^{\circ} 14' N.$, lon. $88^{\circ} 1' W.$ F. red D. light, 4th ord., vis. 12 miles, 50 ft. high, structure black, 30 ft. high. Lighted 1864. Six beacon lights mark the dredged channel into Mobile harbor.

SAND ISLAND, middle of the low island about 3 miles S.S.W. of Mobile point, lat. $30^{\circ} 11' N.$, lon. $88^{\circ} 3' W.$ F. white D. light, 2nd order, vis. 17 miles, 132 ft. high, structure black, conical, 125 ft. high. Lighted 1838.

BATTERY GLADDEN, Ruins of battery, 6 cables east of Choctau point, lat. $30^{\circ} 40' N.$, lon. $88^{\circ} W.$ F. white D. light, 4th ord., vis. 12 miles, 47 ft. high, structure straw color, screw piles, 41 ft. high. Lighted . Fog bell.

PENSACOLA HARBOR, 1. Near fort Barrancas, north side of Pensacola bay, lat. $30^{\circ} 21' N.$, lon. $87^{\circ} 19' W.$ Fl. white light, 1 min., D. 1st ord., vis. 21 miles, 210 ft. high, structure upper two-thirds black, lower third white, 160 ft. high. Lighted 1824.

2. Bar beacon, 150 yards S. S. E. $\frac{1}{4}$ E. from main lighthouse. F. white D. light, 6th ord., vis. 6 miles, 55 ft. high, structure black and white, 26 ft. high. Lighted 1859. In line lead over the bar.

CAPE SAN BLAS, near the south point of the cape, lat. $29^{\circ} 40' N.$, lon. $85^{\circ} 22' W.$ Fl. white D. light, 3rd ord., $1\frac{1}{2}$ min., vis. 16 miles, 102 ft. high, structure white, 96 ft. high. Lighted 1847.

CAPE ST. GEORGE, on the cape, lat. $29^{\circ} 35' N.$, lon. $85^{\circ} 3' W.$ F. white D. light, 3rd ord., vis. 14 miles, 73 ft. high, structure white, 68 ft. high. Lighted 1847.

ST. MARK, east side of entrance to river, lat. $30^{\circ} 4' N.$, lon. $84^{\circ} 11' W.$ F. white D. light, 4th ord., vis. 14 miles, 83 feet high, structure white, 75 ft. high. Lighted 1829.

CEDAR CAYS, Seahorse cay, east end of mound, lat. $29^{\circ} 6' N.$, lon. $83^{\circ} 4' W.$ F. and Fl. D. light, 4th ord., white with flash 1 min., vis. 14 miles, 75 ft. high, structure red, lantern white. Lighted 1854. On keeper's dwelling. The reef, extending in a S. W. direction, is marked by an iron pile beacon.

EGMONT, Egmont cay, entrance of Tampa bay, lat. $27^{\circ} 36' N.$, lon. $82^{\circ} 46' W.$ F. white D. light, 4th ord., vis. 15 miles, 86 ft. high, structure white, lantern black, 81 ft. high. Lighted 1848.

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RULES,

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bearings, and positions from
Cross Bearings.*

Recommended by the highest authorities of the Naval and Merchant service,

PRICE \$12.00.

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JOHN W. GABRIEL,
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UNITED STATES' LIGHTS.

ARRANGED FROM T. S. & J. D. NEGUS'S LIST OF LIGHT-HOUSES
OF THE U. S. COAST.

NOTES AND REFERENCES.

The Names of the Lights are printed as follows, viz. :

- 1ST. PRIMARY SEA-COAST LIGHTS.
- 2ND. SECONDARY SEA-COAST LIGHTS, AND LAKE-COAST LIGHTS.
- 3RD. *Lightships*.
- 4TH. Sound, bay, river and harbor lights.

Distance visible at which lights may be seen in clear weather, is the distance at an elevation of 15 feet above the level of the sea. The height of the light is also given from mean sea level.

ABBREVIATIONS.

F. W., Fixed white; F. R., Fixed red; Flg. W., Flashing white; Flg. R., Flashing red; Flg. R. and W., Flashing red and white; F. V. W. F., Fixed white, varied by white flashes; F. V. R. F., Fixed white, varied by red flashes; F. V. R. and W. F., Fixed white, varied by red and white flashes; F. R. V. R. F., Fixed red, varied by red flashes. Height of Light above sea level. Lat. N., Lon. W.

MAINE.

St. Croix River. On Docket's or Demont's Island, opposite Red Beach, lat. $45^{\circ} 7' 43''$, lon. $67^{\circ} 8'$, F. V. W. F. 30 sec. visible 12 miles, 71 ft. high, tower white.

WEST QUODDY HEAD. Near Lubec, south side of entrance to Quoddy Bay, lat. $44^{\circ} 48' 54''$, lon. $66^{\circ} 57' 1''$, F. W., vis. 18 miles, 133 ft. high, tower white and red. A 10-inch fog-whistle, in duplicate, giving blasts of 8 sec. at intervals of 52 sec.

Little River. On an island at the mouth of Little River harbor, lat. $44^{\circ} 39' 45''$, lon. $67^{\circ} 12' 5''$, F. V. W. F. $1\frac{1}{2}$ min., vis. 11 miles, 40 ft. high, tower white. Fog-bell struck by machinery twice a minute.

- AVERY'S ROCK.** On Avery's rock, in Machias bay, lat. $44^{\circ} 39'$, lon. $67^{\circ} 21'$, F. R. vis. 14 miles, 68 ft. high, tower white. A fog-bell, struck by machinery, giving two blows in quick succession, alternately with a single blow, at intervals of 15 sec.
- LIBBY ISLAND.** On south end of Libby Island, entrance to Machias Bay, lat. $44^{\circ} 34' 5''$, lon. $67^{\circ} 22' 2''$, F. W. vis. 12 miles, 52 ft. high, tower gray. A fog-bell struck by machinery.
- MOOSE PEAK.** On Mistake Island, west entrance to Bay of Fundy, lat. $44^{\circ} 23' 27''$, lon. $67^{\circ} 31' 55''$, Flg. W. 30 sec., vis. 13 miles, 65 ft. high, tower white.
- NASH'S ISLAND.** Off the mouth of Pleasant river, (east side), lat. $44^{\circ} 27' 51''$ lon. $67^{\circ} 44' 50''$. F. R. vis. 12 miles, 47 ft. high, tower white.
- Narraguagus.** On S. E. point of Pond Island, at the entrance of Narraguagus bay, lat. $44^{\circ} 27' 20''$, lon. $67^{\circ} 49' 52''$, F. W. vis. 12 miles, 45 ft. high, tower white. A fog-bell struck by hand.
- PETIT MANAN** On south end of the Island of that name, lat. $44^{\circ} 22' 2''$, lon. $67^{\circ} 51' 51''$, F. V. W. F. 2 min., vis. 17 miles, 125 ft. high, tower gray. A 10-inch steam fog-whistle, in duplicate, giving 2 blasts of 5 sec. each per minute; intervals between blasts, 8 sec. and 42 sec.
- Prospect Harbor.** On Prospect Harbor point, Gouldsboro, on the eastern side of the entrance to the harbor, lat. $44^{\circ} 24' 11''$, lon. $63^{\circ} 0' 46''$, Flg. R. & W. 30 sec., vis. 11 miles, 45 ft. high.
- Winter Harbor.** On south point of Mark island, west of entrance to the harbor, lat. $44^{\circ} 21' 40''$, lon. $68^{\circ} 5' 16''$, F. W. vis. 11 miles, 37 ft. high, tower white.
- MOUNT DESERT.** On Mount Desert Rock, lat. $43^{\circ} 53' 7''$, lon. $68^{\circ} 7' 42''$, F. W. vis. 14 miles, 75 ft. high, tower gray. A fog bell, struck by hand.
- EGG ROCK.** On Egg Rock, in Frenchman's bay, lat. $44^{\circ} 21' 15''$, lon. $63^{\circ} 8'$, F. R. vis. 14 miles, 76 ft. high, tower white. A fog bell, struck by hand.
- BAKER'S ISLAND.** Off Mount Desert Island, and south of the entrance to Frenchman's bay, lat. $44^{\circ} 14' 23''$, lon. $68^{\circ} 11' 56''$, F. V. W. F. $1\frac{1}{2}$ min., vis. 15 miles, 105 ft. high, tower white.
- Bear Island.** One of the Cranberry islands, about 5 miles northwest of Baker's island, lat. $44^{\circ} 16' 59''$, lon. $68^{\circ} 16' 12''$, F. W. vis. 15 miles, 97 ft. high, tower brown. A fog bell, struck by hand.
- Bass Harbor Head.** E. side of entrance to Bass harbor, lat. $44^{\circ} 13' 18''$, lon. $68^{\circ} 29' 14''$, F. R. vis. 13 miles, 56 ft. high, tower white. A fog bell, struck by hand.
- Burnt Coat Harbor, (front).** On south end of Swan island, lat. $41^{\circ} 8' 1''$, lon. $68^{\circ} 26' 51''$, F. W. vis. 11 miles, 42 ft. high, tower white.
- Burnt Coat Harbor, (rear).** On south end of Swan island, lat. $44^{\circ} 8' 2''$, lon. $68^{\circ} 26' 50''$, F. W. vis. 14 miles, 75 ft. high, tower white.
- EAST PENOBSCOT BAY.**
- Blue Hill Bay, (formerly Eggmoggin).** On Green island, entrance to Blue Hill bay, lat. $44^{\circ} 14' 54''$, lon. $68^{\circ} 29' 52''$, F. W. vis. 9 miles, 26 ft. high, tower white.
- SADDLEBACK LEDGE.** Near southwest end of Isle au Haut, and east side of entrance to bay, lat. $44^{\circ} 0' 51''$, lon. $68^{\circ} 43' 35''$. F. W. vis. 12 miles, 51 ft. high, tower gray and white.

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Heron Neck. On south point of Green island, the southernmost of Fox islands, lat. $44^{\circ} 1' 36''$, lon. $68^{\circ} 51' 45''$. F. R. vis. 14 miles, 92 ft. high, tower white. A fog bell, struck by hand.

Deer Island Thoroughfare. On Mark island, western entrance to Deer island thoroughfare, lat. $44^{\circ} 8' 3''$, lon. $68^{\circ} 42' 12''$. F. W. vis. 12 miles, 52 ft. high, tower white. A fog trumpet, (Van Tromp).

Eagle Island. On Eagle island, at the head of Isle au Haut bay, lat. $44^{\circ} 13' 3''$, lon. $68^{\circ} 46' 4''$. F. W. vis. 15 miles, 106 ft. high, tower white.

Pumpkin Island. West entrance to Eggmoggin reach, lat. $44^{\circ} 18' 32''$, lon. $68^{\circ} 44' 34''$. F. W. vis. 9 miles, 27 ft. high, tower white.

MATINICUS ROCK. Two towers and lights on Matinicus rock, off southern entrance to Penobscot bay, lat. $43^{\circ} 47'$ lon. $68^{\circ} 51' 18''$. F. W., vis. 14 miles, 85 and 90 ft. high, tower gray. A 10-inch steam fog-whistle (also a 12-inch) giving blast of 5 sec., at intervals of 25 sec; also, a bell rung by hand.

WHITEHEAD. On Whitehead Island, west entrance to Penobscot bay, lat. $43^{\circ} 58' 42''$, lon. $69^{\circ} 7' 28''$. F. W. vis. 14 miles, 79 ft. high, tower gray. A 10-inch steam fog-whistle, in duplicate, blasts of 8 sec. at intervals of 52 sec.; bell rung by hand, if necessary.

PENOBSCOT BAY.

Owl's Head. On the west side of Penobscot bay, off Rockland Harbor, lat. $44^{\circ} 51' 31''$, lon. $69^{\circ} 2' 39''$. F. W. vis. 15 miles, 105 ft. high, tower white. A fog-bell, struck by machinery 4 times a min.; bell rung by hand, if necessary.

Brown's Head. On the southern of the Fox islands, entrance to Fox Island thoroughfare, lat. $44^{\circ} 6' 41''$, lon. $68^{\circ} 54' 34''$. F. W. and F. R., vis. 11 miles, 39 ft. high, tower white. A fog bell, struck by hand.

Indian Island. On the southern point of Indian island, east side of entrance to Rockport harbor, lat. $44^{\circ} 9' (54'')$, lon. $69^{\circ} 3' (22'')$. F. R., vis. 12 miles, 47 ft. high, tower white.

Negro Island. South side of the entrance to Camden harbor, lat. $44^{\circ} 12' 4''$, lon. $69^{\circ} 2' 56''$. F. W., vis. 12 miles, 52 ft. high, tower white.

Grindell's Point. On the north side of the entrance to Gilkey's Harbor, lat. $44^{\circ} 16' 53''$, lon. $68^{\circ} 56' 35''$. F. W., vis. 11 miles, 39 ft. high, tower white. A fog-bell, struck by hand.

Dice's Head. North side of entrance to Castine harbor, lat. $44^{\circ} 22' 57''$, lon. $68^{\circ} 49' 9''$. F. W., vis. 17 miles, 130 ft. high, tower white.

Fort Point. On old Fort Point, at mouth of Penobscot river, lat. $44^{\circ} 28' 1''$, lon. $68^{\circ} 48' 42''$. F. W. vis. 15 miles, 103 ft. high, tower white.

Tennant's Harbor. On southern island, entrance to Tennant's harbor, lat. $43^{\circ} 57' 39''$, lon. $69^{\circ} 11' 6''$. F. R. V. F., 1 min., vis. 13 miles, 69 ft. high, tower white.

Marshall's Point. East side of entrance to Herring gut, or St. George's harbor, lat. $43^{\circ} 55' 2''$, lon. $69^{\circ} 15' 41''$. F. W., vis. 10 miles, 31 ft. high, tower white and gray.

MONHEGAN ISLAND. On Monhegan Island, lat. $43^{\circ} 45' 52''$, lon. $69^{\circ} 18' 57''$. Fig. W., 1 min., vis. 19 miles, 175 ft. high, tower gray.

Manana Island (fog signal). On the west end of Manana Island, lat. $43^{\circ} 45' 46''$, lon. $69^{\circ} 19' 36''$. A first-class Deboll's trumpet, in duplicate, giving blasts of 15 seconds, at intervals of 40 seconds.

Franklin Island. On north end of the island, and west of entrance to St. George's River, lat. $43^{\circ} 53' 31''$, lon. $69^{\circ} 22' 30''$. F. V. W. F. $1\frac{1}{2}$ min. vis. 12 miles, 54 ft. high, tower white.

PERNAQUID POINT. On the point, S.W. entrance to Muscongus bay, and E. of entrance Jahn's bay, lat. $43^{\circ} 50' 12''$, lon. $96^{\circ} 30' 22''$. F. W. vis. 14 miles, 75 ft. high, tower white.

Burnt Island. West side of the entrance to Booth Bay harbor, lat. $43^{\circ} 49' 29''$, lon. $69^{\circ} 33' 25''$. F. W. vis. 13 miles, 61 ft. high, tower white.

Hendrick's Head. On east side of mouth of Sheepscot river, lat. $43^{\circ} 49' 20''$, lon. $69^{\circ} 41' 24''$. Flg. W. 30 sec., vis. 12 miles, 40 ft. high, tower white.

Pond Island. On west side of entrance to Kennebec river, lat. $43^{\circ} 44' 23''$, lon. $69^{\circ} 46' 14''$. F. W. vis. 18 miles, 54 ft. high, tower white. A fog bell struck by machinery six times a minute.

SEGUIN. On Seguin island, off the mouth of Kennebec river, lat. $43^{\circ} 42' 25''$, lon. $69^{\circ} 45' 31''$. F. W. vis. 20 miles, 180 ft. high, tower gray. A 10-inch steam fog-whistle, in duplicate, giving blasts of 8 seconds, at intervals of 52 seconds.

HALF-WAY ROCK. On Half-way rock, Casco bay, lat. $43^{\circ} 39' 21''$, lon. $70^{\circ} 2' 13''$. F. V. R. F. $1\frac{1}{2}$ min., vis. 15 miles, 80 ft. high, tower gray.

CASCO BAY.

CAPE ELIZABETH. Two towers and lights on Cape Elizabeth, S.S.E. of Portland; 1. East light, lat. $43^{\circ} 33' 57''$, lon. $70^{\circ} 12' 1''$. F.W. vis. 18 miles, 143 ft. high, tower white. A 2nd class Siren, giving two blasts of 5 sec. each, with an interval of 8 sec. between them, and then a pause of 42 sec. every minute. In case of accident to siren a 10-inch steam whistle will be sounded.

2. West light, lat. $43^{\circ} 33' 50''$, lon. $70^{\circ} 12' 10''$. F. V. W. F. 1 min., vis. 18 miles, 143 ft. high, tower white.

PORTLAND HEAD. On Portland head, near entrance to Portland harbor, lat. $43^{\circ} 37' 22''$, lon. $70^{\circ} 12' 29''$. F. W. vis. 15 miles, 101 ft. high, tower white. A 2nd class Daboll's air-trumpet, in duplicate, giving blasts of 8 sec. at intervals of 40 sec. If air-trumpet is injured, a bell, struck by machinery.

Portland Breakwater. On end of Breakwater, Portland harbor, lat. $43^{\circ} 39' 18''$, lon. $70^{\circ} 14' 8''$. F. R. V. R. F. 40 sec., vis. 8 miles, 23 ft. high, tower white.

Wood Island. Near the entrance to Saco harbor, lat. $43^{\circ} 27' 23''$, lon. $70^{\circ} 19' 45''$. F. R. V. R. F. 1 min., vis. 13 miles, 62 ft. high, tower white. A bell, struck by machinery, two blows in rapid succession; pause of 25 seconds, followed by one blow.

Goat Island. On the north side of the entrance to Cape Porpoise harbor, lat. $43^{\circ} 21' 27''$, lon. $70^{\circ} 25' (31'')$. F. W., vis. 11 miles, 38 ft. high, tower white.

THE KNUBBLE (Cape Neddick). On York Knubble, Cape Neddick, lat. $43^{\circ} 9' (45'')$, lon. $70^{\circ} 35' (30'')$. F. R., vis. 15 miles, 92 ft. high, tower white. A bell, struck by machinery, 2 blows in quick succession, pause of 30 sec.; then one blow, and pause of 30 sec.

BOON ISLAND. On Boon Island, off York harbor, lat. $43^{\circ} 7' 16''$, lon. $70^{\circ} 28' 36''$. F. W., vis. 18 miles, 133 ft., tower gray.

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NEW HAMPSHIRE.

WHALE'S BACK. On east side of outer entrance to Portsmouth harbor, N. H., lat. $43^{\circ} 3' 30''$, lon. $70^{\circ} 41' 48''$. F. V. W. F. $1\frac{1}{2}$ min., vis. 13 miles, 65 ft. high, tower gray. A 3rd-class Daboll's trumpet, in duplicate, giving blasts of 10 seconds' duration, at intervals of 30 seconds.

Portsmouth Harbor (New Castle). On south-west side of inner entrance to Portsmouth harbor, N. H., lat. $43^{\circ} 4' 15''$, lon. $70^{\circ} 42' 32''$. F. W. vis. 14 miles, 70 ft. high, tower white.

ISLES OF SHOALS. On White island, the southwest island of Isles of Shoals, off Portsmouth, N. H., lat. $42^{\circ} 58'$, lon. $70^{\circ} 37' 25''$, Flg. R. & W. 15 sec., vis. 15 miles, 87 ft. high, tower white.

MASSACHUSETTS.

Newburyport Harbor. On north end of Plum island, south side of entrance to Merrimac river, lat. $42^{\circ} 48' 53''$, lon. $70^{\circ} 49' 10''$. F. W. vis. 12 miles, 50 ft. high, tower white.

. . . . Beacon. Range in front, F. W. vis. 8 miles, $25\frac{1}{2}$ ft. high, tower black and white.

. . . . Upper Harbor, (outer beacon). On Bailey's new wharf, near east corner, lat. $42^{\circ} 48' 40''$, lon. $70^{\circ} 51' 54''$. F. R. vis. 10 miles, $25\frac{1}{2}$ ft. high, tower black.

. . . . Upper Harbor (inner beacon). Range in rear, lat. $42^{\circ} 48' 39''$, lon. $70^{\circ} 51' 59''$. F. green, vis. 12 miles, $47\frac{1}{2}$ ft. high, tower red.

IPSWICH. South side of entrance to Ipswich harbor, on Castle Neck, about $1\frac{1}{2}$ mile southeast of Ipswich river, lat. $42^{\circ} 41' 6''$, lon. $70^{\circ} 45' 59''$. F. V. W. F. $1\frac{1}{2}$ min., vis. $12\frac{1}{2}$ miles, 50 ft. high, tower white.

. . . . Beacon. Range in front, F. W. vis. 8 miles, 20 ft. high, tower black.

Annisquam Harbor. On Wigwam point, east side of the entrance to the harbor, lat. $42^{\circ} 39' 41''$, lon. $70^{\circ} 40' 54''$. F. W. vis. 13 miles, 50 ft. high, tower white.

STRAITSMOUTH. Or. northeast point of Straitsmouth island, north side of Cape Ann, lat. $42^{\circ} 39' 43''$, lon. $70^{\circ} 35' 18''$. F. W. vis. 11 miles, 33 ft. high, tower white.

CAPE ANN. On Thatcher's island, distant about $\frac{3}{4}$ mile from Cape Ann, lat. $42^{\circ} 38' 20''$, lon. $70^{\circ} 34' 30''$. F. W. vis. 20 miles, $165\frac{1}{2}$ ft. high, tower a gray stone. A 10 inch steam-whistle, in duplicate, giving each minute a blast of 8 and a blast of 4 seconds, with alternate intervals of 4 and 44 sec.

. . . . lat. $42^{\circ} 38' 11''$, lon. $70^{\circ} 34' 31''$. F. W. vis. 20 miles, $165\frac{1}{2}$ ft. high, tower gray stone.

Eastern Point. East side of entrance to Cape Ann or Gloucester harbor, lat. $42^{\circ} 34' 47''$, lon. $70^{\circ} 39' 53''$. F. R. vis. 13 miles, 60 ft. high, tower white. A fog bell struck by machinery.

Ten Pound Island. In Cape Ann or Gloucester harbor, on east side of entrance to inner harbor, lat. $42^{\circ} 36' 5''$, lon. $70^{\circ} 39' 56''$. F. W. vis. 11 miles, 50 ft. high, tower white.

SALEM HARBOR.

Baker's Island. South side of the northeast entrance to Salem harbor, north end of Baker's island, lat. $42^{\circ} 32' 10''$, lon. $70^{\circ} 47' 10''$. F. W. vis. 15 miles, 87 ft. high, tower white. A fog bell.

. . . . Beacon. Range. F. W. vis. 14 miles, 64 ft. high, tower white.

- Hospital Point. On Hospital point, Beverly, north side of Salem harbor entrance, lat. $42^{\circ} 32' 46''$, lon. $70^{\circ} 51' 22''$, F. W. vis. 13 miles, 63 ft. high, tower white.
- Fort Pickering. On Winter island, north side of entrance to Salem harbor, lat. $42^{\circ} 31' 34''$, lon. $70^{\circ} 52'$, F. W. vis. 10 miles, 32 ft. high, tower red.
- Derby's Wharf. On the end of Derby's wharf, upper part of Salem harbor, lat. $42^{\circ} 30' 58''$, lon. $70^{\circ} 53' 2''$, F. R. vis. 9 miles, 22 ft. high, tower red.
- Marblehead. South side of entrance to Marblehead harbor, lat. $42^{\circ} 30' 18''$, lon. $70^{\circ} 50' 2''$, F. W. vis. 11 miles, 43 ft. high, tower white.
- Egg Rock. Off Nahaut, $\frac{3}{4}$ mile from shore, lat. $42^{\circ} 25' 59''$, lon. $70^{\circ} 53' 53''$, F. R. vis. 12 miles, 87 ft. high, tower white.

BOSTON BAY.

- MINOT'S LEDGE. On the Outer Minot, one of the Cohasset rocks), and entrance to Boston bay, Mass., lat. $42^{\circ} 16' 9''$, lon. $70^{\circ} 45' 34''$, F. W. vis. 16 miles, 92 ft. high, tower granite. Fog bell, struck by machinery.
- BOSTON. On Little Brewster island, north side of main outer entrance to Boston harbor, lat. $42^{\circ} 19' 39''$, lon. $70^{\circ} 53' 25''$, Flg. W. 30 sec., vis. 17 miles, 111 ft. high, tower white. A 1st class Daboll's air trumpet, in duplicate, giving blasts of 7 seconds, at intervals of 43 seconds.
- Narrows. On the west end of the spit which makes out from the Great Brewster island, Boston harbor, Mass., northeast side of entrance to Narrows channel, lat. $42^{\circ} 19' 21''$, lon. $70^{\circ} 55' 10''$, F. R. vis. 12 miles, 46 ft. high, tower brown.
- Long Island Head. On the northeast end of Long Island, and south side of the entrance to main ship-channel to Boston, from head of Broad sound, Mass., lat. $42^{\circ} 19' 46''$, lon. $70^{\circ} 57' 23''$, F. W. vis. 17 miles, 129 ft. high, tower white.

CAPE COD BAY.

- Plymouth (Gurnet). On Gurnet point, north side of entrance to Plymouth harbor, Mass., lat. $42^{\circ} 0' 10''$, lon. $70^{\circ} 36' 3''$, F. W. vis. 11 miles, 102 ft. high, tower white.
- Beacon Range, F. W. vis. 6 miles, tower white.
- Duxbury Pier. Placed in 7 ft. water, at mean tide, near Duxbury pier, Plymouth, Mass., north side of entrance to anchorage in "Cowyard," lat. $41^{\circ} 59' 13''$, lon. $70^{\circ} 38' 56''$, F. W. vis. 11 miles, 40 ft. high, tower red.
- Race Point. Northwestern point of Cape Cod, Mass., lat. $42^{\circ} 3' 43''$, lon. $70^{\circ} 14' 36''$, F. V. W. F. $1\frac{1}{2}$ min., vis. 12 miles, 51 ft. high, tower red. A 12-inch steam fog whistle, in duplicate, giving blasts of 4 sec., with alternate intervals of 8 and 44 sec.
- Wood End. On the beach at Wood End, Cape Cod, Mass., lat. $42^{\circ} 1' 15''$, lon. $70^{\circ} 11' 37''$. Flg. R. 15 sec, vis. 12 miles, 45 ft. high, tower brown.
- Long Point. On Long Point shoal, southwest side of entrance. Provincetown harbor, Mass., lat. $42^{\circ} 1' 58''$, lon. $70^{\circ} 10' 8''$, F. W. vis. 11 miles, 44 ft. high, tower brown. A bell, struck by machinery, giving 2 blows in quick succession, followed by an interval of 30 seconds, then a single blow, also followed by an interval of 30 seconds.
- Mayo's Beach. At the head of Wellfleet bay, Mass., lat. $41^{\circ} 55' 48''$, lon. $70^{\circ} 2' 4''$ F. W. vis. 11 miles, 36 ft. high, tower white.
- Billingsgate Island. West side of and near the entrance of Wellfleet bay, on southeast side of Sandy Neck point, Mass., lat. $41^{\circ} 52' 16''$, lon. $70^{\circ} 4' 9''$, F. W. vis. 13 miles, 52 ft. high, tower red.
- Sandy Neck. West side of entrance to Barnstable harbor, Mass., lat. $41^{\circ} 43' 20''$, lon. $70^{\circ} 16' (52'')$ F. W. vis. 13 miles, 59 ft. high, tower white.

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CAPE COD, (Highlands, Truro). On the northeast or seaward side of Cape Cod, (Highlands, Truro), Mass., lat. $42^{\circ} 2' 21''$, lon. $70^{\circ} 3' 39''$, F. W. vis. 20 miles, 195 ft. high, tower white. A 1st.-class Daboll trumpet; blasts 8 sec. at intervals of 30 seconds.

NAUSET BEACH, (Beacons). Three towers and lights at Eastham, on the east side of Cape Cod, Mass., lat. $41^{\circ} 51' 37''$, lon. $69^{\circ} 57' 4''$, lights F. W., vis. 11 miles, 93 ft. high, towers white.

CHATHAM. On the Main, west side of Chatham harbor, Mass., North light, lat. $41^{\circ} 40' 16''$, lon. $69^{\circ} 57'$, F. W. vis. 14 miles, 80 ft. high, tower white. Also, F. W. South light, and white tower.

EAST ENTRANCE TO VINEYARD SOUND.

Pollock Rip Light-ship. Off Chatham, 4 miles E. $\frac{1}{2}$ S. of Monomoy Point light-house, Mass., lat. $41^{\circ} 31' (37'')$, lon. $69^{\circ} 55' (10'')$, 2 F. R. vis. 12 miles, 45 ft. high, vessel red. A 1st.-class steam fog-siren, giving during each minute, a blast of 5 seconds duration, with intervals of 55 seconds.

MONOMOY POINT. On Monomoy beach, the southern extremity of Cape Cod, Mass., lat. $41^{\circ} 33' 32''$ lon. $69^{\circ} 59' 38''$, F. W. vis. 12 miles, 41 ft. high, tower red.

Shovelful Shoals Light-ship. Off Chatham, $1\frac{5}{8}$ miles S. by W. from Monomoy Point light-house, Mass., lat. $41^{\circ} 31' (58'')$, lon. $69^{\circ} 59' (49'')$, F. R. vis. 12 miles, 40 ft. high, vessel green. A bell and horn.

Handkerchief Light-ship. Off the southern point of the Handkerchief shoal, in Vineyard sound, Mass. The light bears S. W. by W. $\frac{1}{2}$ W. from the Shovelful Shoals light-ship, lat. $41^{\circ} 29' (36'')$, lon. $70^{\circ} 3' (40'')$, F. W. vis. 12 miles, 40 ft. high, vessel straw color. A bell and horn.

NANTUCKET, (Great Point). On Sandy or Great point, the northeast extremity of Nantucket island, Mass., lat. $41^{\circ} 23' 22''$, lon. $70^{\circ} 2' 45''$, F. W. vis. 14 miles, 70 ft. high, tower white.

SANKATY HEAD. On south-east extremity of the island on Nantucket, about S. by W., 23 miles from Pollock Rip light-ship, Mass., lat. $41^{\circ} 16' 59''$, lon. $69^{\circ} 57' 55''$, F. V. W. F. 1 min., vis. 19 miles, 150 ft. high, tower white, red and white.

Nantucket New South Shoals Light-ship. About 3 miles S.S.E. of the shoalest part of Davis' New South shoal. A red can buoy, marked "South Shoal" on the head, is placed midway between light-ship and shoal off Nantucket, in 14 fathoms water. lat. $40^{\circ} 56'$, lon. $69^{\circ} 51' (50'')$, 2 F. W. vis. 12 miles, 44 ft. high, tower red. A bell and fog-horn.

GAY HEAD. On the western point of Martha's Vineyard island, south side of west entrance to Vineyard sound, Mass., lat. $41^{\circ} 20' 52''$ N., lon. $70^{\circ} 50' 7''$ W., Flg. W. & R., 10 sec., vis. 20 miles, 170 ft. high, tower red.

VINEYARD SOUND.

Brant Point. On Brant point, west side of entrance to Nantucket harbor, lat. $41^{\circ} 17' 21''$, lon. $70^{\circ} 5' 33''$, F. W., vis. 12 miles, 46 ft. high, tower red.

Nantucket Cliff Range Beacon, (front). On the beach, northwest of Nantucket harbor, lat. $41^{\circ} 17' 36''$, lon. $70^{\circ} 6' 23''$, F. W. vis. 7 miles, 8 feet high, tower white.

Range Beacon, (rear), lat. $41^{\circ} 17' 33''$, lon. $70^{\circ} 6' 24''$, F. R. vis. 7 miles, 10 feet high, tower white.

- Stage Harbor. On Harding's beach, west side of Chatham, lat, $41^{\circ} 39' 30''$, lon, $69^{\circ} 59' 2''$, F. W. vis. 12 miles, 45 ft. high, tower red.
- Bass River. On the north side of Vineyard Sound, east side of entrance to Bass river, lat. $41^{\circ} 39' (4'')$, lon. $70^{\circ} 10' 10''$, F. W. vis. 12 miles, 40 ft. high, tower white.
- Bishop and Clerk's. On north point of Bishop and Clerk's ledge, Vineyard sound, lat. $41^{\circ} 34' 25''$, lon. $70^{\circ} 15' 1''$, Flg. W. 30 sec., vis. 13 miles, 59 ft. high, tower gray. A bell.
- Hyannis. East side entrance to Hyannis harbor. Harbor light on the main, inside of the Breakwater, Hyannis, lat. $41^{\circ} 38' 9''$ lon. $70^{\circ} 17' 19''$, F. R. vis. 12 miles, 42 ft. high, tower white.
- Cross-Rip Lightship.* Northwest of Nantucket, off Cross-Rip shoal, lat. $41^{\circ} 26' (44'')$, lon. $70^{\circ} 17' (25'')$, F. W. vis. 12 miles, 39 ft. high, vessel black and white. A bell and horn.
- Cape Poge. On Chappaquiddick island, north-east point of Martha's Vineyard, lat. $41^{\circ} 25' 14''$, lon. $70^{\circ} 27' 5''$, F. W. vis. 13 miles, 57 ft. high, tower white.
- Succoneset Shoal Lightship.* Between Succoneset shoal and Eldridge shoal, Vineyard sound, lat. $41^{\circ} 32'$, lon. $70^{\circ} 26' (40'')$, F. W. vis. 12 miles, 40 ft high, vessel straw color.
- Edgartown. North side of Edgartown harbor, lat. $41^{\circ} 23' 25''$, lon. $70^{\circ} 30' 12''$, F. W. vis. 11 miles, 37 ft. high, tower white.
- East Chop. On East Chop, eastern entrance to Vineyard Haven harbor, lat. $41^{\circ} 28' (11'')$, lon. $70^{\circ} 30' (4'')$, F. R. vis. $14\frac{1}{2}$ miles, 79 ft. high, tower white.
- Holmes's Hole, (West Chop). On West Chop, western entrance to Vineyard Haven harbor, lat. $41^{\circ} 28' 49''$, lon. $70^{\circ} 36'$, F. W. vis. 13 miles, 69 feet high, tower white.
- Nobska Point. E. S. E. side of entrance to Wood's Holl harbor, lat, $41^{\circ} 30' 55''$, lon. $70^{\circ} 39' 19''$, F. W. vis. 13 miles, 89 ft. high, tower red. A bell, struck by machinery, giving 2 blows in quick succession, alternately with 1 blow, at intervals of 30 seconds.
- Tarpaulin Cove. W. side of cove on Naushon Is., lat. $41^{\circ} 28' 6''$, lon. $70^{\circ} 45' 28''$, F. V. W. F. 30 sec., vis. 15 miles, 80 ft. high, tower white.
- GAY HEAD. On the western end of Martha's Vineyard Island, lat. $41^{\circ} 20' 52''$, lon. $70^{\circ} 50' 7''$, Flg. W. & R., 10 sec., vis. 20 miles, 170 ft. high, tower red.
- Vineyard Sound Light-ship. (Sow and Pigs).* Near the rocks called "Sow and Pigs," $13\frac{1}{2}$ fathoms water. Cuttyhunk light N. E. $\frac{1}{4}$ E.; Gay Head, E. S. E.; Dumpling rock, N. N. E. $\frac{1}{4}$ E., lat. $41^{\circ} 23'$, lon. $70^{\circ} 59'$, 2 F. W., vis. 11 miles, 34 ft. high, structure red. A 1st-class steam fog siren, giving blasts of 6 sec., followed by intervals of 45 seconds.
- Hen and Chickens Light-ship.* About a mile south-east of the Hen and chickens reef, lat. $41^{\circ} 27'$, lon. $71^{\circ} 1' (5'')$, F. W., vis. 11 miles, 25 ft. high, structure lead color. A bell and horn.
- BUZZARD'S BAY.
- Cuttyhunk. On S.W. point of Cuttyhunk Is. S.E. side of entrance to Buzzard's bay, lat. $41^{\circ} 24' 50''$, lon. $70^{\circ} 56' 59''$. F. W., vis. 12 miles, 42 ft. high, tower white.
- Dumpling Rock, (Round Hill). Off Round Hill, north-west side of Buzzard's bay, S.S.W. of Clark's Point light and New Bedford, lat, $41^{\circ} 32' 16''$, lon. $70^{\circ} 55' 18''$, F. W. vis. 12 miles, 42 ft. high, tower white. A bell, struck by machinery, giving 2 blows in quick succession, alternately with a single blow, at intervals of 30 seconds.

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- Clark's Point. On fort at Clark's point, west side of entrance to New Bedford harbor, lat. $41^{\circ} 35' 32''$, lon. $70^{\circ} 54' 3''$, F. W., vis. 13 miles, 68 ft. high, tower white.
- Palmer's Island. West side of entrance to New Bedford inner harbor, on N.E. end of the island in New Bedford harbor, lat. $41^{\circ} 37' 35''$, lon. $70^{\circ} 54' 34''$, F. W., vis. 12 miles, 38 ft. high, tower white.
- Ned's Point. East side of Mattapoiset harbor, east of New Bedford, north-west side of Buzzard's bay, lat. $41^{\circ} 39' 1''$, lon. $70^{\circ} 47' 45''$, F. W., vis. 11 miles, 43 ft. high, tower white.
- Bird Island. East side of entrance to Sippican harbor, off Great Neck point, west side of Buzzard's bay, lat. $41^{\circ} 40' 8''$ lon. $70^{\circ} 43' 3''$, F. V. W. F., $1\frac{1}{2}$ min., vis. 11 miles, 37 ft. high, tower white.
- Wing's Neck. Near head of Buzzard's bay, east side of entrance to Sandwich harbor, lat. $41^{\circ} 40' 47''$, lon. $70^{\circ} 39' 41''$, F. W. vis. 12 miles, 44 ft. high, tower white.

RHODE ISLAND.

Brenton's Reef Lightship. Off Brenton's reef, and the eastern entrance to Newport harbor, R. I., lat. $41^{\circ} 25'$ ($50''$), lon. $71^{\circ} 22'$ ($35''$), 2 F. W., vis. 12 miles, 50 and 40 ft. high, structure straw color. A bell and horn.

Castle Hill. Entrance to Newport harbor, lat. $41^{\circ} 27'$ ($41''$), lon. $71^{\circ} 21'$ ($43''$). A fog-signal to be erected.

BEAVER TAIL. On S. end of Conanicut island, between the two entrances to Narragansett bay, lat. $41^{\circ} 26' 56''$, lon. $71^{\circ} 23' 59''$, F. W. vis. 13 miles, 68 ft. high, tower granite. A 1st-order Daboll trumpet, in duplicate, operated by a 24-inch hot-air engine, giving blasts of 6 seconds, at intervals of 10 and 50 seconds.

NARRAGANSETT BAY, &C.

Lime Rock. On rock south side of south entrance to Newport harbor, lat. $41^{\circ} 28'$ ($37''$), lon. $71^{\circ} 19'$ ($34''$), F. R., vis. 11 miles, 30 ft. high, tower white.

Newport Harbor, (Goat Island). On North end of Goat Island, Newport harbor, lat. $41^{\circ} 29'$ ($34''$), lon. $71^{\circ} 19'$ ($33''$), F. W. vis. 11 miles, 33 ft high, tower white. A fog-bell, struck by machinery, at intervals of 15 seconds.

Rose Island. On the south-west point of Rose island, in Narragansett bay, lat. $41^{\circ} 29'$ ($42''$), lon. $71^{\circ} 20'$ ($35''$), F. R. vis. 11 miles, 58 ft. high, tower drab.

Dutch Island. On south end of Dutch island, Narragansett bay, lat. $41^{\circ} 29' 46''$, lon. $71^{\circ} 24' 16''$, F. W. vis. 13 miles, 56 ft. high, tower white. A fog-bell, struck by machinery, at intervals of 15 seconds.

Wickford Harbor. On Old Gay rock, Wickford harbor.

Poplar Point. Near Wickford, Narragansett bay, lat. $41^{\circ} 34' 14''$, lon. $71^{\circ} 26' 22''$, F. W. vis. 13 miles, 51 feet high, tower white.

Prudence Island. On Sandy Point, east side of Prudence island, Narragansett bay, lat. $41^{\circ} 36' 27''$, lon. $71^{\circ} 18' 30''$, F. W. vis. 11 miles, 30 ft. high, tower white.

Muscle Bed Shoals. On south-east side of the channel opposite to Bristol Ferry lighthouse, lat. $41^{\circ} 38'$ ($9''$), lon. $71^{\circ} 15'$ ($56''$) F. R. vis. 11 miles, 35 ft. high, tower red. A fog-bell, struck by machinery, one blow every 20 seconds.

- Bristol Ferry.** On Bristol Ferry point, near north side of entrance to Mount Hope bay lat. $41^{\circ} 38' 33''$, lon. $71^{\circ} 15' 38''$, F. W. vis. 11 miles, 35 ft. high, tower white.
- Warwick.** On south end of Warwick Neck, lat. $41^{\circ} 39' 59''$, lon. $71^{\circ} 22' 42''$, F. W. vis. 13 miles, 54 ft. high, tower white.
- Conimicut.** On end of Conimicut sand spit, W. side of entrance to Providence river, lat. $41^{\circ} 43'$, lon. $71^{\circ} 20' (45'')$, F. W. vis. 13 miles, 50 ft. high, tower gray. A bell, struck by machinery, at intervals of 12 seconds.
- Bullock's Point.** At the point of the shoal off Bullock's point, Providence river, east side of channel, lat. $41^{\circ} 44' 14''$, lon. $71^{\circ} 22' (12'')$, F. R., vis. 11 miles, 50 ft. high, tower drab.
- Sabine's Point.** In Providence river, (east side,) on the shoal off Sabine's point, near the eastern edge of the channel, lat. $41^{\circ} 45' 42''$, lon. $71^{\circ} 22' (31'')$ F. W., vis. 11 miles, 51 ft. high, tower white.
- Pomham Rocks.** In Providence River, (east side,) near eastern edge of the channel, lat. $41^{\circ} 46' 37''$, lon. $71^{\circ} 22' (11'')$, F. R. vis. 11 miles. 69 ft. high, tower white.
- Fuller's Rock.** In Providence river, (east side), near eastern edge of the channel, lat. $41^{\circ} 47' 36''$, lon. $71^{\circ} 22' (47'')$, F. W. vis. 10 miles, 28 ft. high, tower white.
- Sassafras Point.** In Providence river, (west side), lat. $41^{\circ} 48' (53'')$, lon. $71^{\circ} 23' (29'')$ F. R. vis. 10 miles, 25 ft. high, tower white.
- POINT JUDITH.** On the southern extremity of Narragansett shore, lat. $41^{\circ} 21' (38'')$, lon. $71^{\circ} 23' (54'')$, Flg. W., 15 sec., vis. 14 miles, 67 ft. high, tower white. A 1st-order steam fog-siren, in duplicate, giving blasts of 6 seconds at intervals of 40 seconds.
- BLOCK ISLAND, (north).** On north end of Block island, lat. $41^{\circ} 13' 38''$, lon. $71^{\circ} 34' 34''$, F. W., vis. $13\frac{1}{2}$ miles, 61 ft. high, tower light brown.
- Block Island Breakwater Range, (front).** On end Government pier, E. side of entrance to basin harbor, Block island, F. R., vis. 10 miles, 12 ft. high, stake.
- Block Island Breakwater Range, (rear).** On the land back of the inner edge of the breakwater basin; distant from the front light, in a course S. S. W., (S. 23° W.), 345 ft., F. R. vis. $13\frac{1}{4}$ miles, 60 ft. high, mast.
- BLOCK ISLAND, (south-easterly).** On south-east end of Block island, lat. $41^{\circ} 9' 8''$, lon. $71^{\circ} 33' 8''$, F. W., vis. 21 miles, 204 ft. high, tower red. A 1st-order steam fog siren, in duplicate, giving blasts of 6 seconds at intervals of 20 sec.
- WATCH HILL.** On Watch Hill point, 3 miles south-east of Stonington, lat. $41^{\circ} 18' 12''$, lon. $71^{\circ} 51' 32''$, F. W., vis. 13 miles, 62 ft. high, tower gray.

CONNECTICUT AND NEW YORK.

- MONTAUK POINT.** On the extreme east end of Long Island, N. Y., lat. $41^{\circ} 4' 13''$, lon. $71^{\circ} 51' 27''$, F. V. W. F., 2 min., vis. 20 miles, 169 $\frac{1}{2}$ ft. high, tower white. A 1st-order Daboll trumpet, in duplicate, operated by a hot-air engine, blasts 12 seconds, at intervals of 50 seconds.

LONG ISLAND SOUND.

- Stonington Harbor.** On east side of entrance to Stonington harbor, Conn., lat. $41^{\circ} 19' 41''$, lon. $71^{\circ} 54' 21''$, F. W., vis. 11 miles, 59 $\frac{1}{2}$ ft. high, tower white.

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Eel Grass Shoal Light-ship. To mark Eel Grass Shoal, in Fisher's island sound, Conn., lat. $41^{\circ} 18' (20'')$, lon. $71^{\circ} 56' (45'')$, F. W., vis. 11 miles, 32 ft. high, structure lead color. A bell and horn.

Morgan's Point, (Mystic). Near Mystic, on north side of Fisher's island sound, Conn., lat. $41^{\circ} 18' 57''$, lon. $71^{\circ} 59' 23''$, F. W., vis. 11 miles, 61 ft. high, tower white.

North Dumpling. In Fisher's island sound, N. Y., lat. $41^{\circ} 17' 14''$, lon. $72^{\circ} 1' 11''$, F. R., vis. 11 miles, $70\frac{1}{2}$ ft. high, tower white. A bell, struck by machinery, at intervals of 15 seconds.

New London Harbor. West side of entrance to Thames river, Conn., lat. $41^{\circ} 18' 58''$, lon. $72^{\circ} 5' 24''$, F. W. vis. 15 miles, 90 ft. high, tower white. A 3rd-class fog trumpet, in duplicate, blasts 6 sec. at intervals of 14 sec.

Bartlett's Reef Light-ship. Off New London, Conn, lat. $41^{\circ} 16' (15'')$, lon. $72^{\circ} 7' (50'')$, 2 F. W., vis. 10 miles, 28 ft. high, structure black and white. A bell and horn.

Race Rock. On Race Rock, off Fisher's Island point, $\frac{1}{2}$ mile S.W. $\frac{3}{4}$ W., and north side of entrance to Long Island sound N. Y., lat. $41^{\circ} 14' 35''$, lon. $72^{\circ} 2' 51''$, Flg. R. & W., 30 sec., vis. 14 miles, $68\frac{1}{2}$ ft. high, tower gray. A bell, struck by machinery, 2 blows in quick succession every 20 sec.

LITTLE GULL ISLAND. South side of main entrance to Long Island sound, N. Y., lat. $41^{\circ} 12' 21''$, lon. $72^{\circ} 6' 26''$, F. W., vis. 17 miles, 92 ft. high, tower gray. A 2nd-order steam fog-siren, in duplicate, giving blasts of 5 seconds at intervals of 40 seconds.

GARDINER'S BAY.

Gardiner's Island. On north end of Gardiner's island, N. Y., lat. $41^{\circ} 8' 9''$, lon. $72^{\circ} 8' 44''$, F. W., vis. 11 miles, 33 ft. high, tower dark brown.

Plum Island. On west end of Plum island, north-east extremity of Long island, and north of Gardiner's bay, N. Y., lat. $41^{\circ} 10' 23''$, lon. $72^{\circ} 12' 43''$, Flg. W., 30 sec., vis. 14 miles, 76 ft. high, tower white. A cast-steel bell, struck by machinery, at intervals of 15 seconds.

Long Reach Bar. Entrance from Gardiner's bay to Orient and Greenport harbors, and to Peconic bay, Long Island, N. Y., lat. $41^{\circ} 6' 31''$, lon. $72^{\circ} 18' 23''$, F. R., vis. 13 miles, 54 ft. high, tower white. A cast-steel bell, struck by machinery, at intervals of 15 seconds.

Cedar Island. Entrance to Sag Harbor, Long island, N. Y., lat. $41^{\circ} 2' 25''$, lon. $72^{\circ} 15' 41''$, F. W., vis. 11 miles, 45 ft. high, tower granite.

CONNECTICUT RIVER.

Saybrook, (Lynde Point). On Lynde point, mouth of the Connecticut river, west side, lat. $41^{\circ} 16' 15''$, lon. $72^{\circ} 20' 37''$, F. W., visible 14 miles, 73 ft. high, tower white. A bell, struck by machinery, at intervals of 12 seconds.

Calves' Island. East side, Connecticut river, 2 miles below the town of Essex, Conn. lat. $41^{\circ} 19' 24''$, lon. $72^{\circ} 21'$, F. W., vis. 5 miles, tower black.

Brockway's Reach. Connecticut river, lower end of reach, 2 miles above town of Essex, lat. $41^{\circ} 22' 18''$, lon. $72^{\circ} 23' (50'')$, F. W., vis. 5 miles, tower white.

Devil's wharf. West side Connecticut river, 4 miles above Essex, and below Deep Creek, Conn., lat. $41^{\circ} 23' 30''$, lon. $72^{\circ} 26' (8'')$, F. W., vis. 5 miles, tower white.

LONG ISLAND SOUND.

- Cornfield Point Light-ship.* Off south side and near centre of Long Sand shoal and Cornfield point, mouth of Connecticut river, Long Island sound, Conn., lat. $41^{\circ} 13' (30'')$, lon. $72^{\circ} 23' (10'')$, F. R., vis. 12 miles, 40 ft. high, tower red. A bell and horn.
- HORTON'S POINT.** On Horton's point, north side Long Island, N. Y., lat. $41^{\circ} 5' 5''$, lon. $72^{\circ} 26' 45''$, F. W., vis. 16 miles, 105 ft. high, tower white.
- Falkner's Island.** Off Guilford harbor, north side of Long Island sound, Conn., lat. $41^{\circ} 12' 41''$, lon. $72^{\circ} 39' 15''$, F. V. W. F., $1\frac{1}{2}$ min., vis. 15 miles, 96 ft. high, tower white. A 10-in. steam fog-whistle, in duplicate, blasts 8 seconds; pause of 52 seconds.
- New Haven Long Wharf.** End of Long wharf, New Haven, Conn., lat. $41^{\circ} 17' 33''$, lon. $72^{\circ} 55' (2'')$, F. R., vis. 9 miles, 21 ft. high, tower drab.
- SOUTH-WEST LEDGE.** On South-west Ledge reef, entrance to New Haven harbor, Conn., lat. $41^{\circ} 14' 2''$, lon. $72^{\circ} 54' 45''$, F. W., vis. 13 miles, 57 ft. high, tower red. A bell, struck by machinery, at intervals of 15 seconds.
- Stratford Point.** West entrance to Stratford river, on north side Long Island sound, Conn., lat. $41^{\circ} 9' 5''$, lon. $73^{\circ} 6' 13''$, Flg. W., 45 sec. vis. 12 miles, 53 ft. high, tower black and white. A bell, struck by machinery, giving a series of 4 blows, 10 sec. between each blow, then pause of 30 sec.
- STRATFORD SHOAL, (Middle Ground).** On Middle ground, Long Island sound, N. Y., lat. $41^{\circ} 3' (32'')$, lon. $73^{\circ} 5' (45'')$, Flg. W., 10 sec., vis. $13\frac{1}{2}$ miles, 63 ft. high, tower gray. A Daboll trumpet, operated by two 18-inch caloric engines, blasts 6 sec. at intervals of 21 seconds.
- Old Field Point.** On Long Island, S. of Stratford Shoal light, nearly opposite Bridgeport, Conn., lat. $40^{\circ} 53' 34''$, lon. $73^{\circ} 7' (8'')$, F. W., vis. $14\frac{1}{2}$ miles, 79 ft. high, tower white.
- Bridgeport Harbor.** About $1\frac{1}{2}$ mile S. by E. of the town of Bridgeport, Conn., lat. $41^{\circ} 9' (22'')$, lon. $73^{\circ} 10' (50'')$, F. R., vis. $12\frac{3}{4}$ miles, 56 ft. high, tower white. A bell, struck by machinery, every 15 seconds.
- Black Rock.** On Fair-weather island, entrance to Black Rock harbor, north side of Long Island sound, Conn., lat. $41^{\circ} 8' 30''$, lon. $73^{\circ} 13' 4''$, F. W. vis. 12 miles, 43 ft. high, tower white.
- PENFIELD REEF.** On Penfield Reef, in Long Island sound, and off Bridgeport harbor, Conn., lat. $41^{\circ} 7' 3''$, lon. $73^{\circ} 13\frac{1}{2}' (11'')$. Flg. R. 5 sec., vis. 13 miles, 54 ft. high, tower white. A bell, struck by machinery, 2 blows in quick succession, at intervals of 20 seconds.
- Norwalk Island.** On Sheffield island, one of the Norwalk group, marks W. entrance to Norwalk river, Conn., N. side L. I. sound, Conn., lat. $41^{\circ} 2' (53'')$, lon. $73^{\circ} 25' (11'')$, F. V. R. F. 1 min., vis. $12\frac{1}{2}$ miles, 52 ft. high, tower gray.
- EATON'S NECK.** East side of entrance to Huntington bay, Long Island, N. Y., lat. $40^{\circ} 57' 12''$, lon. $73^{\circ} 23' 45''$, F. W. vis. 18 miles, 147 ft. high, tower white. A 2nd-order steam fog-siren, in duplicate, worked by a 12 horse-power steam engine, giving blasts of 9 seconds, at intervals of 35 seconds.
- Lloyd's Harbor.** In Huntington bay, Long Island, S. E. end of Lloyd's Neck, N. side of entrance to the harbor, N. Y., lat. $40^{\circ} 54' 55''$, lon. $73^{\circ} 26' (4'')$, F. W. vis. 12 miles, 40 ft. high, tower white.
- Great Captain's Island.** Near Greenwich point, north side of Long Island sound, N. Y., lat. $40^{\circ} 58' (55'')$, lon. $73^{\circ} 37' (26'')$, F. W. vis. 14 miles, 74 ft. high, tower white.

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Execution Rocks. In Long Island sound, off Sands' point, Long Island, N. Y., lat. $40^{\circ} 52'$ ($33''$), lon. $73^{\circ} 44'$ ($17''$), F. W. vis. 13 miles, 58 ft. high, tower white. A 1st-order fog-trumpet, in duplicate, worked by a 24-inch caloric engine, blasts 7 sec. at intervals of 43 sec.; Anderson fog-horn to be sounded in case of accident to fog-trumpet.

Sands' Point. East side of entrance to Cow bay, Long Island, N. Y., lat. $40^{\circ} 51'$ ($55''$), lon. $73^{\circ} 43'$ ($48''$), Flg. W. 30 sec., vis. 13 miles, 68 ft. high, tower white.

Stepping Stones. On the outer edge of Stepping Stones reef, $1\frac{1}{4}$ nautical mile S. by W., $\frac{1}{2}$ W., of Hart island, East River, N. Y., lat. $40^{\circ} 49'$ ($25''$), lon. $73^{\circ} 46'$ ($12''$), F. R. vis. 10 miles, 49 ft. high, tower red. A bell, struck by machinery, at intervals of 20 seconds.

Throg's Neck. On the N. E. side of Fort Schuyler, and S. E. end of Throg's Neck, N. Y., lat. $40^{\circ} 48' 17''$ lon. $73^{\circ} 47' 30''$, F. W. vis. 11 miles, 66 ft. high, tower white. A bell, struck by machinery, at intervals of 15 seconds.

North Brother Island. On the south end of North Brother island, East River, N. Y., lat. $40^{\circ} 47' 58''$, lon. $73^{\circ} 53'$ ($54''$), F. W. vis. 11 miles, 50 ft. high, tower drab.

Blackwell's Island. On northerly point Blackwell's Island, near Hell Gate, East River, N. Y., lat. $40^{\circ} 46' 15''$, lon. $73^{\circ} 56'$ ($28''$), F. R. vis. 13 miles, 54 ft. high, tower gray.

NEW YORK AND NEW JERSEY.

GREAT WEST (OR SHINNECOCK) BAY. On Pondquogue point, on Long Island, north side of Shinnecock bay, one nautical mile from the line of sea-beach, and about midway between Montauk and Fire Island light-houses, N. Y., lat. $40^{\circ} 51'$, lon. $72^{\circ} 30' 16''$, F. W. vis. 19 miles, 160 ft. high, tower red.

FIRE ISLAND. On east side of Fire Island inlet, south side of Long Island, N. Y., lat. $40^{\circ} 37' 55''$, lon. $73^{\circ} 13' 9''$, Flg. W., 1 min., vis. 20 miles, 168 ft. high, tower yellow.

ENTRANCE TO NEW YORK BAY.

Sandy Hook Lightship. Placed nearly $6\frac{3}{8}$ nautical miles from the Navesink lights and the Sandy Hook main light, off the entrance of the bar; two fixed red lights, lat. $40^{\circ} 26'$ ($51''$), lon. $73^{\circ} 51'$ ($58''$), 2 F. R. vis. 12 miles, 45 ft. high, structure red. A fog-bell and a Thier's automatic fog-horn.

Wreck of the Scotland Lightship. Off Sandy Hook, in line with wreck and main light, $3\frac{1}{2}$ nautical miles from Navesink lights, and $2\frac{3}{4}$ miles from Sandy Hook main light. Entrance to New York Bay, N. Y., lat. $40^{\circ} 26'$ ($38''$), lon. $73^{\circ} 56'$ ($26''$), 2 F. W. vis. 12 miles, 45 ft. high, structure lead-color. A fog-bell.

HIGHLANDS OF NAVESINK. On the Highlands of Navesink, N. J. North light, lat. $40^{\circ} 23' 45''$, lon. $73^{\circ} 59' 11''$, F. W. vis. 22 miles, 248 ft. high, tower brown.

. . . . South light, lat. $40^{\circ} 23' 43''$ lon. $73^{\circ} 59' 10''$, F. W. vis. 22 miles, 248 ft. high, tower brown.

SANDY HOOK. Southwest side of entrance to New York bay, N. J., lat. $40^{\circ} 27' 40''$, lon. $74^{\circ} 0' 9''$, F. W. vis. 15 miles, 90 ft. high, tower white.

East Beacon, (Hook). On north point of Sandy Hook, N. J., lat. $40^{\circ} 28'$ ($16''$), lon. $74^{\circ} 0'$ ($27''$), F. W. vis. 11 miles, 46 ft. high, tower red. A 1st-order steam fog-siren, in duplicate, giving blasts of 6 seconds at intervals of 40 seconds.

- West Beacon. On the bay side of Sandy Hook, northwest of main light, N. J., lat. $40^{\circ} 27' 48''$, lon. $74^{\circ} 0' 27''$, F. W. vis. 11 miles, 45 ft. high, tower white.
- Conover Beacon. 1. (Main Channel range beacons), Near the beach, on the south shore of Sandy Hook bay, N. J., lat. $40^{\circ} 25' 14''$, lon. $74^{\circ} 3' 22''$, F. W. vis. 13 miles, 60 ft. high, tower white and red.
- Chapel Hill Beacon. 2. Back-station range, lat. $40^{\circ} 23' 51''$, lon. $74^{\circ} 3' 34''$, F. W. vis. 21 miles, 224 ft. high, tower white.
- Point Comfort Beacon, (Bay side). Near the beach, bay side, Raritan bay, lat. $40^{\circ} 26' 51''$, lon. $74^{\circ} 7' 18''$, F. W. vis. 12 miles, 45 ft. high, tower white.
- Waackaack, (Wilson's). Near Waackaack beach, N. J., lat. $40^{\circ} 26' 36''$, lon. $74^{\circ} 8' 12''$, F. W. vis. 14 miles, 76 ft. high, tower white.
- Swash Channel range beacons, 1. Elm Tree Beacon. Oh Staten Island, N. Y., lat. $40^{\circ} 33' 46''$, lon. $74^{\circ} 5' 47''$, F. W. vis. 12 miles, 62 ft. high, tower white and red.
- 2. New Dorp Beacon. On Staten Island, N. Y., lat. $40^{\circ} 34' 48''$, lon. $74^{\circ} 7' 14''$, F. W. vis. $20\frac{1}{4}$ miles, 192 ft. high, tower white.
- Great Beds. Raritan bay. (The soil belongs to New York, jurisdiction to State of New Jersey), lat. $40^{\circ} 29' (10'')$, lon. $74^{\circ} 15' (22'')$, F. R. vis. 13 miles, 57 ft. high, tower red.
- N. Y. BAY, 1. Princess Bay. On Staten Island, N. Y., lat. $40^{\circ} 30' 25''$, lon. $74^{\circ} 12' 50''$, F. V. W. F. 2 min., vis. 16 miles, 106 ft. high, tower brown.
- 2. Port Lafayette. Near southwest corner of the sea-wall of Fort Lafayette, east side of the Narrows, N. Y., lat. $40^{\circ} 36' 26''$, lon. $74^{\circ} 2' (20'')$. Fog-bell, struck by machinery. one and two blows alternately, at intervals of 20 seconds.
- 3. Fort Tomkins. On Staten Island, west side of the Narrows, N. Y., lat. $40^{\circ} 36' 4''$, lon. $74^{\circ} 3' 17''$, F. W. vis. 15 miles, 90 ft. high, tower drab.
- 4. Robbin's Reef. Off Tompkinsville, lower part of New York harbor. (Soil belongs to the State of New York, jurisdiction to the State of New Jersey), lat. $40^{\circ} 39' 24''$, lon. $74^{\circ} 3' 57''$, F. W. vis. 13 miles, 58 ft. high, tower white. A bell, struck by machinery, at intervals of 15 seconds.
- Fort Columbus. On northwest end of Governor's Island, New York harbor, lat. $40^{\circ} 41' 33''$, lon. $74^{\circ} 1' (14'')$. Fog-bell struck by machinery, twice quickly, at intervals of 20 seconds.
- NEWARK BAY, N. J. 1. Bergen Point. On reef of rocks near Bergen point, N. J., lat. $40^{\circ} 38' 32''$, lon. $74^{\circ} 8' 56''$, F. W. vis. 11 miles, 48 ft. high, tower gray. A bell, struck by machinery, every 15 seconds.
- 2. Corner Stake. Opposite Elizabeth-port, N. J., lat. $40^{\circ} 38' 44''$, lon. $74^{\circ} 10' (7'')$, F. R.
- 3. Passaic Light. Near the mouth of Passaic river, N. J., lat. $40^{\circ} 41' 44''$, lon. $74^{\circ} 7' 40''$, F. W. vis. 11 miles, 48 ft. high, tower drab. Bell, struck by machinery, one blow every 20 seconds.
- 4. Elbow Beacon. On a shoal point between the Passaic and Hackensack rivers, N. J. lat. $40^{\circ} 42' 6''$, lon. $74^{\circ} 7' 29''$ F. W. vis. 6 miles, 27 ft. high, tower black and red.
- New York and Erie Railroad Landing. On end of wharf, opposite Irvington, N. Y.

HUDSON RIVER.

- Stony Point. On west side of the river, entrance to Highlands and Peekskill bay, N. Y. lat. $41^{\circ} 14' 26''$, lon. $73^{\circ} 58' 20''$, F. W. vis. 13 miles, 179 ft. high, tower white. A bell, struck by machinery, at intervals of 15 seconds.
- West Point. On Gee's point, west side of the river, N. Y., lat. $41^{\circ} 23' 43''$, lon. $73^{\circ} 57' 5''$, F. W. vis. 11 miles, 40 ft. high, tower white.

- Esopus Meadows. Opposite Esopus, west side of the river, N. Y. lat. $41^{\circ} 52' 5''$, lon. $73^{\circ} 56' 32''$, F. W. vis. 12 miles, 53 ft. high, tower white.
- Rondout. On a mud flat at south side of north entrance to Rondout creek, west side of river, N. Y., lat. $41^{\circ} 55' 12''$, lon. $73^{\circ} 58' 2''$, F. W. vis. 11 miles, 42 ft. high, tower gray.
- Rondout Creek, S. dike. On end of south dike, mouth of Rondout creek, N. Y., lat. $41^{\circ} 55'$, lon. $73^{\circ} 58'$, F. W. vis. 9 miles, 19 ft. high.
- Rondout Creek, N. dike. On end of north dike, mouth of Rondout creek, N. Y., lat. $41^{\circ} 55'$, lon. $73^{\circ} 58'$, F. R. vis. $9\frac{1}{2}$ miles, 21 ft. high.
- Rondout Creek, middle of N. dike. On middle or bend of north dike, mouth of Rondout creek, N. Y., lat. $41^{\circ} 55'$, lon. $73^{\circ} 58'$, F. R., vis. $9\frac{1}{2}$ miles, 21 ft. high.
- Saugerties. On a mud flat, N. side of entrance to Saugerties creek, W. side of river, N. Y., lat. $42^{\circ} 4' 12''$, lon. $73^{\circ} 55' 48''$; F. W. visible 11 miles, 42 feet high, tower drab.
- Hudson City. On south end of Middle ground mud flat, west of city of Hudson, N. Y., lat. $42^{\circ} 15'$, lon. $73^{\circ} 48'$ F. W. vis. 11 miles, 54 ft. high, tower red.
- Four-mile point. West side of river, about half way between Athens and Coxsackie, N. Y., lat. $42^{\circ} 18' 20''$, lon. $73^{\circ} 47' 2''$, F. W., visible 11 miles, 93 ft. high, tower red.
- Coxsackie. North end of low island, north of Coxsackie, west side of main channel of river, N. Y., lat. $42^{\circ} 22' 45''$, lon. $73^{\circ} 47' 43''$. F. W., visible 11 miles, 42 feet high, tower red.
- Stuyvesant. On the east side of the river, N. Y., lat. $42^{\circ} 24' 40''$, lon. $73^{\circ} 46' 43''$, F. W. visible 11 miles, 42 ft. high, tower red.
- New Baltimore. On little island in the river, main channel to the eastward of it, N. Y., lat. $42^{\circ} 27' 3''$ lon. $73^{\circ} 47' 3''$, F. W., visible 8 miles, 16 ft. high.
- New Baltimore dike. On south end of the dike, on the east side of the river, N. Y., lat. $42^{\circ} 27' 12''$, lon. $73^{\circ} 46' (58'')$, F. W., vis. 9 miles, 18 ft. high.
- Five-hook island. Behind dike, near south end of Calver's Plat island, east side of the river, N. Y., lat. $42^{\circ} 27' 48''$, lon. $72^{\circ} 46' (58'')$, F. W., vis. 8 miles, 18 feet high, tower white.
- Coezman's Bar. Behind the dike, on north end of Poplar or Mull's island, east side of river, N. Y., lat. $42^{\circ} 28' 31''$, lon. $73^{\circ} 47' 5''$ F. W., vis. 9 miles, 20 ft. high, tower white.
- Roha Hook. Behind the angle of the dike, south of Roha Hook, west side of river, N. Y., lat. $42^{\circ} 28' 54''$, lon. $73^{\circ} 47' (21'')$, F. W., vis. 8 miles, 17 feet high, tower white.
- Schodack Channel. Behind dike, west side of Mull's Plat island, opposite upper end of Schodack island, east side of the river, N. Y., lat. $42^{\circ} 29' 54''$, lon. $73^{\circ} 46' (40'')$, F. W., vis. 9 miles, 20 ft. high, tower white.
- Nine-mile Tree. Behind the centre of dike, below Castleton, east side of the river, N. Y., lat. $42^{\circ} 31' 6''$, lon. $73^{\circ} 45' (52'')$, F. W., visible 9 miles, 20 feet high, tower white.
- Cow Island. On the south end of Cow island, near Castleton, east side of the river, N. Y., lat. $42^{\circ} 32' 14''$, lon. $73^{\circ} 45' 22''$, F. W. vis. 9 miles, 22 ft. high, tower white.
- Bear Island. On corner of south end of Government dike, west side of the river, N. Y., lat. $42^{\circ} 33' (42'')$, lon. $73^{\circ} 45'$, F. W. vis. 9 miles, 20 ft. high, tower white.

- Van Wies's Point. On south end of stone dike, below Albany, on west side of river, N. Y., lat. $42^{\circ} 35' 6''$, lon. $73^{\circ} 45' (30'')$, F. W. vis. 9 miles, 18 ft. high, tower white.
- Cross Over. On north end of stone dike, below Albany, west side of the river, N. Y., lat. $42^{\circ} 36' 50''$, lon. $73^{\circ} 45' (44'')$, F. W. vis. 9 miles, 26 ft. high, tower white.
- Cuyler's Dike. On lower or south end of dike, on east side of river, near Albany, N. Y., lat. $42^{\circ} 37' 39''$, lon. $73^{\circ} 45' (8'')$, F. W., visible 9 miles, 20 feet high, tower white.

NEW JERSEY AND DELAWARE.

- BARNEGAT. South side of Barnegat inlet, on the north end of Long beach, N. J., lat. $39^{\circ} 45' 49''$, lon. $74^{\circ} 6' 25''$, Flg. W., 10 sec., vis. 19 miles, 165 ft high, tower white and red.
- Tucker's Beach. Near entrance to Little Egg harbor, N. J., lat. $39^{\circ} 30' (19'')$, lon. $74^{\circ} 17' (9'')$, F. V. R. F., 10 sec., vis. $12\frac{1}{2}$ miles, 52 ft. high, tower red.
- ABSECON. On the south side of Absecon inlet, Atlantic City, N. J., lat. $39^{\circ} 21' 56''$, lon. $74^{\circ} 24' 53''$ F. W. vis. 19 miles, 167 ft. high, tower white and red.
- Hereford Inlet. South side of Hereford inlet, on north end of Five mile beach, sea-coast of New Jersey, 9 nautical miles from Cape May light-house, N. J., lat. $39^{\circ} 0' 21''$, lon. $74^{\circ} 47' 30''$, F. R. vis. 13 miles, 57 ft. high, tower buff.
- Five-fathom Bank Light-ship.* About $5\frac{1}{2}$ nautical miles, S. by E. $\frac{1}{2}$ E. from the shoal called the "Five-fathom Bank," and about 2 nautical miles S. E. by E. $\frac{1}{2}$ E. from a shoal with $3\frac{1}{2}$ fathoms of water, off the entrance to Delaware bay, N. J., lat. $38^{\circ} 48' 20''$, lon. $74^{\circ} 36' 19''$, 2 F. W. vis. $11\frac{2}{3}$ miles, 40 & 45 ft. high, tower straw-color. A 12-inch steam fog-whistle, giving a blast of 4 seconds duration each minute.
- CAPE MAY. On the northeastern side of entrance to Delaware bay, N. J., lat. $38^{\circ} 55' 56''$, lon. $74^{\circ} 57' 40''$, Flg. W. 30 sec., vis. 19 miles, 167 ft. high, tower gray.
- CAPE HENLOPEN. Southwestern side of entrance to Delaware bay, Del., lat. $38^{\circ} 46' 39''$, lon. $75^{\circ} 5' 4''$, F. W. vis. 17 miles, 128 ft. high, tower white.

DELAWARE BAY.

- Cape Henlopen Beacon. On northern end of cape, seven-eighths mile from the main light, Del., lat. $38^{\circ} 47' 34''$, lon. $75^{\circ} 5' 12''$, F. W. vis. 12 miles, 40 feet high, tower white. A 1st-class steam fog-siren, blasts 6 seconds at intervals of 39 seconds.
- Delaware Breakwater, (front). On western end of breakwater, south side of entrance to Delaware bay, Del., lat. $38^{\circ} 47' 54''$, lon. $75^{\circ} 6' 30''$, F. V. W. F., 45 sec., vis. 12 miles, 47 ft. high, tower white. A bell struck by machinery, at intervals of 10 seconds.
- Delaware Breakwater Range, (rear). Near Lewes, Del.
- Mispyllion Creek. At the mouth of Mispyllion Creek, Del., lat. $38^{\circ} 56' 49''$, lon. $75^{\circ} 18' 57''$, F. W. vis. 11 miles, 48 ft. high, tower buff.
- Brandywine Shoal. On Brandywine shoal, seven-eighths nautical mile from lower end, east side of channel, Del., lat. $38^{\circ} 59' 7''$, lon. $75^{\circ} 6' 49''$, F. W. vis. 12 miles, 46 ft. high, tower red. A bell, struck by machinery, 2 blows, and then a pause of 30 seconds.

Fourteen-foot Bank Lightship. About 700 yards east of shoal, called the "Fourteen-foot Bank," N. J., lat. $39^{\circ} 3'$, lon. $75^{\circ} 10'$ ($50''$), 2 F. W., visible $10\frac{1}{2}$ miles, 43 and 29 ft. high, structure straw color.

Maurice River. Near mouth of Maurice river, N. J., lat. $39^{\circ} 11' 42''$, lon. $75^{\circ} 1' 41''$, F. R., vis. 11 miles, 48 ft. high, tower white.

Egg Island. On Egg Island, N. J., lat. $39^{\circ} 10'$ ($40''$), lon. $75^{\circ} 8'$ ($14''$), F. W., visible $12\frac{1}{2}$ miles, 50 ft. high, tower white.

Cross Ledge. On lower end of Cross Ledge shoal, east side of channel, N. J., lat. $39^{\circ} 9' 44''$, lon. $75^{\circ} 14' 14''$, Flg. W., 15 sec., vis. 13 miles, 33 ft. high, tower grey. A bell, struck by machinery, at intervals of 10 seconds.

Mahon's River. At mouth of Mahon's river, Del., lat. $39^{\circ} 10'$ ($34''$), lon. $75^{\circ} 24'$ ($16''$), F. W., vis. 13 miles, 57 ft. high, tower buff.

Ship John Shoal. On Ship John shoal, E. side of channel, in about 8 ft. water at low tide, N. J., lat. $39^{\circ} 18' 16''$, lon. $75^{\circ} 22' 39''$, F. R., vis. 13 miles, 53 ft. high, tower black and brown. A bell, struck by machinery, three blows quickly; pause of 45 seconds.

Cohansey. Near mouth of Cohansey Creek, N. J., lat. $39^{\circ} 20' 19''$, lon. $75^{\circ} 21' 33''$, F. W., vis. 12 miles, 46 ft. high, tower white.

DELAWARE RIVER.

Bombay Hook. Near mouth of Duck Creek, Del., $4\frac{1}{2}$ nautical miles above Bombay Hook pt., lat. $39^{\circ} 21' 47''$, lon. $75^{\circ} 30' 40''$, F. W., vis. 12 miles, 46 feet high, tower white.

Port Penn Range Beacon, 1, (front). On the Delaware side of the river, about $1\frac{3}{4}$ statute mile below Port Penn, Del., lat. $39^{\circ} 29' 30''$, lon. $75^{\circ} 35' 22''$, F. W., 40 feet high, tower white.

Port Penn Range Beacon, 2, (rear), lat. $39^{\circ} 30' 40''$, lon. $75^{\circ} 36' 37''$ F. W., 140 ft. high, tower black.

Reedy Island. On lower end of Reedy Island, Delaware bay, Del., lat. $39^{\circ} 30' 1''$ lon. $75^{\circ} 34' 10''$, Flg. W., 30 sec., visible 11 miles, 36 feet high, tower drab. A bell struck by machinery, at intervals of 15 seconds.

Finn's Point Range Beacon, 1, (front). On New Jersey side of river, about $\frac{3}{4}$ statute mile below Finn's point, N. J., lat. $39^{\circ} 35' 33''$, lon. $75^{\circ} 32' 19''$, F. W., 30 feet high, tower white.

Finn's Point Range Beacon, 2, (rear), lat. $39^{\circ} 36' 57''$, lon. $75^{\circ} 32' 4''$, F. W., 105 feet high, tower black.

Bulkhead Shoal Ranges. 1, New Castle Range Beacon (front). On Delaware side of river, about $1\frac{3}{4}$ statute mile below Newcastle, Del., lat. $39^{\circ} 33' 35''$, lon. $75^{\circ} 36' 1''$, F. W., 20 feet high, tower white.

. . . . 2, New Castle Range Beacon, (rear), lat. $39^{\circ} 33' 57''$, lon. $75^{\circ} 36' 16''$, F. W., 90 feet high, tower white.

. . . . 3, Deep Water Point Range Beacon, (front). On the New Jersey side of the river; front light about five-eighths statute mile below Deep Water point, N. J., lat. $39^{\circ} 41' 4''$, lon. $75^{\circ} 30' 50''$, F. W., 25 ft. high, tower white.

. . . . 4, Deep Water Point Range Beacon, (rear), lat. $39^{\circ} 41' 56''$, lon. $75^{\circ} 29' 53''$, F. W., 98 feet high, tower black.

Christiana. At mouth of Christiana River, Wilmington, Del., lat. $39^{\circ} 43' 15''$, lon. $75^{\circ} 31' 16''$. F. W. vis. 12 miles, 48 ft. high, tower white.

Cherry Island Flat Range. 1, Beacon, (front). About half a mile above the Edgemoor Iron Works, on Delaware side of river Del., lat. $39^{\circ} 45'$, lon. $75^{\circ} 29' 42''$. F. W. 34 ft. high, tower white. Fog bell struck by machinery; will strike a volley of strokes every 15 seconds.

Cherry Island Flat Range. 2, Beacon (rear), lat. $39^{\circ} 45' 40''$, lon. $75^{\circ} 29' 27''$, F. W. 120 ft. high, tower white.

NEW JERSEY AND PENNSYLVANIA.

DELAWARE RIVER.

Schooner Ledge Range Beacon, 1, (front). On the Pennsylvania side of Delaware River, below the Lazaretta, distant from each other $1\frac{1}{2}$ mile; front light near the mouth of Crum creek, rear light in Derby creek valley, Pa., lat. $39^{\circ} 51' 25''$, lon. $75^{\circ} 19' 28''$, F. W. 37 ft. high., tower red.

. . . . Beacon 2, (rear), lat. $39^{\circ} 52' 11''$, lon. $75^{\circ} 18' 4''$, F. W. 100 ft. high, tower black.

Tinicum Island and Fort Mifflin Bar Ranges. On the New Jersey side of Delaware river; front light on river bank, about $\frac{3}{4}$ mile below Billingsport, N. J., lat. $39^{\circ} 50' 44''$, lon. $75^{\circ} 15' 12''$, F. W. 37 ft. high, tower white.

1, Cut Range Beacon, (front for both).

. . . . Beacon 2, (rear), lat. $39^{\circ} 50' 44''$, lon. $75^{\circ} 14' 24''$, F. R. 106 ft. high, tower black.

. . . . Beacon 3, (rear), lat. $39^{\circ} 50' 29''$, lon. $75^{\circ} 15' 43''$, F. R. 60 ft. high, tower white.

Fort Mifflin. On pier in Delaware river, opposite Fort Mifflin, Pa., lat. $39^{\circ} 52' 12''$, lon. $75^{\circ} 12' 28''$, F. W. vis. $10\frac{1}{2}$ miles, 28 ft. high, tower white. A bell, struck by machinery, 8 blows every 15 sec.; then pause of 42 sec.

SCHUYLKILL RIVER. 1, Schuylkill Range Beacon (front). On League island, mouth of Schuylkill river, Pa., lat. $39^{\circ} 53' 18''$, lon. $75^{\circ} 11' 40''$, F. W. vis. 9 miles, 17 ft. high, tower white.

. . . . 2, Range Beacon (rear), lat. $39^{\circ} 53' 25''$, lon. $75^{\circ} 11' 36''$, F. W. vis. 11 miles, 33 feet high, tower white.

NEW JERSEY, DELAWARE AND VIRGINIA.

FENWICK'S ISLAND. On the coast 20 miles S. of Cape Henlopen lighthouse; on dividing line between Delaware and Maryland, Del., lat. $38^{\circ} 27' 1''$, lon. $75^{\circ} 3' 19''$, F. V. W. F. 2 min., vis. 15 miles, 86 ft. high, tower white.

Water-Quarter Shoal Light-ship. Two miles S. E. by E. $\frac{1}{2}$ E. from Winter-Quarter shoals, in 11 fathoms water, fine black-sand bottom. Distant $8\frac{1}{2}$ nautical miles from the coast, Va., lat. $37^{\circ} 57'$, lon. $75^{\circ} 5' 30''$, F. R. vis. $11\frac{1}{2}$ miles, 33 ft. high, structure red. A bell and horn.

ASSATEAGUE. About 2 miles from the south-west point of Assateague island, Va., lat. $37^{\circ} 54' 37''$, lon. $75^{\circ} 21' 24''$, F. W., vis. $18\frac{1}{2}$ miles, 153 feet high, tower red.

VIRGINIA.

Hog Island. On the west point of Hog island, Great Machipongo inlet, Va., lat. $37^{\circ} 23' 16''$, lon. $75^{\circ} 41' 55''$, F. W. vis. 13 miles, 60 ft. high, tower white.

CAPE CHARLES. On Smith's island (Cape Charles), Va., lat. $37^{\circ} 7' 9''$, lon. $75^{\circ} 53' 33''$, Flg. W. 45 sec., vis. 19 miles, 160 ft. high, tower white.

CAPE HENRY. On the south side of the main entrance to Chesapeake bay, Va. lat. $36^{\circ} 55' 29''$, lon $76^{\circ} 0' 32''$, F. W. vis. 17 miles, 129 ft. high, tower white., A 1st-class steam fog-siren, blasts 5 seconds at intervals of 90 seconds,

HAMPTON ROADS, I. THIMBLE SHOAL. On Thimble shoal, off the Horse-shoe bar, north side of the channel to Hampton Roads, Va., lat. $37^{\circ} 0' 49''$, lon. $76^{\circ} 14' 26''$, F.V.R. & W.F. 10 sec. vis. 12 miles, 45 ft. high, tower drab. Two bells, at intervals of 5 seconds—one bell is on the north and the other on the south side of the light-house.

. . . . Old Point Comfort. On north side entrance to Hampton Roads, Va., in front of the fort, lat. $37^{\circ} 0' 3''$, lon. $76^{\circ} 18' 26''$, F. W. vis. 12 miles, 48 ft. high, tower white. A bell, struck by machinery, at intervals of 10 seconds.

ELIZABETH RIVER. Craney island. On the west side of the Channel, near the mouth of Elizabeth river, Va., lat. $36^{\circ} 53' 29''$, lon. $76^{\circ} 20' 20''$, F. W. vis. 11 miles, 40 ft. high, tower white.

. . . . Lambert's Point. On east side of channel in Elizabeth river, near end of the shoal making out from Lambert's point, in 6 ft. of water, Va., lat. $36^{\circ} 52' 30''$, lon. $76^{\circ} 19' 57''$, F. R. vis. 11 miles, 38 ft high, tower white, A bell, struck by machinery, at intervals of 10 seconds.

. . . . Naval Hospital. Sixty feet to the north of the wharf at Naval Hospital, Elizabeth river, Va., lat. $36^{\circ} 50' 52''$, lon. $76^{\circ} 18' 8''$, F. R. vis. 11 miles, 45 ft. high.

Nansemond River. On shoal east side of entrance to Nansemond river, half a mile north from Pig point, Va., lat $36^{\circ} 54' 52''$, lon. $76^{\circ} 26' 32''$, F. R. vis. 11 miles, $38\frac{1}{2}$ ft. high, tower white. A bell, struck by machinery, at intervals of 7 seconds.

JAMES RIVER.

White Shoal. Below Sandy point, Va, on lower end of shoal, and on starboard side of main channel of river, going up, lat. $37^{\circ} 1' 16''$, lon. $76^{\circ} 31' 42''$, F. W. vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at intervals of 10 seconds.

Point of Shoals. On the Point of Shoals, Va., about centre of curve of river forming Burwell's bay, little below Mulberry Island point, and on starboard side of main channel, going up, lat. $37^{\circ} 4' 3''$, lon. $76^{\circ} 39' 14''$, F. W. vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at alternate intervals of 5 and 20 seconds.

Deep-water Shoals. On the shoal, starboard side of channel, going up, above Mulberry Island point and below Lyon's creek, Va., lat. $37^{\circ} 8' 53''$, lon. $76^{\circ} 38' 15''$, F. W. vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at intervals of 15 seconds.

Jordan's Point. On Jordan's point, on the port side of the river, going up, about $2\frac{1}{2}$ miles below City Point, Va., lat. $37^{\circ} 18' 43''$, lon. $77^{\circ} 13' 27''$, F. W. vis. 11 miles, $31\frac{1}{2}$ ft. high, tower white. A bell, struck by machinery, at intervals of 10 seconds.

Dutch Gap Canal, (lower light). On port side of the river, going up. One at each end of the canal, Va., lat. $37^{\circ} 22' 32''$, lon. $77^{\circ} 21' 36''$, F. R. 24 ft. high, tower white.

. . . . (upper light), lat. $37^{\circ} 22' 35''$, lon. $77^{\circ} 21' 40''$. F. R. 24 ft. high, tower white.

CHESAPEAKE BAY. Cherrystone. On shoal, west side of entrance to Cherrystone inlet, $1\frac{1}{2}$ mile S. of Sandy point, lat. $37^{\circ} 15' 36''$, lon. $76^{\circ} 2' 7''$, F. W. vis. 11 miles, 36 ft. high, tower white. A bell, struck by machinery, twice quickly, at intervals of 30 seconds.

. . . . Back River. On point, south side of entrance to Back river, west side of Chesapeake bay, Va., 5 miles N. E. of Old Point Comfort, Va., lat. $37^{\circ} 5' 10''$, lon. $76^{\circ} 16' 14''$, F. V. W. F. $1\frac{1}{2}$ min., vis. 11 miles, 35 ft. high, tower white.

VIRGINIA AND MARYLAND.

CHESAPEAKE BAY.

- YORK SPIT.** On easterly end of York Spit, entrance to York river from Chesapeake bay, Va., lat $37^{\circ} 12' 31''$, lon. $76^{\circ} 15' 18''$. F. R. vis. 11 miles, 38 ft. high, tower yellow. A bell, struck by machinery, at intervals of 10 seconds. A fog-horn in case of accident to bell machinery.
- Too's Marshes.** On shoal, about half a mile N. E. from Too's point, Va., in 5 feet at low water, lat. $37^{\circ} 14' 12''$, lon. $76^{\circ} 23' 13''$, F. W. vis. 11 miles, 43 ft. high, tower white. A bell, struck by machinery, twice quickly, alternating with single stroke at intervals of 30 seconds.
- Bell's Rock.** On Bell's rock, York river, lat. $27^{\circ} 29' 26''$, lon. $76^{\circ} 45' 35''$, F. W. $45\frac{1}{2}$ ft. high, tower white. A bell, struck by machinery, every 15 seconds.
- NEW POINT COMFORT.** On north side of entrance to Mob-jack bay, west side of Chesapeake bay, Va., lat. $37^{\circ} 18'$, lon. $76^{\circ} 16' 43''$, F. W. vis. 13 miles, 60 ft. high, tower white.
- WOLF TRAP.** On the east end of the Wolf Trap shoal, between York and Rappahannock rivers, Chesapeake bay, Va., lat. $37^{\circ} 23' 13''$, lon. $76^{\circ} 11' 35''$, F. W. F. 30 sec., vis. 11 miles, 38 ft. high, tower lead color. A bell, struck by machinery, at intervals of 15 seconds. A fog-horn in case of accident to bell machinery.
- Stingray Point.** About a mile east of Stingray point, Va., south side of Rappahannock river, in 6 feet water at mean tide, lat. $37^{\circ} 33' 37''$, lon. $76^{\circ} 16' 15''$, F. R. vis. 11 miles, 36 ft. high, tower white. A bell, struck by machinery, at alternate intervals of 5 and 30 seconds.
- WINDMILL POINT.** On Windmill Point shoals, north side of the mouth of Rappahannock river, Chesapeake bay, Va., lat. $37^{\circ} 35' 52''$, lon. $76^{\circ} 14' 15''$, F. W. vis. 11 miles, 38 ft. high, tower straw color. A bell, struck by machinery, at intervals of 10 seconds.
- Watt's Island.** On Little Watt's island, east side of Tangier sound, west side of Pocomoke sound, Va., lat $37^{\circ} 46' 53''$, lon $75^{\circ} 53' 38''$, F. V. W. F. 2 min., vis. 12 miles, 50 ft. high, tower white.
- JANE'S ISLAND.** Entrance to Little Annessex river, Tangier sound, on south end of shoal extending off from Jane's island, Md., lat. $37^{\circ} 57' 51''$, lon. $75^{\circ} 54' 59''$, F. W. vis. $11\frac{1}{2}$ miles, 40 ft. high, tower white. A bell, struck by machinery, at intervals of 15 seconds.
- Somers' Cove.** On the shoal N. side of Little Annessex river, about $1\frac{3}{4}$ mile E. of Jane's island light-house, Md., lat. $37^{\circ} 53'$, lon. $75^{\circ} 52' 35''$, F. W. vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at intervals of 15 seconds.
- SMITH'S POINT.** On shoal making out from S. E. side of mouth of Potomac river, in 12 feet water at mean tide, west side of Chesapeake bay, Va., lat. $37^{\circ} 53' 33''$, lon. $76^{\circ} 11' 44''$, Flg. W. 30 sec., vis. 11 miles, 38 ft. high, tower white. A bell struck at intervals of 15 seconds.
- Solomon's Lump.** Off Solomon's Lump, and on southern edge of channel, in Kedge's strait, east side of Chesapeake bay, Md., lat. $38^{\circ} 2' 49''$, lon. $76^{\circ} 0' 54''$, F. W., visible 11 miles, 42 feet high, tower white. A bell, struck by machinery, twice quickly, alternating with a single stroke at 30 seconds' interval.

MARYLAND.

CHESAPEAKE BAY.

Clay Island. On S.E. end of Clay island, at entrance to Fishing bay and Nanticoke river, Md., lat. $38^{\circ} 13' 53''$, lon. $75^{\circ} 58' 29''$, F. W. vis. $11\frac{1}{2}$ miles, 42 ft. high, tower white.

POINT LOOKOUT. On N. side of Potomac river entrance, W. side of Chesapeake bay, Md., lat. $38^{\circ} 2' 16''$, lon. $76^{\circ} 19' 22''$, F. W. vis. $11\frac{1}{2}$ miles, 43 ft. high, tower white. A bell, struck by machinery, at intervals of 10 seconds.

HOOPER'S STRAITS. On north side of entrance from Chesapeake bay to Tangier sound, on shoal north side of channel between mainland and Bloodworth's island, Md., lat. $38^{\circ} 13' 32''$, lon. $76^{\circ} 4' 10''$, F. W. vis. $11\frac{1}{2}$ miles, 42 ft. high, tower white. A bell, struck by machinery, at intervals of 12 seconds.

Cove Point. Four miles to the N. of the entrance to Patuxent river, on west side of Chesapeake bay, Md., lat. $38^{\circ} 23' 7''$, lon. $76^{\circ} 22' 57''$, F. V. W. F. $1\frac{1}{2}$ min., vis. 12 miles, 46 ft. high, tower white. A bell, struck at intervals of 12 seconds.

Choptank River. Screw-pile foundation light-house, opposite the entrance to the Choptank and Tread Haven rivers, Md., lat. $33^{\circ} 39' 19''$, lon. $76^{\circ} 10' 58''$, F. W. vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at intervals of 10 seconds.

Thomas' Point Shoal. On shoal making out from Thomas' point, on west side of bay, Md., lat. $38^{\circ} 54' 6''$, lon. $76^{\circ} 25' 57''$, Flg. R., 30 sec. vis. $11\frac{3}{4}$ miles, $43\frac{1}{2}$ ft. high, tower white. A bell, struck by machinery, 3 blows quickly, at an interval of 30 seconds.

Greenbury Point. North side of entrance to Severn river, west side of Chesapeake bay, Md., lat. $38^{\circ} 58' 21''$, lon. $76^{\circ} 27' 22''$, F. W. vis. 11 miles, 50 ft. high, tower white.

Sandy Point. On Sandy point, west side of Chesapeake bay, Md., lat. $39^{\circ} 1' 8''$, lon. $76^{\circ} 23' 49''$, F. V. W. F. $1\frac{1}{2}$ min., vis. 12 miles, 50 ft. high, tower white. A bell, struck by machinery, at intervals of 10 seconds.

Love Point. On shoal making out from upper end of Kent island, Chesapeake bay, Md., lat. $39^{\circ} 3' 12''$, lon. $76^{\circ} 17' 10''$, F. W. vis. 11 miles, 38 ft. high, tower white. A bell, struck by machinery, at intervals of 8 seconds.

Craighill Channel, (rear). On shoal near Miller's island, in 2 ft. water, mean tide, in direct prolongation of axis of Craighill channel, Md., lat. $39^{\circ} 13' 38''$, lon. $76^{\circ} 23' 39''$, F. W. vis. 16 miles, 106 ft. high, tower brown and straw color.

Craighill Channel, (front). In Chesapeake bay, near the mouth of the Patapsco river, in 15 ft. water, mean tide, in direct prolongation of the axis of the Craighill channel, Md., lat. $39^{\circ} 11' 17''$, lon. $76^{\circ} 23' 39''$, 2 F. W. vis. $11\frac{1}{2}$ & 10 miles, 40 & $22\frac{3}{4}$ ft. high, tower white and brown. A bell, struck by machinery, at alternate intervals of 3 and 30 seconds.

PATAPSCO RIVER.

SEVEN-FOOT KNOLL. Mouth of Patapsco river, on Seven-foot Knoll, between Main and Swash channels, Md., lat. $39^{\circ} 9' 17''$, lon. $76^{\circ} 24' 35''$, F. R. vis. 12 miles, 43 ft. high, tower black. A bell, struck by machinery, at intervals of 12 seconds.

Fort Carroll. On Fort Carroll, in Patapsco river, on south-west corner of the fort, Md., lat. $39^{\circ} 12' 50''$, lon. $76^{\circ} 31' 11''$, F. W. vis. 14 miles, 75 ft. high, tower brown. A bell, struck by machinery, at intervals of 10 seconds.

MARYLAND AND VIRGINIA.

Hawkins's Point. On the shoal, near Hawkins' point, south side of Patapsco river, Md., lat. $39^{\circ} 12' 26''$, lon. $76^{\circ} 32'$, F. W. vis. 10 miles, 28 ft. high, tower white.

Leading Point. On Leading point, south side of Patapsco river, 1 nautical mile from Hawkins's point, Md., lat. $39^{\circ} 12' 47''$, lon. $76^{\circ} 33' 10''$, F. W. vis. 14 miles, 70 ft. high, tower brown and white.

Lazaretto Point. North side of Baltimore harbor, opposite Fort McHenry, Md., lat. $39^{\circ} 15' 43''$, lon. $76^{\circ} 34' 20''$, F. R. vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at intervals of 10 seconds.

UPPER PART OF CHESAPEAKE BAY AND SUSQUEHANNA RIVER.

Poole's Island. On Poole's island, Chesapeake bay, off mouth of Gunpowder river, Md., lat. $39^{\circ} 17' 23''$, lon. $76^{\circ} 16' 2''$, F. W. vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at intervals of 12 seconds.

Turkey Point. On the bluff point separating the mouths of Elk and Susquehanna rivers, at the head of Chesapeake bay, Md., lat. $39^{\circ} 26' 57''$, lon. $76^{\circ} 0' 33''$, F. W. vis. 13 miles, 65 ft. high, tower white.

Fishing Battery. On Fishing or Donoho's battery, entrance to the Susquehanna river, Md., lat. $39^{\circ} 29' 35''$, lon. $76^{\circ} 5' 2''$, F. W. vis. 11 miles, 36 ft. high, tower white.

Havre-de-Grace. On Concord point, Susquehanna river, on south bank, near Havre-de-Grace, Md., lat. $39^{\circ} 32' 24''$, lon. $76^{\circ} 5' 8''$, F. R. vis. 11 miles, 40 ft. high, tower white.

POTOMAC RIVER.

Piney Point. On east side of Potomac river, about 14 miles N.W. from its mouth, Md., lat. $38^{\circ} 8' 4''$, lon. $76^{\circ} 31' 50''$, F. W. vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at intervals of 20 seconds.

Blakistone's Island. Near entrance to St. Clement's bay, north side of Potomac river, Md., lat. $38^{\circ} 12' 23''$, lon. $76^{\circ} 44' 44''$, F. W. vis. 12 miles, 46 ft. high, tower white. A bell, struck by machinery, at intervals of 16 seconds.

LOWER CEDAR POINT. On end of Yates's shoal, west side of Potomac river, opposite Lower Cedar point, above the Kettle-bottoms, Va., lat. $38^{\circ} 20' 20''$, lon. $76^{\circ} 59' 39''$, F. W., vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at intervals of 12 seconds.

Mathias Point Shoal. On the end of shoal off Mathias point, Va., lat. $38^{\circ} 24' 13''$, lon. $77^{\circ} 2' 19''$, F. W., vis. 12 miles, 45 ft. high, tower white. A bell, struck by machinery, twice quickly, alternating with a single stroke at 30 seconds interval.

UPPER CEDAR POINT. On the end of the shoal off Upper Cedar point, and above the mouth of Tobacco river, Md., lat. $38^{\circ} 24' 7''$, lon. $77^{\circ} 5'$. A bell, struck by machinery, at intervals of 15 seconds.

Fort Washington. On the wharf at Fort Washington, Md., lat. $38^{\circ} 42' 42''$, lon. $77^{\circ} 2' 13''$, F. W., vis. 9 miles, 17 ft. high, tower white.

Jones's Point. About a mile below Alexandria, on the west bank of the Potomac river, Va., lat. $38^{\circ} 47' 22''$, lon. $77^{\circ} 2' 29''$, F. W. vis. 11 miles, 35 ft. high, tower white.

RAPPAHANNOCK RIVER. Bowler's Rock, (Corner Rock). On the shoal on the port side of the channel, going up, Va., lat. $37^{\circ} 49' 15''$, lon. $76^{\circ} 43' 50''$ F. W. vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at intervals of 10 seconds.

NORTH LANDING RIVER.

Beacon-Light, No. 1. At the junction of Blackwater and North Landing rivers, Va., lat. $36^{\circ} 35' 36''$, lon. $76^{\circ} 3' 19''$, F. R. vis. 8 miles, 15 ft. high.

Beacon-Light, No. 2. E. by S., about half a nautical mile from point formed by junction of North Landing and Blackwater rivers, Va., lat. $36^{\circ} 35' 27''$, lon. $76^{\circ} 2' 40''$, F. W. vis. 8 miles, 15 ft. high.

Beacon-Light, No. 3. On shoal at Green point, and S.W. by S., about three-fourths of a nautical mile from Wauk's point, Va., lat. $36^{\circ} 33' 18''$, lon. $76^{\circ} 1' 31''$, F. W. vis. 8 miles, 15 ft. high.

Beacon-Light, No. 4. At end of Faraby's island, on the shoal, and S.E. by E., about half a nautical mile from Gibb's point, Va., lat. $36^{\circ} 32'$, lon. $76^{\circ} 0' 58''$ F. W. vis. 8 miles, 15 ft. high.

NORTH CAROLINA.

CURRITUCK SOUND.

Beacon Light, No. 5. Off Mackay's island, distant S. S. E. about $1\frac{3}{4}$ nautical mile from Troublesome point, and W. by N. $\frac{1}{2}$ N., about $1\frac{7}{8}$ nautical mile from Halfway point, N.C., lat. $36^{\circ} 39' 24''$, lon. $76^{\circ} 0' 30''$, F. W. vis. 8 miles, 15 ft. high.

Beacon Light, No. 6. In a southerly direction from Mackay's island, distant S. $\frac{1}{2}$ E., 2 nautical miles from Halfway point, due E. $2\frac{1}{3}$ nautical miles from Currituck court-house, and N. half a nautical mile from Bell's point, N.C., lat. $36^{\circ} 26' 26''$, lon. $75^{\circ} 58'$, F. W. vis. 8 miles, 15 ft. high.

Beacon Light, No. 7. Situated W. from the head of Church's island half a nautical mile, and E. half a nautical mile from Bell's island, N.C., lat. $36^{\circ} 25' 40''$, lon. $75^{\circ} 55' 9''$, F. W. vis. 8 miles, 15 ft. high.

Beacon Light, No. 8. On Long point, entrance to Albemarle and Chesapeake canal, N.C., F.W. vis. 8 miles, 15 ft. high.

NORTH RIVER. **Beacon Light, No. 9.** In North river, opposite the mouth of the Albermarle and Chesapeake canal, N. C., lat. $36^{\circ} 17' 40''$, lon. $75^{\circ} 58' 40''$, F. R. vis. 8 miles, 15 ft. high.

. . . . **Beacon Light, No. 10.** In North river, off Deep Bend, N. C., lat. $36^{\circ} 16' 15''$, lon. $75^{\circ} 59' 30''$, F. W. vis. 8 miles, 15 ft. high.

CURRITUCK-BEACH. On the coast of North Carolina, about midway between Cape Henry and Body's island light-house, N. C., lat. $36^{\circ} 22' 32''$, lon. $75^{\circ} 49' 53''$, F.V.R.F. $1\frac{1}{2}$ min. vis. 18 miles, 158 ft. high, tower red.

BODY'S ISLAND. On Body's Island, north of Cape Hatteras, N. C., lat. $35^{\circ} 49' 3''$, lon. $75^{\circ} 33' 50''$, F. W. vis. 18 miles, 156 ft. high, tower white and black.

CAPE HATTERAS. About 2 miles north of southern end of the point of the cape, N. C., lat. $35^{\circ} 15' 14''$, lon. $75^{\circ} 31' 17''$, Flg. W. 10 sec., vis. 20 miles, 191 ft. high, tower black and white.

Hatteras Inlet. On shoal known as Oliver's reef, on north side of entrance to Hatteras inlet from Pamlico sound, N. C., lat. $35^{\circ} 15' 44''$, lon. $75^{\circ} 45' 40''$, Flg. R. 30 sec., vis. 11 miles, 38 ft. high, tower white. A bell, struck by machinery, at intervals of 8 seconds.

OCRACOKE. Near entrance and on N. side of Ocracoke inlet, about $23\frac{1}{2}$ nautical miles to S. and W. of Cape Hatteras, N. C., lat. $35^{\circ} 6' 28''$, lon. $75^{\circ} 59' 12''$, F. W. vis. 14 miles, 75 ft. high, tower white.

PAMPLICO SOUND.

N. W. Point Royal Shoal. On the north-west point of Royal shoal, in Pamlico sound, N. C., 9 miles from Ocracoke light, N. C., lat. $35^{\circ} 9' 15''$, lon. $76^{\circ} 9' 32''$, F. V. W. F. $1\frac{1}{2}$ min., 33 ft. high, tower white. A bell, struck by machinery, at intervals of 15 seconds.

Brant Island Shoal. In southern part of Pamlico sound, N. C., lat. $35^{\circ} 8' 6''$, lon. $76^{\circ} 17' 39''$, F. W. vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at intervals of 20 seconds.

Neuse River. On point of the shoal which makes out from E. end of Piney point, on W. side of entrance to Neuse river, N. C., lat. $35^{\circ} 5' 16''$, lon. $76^{\circ} 32' 58''$, F. W. vis. 11 miles, 55 ft. high, tower white. A bell, struck by machinery, at intervals of 15 seconds.

Pamlico Point. On south side of entrance to Pamlico river, N. C., lat. $35^{\circ} 18' 47''$, lon. $76^{\circ} 29' 5''$, F. W. vis. 11 miles, 37 ft. high, tower white.

Long Shoal. On east point of Long Shoal, N. C., lat. $35^{\circ} 33' 20''$, lon. $75^{\circ} 42' 18''$, F. W., vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at alternate intervals of 5 and 3 seconds.

Roanoke Marshes. On east side and about midway of the narrow channel connecting Pamlico and Croatan Sounds, N. E., lat. $35^{\circ} 48' 37''$, lon. $75^{\circ} 42' 7''$, F. R., vis. 11 miles, 33 ft. high, tower white. A bell, struck by machinery, at intervals of 12 seconds.

Croatan. Between Croatan and Albemarle sounds, east of Caroon's point, N. E., lat. $35^{\circ} 57' 35''$, lon. $75^{\circ} 47' 8''$, F. W., vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at intervals of 15 seconds.

North River. On the bar at the entrance to North river, N. C., lat. $36^{\circ} 9' 17''$, lon. $75^{\circ} 53' 50''$, F. R., vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at intervals of 5 seconds.

ALBEMARLE SOUND.

Wade's Point. On point of shoal on the west side of Pasquotank river, N. C., lat. $36^{\circ} 9' 8''$, lon. $75^{\circ} 58' 40''$, F. W., vis. $10\frac{3}{4}$ miles, 31 ft. high, tower white.

Laurel Point. About $\frac{3}{4}$ nautical mile due north from Laurel point, N. C., lat. $35^{\circ} 59' 48''$, lon. $76^{\circ} 23' 55''$, Flg. W., 30 sec., vis. $11\frac{3}{4}$ miles, 42 ft. high, tower white. A bell, struck by machinery, at intervals of 10 seconds.

Edenton Harbor Range Beacons (front). Near the town of Edenton, on the end of county wharf, N. C., lat. $36^{\circ} 3' 20''$, lon. $76^{\circ} 36' 38''$, F. R., vis. 6 miles, 8 ft. high.

. . . . (rear). Four hundred feet northward, in a tree, N. C., F. R., 30 ft. high.

Roanoke River. Near mouth of Roanoke river, N. C., lat. $35^{\circ} 56' 58''$, lon. $76^{\circ} 41' 42''$, F. W., vis. 11 miles, 35 ft. high, tower white. A bell, struck by machinery, at intervals of 15 seconds.

CAPE LOOKOUT. Near the extremity of Cape Lookout, distant from Cape Hatteras, in a south-westerly direction, 63 miles, N. C., lat $34^{\circ} 37' 16''$, lon. $76^{\circ} 31' 28''$, F. W. vis. 19 miles, 156 ft. high, tower black and white.

Frying-pan Shoals Light-ship. In 10 fathoms water, off the end of Frying-pan shoals, off Cape Fear, N. C., one mile beyond the outer 18 foot shoal, N. C., lat. $33^{\circ} 35'$, lon. $77^{\circ} 50'$, 2 F.W. vis. 11 miles, each 40 ft. high, tower yellow. A bell and horn.

CAPE FEAR. On Bald head; old tower on the north-westerly end of Smith's Island, entrance to Cape Fear river, N. C., lat $33^{\circ} 52' 19''$, lon. $77^{\circ} 59' 49''$, F. W. vis. 16 miles, 101 ft. high, tower white.

Cape Fear Range Beacon (front). A stake light in front of main light, N. C., lat. $33^{\circ} 52'$, lon. $78^{\circ} 0' 10''$, F. W. vis. 10 miles, 30 ft. high, tower white.

Oak Island Range Beacon (front). On Oak island, to S. of main channel, mouth of Cape Fear river, N. C., lat. $33^{\circ} 53' 22''$, lon. $78^{\circ} 1' 14''$, F. R. vis. 9 miles, 22 ft. high, tower white.

. . . . Beacon (rear). F. R. vis. $10\frac{3}{4}$ miles, 32 ft. high, tower white.

SOUTH CAROLINA.

GEORGETOWN. On the south side of North island, east side of entrance to Pedee river, and to the harbor of Georgetown, S. C., lat $33^{\circ} 13' 21''$, lon. $79^{\circ} 11'$, F. W. vis. 15 miles, 85 ft. high, tower white.

Sampit River Beacon. At junction of Sampit and Pedee rivers, entrance to Georgetown, S. C., lat. $33^{\circ} 21' 9''$, lon. $77^{\circ} 16' 27''$, F. W. vis. 10 miles, 27 ft. high, tower white.

CAPE ROMAIN. On Raccoon Key, about 6 miles from end of shoals off the cape, and 10 miles S. W. of entrance to Santee river, S. C., lat, $33^{\circ} 1' 8''$, lon. $79^{\circ} 22' 23''$, Flg. W. 1 min. vis. 18 miles, 154 ft. high, tower red.

Bull's Bay. North end of Bull's island, 25 miles northeast of Charleston, S. C., lat. $32^{\circ} 55' 20''$, lon. $79^{\circ} 33' 49''$, F. W. vis. 12 miles, 49 ft. high, tower white.

Rattlesnake Shoal Lightship, No. 34. Off Rattlesnake shoal, in $5\frac{1}{2}$ fathoms water, S. C., lat. $32^{\circ} 44'$, lon. $79^{\circ} 43' 45''$, 2 F. W. vis. 12 miles, 44 ft. high, structure white. A bell, struck by hand.

CHARLESTON, (main light). On south end of Morris Island, S. C., lat. $32^{\circ} 41' 44''$, lon. $79^{\circ} 52' 58''$, F. W. vis. $18\frac{1}{2}$ miles, 158 ft. high, tower black and white.

Morris Island Range Beacon, (front). On south end of Morris island, S. C., lat. $32^{\circ} 41' 24''$, lon. $79^{\circ} 52' 38''$, F.R. vis. 9 miles, 20 ft. high, tower red.
. . . . (rear), lat. $32^{\circ} 41' 32''$, lon. $79^{\circ} 53' 13''$, F. R. vis. 11 miles, 40 feet high, tower black.

CHARLESTON HARBOR. Sullivan's Island Range Beacon, (front). On Sullivan's island, S.C., lat. $32^{\circ} 45' 33''$, lon. $79^{\circ} 51' 20''$, F. R. vis. 10 miles, 26 ft. high, tower white.
. . . . (rear), lat. $32^{\circ} 45' 41''$, lon. $79^{\circ} 51' 21''$, F. R. vis. 13 miles, 57 ft. high, tower white.

Fort Sumpter. On Fort Sumter, Charleston harbor, S. C., lat. $32^{\circ} 45' 8''$, lon. $79^{\circ} 52' 24''$, F. W. vis. 12 miles, 57 ft. high, tower brown.

Fort Ripley Shoal, (Middle Ground). On the Middle Ground, between South Channel and Folly Island Channel, Charleston harbor, S. C., lat. $32^{\circ} 45' 50''$, lon. $79^{\circ} 54' 10''$, F.R. vis. 12 miles, 49 ft. high, tower yellow.

HUNTING ISLAND. On N. end of Hunting island, S. C., south side of entrance to St. Helena sd., S. C., lat. $32^{\circ} 23' 20''$, lon. $80^{\circ} 25' 16''$, Flg. W. 30 sec., vis. 17 miles, 136 ft. high, tower white and black.

Martin's Industry Light-ship, No. 29. Off Port Royal entrance, about 15 miles, eastward of Tybee light, Ga., lat. $32^{\circ} 5' 31''$, lon. $80^{\circ} 35' 13''$, 2. F. W. vis. 12 miles, 44 ft. high, structure red. A bell and horn.

Hilton Head Range Beacon (front). On Hilton Head island, S. C., lat. $32^{\circ} 9' 38''$, lon. $80^{\circ} 43' 15''$, F. R. vis. 11 miles, 37 ft. high, tower white.
 (rear), lat $32^{\circ} 9' 49''$, lon $80^{\circ} 44' 26''$, F. R. vis. 16 miles, 98 ft. high, tower white.

Paris Island Range Beacon (front). On Paris island, S. C., lat. $52^{\circ} 17' 46''$, lon. $80^{\circ} 40' 13''$, F. W. vis. $12\frac{1}{2}$ miles, 32 ft. high, tower white.
 (rear), lat. $32^{\circ} 18' 43''$, lon. $80^{\circ} 40' 45''$ F. W. vis. 17 miles, 130 ft. high, tower white.

Daufuskle Island Range Beacon (front). On the northeast point of Daufuskle island, S. C., lat. $32^{\circ} 8' 21''$, lon. $80^{\circ} 49' 56''$, F. W. vis. 9 miles, 22 ft. high, tower white.
 (rear), lat. $32^{\circ} 8' 42''$, lon. $80^{\circ} 49' 58''$, F. W. vis. 14 miles, 65 ft. high, tower white.

GEORGIA.

TYBEE. On N. E. end of Tybee island, and on S. side of entrance to Savannah river, Ga., lat. $32^{\circ} 1' 20''$, lon. $80^{\circ} 50' 43''$, F. W. vis. 18 miles, 150 ft. high, tower white.

Tybee Beacon. Near the point of Tybee island, Ga., in front of main light, Ga., lat. $32^{\circ} 1' 17''$, lon. $80^{\circ} 50' 16''$, F. W. vis. 10 miles, 28 ft. high, tower white.

SAVANNAH RIVER.

Cockspur Island Beacon. On a knoll connected with E. end of Cockspur island, Savannah river, Ga., lat. $32^{\circ} 1' 21''$, lon. $80^{\circ} 52' 46''$, F. W. vis. 10 miles, 25 ft. high, tower white.

Oyster Beds Beacon. On the oyster beds in Savannah river, Ga., to mark the south channel, lat. $32^{\circ} 2' 20''$, lon. $80^{\circ} 53' 39''$, F. R. vis. 11 miles, 35 ft. high, tower white.

Tybee Knoll Cut Range Beacon (front). On easterly end of Long island, Savannah river, Ga., lat. $32^{\circ} 1' 57''$, lon. $80^{\circ} 54' 26''$, F. W. vis. 10 miles, 24 ft. high, tower white.
 (rear), lat. $32^{\circ} 1' 57''$, lon. $80^{\circ} 54' 50''$, F. W. vis. 12 miles, 47 ft. high, tower white.

Fig Island Range Beacon, (front). Near the south side of the Fig Island shore, in the Savannah river, Ga., lat. $32^{\circ} 4' 48''$, lon. $81^{\circ} 3' 56''$, F. R. vis. 9 miles, 30 ft. high, tower white.
 (rear). In the cupola of the Exchange building, Savannah, Ga., lat. $32^{\circ} 4' 50''$, lon. $81^{\circ} 5' 27''$, F. R. vis. 17 miles, 180 ft. high, tower brown.

SAPPELO MAIN LIGHT. On S. end of Sapelo island, N. side of the entrance to Doboy sound, Ga., lat. $31^{\circ} 23' 28''$, lon. $81^{\circ} 17' 7''$, F.V.W.F. 45 sec., vis. 14 miles, 79 ft. high, tower red and white.

. . . . Beacon. In front of main light, Ga., lat. $31^{\circ} 23' 24''$, lon. $81^{\circ} 17'$, F. W. vis. 10 miles, 25 ft. high, tower brown.

Wolf Island Range Beacon, (rear). Near north end of Wolf island, and S. S. E. of Sapelo island light, Ga., lat. $31^{\circ} 21' 4''$, lon. $81^{\circ} 16' 48''$, F. W. vis. 11 miles, 38 ft. high, tower white.

. (front). Lat. $31^{\circ} 21' 3''$, lon. $81^{\circ} 16' 39''$, F. W. vis. 11 miles, 30 feet high, tower brown.

ST. SIMON'S. On S. end of St. Simon's island, and N. side of entrance to St. Simon's sound, Ga., lat. $31^{\circ} 8' 2''$, lon. $81^{\circ} 23' 35''$, F. V. R. and W. F. 1 min. vis. 16 miles, 108 ft high, tower white.

LITTLE CUMBERLAND ISLAND. On S. side of entrance to St. Andrew's sound and Satilla river, Ga., lat. $30^{\circ} 58' 34''$, lon. $81^{\circ} 24' 45''$, F. W. vis. 14 miles, 78 feet high, tower white.

BRAZIL.

[Color of Lights to be considered as *white*, unless otherwise stated, and their height as above the sea. Latitude South; Longitude West.]

PARA RIVER.

Braganza Shoal Light-vessel. $1\frac{1}{2}$ mile N. from shoal, in 16 fathoms water, lat. $0^{\circ} 26' 9''$, S., lon. $47^{\circ} 54' W.$, rev. 5 min., ecl. 5 sec., vis. 8 miles, 33 ft. high, above the sea.

Galvotas Island. Entrance to Para river, lat. $0^{\circ} 35' 20''$, lon. $48^{\circ} 1' 10''$, F. vis. 11 miles, 41 ft. high.

Chapeo Virado. On point, lat. $1^{\circ} 7' 45''$, lon. $48^{\circ} 27''$, F. vis. 7 miles.

Port da Barra. F. vis. 7 miles.

Cotijuba. On island, lat. $1^{\circ} 15' 35''$, lon. $48^{\circ} 37'$, F. vis. 7 miles.

Marianno. On Guajara island, lat. $1^{\circ} 47' 30''$, lon. $49^{\circ} 28'$. F. vis. 7 miles.

Capim. On islsnd, lat. $1^{\circ} 32' 20''$, lon. $48^{\circ} 51'$, F. vis. 7 miles.

Panacuera. Mouth of the river Tocantius, lat. $1^{\circ} 44' 30''$, lon. $49^{\circ} 5'$, F. vis. 7 miles.

Goyabal. On point, lat. $1^{\circ} 37'$, lon. $49^{\circ} 12'$, F. vis. 7 miles.

Jutahy. On island, lat. $1^{\circ} 51'$, lon. $49^{\circ} 54'$, F. vis. 7 miles.

Atalaia point. On point, lat. $0^{\circ} 34'$, lon. $47^{\circ} 17' 9''$, F. and Fl. 2 min., vis. 15 miles, 101 ft. high.

MARANHAM, I. Itacolomi. On point, lat. $2^{\circ} 10' 10''$, lon. $44^{\circ} 24' 45''$, rev. red and white, 50 sec., vis. 15 miles, 147 ft. high. Alternate red and white flashes, vis. 50 sec., eclipse 50 sec.

. 2. Alcantara. On point, lat. $2^{\circ} 25'$, lon. $44^{\circ} 22''$, F. vis. 5 miles.

. 3. San Luiz, San Marcos fort, lat. $2^{\circ} 29'$, lon. $44^{\circ} 18'$, F. vis. 10 miles.

. 4. Santo Antonio da Barra. Santo Antonio fort, lat. $2^{\circ} 29' 30''$, lon. $44^{\circ} 19' 39''$, F. vis. 5 miles.

. 5. Santa Anna. E. part of island, lat. $2^{\circ} 16' 30''$, lon. $43^{\circ} 38' 25''$, Rev. 32 sec., vis. 14 miles, 70 ft. high, tower white.

PEDRA DO SAL. On point, lat. $2^{\circ} 49' 19''$, lon. $41^{\circ} 43' 15''$, F. vis. 10 miles, 20 ft. high.

CEARA. I. Macoripe point, lat. $3^{\circ} 42' 5''$, lon. $38^{\circ} 27' 31''$, Rev. 30 sec. vis. 12 miles, 85 ft. high.

. 2. Aracaty, at the mouth of river, F. vis. 10 miles.

- THE ROCAS.** On reef.
Gonzalo River Light-vessel. Off entrance, F., 30 ft. high.
- RIO GRANDE DO NORTE.** Fortress of Santos Reis Magos, lat. $5^{\circ} 45'$, lon. $35^{\circ} 13' 15''$, F. vis. 10 miles, 43 ft. high.
- PEDRA SECCA.** Off bar at Cabedello, lat. $6^{\circ} 56' 30''$, lon. $34^{\circ} 49' 21''$, Rev. 1 min. vis. 12 miles, 52 ft. high.
- OLINDA POINT.** Old fort of Monte Negro, lat. $8^{\circ} 0' 50''$, lon. $34^{\circ} 50' 30''$, Int. vis. 10 miles.
- PERNAMBUCO.** On reef, 50 yards from Picao fort, lat. $8^{\circ} 3' 22''$, lon. $34^{\circ} 51' 57''$, Rev. white and red, 1 min., vis 15 miles. Every minute 2 white flashes and 1 red flash in succession.
- MACEIO.** A mile from anchorage, W. part of mountain, lat. $9^{\circ} 39' 30''$, lon. $35^{\circ} 39' 14''$, F. & Fl. vis. 22 miles, 208 ft. high. Fixed 70 sec., eclipse 16 sec., flash 12 sec., eclipse 22 sec.
- SAN FRANCISCO.** N. point of river, lat. $10^{\circ} 27'$, lon. $36^{\circ} 21' 30''$, light vis. 10 miles, 69 ft. high.
- COTINGUIBA BAR.** Watch-tower, lat. $11^{\circ} 1'$, lon. $37^{\circ} 5' 30''$, F. with green and red sectors, vis. 6 to 9 miles, 115 ft. high.
- ITAPUAN.** Piraboco rock, 200 yards from the shore, lat. $12^{\circ} 58'$, lon. $38^{\circ} 21'$, F. vis. 14 miles.
- BAHIA, OR SAN SALVADOR.** 1, Fort San Antonio, lat. $13^{\circ} 0' 37''$, lon. $38^{\circ} 32' 6''$, Rev. white and red, 80 sec., vis. 18 miles, 140 ft. high. Every 80 sec. 2 white flashes and 1 red flash in succession.
 . . . 2, Fort Santa Maria, lat. $13^{\circ} 0' 24''$, lon. $38^{\circ} 32' 51''$, F. vis. 6 miles.
 . . . 3, Fort do Marcello, lat. $12^{\circ} 58' 16''$, lon. $38^{\circ} 28' 8''$, F. red, vis. 4 miles.
- MORRO DE SANTO PAOLO.** On Morro, lat. $13^{\circ} 22' 35''$, lon. $38^{\circ} 51' 48''$, Rev. 1 min., vis. 20 miles, 276 ft. high, tower white.
- ABROLHOS ISLES.** Santa Barbara island, highest point, lat. $17^{\circ} 57' 42''$, lon. $38^{\circ} 41' 30''$, Rev. 1 min, vis. 17 miles, 189 ft. high. Every min. duration of flash 11 seconds.
- ESPIRITO SANTO BAY.** On Santa Luzia point, lat. $20^{\circ} 18' 20''$, lon. $40^{\circ} 15' 15''$, F., vis. 12 miles, 66 ft. high.
- CAPE FRIO.** Focinho do Cabo point, lat. $33^{\circ} 0' 42''$, lon. $41^{\circ} 57' 4''$, Rev. $1\frac{1}{2}$ min., vis. 25 miles, 522 ft. high, tower light stone.
- RAZA.** On island, lat. $23^{\circ} 5' 45''$, lon. $43^{\circ} 8' 17''$, Rev. red and white, $2\frac{1}{4}$ min., vis. 12 miles, 315 ft. high, tower white. Every $2\frac{1}{4}$ minutes, 2 white and 1 red face. alternately.
- RIO DE JANEIRO.** 1, Fort Santa Cruz, E. entrance, lat. $22^{\circ} 56' 36''$, lon. $43^{\circ} 7' 17''$, F., vis. 6 miles.
 . . . 2, Calhabouco point, F. red, vis. 2 miles.
- SANTOS.** Moela island, lat. $24^{\circ} 2'$, lon. $46^{\circ} 13'$, F., vis. 24 miles, 334 ft. high, tower white.
- PARANAGUA BAY.** 1, On fort, Isle do Mel., lat. $25^{\circ} 30' 57''$, lon. $48^{\circ} 19' 20''$, F., vis. 6 miles, 47 feet high.
 . . . 2, On summit of Morro das Conchas (Cónxas), on N. E. part of Isle do Mel., lat. $25^{\circ} 32' 38''$, lon. $48^{\circ} 18' 20''$, F., vis. 20 miles, 262 ft. high, tower white.

INHATOMIRIM. Fort Santa Cruz, lat. $27^{\circ} 25' 32''$, lon. $48^{\circ} 33' 56''$, F., vis, 9 miles, 123 ft. high.

SANTA CATHARINA ISLAND. Punta dos Naufragados, S. point, lat. $27^{\circ} 49' 30''$, lon. $48^{\circ} 32' 30''$, Rev., 1 min., vis. 18 miles, 149 ft. high.

RIO GRANDE DO SUL. N. point of entrance, 1-10 mile from extremity of point, lat. $32^{\circ} 7' 15''$, lon. $52^{\circ} 4' 25''$, Rev. 2 min., ecl. 50 sec., vis. 14 miles, 96 ft. high.

PATOS LAKE. 1, Surengonea. On island, lat. $31^{\circ} 44'$, lon. $52^{\circ} 9' 40''$, F.
 2, Estreito. On point, lat. $31^{\circ} 48' 30''$, lon. $51^{\circ} 50'$, F. vis. 6 miles.
 3, Bojuru. On point, lat. $31^{\circ} 35'$, lon. $51^{\circ} 38'$, F. vis. 13 miles.
 4, Cape Marca. On cape, F. vis. 12 miles, 54 ft high, tower white.
 5, Christovao. On point, lat. $31^{\circ} 26'$, lon. $51^{\circ} 24'$, F. vis. 15 miles.
 6, Barba Negra. On isle, lat. $30^{\circ} 37'$, lon. $51^{\circ} 15'$, F. vis. 12 miles.

RIO DE LA PLATA.

Cape Polonio. On cape, lat. $34^{\circ} 24'$, lon. $53^{\circ} 47' 20''$, F. vis. 18 to 20 miles, 131 ft. high, tower gray and white.

Cape Santa Maria. On cape, lat. $34^{\circ} 40' 30''$, lon. $54^{\circ} 9' 26''$, Rev. 1 min. vis. 18 miles, 132 ft. high.

San Jose Ignacio Point. On point, lat. $34^{\circ} 51'$, lon. $54^{\circ} 40'$, F. vis, 15 miles, 103 ft. high.

Maldonado Bay. E. point, lat. $34^{\circ} 58' 15''$, lon. $54^{\circ} 54' 23''$, F. vis. 20 miles, 152 ft. high.

Flores. On island, lat. $34^{\circ} 56' 55''$, lon. $55^{\circ} 55'$, Rev. 1 min. vis. 12 miles, 104 ft. high, tower white. Every minute eclipse (approx.) 15 sec.

Punta Brava. On point, 200 yards N. of Punta Brava reef, lat. $34^{\circ} 56'$, lon. $56^{\circ} 10' 21''$, F. vis. 12 miles, 70 ft. high, tower white.

English Bank Light-ship N. part of bank, in seven fathoms, lat. $35^{\circ} 7' 30''$, lon. $55^{\circ} 52' 15''$, F., vis. 8 miles, vessel red.

English Bank. N. extremity of bank, F.

Monte Video. 1. W. side of harbor, on mount, lat. $34^{\circ} 53' 15''$, lon. $56^{\circ} 14' 36''$, F. and Fl., 3 min., vis. 25 miles, 486 ft. high, tower brown. A flash every 3 minutes for 15 secs., flash preceded and followed by short eclipse.

. . . . 2, End of breakwater, on San Jose point, F. red, 16 ft. high.

. . . . 3, Cathedral, S. tower, lat. $34^{\circ} 54' 20''$, lon. $56^{\circ} 12' 58''$, F., 147 ft. high.

Panela Shoal Light-ship. 200 yards N. N. W. $\frac{1}{2}$ W. of shoal, lat. $34^{\circ} 54'$, lon. $56^{\circ} 26'$, F., 17 ft. high, vis. 5 miles.

Point Indio Light-ship. N. E. $\frac{1}{4}$ N., 11 miles from Indio point, in $3\frac{1}{2}$ fathoms, lat. $35^{\circ} 8' 30''$, lon. $57^{\circ} 8' 3''$, F., 33 ft. high, vis. 10 miles, tower black.

Chico Bank Light-ship. N. E. by E. from point Atalaya, $11\frac{1}{2}$ miles, in $4\frac{1}{2}$ fathoms, lat. $34^{\circ} 45' 45''$, lon. $57^{\circ} 30' 10''$, F., 20 ft. high, vis. 10 miles, vessel red.

Colonia. S. W. angle of plaza, lat. $34^{\circ} 28' 10''$, lon. $57^{\circ} 49' 42''$, Rev. 3 min., 110 ft. high, vis. 10 miles, tower dull brick.

Parallon Island. On island, lat. $34^{\circ} 29'$, lon. $57^{\circ} 57'$, F., 84 ft. high, vis. 13 miles, tower white.

Buenos Ayres. 1, In $2\frac{1}{2}$ fathoms; guard-ship, outer roads, lat. $34^{\circ} 34' 30''$, lon. $58^{\circ} 16'$, F., about 20 ft. high, vis. 7 miles.

. . . . 2, Custom-house tower, F.

Martin Garcia. On island, lat. $34^{\circ} 11' 10''$, lon. $58^{\circ} 13' 30''$, F.

FALKLAND ISLANDS. Cape Pembroke, lat. $51^{\circ} 40' 40''$, lon. $57^{\circ} 41' 48''$, F., 110 ft. high, vis. 14 miles, tower white and red.

LEADING LIGHTS IN THE ENGLISH CHANNEL.

ON THE ENGLISH COAST.

THE NEW EDDYSTONE LIGHTHOUSE.

Owing to the undermining of the rock on which the old structure was built, it was subject at times to alarming tremors and vibrations; and therefore the official authorities decided in 1877 to erect a new tower. Accordingly careful surveys were made, and a base was found on a rock at a distance of 40 yards from the old lighthouse in a S. S. E. direction,—the only drawback to the selected rock being that its top is only just above the level of low water; consequently the foundation had to be laid *below* the level of low water.

To Mr. James N. Douglass, the Engineer-in-chief of the Trinity House, was entrusted the design of the new tower, and also the general arrangements in connection with the organization of the staff, &c.; and in the winter of 1877 and spring of 1878, under the personal superintendence of Mr. F. Edmond, who possessed considerable experience in lighthouse building, and Mr. W. T. Douglass, son of the Engineer-in-chief, the preliminaries were all arranged.

During the summer of 1878 the work was commenced, and continued with general success until towards the end of December, when operations were suspended for the winter.

While the men were working below the level of low water, not more than three hours at a time could be spent on the rock; the most extended limit of their stay being from about $\frac{3}{4}$ ebb to $\frac{1}{4}$ flood tide, and during that interval the utmost energy of all had to be exerted. Frequently when at work the agitation of the sea compelled the men to seize their tools and rush to the boats with all possible speed.

The coffer dam was completed by June, 1879; during its construction the urgency was so great to facilitate its progress, that work was even carried on on Sundays, when fair weather and a good tide offered.

The foundation stone of the new tower was laid on the 19th August, 1878; the top stone on the 1st June, 1881, and on the 18th May, 1882, after a laborious period of three years and a half, the new Eddystone Lighthouse was formally commissioned. On each of those occasions His Royal Highness the Duke of Edinburgh enacted the leading part, and the imposing ceremonies were participated in by Elder Brethren, Officials of the Trinity House, and other eminent personages, and also witnessed by many distinguished visitors.

The extraordinary quickness with which the work had been executed—more rapidly in proportion to its dimensions than any other lighthouse previously undertaken—was chiefly due to the special steam machinery and appliances for pumping, rock-drilling and hoisting materials, with other improved apparatus, &c.

This outline of the history of proceedings in relation to the new tower, has been compiled (for *J. W. Gabriel's Epitomized Nautical Almanac*,) from the June No. of the *Nautical Magazine*, which also contains additional details, with the sub-joined official announcement.

The following Notice to Mariners, issued by the Trinity House, will indicate the general character of the light:—

NOTICE TO MARINERS.—*English Channel*.—*New Eddystone Lighthouse*.—Trinity House, London, 18th May, 1882.—Notice is hereby given, that the character of this light has been altered so that it is now a *white double-flashing half-minute light*, and will henceforth show at an elevation of 133 ft. above high water,

two successive flashes of about $2\frac{1}{2}$ seconds duration, divided by an eclipse of about 4 seconds, the second flash being followed by an eclipse of about 21 seconds. The light is visible all round the horizon, and in clear weather at a distance of $17\frac{1}{2}$ miles. That a white fixed subsidiary light is also shown from a window in the Lighthouse at a distance of 40 feet below the flashing light, to mark the *Hand Deeps*. This extends over a sector of 16° from N. 32° W. to N. 48° W. (magnetic, from the Lighthouse). Also, that a large bell will be sounded during foggy weather twice in quick succession every half-minute; thus assimilating the character of the sound signal to that of the light.

Note.—Mariners will observe that the light on the Casket Rocks, 78 miles S. E. $\frac{1}{2}$ E. magnetic from the Eddystone, is similar in character, but shows three flashes in quick succession instead of two.—By order, J. INGLIS, Secretary.

Bishop Rock—Scilly Isles—One fixed light. W. $\frac{3}{4}$ N., 4 miles from St. Agnes' light. Lat. $49^\circ 52'$ N., Long. $6^\circ 27'$ W. Hidden between the bearings of S. W. by W. and W. by N. $\frac{1}{4}$ N., visible 16 miles.

St. Agnes'—Scilly Isles—One revolving light, every minute, visible 17 miles.

Seven Stones—Light-vessel, in 40 fathoms—Two fixed lights (has two masts).

Longships—One fixed light, visible 14 miles.

Wolf—(Building.)

N. B.— $\frac{2}{3}$ of a mile E. by N. is frequently a vessel moored with a light.

Lizard—Two fixed lights, visible 21 miles. When in one, these lights keep clear of the Manacles to the eastward; and of the Wolf to the westward.

St. Anthony's—entrance to Falmouth—One revolving light, every 20 seconds. A fixed light (white), 37 feet below revolving light, to clear Manacles Rocks, only seen between the bearings N. N. E. $\frac{1}{2}$ E. and N. by E. $\frac{1}{4}$ E.

Eddystone—One white double flashing light, visible $17\frac{1}{2}$ miles. (See Notice to Mariners.)

Start Point—One revolving light, every minute. In the same tower is shown a fixed light in the direction of Berry Head, visible only when the Start Point bears between W. $\frac{1}{4}$ S. and S. W. by S.; also a faint continuous light is seen within 10 miles.

Portland—near the Bill—Two fixed lights. When in one, bearing N. N. W. $\frac{3}{4}$ W., they lead between the Race and Shambles.

Shambles—Light-vessel, on East end of shoal in 15 fathoms—One fixed light.

Needles—Isle of Wight—One fixed light. Red from N. W. $\frac{1}{2}$ N. round Westward to S. W. by W., except between E. and E. S. E., when it will appear as a white light; it also appears white from N. E. by E. to N. E. by E. $\frac{1}{2}$ E.

Hurst—Two fixed lights, visible 13 and 10 miles. Leading light up the Solent is shown from lantern of the high light-house, 76 feet above high water.

St. Catherine—Isle of Wight—One fixed light, visible 19 miles. Daboll's fog-horn traverses an arc of 215° from E. $\frac{3}{4}$ S. to N. W. by Southward, the duration being 5 seconds, with an interval of 15 seconds.

Warner—Light-vessel—One revolving light, every minute. In 13 fathoms, on East side of bank.

Bembridge or Nab—Light-vessel in $5\frac{1}{4}$ fathoms—Two fixed lights.

Owers—Light-vessel, in 19 fathoms—One fixed light.

Beachy Head—One revolving light, every 2 minutes. (Brilliance 15 seconds, darkness $1\frac{3}{4}$ minute). Kept open of the next Eastern Cliff, leads outside the Royal Sovereign, and other shoals. *Note the difference between this light and that on Cape Grisnez, which flashes every half minute.*

Dungeness—One fixed light, visible 15 miles. Daboll's fog-horn is sounded during foggy weather. The mouth of the horn will traverse an arc of 210° , viz., from N. E. by E. $\frac{1}{2}$ E. round South to W. $\frac{1}{2}$ N. and *vice versa*, so as to point in every direction between those bearings once in each minute; duration of sound 5 seconds, interval 20 seconds.

Varne Shoal—Light-vessel, in 16 fathoms—One revolving red light, every 20 seconds.

South Foreland—Two fixed lights. These lights in one clear the South end of the Goodwin Sands.

South Sand Head—Light-vessel, in 13 fathoms—One fixed light.

Gull Stream—Light-vessel, near west edge of sand, in $8\frac{1}{2}$ fathoms—One revolving light, every 20 seconds.

North Sand Head—Light-vessel, off North end of the sand, in 9 fathoms—Three fixed lights, triangular.

North Foreland—One fixed light. Shows a band of *Red* light to clear the East end of Margate Sand, a cable's length, when bearing S. by E. $\frac{1}{2}$ E. to S. $\frac{1}{2}$ W.

ON THE FRENCH COAST.

Ushant—N. W. point of Island—One revolving light every 20 seconds. Twice Bright, once Red. Lat. $48^{\circ} 28' 5''$ N., long. $5^{\circ} 3' W.$

Ushant—N. E. point of Island—One fixed light.

Hanois Rock—One revolving light, every 45 seconds; Red light visible all round the western horizon. The Casquets bear N. E. by E. $\frac{1}{4}$ E., $21\frac{1}{4}$ miles.

Casquets—Opposite Bill of Portland—Three revolving lights, every 20 seconds. Relative position E. $\frac{7}{8}$ N., S. W. $\frac{1}{2}$ W., and N. W. $\frac{7}{8}$ W. The three lights will appear as *two* when viewed in either of these three or in the opposite directions.

Barfleur—One revolving light, every half minute; does not quite disappear within the distance of 12 miles.

Cape de la Hague—One fixed light.

Cape de la Heve—Two fixed lights.

Fecamp—One fixed light.

Ailly—One revolving light, every minute; eclipses not total within 10 miles.

Alpreck—One fixed and flashing light, every 2 minutes a red flash; flash preceded and followed by a short eclipse.

Cape Grisnez—opposite Dungeness—One revolving light, every half minute; eclipses not total within 12 miles. The illuminating apparatus is now superseded by an electric one. The flashes are of greater duration and intensity than before.

EAST COAST OF ENGLAND AND SCOTLAND.

- Kentish Knock*—Lightvessel—One revolving light, every minute. On the East side of the Sand in 11 fathoms, carries 2 Balls, vertical.
- Galloper*—Lightvessel—Two fixed lights. On S. W. part of Shoal, in 20 fathoms.
- Sunk*—Lightvessel—One fixed light. Fairway East of Swin, in $9\frac{1}{2}$ fathoms.
- Shipwash*—Lightvessel—One fixed light. Off N. E. end of Sand, in $9\frac{1}{2}$ fathoms.
- Orfordness*—Two fixed lights. When in one, S. of the Ness, they lead through Hollesley Bay, close to the N. W. edge of the Whiting, and across the outer edge of the Cutler Sand; and to the North they lead inside of the Knoll, the Ridge, and the Napes.
- Pakefield*—One fixed red light.
- Lowestoft*—Two fixed lights.
- Corton Lightvessel*—One revolving light, every 20 seconds a red face.
- Corton Gateway*—Two fixed red lights. Kept in a line, N. N. W. $\frac{3}{4}$ W., lead through the Gateway.
- St. Nicholas*—Light vessel—Two fixed lights. At Northern extremity of Hewitt's Channel, one *bright* and one *red*. The latter at the afterpart of the Lightvessel, 20 feet above the water.
- Coekle*—Lightvessel—One revolving light every minute. At north entrance, Eastern side, in 5 fathoms.
- Winterton*—one fixed light.
- Newarp*—Lightvessel—Three triangular fixed lights. Near the North end of the Cross Sand, in 17 fathoms.
- Hasborough*—Two fixed lights. In one, N. W. by W., they lead through Hasborough gateway.
- Hasborough*—Lightvessel—Two fixed lights. Near North end of the Sand, in 15 fathoms.
- Leman and Ower*—Lightvessel—Two lights; upper light revolves every minute; lower, fixed. Near the S. E. point of the Ower, but 5 miles S. of its shoalest spot, and 4 miles E. S. E. of the shoalest part of the Leman.
- Cromer*—One revolving light, every minute.
- Dudgeon*—Lightvessel, one fixed light. Near the shoal, in 9 fathoms.
- Outer Dowsing*—Lightvessel—One revolving light, Red face every 20 seconds. On the Western side of the Sand, in 9 fathoms.
- Spurn*—Lightvessel—One revolving light every minute. Off the point, River Humber, in 9 fathoms.
- Spurn*—On the Point—Two fixed lights.
- Bull Sand*—Lightvessel—One fixed light. S. E. end of Bull Sand, in $5\frac{1}{4}$ fathoms.
- Flambro' Head*—One revolving light, every 2 minutes; two flashes bright, one Red. When bearing N. N. E., clears North end of Smithic Shoal.
- Whitby*—Two Bright fixed lights. South lighthouse open East of North one clears Whitby Scar Rock, a *Red* light from North Tower inshore of and over Scar Rock. Lights visible from N. 28° W. round Westerly to S. 17° E.

- Hartlepool*—On the Heugh—Two fixed lights in one tower; high light Bright, low light Red. Upper light all night; small lower light from half flood to half ebb.
- Sunderland*—North Pier Head—Two fixed lights in one tower.
- Sunderland*—South Pier Head—One fixed light. The lower light on North Pier Head is a small (distinguishing) red light, 18 feet below the upper light; and both are exhibited all night. South Pier light exhibited from half flood to first quarter ebb.
- Souter Point*—(Building.)
- Tynemouth*—One revolving light every minute.
- Coquet*—S. W. part of the Island—One fixed light, Bright Brilliant when seen from the Eastward, between S. by W. $\frac{1}{2}$ W., and N. by E. $\frac{1}{2}$ E. A dim light is seen round the remainder of the circle. In the direction of Hauxley Point Buoy and Boulmer Rocks it appears *red*.
- Farn*—Two lights; high, revolving every half minute; low, fixed. Highest light near S. W. point of the Island; lowest, near its N. W. Low light is visible between the bearings of S. S. E. $\frac{1}{4}$ E. and S. $\frac{3}{4}$ E.
- Longstone*—One revolving light every half minute.
- St. Abb's Head*—One flashing light, flashes every 10 seconds.
- Inchkeith*—on the summit of the Island—One revolving light, every minute.
- Isle of May*—on the summit of the Island—Two fixed lights. When in one, bearing S. S. W. $\frac{1}{4}$ W. and N. N. E. $\frac{1}{4}$ E., they lead about half a mile to the Eastward of the North Carr Rock. The lights must on no account be opened to the Westward.
- Bell Rock*—One revolving light, every 2 minutes, bright and red alternately.
- Buddeness or Tay*—on the Ness—Two fixed lights. Bearing N. N. W. $\frac{2}{3}$ W. and S. S. E. $\frac{2}{3}$ E. Leading lights between the Gaa and Abertay Sands, at the mouth of the river Tay.
- Girdleness*—on the Ness—Two fixed lights vertical, in the same tower. Seen from N. N. E. to W. S. W. $\frac{1}{2}$ W. by the Eastward.
- Buchanness*—on the Ness—One flashing light, flashes every 5 seconds. Visible from N. by E. to S. W. by W. by the Eastward.
- Kinnaird Head*—on the Head—One fixed light. Shows Red N. N. W. $\frac{1}{2}$ W., and Northerly as far as the land admits. Visible from W. N. W. to S. S. E. $\frac{3}{4}$ E., Northerly and Easterly.
- Covesea Skerries*—on Craig Head—One revolving light, every minute. Visible from W. by N. $\frac{1}{4}$ N. round Northerly and Easterly, to S. E. by E. $\frac{1}{4}$ E., Bright; but from S. E. by E. $\frac{1}{4}$ E. Southerly to S. E. $\frac{1}{4}$ S., Red.
- Tarbetness*—on the Ness—One intermittent light. Visible 2 $\frac{1}{2}$ minutes, then suddenly eclipsed half a minute. But to the Westward of the Ness, the light is permanently visible.
- Noss Head*—on the Head—One revolving light, every half minute; Bright to seaward and Red towards Sinclair Bay. Visible from W. N. W. to S. W. $\frac{1}{4}$ W. by the Eastward.
- Pentland Skerries*—on the Island—Two fixed lights. Bearing N. N. E. and S. S. W.
- Dunnet Head*—on the Head—One fixed light. Visible from S. E. $\frac{1}{2}$ E. to W. by N. $\frac{1}{2}$ N. by the North.

Holburn Head—One flashing light, every 10 seconds.

Cantic Head—Orkney Islands—One revolving light, every minute.

Hoy—Orkney Islands—Two fixed lights. The high light stands on the N. E. point of Gremsa Island; and the low light on its N. W. point. High light Red from Seaward, but White when between S. S. E. $\frac{1}{4}$ E. and W. S. W.; it also lights a small arc towards Cava, in Scapa Flow, between N. $\frac{1}{2}$ W. and N. N. W. $\frac{1}{2}$ W. The low light, White, is visible between E $\frac{1}{2}$ S and W. $\frac{1}{2}$ N. round by S. When the lights are in one, they lead between the rocks of Bow and Kirk; when within half-a-mile of the shore on this line, the high light disappears below the foreground, and it is then time to haul towards the Stromness shore, when the Red light will re-appear.

Start Point—on the East Point of Sanday Island—One fixed light.

North Ronaldsha—on the North Point—One flashing light, flashes every 10 seconds.

Sumburgh Head—on the S. W. Point of the Shetlands—One fixed light. Visible from N. E. by E. $\frac{1}{4}$ E., round to N. W. by N. $\frac{1}{4}$ N. by the Southward.

Cape Wrath—On the Cape, N. W. point of Scotland—One revolving light, every 2 minutes; Bright and Red alternately. Visible from S. $\frac{1}{2}$ E. to S. W. by W., by the N.

Butt of Lewis—N. Point—One fixed light.

Barra Head—Highest part of Bernera Island, S. Point of Hebrides—One Intermittent light. White 2 $\frac{1}{2}$ minutes, then dark $\frac{1}{2}$ minute, visible from N. by E. to E. N. E., by W. and S.

Skerryvore—on the Rock, 12 miles W. S. W. from Tyree Island—One revolving light, every minute.

LEADING LIGHTS OF ST. GEORGE'S CHANNEL.

COAST OF IRELAND.

Fastnet—On the summit of the Rock—One revolving light, every 2 minutes; visible 18 miles. This is instead of that formerly shown on Cape Clear. There is a dangerous rock, carrying only 11 feet at low water, 400 yards N. E. by E. of the Fastnet.

Kinsale—On S. Point of the Old Head—One fixed light, visible 21 miles. Red light is shown in a line to the Horse Rock, in Courtmacsherry Bay; Bright to seaward.

Cork Harbor—On Roche Point—two lights; upper light Red, revolving every minute; lower, Bright, fixed. The lower bright light, at foot of tower, marks the Daunt Rock.

Ballycotton—On the outer Island—One flashing light, every 10 seconds; visible 18 miles. Seen from E. $\frac{1}{2}$ N., round Southerly, to W. $\frac{1}{2}$ N. There are red panes of glass at the foot of the apparatus, to warn vessels not to approach within that mark. When visible tack off shore.

Minehead—S. side of Head—One intermittent light, every minute. Bright 50 seconds; suddenly eclipsed 10 seconds. Seen from E. by N. $\frac{1}{2}$ N. to W. $\frac{3}{4}$ S., and visible 21 miles.

- Waterford*—Hook Tower, E. side of entrance—One fixed light, visible 16 miles.
- Saltees*—Light vessel—Two fixed lights, visible 9 miles. Off Coningbeg Rock, the Southernmost of the Saltees Islands, in 32 fathoms.
- Tuskar*—On the Rock—One revolving light, every 2 minutes; visible 15 miles. Two sides Bright, one Red. Red light seen 10 miles and visible every sixth minute.
- Blackwater Bank*—Light vessel—One fixed light, visible 9 miles. In 19 fathoms, off N. E. part of Bank.
- Lucifer*—Light vessel—One fixed Red light. Outside the Lucifer Shoals, in 21 fathoms.
- Arklow*—South Light vessel, one revolving light every minute.
- Arklow*—North Light vessel—Two fixed lights.
- Codling*—Light vessel—One Red revolving light, every 20 seconds.

DUBLIN BAY.

- Kish Bank*—Light vessel—One light, revolving every minute.
- Poolbeg*—Two fixed lights in one tower, visible 12 miles. At the end of S. Wall, at the entrance to the river Liffey. The lower light is shown from half flood to half ebb. The lower light is much fainter than the upper one.
- Poolbeg*—One fixed light, visible 10 miles. At the end of the N. Wall or Quay.
- Bailey*—On S. E. Point of Howth Peninsula—One fixed light, vis. 15 miles.
- Howth*—On E. Pier Head—One fixed Red light, visible 11 miles.
- Rockabill*—One flashing light, every 12 seconds. White flash between N. $\frac{1}{2}$ W. and S. W. by S. Red flash towards land.
- Carlingford*—On Haulbowline Rock—Two fixed lights in the same tower, visible 15 miles. The lower light from half flood to half ebb.
- Dundrum Bay*—On St. John's Point—One intermittent light, every minute, visible 12 miles. The light is Red for 45 seconds—suddenly eclipsed for 15 sec.
- South Rock*—On the Rock—One revolving light, every minute and a half, visible 12 miles.
- Copeland*—On Small Copeland Island—One fixed light, visible 16 miles.
- Maidens*—On the Rocks—Two fixed lights, visible 13 and 14 miles.
- Rathlin*—On N. E. point of Island—Two lights in same tower; the upper light revolving every minute, giving a Bright light during 50 seconds, then eclipsed for 10 seconds. The lower light fixed. The upper light visible from seaward, between the bearings of S. E. $\frac{1}{2}$ S., round by the Eastward, to N. E. by N.; and in the channel Westward of Rathlin Island, from E. N. E. $\frac{1}{2}$ N. to E. $\frac{1}{4}$ N., and is colored Red on the line of the Carickavanan Rock. Visible in clear weather 21 miles. The lower light is a separate light within the distance of 10 miles, and from seaward between the bearings of S. E. by S., N. N. E. $\frac{1}{2}$ E., and not visible in the channel westward of Rathlin Island.
- Innishowen*—On Dunagree Point—Two fixed lights.
- Innistrahul*—On N. E. part of the Island—One revolving light, every 2 minutes, visible 18 miles.

- Lough Swilly*—On Fanad Point—One fixed light, Red, but towards the Lough, Bright, visible 14 miles.
- Tory Island*—On N. W. part of the Island—One fixed light, visible 16 miles. To vessels passing to the S. E. of the island, the light will disappear behind its heights, between N. W. by N., and N. W. $\frac{1}{2}$ W.
- Rathlin o' Birne*—On the Island—One fixed White light, visible 16 miles; Red towards the mainland and Sound, eastward of the Island.
- Aranmore Island*—One Bright (or Red) flashing light. Flash every 20 seconds. Light Red to Eastward.

WELSH AND SCOTCH COASTS, INCLUDING THE ISLE OF MAN.

- Smalls*—On the Rock—One fixed light, visible 15 miles.
- South Bishop*—On the Rock—One revolving light, every 20 seconds; visible 18 miles.
- Cardigan Bay*—Lightvessel, between South Bishop and Bardsey Island—One Red revolving light every 30 seconds, when it appears brightest.
- Bardsey*—On the island—One fixed light, visible 17 miles.
- Stack*—On South Stack Rock, off N. W. point of Holyhead Island—One revolving light, every 2 minutes; visible 19 miles. During foggy weather, a small bright light revolving in $1\frac{1}{2}$ minute, is occasionally shown about 40 feet above the sea, and 30 yards N. of the main light.
- Skerries*—On the highest Island—one fixed light, visible 16 miles. A Red gleam shown over the Coal Rock to E. $\frac{1}{2}$ S.
- Lynus*—On the Point—One flashing light, in 10 seconds; visible 8 and obscured 2 seconds; seen 16 miles.

ENTRANCE TO MERSEY AND DEE RIVERS.

- Air*—On the Point, at low water mark—One fixed light. From N. W. to W. it shows bright, from N. W. Northerly, to E. by S. $\frac{1}{4}$ S., Red; from E. by S. $\frac{1}{4}$ S. to S. by E., Bright. The Red light is visible only within the Hoyle Sand. A bell is sounded in foggy weather.
- Liverpool North-West Lightship*—One revolving light, every minute. Off the W. extreme of the 3 and 4 fathom Tongue in $6\frac{1}{2}$ fathoms.
- Hoy Lake*—near the Church—Two fixed lights. When in one S. W. by S., you may haul up the Rock Channel.
- Bidston*—on Bidston Hill—One fixed light, visible 23 miles.
- Leasowe*—One fixed light, visible 15 miles. On the shore midway between the Mersey and Dee Rivers.
- Rock*—One revolving light, every minute; visible 14 miles. On the point W. side of the River Mersey. This light is Bright for two minutes, then Red the third minute. A fixed light shows down the Rock Channel and up the river, when 11 feet water.

Crosby—Light vessel—One fixed yellow light, visible 8 miles; distinguished by a green fixed light under bright one. Crosby Channel, N. E. elbow of Great Burbo Bank. Moored in 48 feet at low water.

Crosby—near Crosby Point—One fixed light, visible 12 miles.

Formby—Light vessel—One fixed Red light, visible 8 miles. At the point of meeting of the Crosby and Queen's Channels. Moored in 46 feet.

Great Orme Head—One fixed light, visible 24 miles. White between S. E. by E. $\frac{3}{4}$ E., by the South to West; Red from W. to W. $\frac{3}{4}$ N.

ISLE OF MAN.

Ayre— $\frac{1}{4}$ mile S. W. of the Point—One revolving light, every 2 minutes; Bright and Red alternately. Visible 15 miles from S. by W. North-easterly to W. by N.

Calf of Man—W. side of Calf Island—Two revolving lights, every 2 minutes; visible 24 and 22 miles; high light visible from E. N. E. to S. E. by E., by the Westward. When in one, they lead on the Chicken Rock.

Douglass—on the Head—One fixed light, visible 14 miles. Not visible from Lang Ness, but with 3 miles offing it will be seen N. E. $\frac{1}{2}$ E., and the Calf light at the same time N. W. by W. $\frac{1}{4}$ W.

Bahama Bank—Light vessel, a mile off the S. E. tail of the Shoal, in 11 fathoms.—Two fixed lights, visible 10 miles.

Mull of Galloway—on S. point—One intermittent light, every 3 minutes; visible $2\frac{1}{2}$ minutes, and half minute eclipsed. Visible 23 miles from N. E. to N. W. $\frac{1}{4}$ W.

Corsewall—on the Point, W. side of entrance of Loch Ryan—One revolving light, every 2 minutes; Bright and Red alternately; visible 15 miles from N. E. by E., Northerly, to S. W.

Sanda Island—on Ship Rock—One fixed Red light.

Pladda Island—on S. E. Point of Arran Island—Two fixed lights, vertical; visible 17 and 14 miles, from N. W. by W., Southerly, to N. E. by E.

Daver Island—on Eastern part—One revolving light, every 30 seconds; visible 17 miles from N. $\frac{1}{4}$ W. to E. by S., by the North.

Clyde River—Cumbrae, on W. side of Little Cumbrae—One fixed light, visible 15 miles.

Mull of Cantyre—on S. W. headland of Cantyre—One fixed light.

Rhynns of Islay—on Oversay Island, off S. W. Point of Islay—One flashing light every 5 seconds.

LEADING LIGHTS OF THE BRISTOL CHANNEL.

Trevose Head—on N. W. part—Two fixed lights, visible 19 miles. The lower light is 50 feet in advance of the higher one. Lat. $50^{\circ} 33' N.$, long. $5^{\circ} 1\frac{1}{2}' W.$

Lundy—on the ridge of the Island—Two lights in one tower; upper, revolving every 2 minutes; lower, fixed, and visible 30 miles. Low light only visible from the Westward, between S. by E. to N. E.

Flatholm—on the Island, S. Point—One fixed light, and visible 17 miles.

English and Welsh Grounds—Light vessel—One revolving light, every minute, and visible 10 miles. Moored S. side of Bristol Channel, in 6 fathoms.

Usk—W. side of entrance of the river—One fixed light, and visible 10 miles. Red, between the bearings of S. E. $\frac{3}{4}$ E. and S. S. E. $\frac{1}{2}$ E. and between the bearings of S. by E. and S. S. W., from whence into the land it will be White. It will then show White between S. S. E. $\frac{1}{2}$ E. and S. by E. $\frac{1}{2}$ E. to mark the Channel into the River, and a White strip will show up the river between the bearings of N. E. by E. $\frac{1}{4}$ E. and E. by N. $\frac{1}{2}$ N.

Nash—on the Point—Two fixed lights, visible 18 and 16 miles. The lights in one, N. W. by W. $\frac{1}{4}$ W., lead a cable's length S. of Nash Sand.

Mumbles—on the Head—A fixed light, and visible 15 miles.

Scarweather—Light vessel—One Red revolving light, every 20 seconds. Off the W. end of the Sand. A half globe above usual globe.

Helwick—Light vessel—A light revolving every minute, and visible 10 miles. Off West end of the Sand, in $16\frac{1}{2}$ fathoms.

Caldy—on Caldys Island, S. part—A fixed light, and visible 19 miles.

St. Ann's—on St. Ann's Point, Milford Haven—Two fixed lights, and visible 19 and 17 miles. When in one, they lead clear of the Crow and Toes Rocks.

RICHARD ABBOTT,

BLOCK AND PUMP MAKER.

Mast Hoops, Jib Hanks, Hand Spikes, Capstan Bars, Lignum Vitæ and Lignum Vitæ Deas Eyes.

BENTLEY'S SPAR YARD, LOWER WATER STREET.

Orders promptly attended to.

SAILING DIRECTIONS.

PORTS OF NOVA SCOTIA.

APPROACHES TO HALIFAX HARBOUR, Etc.

HALIFAX HARBOR, possessing an area of about 10 square miles, is open at all seasons, and its navigation is scarcely ever interrupted by ice. It is one of the finest and safest in the world, affording space and depth of water sufficient for any number of the largest ships; and although the dangers off its entrance are such as to render great caution necessary,—especially during the fogs which usually accompany all winds from the sea,—it is easier of ingress and egress than any other large harbor on the coast. The entrance, $5\frac{1}{2}$ miles wide, lies between Devil island, in the north-east, and Chebucto head, to the south-west; and from mid-position between these points the general trend of the harbor is about N. by W., $\frac{1}{2}$ W., for a distance of 15 miles, to the head of Bedford Basin.

The city of Halifax is built on the declivity of a peninsula on the western side of the harbor, and 8 miles within its entrance. The citadel, immediately in rear of the city, and in a central position between its two entrances, stands on a commanding elevation 227 feet above the sea at high water, and with its flagstaff forms a leading mark, easily recognized from a vessel off the entrance of the harbor.

The harbor opposite the town is about three fourths of a mile broad, but at the Narrows—about a mile above the upper end of the city,—it contracts to less than a quarter of a mile, and then expands into Bedford basin, which has an area of ten square miles, and is completely landlocked. On the eastern side of the harbor, and immediately opposite the Naval yard, is the town of Dartmouth; between it and the city steam vessels ply continually. Eastern fort, with its tower, stands close to the shore, 2 miles farther to the southward, on the same side of the harbor.

Halifax is the chief rendezvous for the ships of the Royal Navy, in the North American station, and its selection as a port of call for the mail steamers to and from England, has increased its importance as a maritime city and advanced its commercial prosperity. Its harbor has the advantage of never being closed by ice; for although in very severe winters, when the low temperature has been accompanied by a continuance of calm weather, the inner part of the harbor has been

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frozen over, yet this has occurred only at intervals of many years; and even then, as the ice never extends beyond George Island, there is always a sufficient space of open water, between it and Macnab island, in which vessels may anchor in safety.

DANGERS:—*Rock Head Shoal*, the outer and most dangerous shoal off the entrance of Halifax harbor, is about 3 cables in length, and its shoalest part, with $3\frac{1}{4}$ fathoms water, lies with the tower of George island in line with Ives point, bearing N. by W., Sambro island on with White head, bearing S. W. $\frac{1}{4}$ W. the lighthouse on the island being open; and Devil island lighthouse N. E. $2\frac{1}{3}$ miles. A buoy, black and white vertical stripes, with staff and cage, is moored near the south-west end of this shoal in $6\frac{3}{4}$ fathoms water, rocky bottom; with the eastern end of George island in line with Ives point, and Sambro lighthouse island open of White Head, bearing S. W. $\frac{1}{2}$ W.

PORTUGUESE SHOAL, a small rocky patch with 5 fathoms water, lies W. S. W. half a mile from Rock head shoal, and from it the east point of George island is just touching the west side of the lighthouse on Maugher beach; Sambro island is concealed behind Chebucto head; and Camperdown flagstaff bears W. by S. A buoy with red and black horizontal stripes, is moored on its western side in 6 fathoms, with George island just open to the westward of the lighthouse on Maugher beach, bearing N. $\frac{1}{2}$ W.; Camperdown flagstaff W. $\frac{3}{4}$ S.; and Devil island lighthouse N. E. $2\frac{1}{3}$ E.

LEADING MARKS.—Sambro island kept well open S. E. of White head, bearing S. W. $\frac{1}{2}$ W. will lead clear to the southward of Rock head and Portuguese shoals. The tower on George island apparently touching the east side of the lighthouse on Maugher beach, bearing N. $\frac{3}{4}$ W., will lead through between them; and George island well open to the west of the lighthouse on Maugher beach, bearing N., $\frac{1}{4}$ W., will lead clear to the westward of them, and also nearly midway between Neverfail and Thrumcap shoals.

WINDSOR.—The town of Windsor, and capital of county of Hants, stands at the confluence of the Avon and St. Croix rivers. The approaches to Avon river are rendered difficult on account of extensive flats, which, from the nature of the bottom and velocity of the tides, must be continually shifting their positions; and as the channels between are narrow and circuitous, without any well defined leading marks, it is absolutely necessary that strangers should obtain the services of a local pilot.

ADVOCATE BAY lies between capes Chignecto and d'Or, and near its head affords good anchorage with winds from W. N. W. round by north to E. S. E.; but care must be taken to get under weigh as soon as the wind hauls round to the southward, as in such cases it frequently veers round to, and blows hard from the westward.

DIGBY GUT is a narrow opening half a mile in breadth, with steep acclivities on each side, and a deep water channel leading into Annapolis basin, on the western side of which stands the town of Digby. The shore on each side the gut is rocky and steep for several leagues, as are also the points of entrance, especially the one on the eastern side, which has deep water within a few fathoms of the shore.

Through the gut the stream of ebb and flood sets with a velocity of 4 to 5 knots an hour, causing various eddies and whirlpools; the truest stream will be found on the eastern side. Vessels wishing to obtain temporary anchorage may find it at the entrance of the gut, on the western side, about half a mile within the light-house. Here the anchorage is good in about 7 fathoms, mud, about a cable from the shore, and sheltered from all winds except between N. W. and E. N. E.

YARMOUTH HARBOR.—The town of Yarmouth is of considerable extent, being upwards of 2 miles in length in a continuous line. It exports a large amount of fish, and supplies can generally be obtained. There is also a gridiron capable of taking vessels under 800 tons. The anchorage within Bunker island is safe from all winds, but the channel leading to it is narrow, circuitous, and being studded with dangers should not be attempted without a pilot, whose services can be procured by making the usual signal when off the lighthouse. In the event of a vessel being caught in the sound during a south-west gale, and compelled to run for the inner anchorage, the following directions may prove serviceable:—

On the end of a reef extending from the south-west point of Bunker island stands a beacon, on which is erected a light tower, exhibiting from an elevation of 27 feet above high water a *fixed red* light, which should be seen in clear weather from a distance of about 10 miles. The light will be visible from the southward, between the bearings of N. E. by N. and N. $\frac{1}{4}$ E., also from the north-westward over Stanwood beach, between the bearings of S. $\frac{1}{2}$ E. and S. E. $\frac{1}{2}$ E.

Caution.—The light cannot be run for on the bearings of S. $\frac{1}{2}$ E. and S. E. $\frac{1}{2}$ E., as the only entrance to Yarmouth harbor is through Yarmouth sound and round cape East.

Directions.—If from the sound anchorage, run to the north-east, inside the Hen and Chickens, until the north end of the ship's stern bears north, and steer for it, keeping about a cable from its east side, and pass on the western side of the beacon about the same distance.

After passing the beacon steer for the Independent church, keeping about 2 cables from the Bunker island shore; about $1\frac{1}{4}$ cable to the northward of Battery point good anchorage will be found in $5\frac{1}{2}$ fathoms.

The channel leading up to Yarmouth is marked with beacons and buoys: *red* on starboard side and *black* on port; about two-thirds of a mile inside Battery point the channel takes a sharp turn to the eastward, the spar, marking the turning, has a barrel on it painted *red*.

DAIRY THERMOMETERS,

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BREWERS' THERMOMETERS,

HOUSE, OUT DOOR AND GREENHOUSE THERMOMETERS.

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J. W. GABRIEL.

HARBOR REGULATIONS.

Harbor Master for the Port of Halifax, N. S., E. O'Bryan.

THE RULES AND REGULATIONS FOR THE GOVERNMENT OF THE PORT OF HALIFAX, AND OF THE OFFICE OF HARBOR MASTER, authorize the Harbor Master or his Deputy to board every ship or vessel of the burthen of 50 tons (registered tonnage) and upwards, within twelve hours after the arrival of such ship or vessel within the port of Halifax, to see that she is moored in strict accordance with the regulations of the port, and to demand and receive as a compensation for his services according to the following scale, and under the prescribed legal restrictions,—(vessels belonging to or employed by Her Majesty's and the Government of the Dominion of Canada, excepted):

SCALE OF FEES.

- For every ship of 50 tons register or under, fifty cents.
- For every ship over 50 tons and not over 100 tons register, one dollar.
- For every ship over 100 tons and not over 200 tons register, one dollar and fifty cents.
- For every ship over 200 tons and not over 300 tons register, two dollars.
- For every ship over 300 tons and not over 400 tons register, two dollars and fifty cents.
- For every ship over 400 tons and not over 500 tons register, three dollars.
- For every ship over 500 tons and not over 700 tons register, four dollars.
- For every ship over 700 tons register, five dollars.

In case of any dispute arising between masters, owners, or other persons engaged in hauling ships or vessels in or out of any docks or wharves, it shall be the duty of the Harbor Master, if called upon, to give such directions in respect to the same as he may think fit, and all masters, pilots and other persons having the charge or command of any ships or vessels shall comply with the directions of the said Harbor Master or his Deputy in these respects, under the penalty of \$20 for each and every neglect or refusal so to do.

If any vessel is dangerously anchored, moored, &c., so as to be unsafe to any other vessel previously moored, fastened or anchored in

the harbor, the Harbor Master or his Deputy is authorized to order such alteration as may be necessary to prevent insecurity and danger ; and the person having charge of such vessel shall comply with the directions in this respect under a penalty of \$20 for each offence.

It shall be the Harbor Master's duty to see that a track be left open for ferry and mail steamers.

Steamers, entering or leaving Halifax harbor, (except those of the Imperial or Dominion governments), are required to proceed at half speed while inside of George's island. \$40 penalty for violating the law.

Whenever any vessel, short of hands, is ordered to be moved, the Harbor Master may employ a sufficient number of extra hands to effect her removal, at the expense of such vessel.

Vessels in the stream, loading or discharging coal, ballast, and such materials, shall have a sufficient piece of canvass or tarpaulin to prevent any portion thereof from falling into the harbor, under the penalty of \$20 for each and every offence, to be paid by the owner, master or person in charge of such vessel.

Whenever the Harbor Master shall find vessels at the wharves with main, jib or spanker booms rigged out so as to incommode other vessels, it shall be his duty to direct them to be rigged in, and in the event of non-compliance, all accidents to the same shall be at the risk of the persons so offending.

No vessel shall be left without some person to take charge of her, by night and by day, when anchored in the stream ; and all vessels lying at anchor in the harbor shall keep a clear bright light burning at least 6 feet from the uppermost deck, from sunset until sunrise. No vessel lying in the stream shall have any tow-line, hawser, or other thing made fast to the shore or any wharf, except for the purpose of hauling in or out.

No boat or vessel, laden or partly laden with hay or straw, that may come into any slip, pier or wharf, shall have any fire on board, under the penalty of \$8, to be paid by the owner, master or other person having charge of her.

No ballast, stone, gravel or rubbish of any kind shall be unladen or thrown from any vessel, boat, scow, &c., or by any person from the beach or shore of the city, into any part of the harbor, or upon the beach or shore thereof, or between high and low water mark, under the penalty of \$40 for each and every offence, to be paid by the owner, master or person having charge of the craft from which such matter shall have been discharged, or by other person violating this law.

No explosive material whatever shall be landed in the city of Halifax without permission, and when permitted, to be landed under such regulations and in such quantities as shall be stated in writing by the Harbor Master.

Any vessels coming into Halifax harbor, (except those belonging to the Imperial and Dominion Governments), having any gunpowder on board exceeding 25 lbs., such gunpowder exceeding that quantity shall be unladen within 48 hours after her arrival, and before bringing her alongside of any pier or wharf in the city, under the pain of for-

feiture of such gunpowder, and the penalty of \$40 for each and every offence, to be paid by the owner, master, or person having charge or command of such vessel; and whenever gunpowder is discharged from any vessel in the harbor, the same shall be conveyed by water to some safe and secure place for the deposit of gunpowder without the limits of the city, and covered with a tarpaulin or other secure covering during its conveyance, under the penalty of \$20 for each and every offence, to be paid by the owner or the person having charge or direction of its conveyance.

No gunpowder shall be taken or received on board of any ship or vessel bound to sea (those belonging to or employed by the Imperial and Dominion Governments excepted) while such ship or vessel remains at any pier or wharf in the city, and until she shall be cleared at the Custom House and ready for sea, except with the knowledge and sanction of the Harbor Master; in which case, as soon as the gunpowder is on board, the vessel shall be removed to the stream, (wind and weather permitting), under the pain of forfeiture of such gunpowder, and further penalty of \$40 for each and every offence, to be paid by the owner of such ship or vessel into which such gunpowder may be so received, contrary to the true intent and meaning hereof, or by the person having charge or command of her; and when it is intended to take or load any gunpowder on board any vessel lying in the harbor, the same shall be conveyed by water to such vessel, and during its conveyance securely covered in the manner hereinbefore mentioned, under the penalty of \$20 for each and every offence, to be paid by the owner or owners of such gunpowder, or the person having charge or direction of such conveyance.

All forfeited gunpowder shall be seized by the Harbor Master, or person deputed by him, conveyed to and deposited in some safe and secure place without the limits of the city, and upon conviction of the offender, the Harbor Master or his Deputy may, within three days after, sell it at public auction, by sample; the proceeds of such sale, after deducting the necessary costs and charges, shall be paid by the Harbor Master to the credit of the Receiver-General of the Dominion.

GENERAL PENALTIES.—The penalty for violation of, or not conforming to the provisions of the law, and for disobeying the lawful orders or directions of the Harbor Master or his Deputy, in respect to any provision for which no penalty is hereinbefore prescribed, shall be \$20, to be imposed upon the owner or person in charge of the ship or vessel not conforming to the particular requirements.

J. W. GABRIEL

Is connected with all the principal merchants by TELEPHONE, Masters of Vessels can order their Chronometers by this means and save time. Sent to and from ships by careful carriers.

PILOT COMMISSIONERS

FOR THE

PORT OF HALIFAX, N. S.

John Pugh, *Chairman*; Daniel Cronan, W. Roche, Jr., J. Taylor Wood, Joseph Seeton, Lewis Anderson, David Hunter. *Secretary and Treasurer*, F. D. Corbett.

LIST OF LICENSED PILOTS.—1882.

- No. 1. John Fleming, Ketch Harbor.
2. Thomas Holland, Duncan's Cove.
3. James Holland, Duncan's Cove.
4. William Baker, Halifax.
5. Bernard Gallagher, Halifax.
6. Daniel Martin, Duncan's Cove.
7. Joseph Reno, Herring Cove.
8. Patrick Hayes, Herring Cove.
9. Hugh Munro, Herring Cove.
10. Jeremiah Holland, Duncan's Cove.
11. Edward Bayers, Ketch Harbor.
12. James Hanrahan, Ferguson's Cove.
13. William Beazley, Ferguson's Cove.
14. John Hayes, Herring Cove.
15. James Spiers, ———.
16. John Beazley, Ferguson's Cove.
17. Charles Glazebrook, Ferguson's Cove.
18. Richard O'Neal, Portuguese Cove.
19. William White, Herring Cove.
20. Thomas Hayes, Herring Cove.
21. Thomas Reno, Herring Cove.
22. Charles Martin, Sambro.
23. John Simmonds, Lower Prospect.
24. John Johnson, Bear Cove.

GENERAL POWERS OF PILOTAGE AUTHORITIES.

The Pilotage Act for the District of Halifax, N. S., provides that every pilotage authority shall have power by by-law, confirmed by the Governor in Council, to determine the qualifications of pilots applying to be licensed as pilots; to make regulations respecting the approval, licensing, management and maintenance of pilot boats, life preservers, &c.; to aid companies for the support of pilot boats; to make regula-

tions as to licenses and certificates, and for the government of pilots, with rules for punishing breaches of regulations; to fix and alter pilotage dues; to provide for the compulsory retirement of aged, infirm or intemperate pilots; to decide questions and disputes between masters of ships and others respecting pilotage; to establish pilot funds (except in Quebec and Montreal) for the relief of superannuated or infirm licensed pilots, or of their wives, widows or children, and to make any new regulations respecting funds applicable to those purposes, with the terms and conditions upon which they may be appropriated; to repeal or alter previous by-laws, and to impose penalties under by-laws, and provide for their recovery and application. They are also required to make annual returns to the Minister, on or before the 10th January, of names and ages of pilots, &c. made up to 31st December previous, with receipts and expenditures of all moneys received.

LICENSED PILOTS, &c.

Every qualified pilot shall receive a license containing his name, place of abode, description of his person, &c., which license shall be registered and posted up at the Custom House of the principal port of the district in which he is licensed to act,—a licensed pilot will not be entitled to act as such until his license is registered. Copies of the Pilotage Act, and of dues and by-laws, to be furnished to and produced by pilots to the master of any ship or other person employing them, when required to do so. Every branch or licensed pilot who retains a license two years without acting as a pilot (unless by special permission, sickness, &c.) shall forfeit his license. Every licensed pilot compelled to retire shall deliver up his license to the authority by whom he is suspended;—and on attaining the age of 65 years every licensed or branch pilot shall deliver up his license, leaving the grant of a new license to the decision of the pilotage authority. Lists of pilots are to be annually transmitted to Collectors; permanently posted up in custom houses and also registered in the respective offices of pilotage authorities, for general inspection. Every pilot compelled to retire on account of age or bodily infirmity, and every widow and child of a deceased pilot shall be entitled to such pension or assistance as the authority of the district in which he was licensed may deem it proper to grant out of the pilot fund (if any) of such district.

RIGHTS OF PILOTS GENERALLY.

Every pilot taken out of his district shall be entitled to cabin passage, and \$2 a day over and above the pilotage dues, from the time the ship passes the limit in which he was engaged to pilot her until his return to the place where he was taken on board, or if discharged from the ship at a distance from such place, he shall be entitled to receive his travelling expenses by cabin passage or first-class conveyance by land, as the case may be, over and above such pilotage dues and other sums.

In case a licensed pilot is placed in quarantine he shall be entitled

to suitable board and accommodation, and \$3 a day extra, from the time he is placed in quarantine until his return to the place where he was taken on board ; or if discharged at a distance from the last mentioned place, to his reasonable travelling expenses over and above such pilotage dues and other additional sums.

Any licensed pilot may quit a ship as soon as it is anchored or moored after completion of her voyage or removal, or as soon as she passes out of his pilotage district, whichever may first happen ; when the service for which he was hired shall be held to have been performed.

A pilot suspended or condemned to pay a penalty for causing damage to a ship, shall not be entitled to any pilotage dues if the amount of such damage is equal to or exceeds that of such dues, nor, if it is less, to more than the excess of the dues over that of the damage.

RIGHTS OF PILOTS WHERE DUES ARE COMPULSORY.

When a ship cannot be boarded, a licensed pilot shall be entitled to pilotage for leading, the same as if he had been on board and piloted the ship ; the pilot shall keep his flag flying while leading, and the ship shall show her ensign at her fore.

Unlicensed persons acting as pilots are liable to a penalty of \$40, except in cases in which no licensed pilot responds to the signal of a ship in want of one, or when a ship is in distress.

A licensed pilot may supercede an unlicensed one by showing his proper signal and exhibiting his license, but the master shall pay the unlicensed pilot a proportionate sum for his services and deduct it from the charge of the licensed pilot. If not superceded, the unlicensed pilot shall be entitled to the full pilotage dues. Any unlicensed pilot who continues in charge of a ship after a licensed pilot offers to take charge of her is liable to a penalty of \$100.

PILOTAGE DUES.

The owner, master, recognized consignee or agent of a ship is liable to pay pilotage dues, provided such recognized consignee or agent has moneys in his hands received on account of such ship, and he may retain the amount of pilotage dues, together with expenses incurred by such liability. All pilotage dues may be recovered as a debt due to the pilot, corporation of pilots, or pilotage authority. Employment of pilot not to be compulsory.

COMPULSORY PAYMENT OF PILOTAGE DUES, AND EXEMPTIONS THEREFROM.

Compulsory.—Every ship which navigates within either of the pilotage districts of Quebec, Montreal, Halifax or St. John, or made compulsory by order in Council, shall pay pilotage dues, unless either such ship be on her inward voyage and no licensed pilot offers his services, or she is exempted under the provisions of the Pilotage Act from payment of such dues : and if such ship be on her outward voy-

age, and the owner or master does not employ or give his ship into the charge of a pilot, such dues shall be paid to the pilot authority of this district.

Exemptions.—Ships belonging to Her Majesty ; ships wholly employed in Her Majesty's service, either in the United Kingdom or in Canada ; steamships trading from port to port in the same province, or between any one or more of the provinces of Quebec, New Brunswick, Nova Scotia or Prince Edward Island, and others of them, or employed on voyages between any ports in the said provinces and the port of New York or any United States ports on the Atlantic, north of New York, shall be exempt from the compulsory payment of pilotage dues ; except only in the ports of Halifax, Sydney Pilotage District, Miramichi and Pictou—as respects each of which ports the pilotage authorities of the district may, from time to time determine, whether any of the steamships so employed shall be wholly or partially exempt from the compulsory payment of pilotage dues ; also ships not exceeding 250 registered tonnage, such as the pilotage authority of the district may exempt in such district.

Exempted ships not belonging to Her Majesty, nor wholly employed in Her Majesty's service, are liable to pay pilotage dues in certain cases by way of penalty.

A non-exempted ship arriving at a district where payment of pilotage dues is compulsory, shall display the prescribed signal for a pilot, and upon sighting a pilot boat lay to or by other practical means facilitate the pilot's coming on board ; and in default shall be liable to pay a sum equal to the amount which would be payable for piloting such ship.

Pilotage dues are payable—if the master of a ship does not accept the offered services of the first licensed pilot ; and also if a pilot's service is declined after a ship has signalled for one.

In case any approaching ship requires the services of a pilot, the master shall display the usual day or night signal shown by merchant ships on such occasions.

No exemption from payment of dues when a pilot is taken voluntarily.

Every master of an exempted ship, when navigating such ship without a pilot, in any pilotage district, shall have all the powers and duties possessed by a licensed pilot.

No owner to be free from liability by reason of employing a licensed pilot.

OFFENCES OF PILOTS.

Fraud or offence against customs or inland revenue ; corrupt practices relating to ships, their tackle, cargoes, crews, passengers, persons in distress at sea or by shipwreck, or to their moneys, goods, or chattels ; if he lends his license, acts as pilot whilst suspended, or in a state of intoxication ; employs (on behalf of any vessel he has charge of) anything beyond what is necessary, with the intent to enhance the expense of pilotage for his own or any other person's gain ; refuses or

delays (without reasonable excuse) to take charge of any ship within the limits of his license, upon the signal for a pilot being made by such ship, or upon being required to do so by the master, owner, agent or consignee thereof, or any officer of the pilotage authority or principal officer of Customs; attempts, upon being so signalled, or required, to make any special bargain for salvage; unnecessarily causes any cable belonging to a ship to be cut or slipped; refuses, when requested to conduct the ship into any port or place into which he is licensed to act, except on reasonable ground of danger to the ship; or quits the ship without the consent of the master, before the service has been performed. For each of the foregoing offences the perpetrator is liable to damages and penalty.

Pilots are liable to penalty for any act tending to the destruction, or serious damage of a ship or immediately to endanger the life or limb of any person on board; also to imprisonment, &c., for refusing or omitting to do any lawful act required to preserve the ship from loss, and persons on board from danger; for misrepresentation of circumstances, and for demanding or requiring more than his legal dues.

PILOT BOATS, &c.

All pilot boats regularly employed shall be approved and licensed by the pilotage authority of the district, in which they are employed, and severally constructed and painted, with dimensions of flag and other characteristics, in accordance with the Pilotage Act. Pilot to display his flag under ensign of ship in which he is engaged, and if he fail to do so, incur a penalty not exceeding \$80; the master of such ship shall be liable to the same penalty if he does not permit such flag to be displayed.

No clearance shall be granted to any ship liable to pilotage dues at any port in Canada where there is a duly constituted pilotage authority, unless legal authority has been produced to the Custom House officer to grant such clearance.

BYE-LAWS.

Epitome of Rules and Regulations of the Board of Pilot Commissioners for the Port of Halifax, N. S.

The Pilot limits for the Port of Halifax (as established by Order-in-Council) shall extend in a north-east line from Chebucto Head Light to Devil's Island Light, thence to extend seawards in a radius of 15 miles.

A pilot is required to give a bond to the Commissioners at the time of receiving his license, for his compliance with the Harbor and Pilot Regulations—himself in the sum of \$80, and two sureties in \$40 each. Such bond to be renewed every year. On receipt of his license he shall pay \$25, and \$5 for each renewal, with \$1 for his bond and \$1 for every renewal, such sums to be paid into the pilotage fund. He shall not lend his license under a penalty of \$40. In taking charge

of any vessel he shall behave himself with civility, be strictly sober, use the utmost care for the safety of the vessel, and to prevent her doing damage to other vessels. No pilot or person in charge shall anchor a vessel so as to prevent a free passage for other vessels to any wharf at which they are severally accustomed to take berths. On boarding any vessel every licensed pilot shall inquire if any cases of contagious disease be on board, or if such vessel be an emigrant ship, or from a port making her liable to quarantine laws; in either case he shall cause the national flag to be hoisted at the main, and bring her to anchor at the usual place for riding quarantine, and not suffer any person to board or leave the vessel until permitted by the Health Officer. Any pilot piloting a vessel inwards shall be entitled on leaving the port to pilot her to sea, unless the pilotage authorities shall direct otherwise. Any pilot in waiting for an outward bound vessel, if detained from stress of weather or other causes, shall be entitled to receive \$3 per day in addition to outward pilotage. Whenever any accident shall occur to or by a vessel whilst in charge of a pilot, it shall be the pilot's duty, after ceasing to be in charge, to personally report himself to the office of the Secretary, and also the accident that has occurred.

Defaulters in relation to the foregoing Regulations are liable to a penalty of \$40 for every offence.

Any questions or disputes arising between pilots and masters of vessels and others, respecting pilotage, extra remuneration, salvage, &c. shall be submitted to the Commissioners for adjustment, and the decision of the Commissioners or a majority of them, respecting such questions and disputes, in which the subject matter does not exceed \$40, shall be final and binding on all parties, and every licensed pilot acting contrary to this regulation, or neglecting to appear before the Commissioners after 24 hours' notice, when his attendance shall be required by them on any occasion, or who shall give unnecessary trouble, annoyance or detention to masters of vessels, shall for every such offence be liable to a penalty not exceeding \$40, and also to suspension or dismissal at the discretion of the Commissioners.

PILOTAGE.

The Rates of Pilotage for the Port of Halifax shall be as follows:—

Vessels of 200 tons and under, \$10.00 Inward and \$6.00 Outward.

Vessels of 200 to 300 tons, \$13.00 Inward and \$ 8.00 Outward.

Vessels of 300 to 400 tons, \$16.00 Inward and \$11.00 Outward.

Vessels of 400 to 500 tons, \$18.00 Inward and \$12.00 Outward.

Vessels of 500 to 600 tons, \$20.00 Inward and \$13.00 Outward.

Over 600 tons, an additional one dollar for every 100 tons (or fractional part thereof), above 600 tons Inwards, and 80 cents Outwards. Outward pilotage for all vessels of 200 tons and upwards to be compulsory. Ships of Her Majesty's Navy and all ships of war, when taking a pilot, to pay the same rates of pilotage as Merchant vessels.

All pilotage dues to be paid to the Treasurer of the Board, and all

suits for the recovery of pilotage dues shall be brought in the name of the Halifax Pilot Commissioners. Pilots are required to report to the Treasurer the arrival and departure of any vessel in which they have been employed, and pay over to him the dues collected for their services. Any pilot demanding or receiving a greater sum for pilotage than the lawful charge, is liable to a penalty of \$40. Pilots for the port of Halifax shall not exceed 25. All approved pilot boats shall be licensed for one year; license fee, \$25; they shall be not less than 30 tons register, the number not to exceed four, each boat to have one or more suitable boat to convey pilots to and from vessels, and for assisting vessels in distress; also to have life preservers for each pilot and apprentice belonging to such pilot boat. The owner of each licensed pilot boat must appoint a Master whose name shall be endorsed on the register of the Customs Authority, and the said master shall be custodian of the Register and License of said boat. All licensed Pilot Boats shall have the characteristics, &c. required by section 75 of the Pilotage Act. Each licensed pilot boat shall have on board two apprentices of good moral character, to undergo a prescribed training for the purpose of rendering them eligible to be licensed pilots. All coal vessels of Nova Scotia over 120 and under 250 tons shall pay one half the tariff rates inwards, if spoken by a pilot and his services not accepted; but any such vessel taking a pilot voluntarily shall pay full tariff rates, such vessel to be exempted from compulsory pilotage outwards. Steam vessels trading between Halifax and any port in the Dominion of Canada, or the United States of America on the Atlantic, north of and including the port of New York, shall pay one-half the tariff rates, if spoken to by a pilot and his services are not accepted, but any such vessel taking a pilot voluntarily shall pay full tariff rates. All such steamships shall pay one-half outward pilotage if the services of a pilot are not required, but if the services of a pilot are accepted, she shall pay full tariff rates. Vessels registered in the Dominion of Canada, not over 120 tons, engaged in trading or fishing voyages within ports in the Dominion of Canada, Newfoundland and St. Pierre, Miquelon, to be exempted from compulsory pilotage. Any licensed pilot not complying with the foregoing bye-laws or evading or attempting to evade the sense, intent, or meaning of any of them, shall be liable to a penalty of \$40, and in case of a continuing breach of the same, shall be liable to have his license withdrawn or suspended at the discretion of the Pilotage Authority.

QUARANTINE REGULATIONS.

The Act of the Parliament of Canada, "relating to Quarantine and Public Health," empowers the Governor in Council to make, from time to time, such regulations as he thinks proper for enforcing compliance with all the requirements of the said Act, and concerning the entry or departure of boats or vessels at the different ports or places in Canada, and concerning the landing of passengers or cargoes from such boats or vessels, or the receiving of passengers or cargoes on board of the same, as may be best calculated to preserve the public health, and for ensuring the due performance of quarantine ;—also for the thorough cleansing and disinfecting of such vessels, goods, or things, so as to prevent, as far possible, the introduction or dissemination of disease into or in Canada, and to appoint such officers as he may deem necessary, and assign to them such powers as may be required to carry out the prescribed regulations ; as well as to impose penalties for the breach thereof.

PORT OF HALIFAX.—All boats, ships or vessels coming into the harbor having at the time of their arrival, or having had during their passage from the places where they respectively cleared, any person on board laboring under Asiatic Cholera, Fever, Small Pox, Scarletina, Measles, or other infectious and dangerous disease, or on board of which any person shall have died during such passage, or which, being of less tonnage than 700 tons measurement, shall have on board 13 or more steerage passengers, or which being of greater than 700 tons, shall have on board 50 or more steerage passengers, or which shall have come from some infected port, shall make their Quarantine in the harbor of Halifax, on board such vessels or at such place on shore, and in such manner as shall be directed by the Inspecting Physician of the said Port of Halifax, and there remain and continue until such ships or vessels shall be discharged from such Quarantine, by such license or passport, and discharge given without fee or emolument of any kind, as shall be directed or permitted by such order or orders as shall be made by the Governor, with the advice of the Privy Council ; and until the said ships and vessels shall respectively have performed such Quarantine and shall be discharged therefrom by such license or passport and discharge as aforesaid, persons, goods or merchandise, which shall be on board such boats, ships or vessels, shall not come or be brought on shore, or go or be put on board of any other ship or vessel in Canada, except at such place indicated as aforesaid when duly required by competent authority.

All boats, ships or vessels of the class and description hereinbefore

mentioned, as liable to make their Quarantine in the harbor of Halifax, shall anchor within a mile of the southern end of George's Island, there to be inspected by the Inspecting Physician, and ordered, according to circumstances aforesaid.

The Inspecting Physician of the Port of Halifax shall visit, on their arrival, such boats, ships or vessels, and shall direct them as best calculated for the Public Health, and in accordance with the intent and meaning of the present regulations and orders in Council, which may be communicated to him from time to time. With the exception of locality, these regulations apply also to the Port of St. John.

Inspecting Physicians of the Ports of Halifax and St. John (or any medical officer nominated to act as assistant or in their absence) shall have, respectively, the control over all officers and employes, who may be appointed or employed for the service of the Quarantine in the said Ports, respectively, and the medical attendance over the sick and healthy passengers, or crew detained on board, or who may have been landed to undergo the said Quarantine on shore, and the said Inspecting Physicians shall have, respectively, the same duties to perform and the same authority as those hereinbefore assigned to the Medical Superintendent of the Quarantine of Grosse-Isle, and shall fulfil the said duties and exercise the same authority in the same manner as prescribed for the said Medical Superintendent.

In all cases where vessels having passengers on board, on account of sickness amongst such passengers, shall be detained in Quarantine, the Master or person in charge may, on application to the Inspecting Physician of Halifax or St. John, be allowed to land passengers with their luggage; and the vessel being properly cleansed, purified and disinfected under the superintendence and with the license of the Inspecting Physician, may proceed up the harbor without the said passengers, upon the master or person in charge paying to the person appointed to receive it, 10 pence for each passenger, for expense of conveyance, and also at the rate of one shilling per diem for each of the passengers, to reimburse the expense of their maintenance for the time during which such vessel, in the judgment of the Inspecting Physician, would have to be detained in Quarantine waiting for the passengers not affected with any of the pestilential or infectious diseases aforesaid, otherwise such vessel shall be detained in Quarantine until the passengers not sick of the aforesaid diseases, shall be cleansed, washed, purified and disinfected.

Pilots of the Port of Halifax and St. John respectively, having been furnished with copies of the said Act, and of these regulations, shall exhibit them to the Master or person in charge of any boat, ship or vessel they may board:—every Pilot having charge of a vessel of the description of those liable to make Quarantine at the Ports of Halifax or St. John respectively, shall bring her to anchor within the limits of the anchorage grounds for the said ports respectively:—They shall also keep a Union Jack flying at the peak of all vessels under their charge, until boarded by the proper Medical Officer aforesaid.

All vessels trading between any ports or places within Canada, and not having touched at any places without the Dominion nor commun-

icated with any other vessel which shall have arrived from any port without the Dominion, shall be exempt from the foregoing rules and regulations so far as respects the necessity of going to or stopping at the anchorage ground aforesaid, nor shall the said rules and regulations apply to any vessel of war, or to transports or vessels having Queen's troops on board accompanied by a Medical Officer, and in a healthy state, or to any steamer, unless sickness or death may have occurred during the passage.

Any person who shall contravene, either by omission or commission, any of the foregoing Regulations, shall for every such offence incur and pay a Fine not exceeding FOUR HUNDRED DOLLARS, to be recovered in the manner prescribed by the said Act; and every person who, upon conviction of any such offence, shall fail to pay the amount of fine which he shall have been condemned to pay, shall be imprisoned until such fine be paid.

— T H E —

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Having excellent passenger accommodation, leave T Wharf alternately,

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Arriving at Halifax at daylight, Monday morning, Port Hawkesbury early Tuesday morning, Pictou, Tuesday forenoon, and Charlottetown, Tuesday afternoon.

Returning.—Leave Charlottetown every Thursday at 5 p.m., Port Hawkesbury, every Friday morning, and Halifax every Saturday at 4 p. m., arriving in Boston early Monday morning, in season to connect with all Trains for the South and West

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TABLE

For finding the Distance of Terrestrial Objects at Sea, in Geographical or Nautical Miles, according to their respective elevation and the elevation of the eye of the observer.

Height in feet.	Dist. in miles.	Height in feet.	Dist. in miles.	Height in feet.	Dist. in miles.	Height in feet.	Dist. in miles.	Height in feet.	Dist. in miles.	Height in feet.	Dist. in miles.	Height in feet.	Dist. in miles.
1	1.15	25	5.74	49	8.0	180	15.4	420	23.5	820	32.9	2500	57.4
2	1.62	26	5.86	50	8.1	190	15.8	430	23.8	840	33.3	2600	58.6
3	1.99	27	5.97	55	8.5	200	16.2	440	24.1	860	33.7	2700	59.7
4	2.30	28	6.08	60	8.9	210	16.6	450	24.4	880	34.1	2800	60.8
5	2.57	29	6.18	65	9.3	220	17.0	460	24.6	900	34.5	2900	61.8
6	2.81	30	6.30	70	9.6	230	17.4	470	24.9	920	34.8	3000	63.0
7	3.04	31	6.40	75	9.9	240	17.8	480	25.2	940	35.2	3100	64.0
8	3.25	32	6.50	80	10.3	250	18.2	490	25.4	960	35.6	3200	65.0
9	3.45	33	6.60	85	10.6	260	18.5	500	25.7	980	36.0	3300	66.0
10	3.63	34	6.70	90	10.9	270	18.9	520	26.2	1000	36.3	3400	67.0
11	3.81	35	6.80	95	11.2	280	19.2	540	26.7	1100	38.1	3500	68.0
12	3.98	36	6.90	100	11.5	290	19.6	560	27.2	1200	39.8	3600	69.0
13	4.14	37	6.99	105	11.8	300	19.9	580	27.7	1300	41.4	3700	69.9
14	4.30	38	7.09	110	12.1	310	20.2	600	28.1	1400	43.0	3800	70.9
15	4.45	39	7.17	115	12.3	320	20.6	620	28.6	1500	44.5	3900	71.7
16	4.60	40	7.27	120	12.6	330	20.9	640	29.1	1600	46.0	4000	72.7
17	4.73	41	7.36	125	12.8	340	21.2	660	29.5	1700	47.3	4100	73.6
18	4.87	42	7.44	130	13.1	350	21.5	680	30.0	1800	48.7	4200	74.4
19	5.01	43	7.54	135	13.3	360	21.8	700	30.4	1900	50.1	4300	75.4
20	5.14	44	7.62	140	13.6	370	22.1	720	30.8	2000	51.4	4400	76.2
21	5.26	45	7.70	145	13.8	380	22.4	740	31.2	2100	52.6	4500	77.0
22	5.39	46	7.79	150	14.1	390	22.7	760	31.7	2200	53.9	4700	78.8
23	5.51	47	7.88	160	14.5	400	23.0	780	32.1	2300	55.1	5000	81.2
24	5.62	48	7.96	170	15.0	410	23.3	800	32.5	2400	59.2	1 mile	83.5

SACCHAROMETERS, for Brewers.

HYDROMETERS, for Testing Spirits.

SALINOMETERS, for Testing Water in Steamship Boilers to avoid incrustation.

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TABLE,

For Finding the Distance of an object, by
two bearings and the distance run
between them.

POINTS.		Difference between the course and the FIRST bearing — Points.																																			
		2	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9	9½	10	10½																		
Difference between the course and the SECOND bearing.	4	1	00																																		
	4½	0	81	1	23																																
	5	0	69	1	00	1	45																														
	5½	0	60	0	85	1	17	1	66																												
	6	0	54	0	74	1	00	1	35	1	85																										
	6½	0	49	0	67	0	88	1	14	1	50	2	02																								
	7	0	46	0	61	0	79	1	00	1	27	1	64	2	17																						
	7½	0	43	0	57	0	72	0	90	1	11	1	39	1	77	2	30																				
	8	0	41	0	53	0	67	0	82	1	00	1	22	1	50	1	87	2	41																		
	8½	0	40	0	51	0	63	0	76	0	92	1	09	1	31	1	58	1	96	2	50																
	9	0	39	0	49	0	60	0	72	0	85	1	00	1	18	1	39	1	66	2	03	2	51														
	9½	0	38	0	48	0	58	0	69	0	80	0	93	1	08	1	25	1	46	1	72	2	08	2	60												
	10	0	38	0	47	0	57	0	66	0	76	0	88	1	00	1	14	1	31	1	51	1	76	2	11	2	61										
	10½	0	38	0	47	0	56	0	65	0	74	0	84	0	94	1	06	1	19	1	35	1	55	1	79	2	12	2	60								
	11	0	39	0	47	0	56	0	64	0	72	0	81	0	90	1	00	1	11	1	24	1	39	1	57	1	80	2	11	2	56						
	11½	0	40	0	48	0	56	0	63	0	71	0	79	0	87	0	95	1	05	1	15	1	27	1	41	1	58	1	79	2	08	2	50				
	12	0	41	0	49	0	57	0	64	0	71	0	78	0	85	0	92	1	00	1	08	1	18	1	29	1	41	1	57	1	76	2	03	2	41		
	12½	0	43	0	51	0	58	0	65	0	71	0	77	0	83	0	90	0	97	1	03	1	11	1	20	1	29	1	41	1	55	1	72	1	96	2	30

RULE.—Multiply the distance run in the interval between the two bearings by the number found in the table under the difference between the course and the first bearing, and opposite the difference between the course and second bearing. The product is the distance at the time the second bearing was taken.

EXAMPLE.—A light-house, when first seen, bore W. N. W.; after running W. by S. 16 miles, it bore N. ½ W. Required, its distance when the second bearing was taken.

Difference between course and first bearing - = 3 points.

Difference between course and second bearing = 8½ points.

Corresponding tabular number - - - 0.63

And 16 miles × 0.63 = 10.8 miles, the distance required.

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rial
au-
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Dist. in miles.

0 57.4
0 58.6
0 59.7
0 60.8
0 61.8
0 63.0
0 64.0
0 65.0
0 66.0
0 67.0
0 68.0
0 69.0
0 69.9
0 70.9
0 71.7
0 72.7
0 73.6
0 74.4
0 75.4
0 76.2
0 77.0
0 78.8
0 81.2
0 83.5

pirits.
team-

Street.

TABLE

OF

Velocity & Pressure of Wind.

Velocity per Hour.	Pressure per Square Ft.	Designation of Wind.	Velocity per Hour.	Pressure per Square Ft.	Designation of Wind.	Velocity per Hour.	Pressure per Square Ft.	Designation of Wind.
MILES.	LBS.		MILES.	LBS.		MILES.	LBS.	
1	0.01	} Gentle. Light.	36	6.48	} High.	71	25.20	} Storm.
2	0.02		37	6.84		72	25.92	
3	0.04		38	7.22		73	26.64	
4	0.08		39	7.60		74	27.38	
5	0.12		40	8.00		75	28.12	
6	0.18	} Fresh.	41	8.40	} Gale.	76	28.88	
7	0.24		42	8.82		77	29.64	
8	0.32		43	9.24		78	30.42	
9	0.40		44	9.68		79	31.20	
10	0.50		45	10.12		80	32.00	
11	0.60		46	10.58		81	32.80	
12	0.72		47	11.04		82	33.62	
13	0.84	} Brisk.	48	11.52	} Storm.	83	34.44	
14	0.98		49	12.00		84	35.28	
15	1.12		50	12.50		85	36.12	
16	1.28		51	13.00		86	36.98	
17	1.44		52	13.52		87	37.84	
18	1.62		53	14.04		88	38.72	
19	1.80		54	14.58		89	39.00	
20	2.00		55	15.12		90	40.50	
21	2.20		56	15.68		91	41.40	
22	2.42		57	16.24		92	42.32	
23	2.64	58	16.82	93	43.24			
24	2.88	59	17.40	94	44.18			
25	3.12	} High.	60	18.00	} Storm.	95	45.12	
26	3.38		61	18.60		96	46.08	
27	3.64		62	19.22		97	47.04	
28	3.92		63	19.84		98	48.02	
29	4.20		64	20.48		99	49.00	
30	4.50	} High.	65	21.12	} Storm.	100	50.00	
31	4.80		66	21.78		110	60.50	
32	5.12		67	22.44		120	72.00	
33	5.44		68	23.12		130	84.00	
34	5.78		69	23.80		140	98.00	
35	6.12		70	24.50		150	112.50	

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THE BAROMETER,

This useful instrument being of leading importance to the mariner for measuring the weight of the air, and the variations of its pressure, in order to determine the changes in the weather, the heights of mountains, &c. the following valuable directions, by Mr. Patrick, merit the favorable consideration of ship masters, and others interested in navigation:—

The changes of the weather seldom produce a variation in the height of the mercury which passes the limits of 28 and 31 inches, which is therefore a sufficient length for the graduated scale, but to use the barometer as a weather glass, several particulars must be attended to.

1st. The rising of the mercury presages, in general, fair weather; and its falling, the contrary, as rain, snow, high winds, and storms.

2d. In very hot weather, the falling of the mercury indicates thunder.

3d. In winter, the rising presages frost; and in frosty weather, if the mercury falls three or four divisions (tenths of an inch), there certainly will follow a thaw; but in a continued frost, if the mercury rises, there will be snow.

4th. When foul weather happens soon after the fall of the mercury, expect but little of it; and on the other hand, little fair weather may be expected when it becomes quickly fair after the rising of the mercury.

5th. In foul weather, when the mercury rises much and high, and so continues two or three days before the foul weather has gone away, then a continuance of fair weather may be expected.

6th. In fair weather, when the mercury falls much and low, and continues so for two or three days before the rain comes, then a great deal of wet and high winds may be expected.

7th. The unsettled motion, or frequent rising and falling of the mercury, denotes changeable weather.

8th. The words on the plates are not so strictly to be observed as the rising and falling of the mercury, for if it stands at "Much Rain," and then rises to "Changeable," it presages fair weather, though not to continue so long as though the mercury had risen higher; and so, on the contrary, if the mercury stand at "Fair," then fall to "Changeable," it presages foul weather, though not so much as if it had sunk lower.

From this it appears that it is not from the point at which the mercury may stand, that we are to form a judgment of the state of the weather, but from its being in a state of rising or falling; therefore it is necessary to attend to the following directions:

d.

Designation
of Wind.

Storm.

Hurricane.

LIES,

t. . .

1st If the mercury is in a rising state, it stands higher in the middle of the tube than at the sides.

2d. If the middle is hollow, it indicates its fall.

3d. If level, it is steady.

4th. Before observation, gently tap the barometer near the top, as the mercury will occasionally, where the tubes are small, slightly hang to the sides of the glass, and prevent its predicting any very delicate change which may have taken place in the air.

The following explanation of the scale and vernier, and examples to show the manner of reading them, may be of use :

The scale is divided into inches and tenths, and again, by means of the vernier, subdivided into hundredths of an inch; the observations are, therefore, better made from the figures than the words.

Example 1.—Suppose the mercury to stand *nearly a tenth* above 30, turn up the vernier till the top stands even with the surface of the mercury, and observe which of its divisions or figures exactly coincides with any one of the divisions on the barometer scale; suppose 9 on the vernier to agree with one of the lines, the height of the mercury as then shown will be 30 in. '09, that is, 30 inches and 9 hundredths of an inch from the level of its surface in the cistern.

Example 2.—Suppose the mercury to stand a little below the 30, but not a tenth below, set the top of the vernier level with the mercury, and suppose 6 on the vernier to coincide with one of the lines on the barometrical scale, the height of the mercury will then be 29 in. '96 (hundredths), or rather more than $9\frac{1}{2}$ tenths above 29 inches.

The greatest height of the mercury is observed when an easterly or northerly wind prevails. Within the tropics, and near them, it does not vary more than from 1 to 3 tenths; this being the case, greater care should be taken in noticing the observations.

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ANCHOR LINE.—For Glasgow, London, Bristol, Mediterranean, East Indies, &c. Henderson Bros., 7 Bowling Green. F. M., black. N. S., red and white lights alternately.

ATLAS MAIL LINE.—Kingston, Carthagen, Greytown. Pim, Forwood & Co., 37 Wall Street. F. M. white, with red and white band and black top. N. S. 2 red lights simultaneously on bridge.

AMERICAN S. S. CO.—Philadelphia and Liverpool. P. Wright & Sons, Philadelphia. F. M. red with white keystone, black top and white band. N. S. red light, followed by Roman candle throwing out 6 red balls, followed by red light.

BRISTOL CITY LINE OF STEAMERS.—New York to Bristol direct. Arkell & Co., 118 Pearl Street. F. M. black, with broad white band in centre, blue star on it. N. S. red-green-red-green, Coston light.

BRAZIL MAIL S. S. LINE.—C. H. Mallony & Co., Agents, New York. N. S. green-red-green-white, Coston light.

CHARLESTON LINE OF STEAMERS.—For Florida, the South and Southwest. James W. Quintard & Co., Pier 27, N. R.

CLYDE'S WEST INDIA S. S. LINE.—William P. Clyde. N. S. single red Coston light.

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CENTAUR LINE.—For London and Hartlepool. William H. Thompson & Co., 15 Broadway. F. M. 2 narrow white bands and black top.

CROMWELL LINE.—For New Orleans, Halifax and St. John's. Clarke & Seaman, Pier 9, N. R. F. M. black, with black top and 2 narrow yellow bands dividing funnel into nearly three equal spaces. N. S., white-green-red-white Coston light.

CUNARD'S S. S. CO. (limited).—Between New York and Liverpool. Vernon H. Brown & Co., 4 Bowling Green. F. M. red with black top. N. S. blue light and 2 Roman candles, each throwing out 6 blue balls to a height not exceeding 150 feet, fired in quick succession.

- DOMINION S. S. CO.**—Portland, Montreal and Liverpool. D. Torrance & Co., Portland and Montreal. F. M. red with black top. N. S. a Roman candle showing 6 red stars at intervals of 5 seconds.
- GENERAL TRANSATLANTIC CO.**—Line between New York and Havre. Louis de Bebian, 6 Bowling Green. F. M. red with black top. N. S. rocket from bridge followed by blue light forward, white light amidships, red light aft, displayed simultaneously.
- GREAT WESTERN S. S. LINE.**—Bristol, England, direct. W. D. Morgan, 70 South Street. F. M. black, with red band with blue and white semi-circle, black top. N. S. three flashes of a blue Chatham light in quick succession.
- GUION LINE U. S. MAIL.**—Steamers for Queenstown and Liverpool. Williams & Guion, 29 Broadway. F. M. black, broad red band and black top. N. S. blue light forward and aft and on bridge simultaneously.
- HOLME LINE.**—New York to Plymouth, Eng. Bowring & Archibald, Agents, 57 Beaver Street, N. Y. F. M. red with black top.
- IMPERIAL GERMAN MAIL, HAMBURG-AMERICAN PACKET CO.**—For Plymouth, Cherbourg and Hamburg. Kunhard & Co., 41 Broad Street, F. M. black. N. S. white, red and blue fire balls, three each in succession at half minute intervals.
- IMPERIAL GERMAN MAIL, NORTH GERMAN LLOYD, S. S. CO.**—New York, Southampton and Bremen. Oelrichs & Co., 2 Bowling Green. F. M. black. N. S. two blue lights changing to red, one forward and one aft, simultaneously.
- INMAN LINE.**—Royal Mail Steamers, Queenstown and Liverpool. John G. Dale, 31 Broadway. F. M., black, with white band and black top. N. S., blue light forward and aft, and red light on bridge, simultaneously.
- LIVERPOOL, BRAZIL AND RIVER PLATTE STEAM NAVIGATION CO.**—Busk & Jevens, 39 Wall Street, F. M. Blue, white and black bands, black top. N. S. Roman candle throwing out 1 red, 1 white and 1 red ball in succession.
- MALLORY'S LINES.**—New York, Nassau, N. P. Matanzas and Texas Line. C. H. Mallory & Co., Pier 20, E. R. F. M. 2 black funnels with a red star between, in which are 5 small white stars, one on each ray, with white circle in centre, and small red star therein. N. S. Blue-red-white, and one red star burned in the air—Coston light.
- MEDITERRANEAN AND NEW YORK S. S. LINE.**—Adriatic and Black Sea. Phelps Bros. & Co., 103 Front Street. F. M. White with black top. N. S. None.
- MERCHANTS EXPRESS.**—Regular Line for Havre. Funch, Edye & Co., 27 South William Street. F. M. White with full red cross painted on it. N. S. None.
- MERCHANTS LINE.**—For Liverpool. Arkell & Co., 118 Pearl Street.
- MERCHANTS' S. S. CO. Limited.** Steam to Brazil. R. B. Borland, 114 Wall Street. F. M. Red with black top. N. S. None.
- MORGAN'S LINES.**—*Great Western S. S. Line.* F. M. Black with red band near top, on which is a blue and white ball. N. S. Three bright flashes in quick succession.
Direct Line to Louisiana and Texas R. R. and S. S. Co. Bogert & Morgan, West Street, New York. F. M. Black. N. S. White—Red—Green. Coston light.

- MONARCH LINE.—New York and London. Patton, Vickers & Co. 6 Bowling Green, New York. F. M. French Gray with black top. N. S. Green—white—green, Coston light.
- NEW YORK, HAVANA AND MEXICAN MAIL LINE.—For Havana direct. F. Alexander & Sons. F. M. light brown, wide white band in middle and light brown top. N. S. green-white-red, Coston light.
- NATIONAL LINE.—Liverpool, London and New York. F. W. Hurst, New York. F. M. White with black top. N. S. Blue light forward and aft, and red light on bridge, the whole forming a triangle.
- NEW YORK HERALD STEAM YACHT.—N. S. Red-green-red. Coston light.
- NEW YORK YACHT CLUB.—N. S. Green-red-green, Coston light.
- OLD DOMINION S. S. CO. LINE.—For Norfolk, City Point and Richmond. N. L. McCready & Co., 197 Greenwich Street. F. M. Black. N. S. Red-white, Coston light.
- PACIFIC MAIL S. S. CO. LINES.—For California, Japan, China, Central and South America, &c. J. H. Builay's office, Pier foot of Canal Street. F. M. Black. N. S. Green-red-white, Coston light.
- QUEBEC S. S. CO.—Bermuda, West Indies and Porto Rico. A. E. Outerbridge & Co., 29 Broadway. F. M. Red with black top. N. S. None.
- RED CROSS LINE.—For Newcastle upon Tyne and Dundee. Bowring & Archibald, 57 Beaver Street. F. M. White below, with red cross on it, black top. N. S. None.
- RED "D" LINE OF S. S.—For Laguayra Puerto Caballo, &c. Boulton, Bliss & Dallett, 135 Pearl Street, New York. F. M. Black with red letter D. in white band. N. S. White-green-red, Coston light.
- RED STAR LINE.—Belgian Royal and U. S. Mail Steamers for Antwerp. Peter Wright & Sons, 19 Broadway. F. M. Black with white band, on which is a red star. N. S. 3 red Coston lights, one forward, one aft, and one amidships, simultaneously.
- ROYAL MAIL STEAM PACKET CO.—Steam to Jamaica, Sanderson & Son, Agents, 39 South William Street, New York. F. M. Black. N. S. Yellow light and yellow Roman candle.
- STATE LINE.—New York, Glasgow and Liverpool. Austin, Baldwin & C., 53 Broadway, New York. F. M. Light buff, red band, black top. N. S. Red light forward and aft, and blue light amidships, simultaneously.
- STETTIN LINE.—New York to Stettin, via Copenhagen. Charles L. Wright & Co., Agents, 56 South Street, New York. F. M. Red pipe with black top.
- SEAWANHAKA YACHT CLUB, N. Y.—N. S. Red-blue, Coston Light.
- THENGVALLA LINE.—New York to Copenhagen. Funch, Edye & Co., Agents, 27 South William Street, New York. F. M. Light yellow, with black band around the middle on which is a blue star.
- U. S. LIGHT HOUSE SERVICE.—N. S. White-green-white, Coston light.
- U. S. REVENUE MARINE SERVICE.—N. S. Red-white-green, Coston light.
- WARD'S LINE.—New York and Cuba Mail S. S. Line, for St. Jago de Cuba and Cienfuegos and Havana. F. M. Black. N. S. Red-green-red, Coston light.

W. Y. EDWARDS' CARDIFF & N. Y. S. S. LINE.—George F. Bulley, 15 South Street. F. M. Black, 2 white bands near the top, black top. N. S. Blue light changing to red light and changing again to blue light.

WHITE CROSS LINE.—Direct to Antwerp. Funch, Edye & Co., 27 South William Street. F. M. Black. N. S. One white rocket forward, followed after interval by green rocket and green lamp in main top.

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