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1886.

COGSWELL'S  
NAUTICAL ALMANAC,



CONTAINING

LISTS of LIGHT HOUSES in CANADA, UNITED STATES, WEST INDIES, &c., &c.

Tide Tables, Phases of the Moon, &c.

175 Barrington St.,

HALIFAX, N. S.

NOVA SCOTIA PRINTING COMPANY,

1885.

PRICE 15 CENTS.

203  
**MOIR, SON & CO.**

**Bread & Biscuit Bakers**

**BY STEAM POWER.**

Pilot Breads for Ships' use  
A SPECIALTY.

We Guarantee our Pilot Bread to keep in  
any Climate.

**PLAIN & FANCY BISCUITS**

OF EVERY DESCRIPTION.

Ships Supplied with Soft Bread while in Port.

**CAKES & CONFECTIONERY.**

Wholesale and Retail.

**ARGYLE, DUKE & GRAFTON STREETS,**

Salesrooms—**CORNER OF ARGYLE & DUKE STS.,**

**HALIFAX, N. S.**



PICKFORD & BLACK, Importers of Welsh Bolt Iron Spikes.

**EDWARD WALSH,**

15 BARRINGTON ST.

**Painter, Glazier,**

PAPER HANGER, &c.

IMPORTER AND DEALER IN

**Paints,**

**Oils,**

**Paper Hangings,**

**&c., &c.**

WHITEWASHING & COLORING

PROMPTLY ATTENDED TO.

Sole Agent for the D. F. and L. Ventilator for Windows, Doors, &c.

HALIFAX, N. S.



**SHIP WORK A SPECIALTY.**

MACDONALD & CO., Manufacturers of Copper and Lead Tanks.

MACDONALD & CO., MANUFACTURERS OF COMPOSITION CLINCH RINGS.—See adv. p. 3 cover.

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

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PHASES OF THE MOON—1886.

Mean Time at Greenwich.

PICKFORD & BLACK, SHIP CHANDLERS, MANILLA AND HEMP ROPE.

MACDONALD & CO., Manufacturers of Patent Roller Bushings.—See adv. p. 3 cover.

January.

	d.	h.	m.
● New Moon.....	4	19	43.7
☾ First Quarter.....	13	0	24.4
○ Full Moon.....	19	19	44.8
☾ Last Quarter.....	26	13	31.3
☾ Apogee.....	6	21	
☾ Perigee.....	20	1	

February.

	d.	h.	m.
● New Moon.....	3	15	15.0
☾ First Quarter.....	11	14	46.2
○ Full Moon.....	18	6	15.0
☾ Last Quarter.....	25	5	11.3
☾ Apogee.....	2	23	
☾ Perigee.....	17	14	

March.

	d.	h.	m.
● New Moon.....	5	10	4.3
☾ First Quarter.....	13	1	17.2
○ Full Moon.....	19	16	36.7
☾ Last Quarter.....	26	22	44.2
☾ Apogee.....	2	4	
☾ Apogee.....	17	23	
☾ Apogee.....	29	21	

April.

	d.	h.	m.
● New Moon.....	4	2	30.6
☾ First Quarter.....	11	8	44.0
○ Full Moon.....	18	2	59.2
☾ Last Quarter.....	25	17	15.5
☾ Perigee.....	14	18	
☾ Apogee.....	26	16	

May.

	d.	h.	m.
● New Moon.....	3	15	42.5
☾ First Quarter.....	10	14	20.1
○ Full Moon.....	17	13	47.1
☾ Last Quarter.....	25	11	36.1
☾ Perigee.....	10	12	
☾ Apogee.....	24	12	

June.

	d.	h.	m.
● New Moon.....	2	1	55.3
☾ First Quarter.....	8	19	26.7
○ Full Moon.....	16	1	38.9
☾ Last Quarter.....	24	4	35.0
☾ Perigee.....	5	11	
☾ Apogee.....	21	5	

July.

	h.	d.	m.
● New Moon.....	1	10	6.6
☾ First Quarter.....	8	1	18.2
○ Full Moon.....	15	15	8.9
☾ Last Quarter.....	23	19	21.4
● New Moon.....	30	17	25.8
☾ Perigee.....	3	5	
☾ Apogee.....	18	19	
☾ Perigee.....	31	11	

August.

	d.	h.	m.
☾ First Quarter.....	6	9	6.3
○ Full Moon.....	14	6	24.2
☾ Last Quarter.....	22	7	41.8
● New Moon.....	29	0	54.4
☾ Apogee.....	15	2	
☾ Perigee.....	28	21	

September.

	d.	h.	m.
☾ First Quarter.....	4	19	55.6
○ Full Moon.....	12	22	50.4
☾ Last Quarter.....	20	17	55.7
● New Moon.....	27	9	18.6
☾ Apogee.....	11	4	
☾ Perigee.....	26	7	

October.

	d.	h.	m.
☾ First Quarter.....	4	10	33.6
○ Full Moon.....	12	15	23.9
☾ Last Quarter.....	20	2	40.8
● New Moon.....	26	19	15.5
☾ Apogee.....	8	13	
☾ Perigee.....	24	12	

November.

	d.	h.	m.
☾ First Quarter.....	3	5	5.2
○ Full Moon.....	11	7	6.5
☾ Last Quarter.....	18	10	40.3
● New Moon.....	25	7	18.5
☾ Apogee.....	5	6	
☾ Perigee.....	20	19	

December.

	d.	h.	m.
☾ First Quarter.....	3	2	25.0
○ Full Moon.....	10	21	30.2
☾ Last Quarter.....	17	18	39.1
● New Moon.....	24	21	54.7
☾ Apogee.....	3	3	
☾ Perigee.....	15	12	
☾ Apogee.....	31	0	

Iron Pipe, all sizes, at MACDONALD & CO.'S.—See p. 3 cover.

SUN'S SEMI-DIAMETER.

Mean Noon, Greenwich.

Day of Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	16 18	16 15	16 10	16 1	15 53	15 48	15 45	15 47	15 53	16 1	16 9	16 15
2	16 18	16 15	16 9	16 1	15 53	15 47	15 45	15 48	15 53	16 1	16 10	16 16
3	16 18	16 15	16 9	16 1	15 55	15 47	15 45	15 48	15 54	16 2	16 10	16 16
4	16 18	16 15	16 9	16 1	15 53	15 47	15 45	15 48	15 54	16 2	16 10	16 16
5	16 18	16 15	16 9	16 0	15 53	15 47	15 45	15 48	15 54	16 2	16 11	16 16
6	16 18	16 15	16 8	16 0	15 52	15 47	15 45	15 48	15 54	16 2	16 11	16 16
7	16 18	16 14	16 8	16 0	15 52	15 47	15 46	15 48	15 55	16 3	16 11	16 16
8	16 18	16 14	16 8	15 59	15 52	15 47	15 46	15 48	15 55	16 3	16 11	16 16
9	16 18	16 14	16 7	15 59	15 52	15 47	15 46	15 48	15 55	16 3	16 11	16 16
10	16 18	16 14	16 7	15 59	15 51	15 47	15 46	15 49	15 55	16 4	16 11	16 17
11	16 18	16 14	16 7	15 59	15 51	15 46	15 46	15 49	15 55	16 4	16 12	16 17
12	16 18	16 14	16 7	15 58	15 51	15 46	15 46	15 49	15 56	16 4	16 12	16 17
13	16 17	16 13	16 7	15 58	15 51	15 46	15 46	15 49	15 56	16 4	16 12	16 17
14	16 17	16 13	16 6	15 58	15 51	15 46	15 46	15 49	15 56	16 5	16 12	16 17
15	16 17	16 13	16 6	15 57	15 51	15 46	15 46	15 50	15 57	16 5	16 13	16 17
16	16 17	16 13	16 6	15 57	15 50	15 46	15 46	15 50	15 57	16 5	16 13	16 17
17	16 17	16 13	16 5	15 57	15 50	15 46	15 46	15 50	15 57	16 5	16 13	16 17
18	16 17	16 12	16 5	15 57	15 50	15 46	15 46	15 50	15 57	16 6	16 13	16 17
19	16 17	16 12	16 5	15 56	15 50	15 46	15 46	15 50	15 58	16 6	16 13	16 17
20	16 17	16 12	16 5	15 56	15 50	15 46	15 46	15 51	15 58	16 6	16 14	16 17
21	16 17	16 12	16 4	15 56	15 49	15 46	15 46	15 51	15 58	16 7	16 14	16 17
22	16 17	16 12	16 4	15 56	15 49	15 46	15 47	15 51	15 59	16 7	16 14	16 18
23	16 17	16 11	16 4	15 55	15 49	15 46	15 47	15 51	15 59	16 7	16 14	16 18
24	16 17	16 11	16 4	15 55	15 49	15 46	15 47	15 51	15 59	16 7	16 14	16 18
25	16 16	16 11	16 3	15 55	15 49	15 46	15 47	15 52	15 59	16 8	16 14	16 18
26	16 16	16 11	16 3	15 55	15 49	15 46	15 47	15 52	16 0	16 8	16 15	16 18
27	16 16	16 11	16 3	15 54	15 48	15 46	15 47	15 52	16 0	16 8	16 15	16 18
28	16 16	16 10	16 2	15 54	15 48	15 46	15 47	15 52	16 0	16 8	16 15	16 18
29	16 16	...	16 2	15 54	15 48	15 46	15 47	15 53	16 0	16 9	16 15	16 18
30	16 16	...	16 2	15 54	15 48	15 45	15 47	15 53	16 1	16 9	16 15	16 18
31	16 16	...	16 2	...	15 48	...	15 47	15 53	...	16 9	...	16 18

PICKFORD & BLACK, Importers of Chain Cables and Anchors, 51 Up. Water St.

MACDONALD & CO., Manufacturers of Patent Roller B...

MACDONALD & CO., MANUFACTURERS OF BRASS SLIDING-DOOR ROLLERS.—See adv. p. 3 cover.

PICKFORD & BLACK, Woodberry Cotton Duck, No. 1 to 2.

ROBERT H. COGSWELL'S

[1886

TIDES-1886.

Mean Time of High Water at Halifax, N. S.

PICKFORD & BLACK, Importers of Refined Iron Clinch Rings.

MACDONALD & CO., Manufacturers of Plumbers' Brass Goods.—See adv. p. 3 cover.

Date.	Jan.		Feb.		March.		April.		May.		June.	
	Morn.	Aft.	Morn.	Aft.	Morn.	Aft.	Morn.	Aft.	Morn.	Aft.	Morn.	Aft.
	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	5 20	5 56	6 25	4 45	5 21	5 51	6 14	5 51	6 14	6 34	6 55	
2	5 51	6 50	7 13	5 51	5 56	6 36	6 56	6 34	6 54	7 16	7 39	
3	6 18	7 34	7 52	6 26	6 49	7 18	7 33	7 12	7 31	8 00	8 19	
4	7 6	8 11	8 27	7 12	7 29	7 49	8 5	7 49	8 6	8 40	9 1	
5	7 49	8 7	8 58	7 48	8 5	8 21	8 36	8 24	8 40	9 23	9 46	
6	8 26	8 42	9 14	8 20	8 36	8 53	9 7	9 00	9 18	10 09	10 32	
7	9 0	9 16	9 46	8 50	9 5	9 24	9 42	9 38	10 00	10 56	11 20	
8	9 33	9 49	10 19	9 20	9 36	10 0	10 18	10 21	10 42	11 47	0 16	
9	10 10	10 23	10 49	9 52	10 07	10 36	10 54	11 03	11 26	0 45	1 16	
10	10 38	10 55	11 22	10 24	10 42	11 14	11 36	11 53	0 21	1 47	2 20	
11	11 11	11 30	11 58	10 57	11 14	..	0 26	0 52	1 24	2 57	3 32	
12	11 48	0 9	0 41	1 8	11 32	11 53	0 57	1 31	2 00	2 38	4 4	
13	0 30	0 54	1 36	0 17	0 40	2 8	2 50	3 20	3 58	5 10	5 41	
14	1 19	1 46	2 44	1 9	1 42	3 36	4 18	4 33	5 8	5 51	6 9	
15	2 18	2 51	4 10	2 20	3 2	4 56	5 21	5 39	5 51	6 34	6 58	
16	3 31	4 9	5 31	3 49	4 34	5 51	6 3	6 9	6 30	7 24	7 45	
17	4 45	5 20	6 9	5 19	5 51	6 28	6 53	6 54	7 19	8 06	8 26	
18	5 51	5 53	7 6	5 56	6 24	7 19	7 40	7 40	8 2	8 44	9 2	
19	6 24	6 51	7 55	6 50	7 14	8 1	8 21	8 20	8 42	9 22	9 42	
20	7 18	7 43	8 43	7 39	8 1	8 42	9 1	9 2	9 21	10 00	10 18	
21	8 08	8 34	9 27	8 23	8 45	9 23	9 42	9 41	10 00	10 36	10 55	
22	8 58	9 21	10 11	9 5	9 27	10 02	10 21	10 19	10 36	11 13	11 31	
23	9 44	10 9	10 54	9 46	10 08	10 40	10 57	10 56	11 14	11 52	0 12	
24	10 33	10 55	11 33	10 47	11 16	11 38	11 35	11 51	0 34	0 57		
25	11 18	11 40	0 5	11 9	11 24	..	0 29	0 19	0 44	1 22	1 48	
26	0 02	0 26	1 05	0 9	0 50	1 18	1 19	1 10	1 39	2 17	2 50	
27	0 50	1 16	2 00	0 29	0 55	1 49	2 25	2 11	2 42	3 25	3 58	
28	1 43	2 13	3 18	1 23	1 54	3 04	3 45	3 21	3 55	4 30	5 1	
29	2 47	3 23	..	2 30	3 14	4 23	4 55	4 25	4 56	5 30	5 51	
30	4 05	4 43	..	3 59	4 38	5 24	5 51	5 25	5 51	5 58	6 22	
31	5 21	5 51	..	5 15	5 46	..	..	5 51	6 13	..	..	

The above is mean time for Halifax, 15 minutes added.

Brass Ventilators made by MACDONALD & CO.—See adv. p. 3 cover.



TIDES—1886.

Mean Time of High Water at Halifax, N. S.

Date.	July.		Aug.		Sept.		Oct.		Nov.		Dec.	
	Morn.	Aft.	Morn.	Aft.	Morn.	Aft.	Morn.	Aft.	Morn.	Aft.	Morn.	Aft.
1	6 48	7 11	8 9	8 33	9 25	9 48	9 46	11 9	10 42	11 1	11 00	11 21
2	7 39	8 0	8 57	9 19	10 10	10 32	10 26	10 47	11 23	11 46	11 42	0 5
3	8 22	8 45	9 44	10 7	10 54	11 14	11 9	11 27	0 8	0 35	0 30	0 56
4	9 10	9 34	10 32	10 57	11 86	...	11 51	0 15	1 4	1 37	1 22	1 52
5	10 00	10 32	11 19	11 42	9 22	0 48	0 40	1 8	2 13	2 52	2 24	3 3
6	10 47	11 12	0 5	0 29	1 15	1 44	1 40	2 18	3 35	4 11	3 39	4 11
7	11 38	0 5	0 54	1 21	2 19	3 0	3 2	3 47	4 45	5 15	4 43	5 11
8	0 29	0 51	1 49	2 21	3 43	4 24	4 27	5 2	5 43	5 51	5 38	5 51
9	1 25	1 54	2 55	3 35	5 1	5 37	5 33	5 51	6 7	6 24	6 5	6 22
10	2 25	3 0	4 13	4 51	5 51	6 9	6 1	6 24	6 44	7 1	6 43	7 3
11	3 33	4 9	5 27	5 51	6 30	6 53	6 44	7 1	7 19	7 36	7 24	7 43
12	4 41	5 16	6 1	6 28	7 13	7 33	7 20	7 36	7 53	8 9	8 3	8 24
13	5 48	5 51	6 52	7 14	7 49	8 5	7 51	8 6	8 25	8 43	8 43	9 3
14	6 19	6 43	7 36	7 56	8 19	8 34	8 21	8 27	9 1	9 19	9 24	9 47
15	7 9	7 29	8 13	8 27	8 49	9 4	8 51	9 7	9 38	9 58	10 9	10 31
16	7 50	8 9	8 45	9 1	9 20	9 35	9 24	9 41	10 17	10 39	10 54	11 18
17	8 28	8 47	9 17	9 32	9 51	10 6	9 57	10 14	11 0	11 24	11 45	0 11
18	9 04	9 21	9 47	10 5	10 23	10 40	10 32	10 50	11 50	0 17	0 39	1 10
19	9 40	9 57	10 21	10 36	10 55	11 13	11 12	11 34	0 50	1 24	1 41	2 15
20	10 14	10 31	10 52	11 9	11 33	...	...	0 27	1 59	2 41	2 49	3 26
21	10 48	11 6	11 26	11 43	0 18	0 46	0 58	1 35	3 22	4 0	4 3	4 36
22	11 21	11 39	...	0 24	1 17	1 53	2 15	3 1	4 33	5 7	5 11	5 43
23	...	0 19	0 49	1 15	2 31	3 18	3 43	4 24	5 38	5 51	5 51	6 9
24	0 41	1 4	1 47	2 20	4 1	4 43	5 1	5 34	6 5	6 29	6 36	7 00
25	1 30	1 57	2 57	3 42	5 21	5 51	5 51	6 2	6 53	7 19	7 25	7 48
26	2 28	3 2	4 23	5 1	5 54	6 21	6 26	6 51	7 39	8 0	8 9	8 29
27	3 41	4 19	5 38	5 51	6 45	7 11	7 14	7 38	8 22	8 42	8 48	9 8
28	4 32	5 26	6 9	6 37	7 35	7 55	7 57	8 19	9 3	9 24	9 27	9 48
29	5 51	5 58	7 3	7 30	8 18	8 41	8 40	9 1	9 44	10 3	10 6	10 25
30	6 26	6 53	7 53	7 53	9 2	9 24	9 21	9 42	10 22	10 42	10 42	11 0
31	7 19	7 44	8 39	8 39	...	...	...	10 2	10 22	...	11 17	11 36

will give Standard time for Nova Scotia.

MACDONALD & CO., Manufacturers of Deep Sea and Hand Leads.

PICKFORD & BLACK, WOODBERRY COTTON DUCK, No. 1 TO 2.

2.

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MACDONALD & CO., Importers of Steam Pumps, etc.—See adv. p. 3 cover.  
 MACDONALD & CO., Manufacturers of Plumbers' Brass Goods.—See adv. n. 3 cover.

TIDE TABLES.

Showing the approximate time of High Water at the undermentioned places— which will be found by adding to or subtracting from the time of High Water at Halifax on any given day, as follows :

PICKFORD & BLACK, IMPORTERS OF WELSH BOLT IRON SPIKES.

MACDONALD & CO., Manufacturers of Brass Binnacles and Stands.—See adv. p. 3, contd.

	H. M.		H. M.
Amet Sound, N. S.	... add 2 41	Canso Gut, (N entrance) N. S.	add 1 26
Andrews St., N. B.	... add 3 1	Canso Gut (Plaster Cove) ...	add 1 21
Annapolis, N. S.	... add 3 11	Canso Harbor, C. B. Island.	sub 0 1
Anne St. B., C. B.	... add 0 45	Carraquette Harbor, Gulf St.	Lawrence
Anthony Strait, Nfld.	... sub 0 39	sub 5 9	
Anticosti Island, Gulf St. Law.		Carbonear, Nfld.	... sub 0 29
rence, East Cape	... sub 9 49	Cardigan Bay, P. E. I.	... add 0 51
Antigonish Harbor, R. St. Law	ad 1 11	Carriboo Harbor, N. S.	... add 2 11
Antrobus Island, Gulf St. Law	ad 2 41	Carleton Point, Gulf St. Law.	sub 4 49
Appectetat Bay, Gulf St. Law	add 3 21	Carong River, R. St. Law	.. sub 0 34
Argyle, Bay of Fundy	... add 1 38	Cascumpeque Harbor, P.E.I.	sub 2 9
Arichat, C. B.	... add 0 21	Castors Harbor, Nfld.	... add 3 1
Avon River, N. S.	... add 4 41	Catalina Harbor, "	... sub 0 59
		Cawee Islands, Gulf St. Law.	sub 5 59
Baltimore, U. S.	... sub 1 16	Champlain, R. St. Lawrence	add 1 56
Barbe St. Harbor, Nfld.	... add 2 11	Change Island, Nfld.	.. sub 0 29
Bangor, U. S.	... add 2 17	Chester Harbor, N. S.	... sub 0 5
Barnstable, U. S.	... add 3 33	Cheticamp, C. B. Island	... add 0 26
Barrow Harbor, Nfld.	... sub 1 36	Civil East Cove, Long Harbor,	Nfld.
Basque Port, Nfld.	... add 1 6	... add 0 19	
Bathurst, Gulf St. Law	... sub 4 34	Clam Point, Bay of Fundy.	... add 0 38
Batiscon, R. St. Law	... add 1 59	Clark Harbor, Bay of Fundy	add 0 51
Bear Cape, P. E. Island	... add 1 11	Clearwater Point, Gulf St. Law	ad 3 21
Bear Head, C. B. Island	... add 0 41	Coacoache Bay, Gulf St. Law	sub 3 19
Beaubere Island, Gulf St. Law.	sub 1 19	Cocagne River, "	sub 0 19
Beaver Harbor, N. S.	... add 0 9	Cod Cape, U. States	... add 3 41
Bedeque Harbor, P. E. I.	... and 2 26	Conroy Island, Nfld	... add 1 26
Bermuda, Ireland Island	... sub 0 35	Conroy Cove, Ship Harbor,	Nfld
Bersimis R., Gulf St. Law.	sub 5 49	... add 0 11	
Bechewen Harbor, Gulf St.	Lawrence	Cook Harbor, Nfld.	... sub 0 11
... add 3 43		Condres Island, (Prairie Bay)	R. St. Lawrence
Bic Island, Gulf St. Law	... sub 5 34	... sub 3 25	
Black Rock, Bay of Fundy	... add 3 40	Caw Head Harbor, Nfld.	... add 2 52
Blind Bay, N. S.	add 0 3	Crane Island, R. St. Law.	sub 2 25
Bonavista, Nfld.	sub 0 24	Crapaud, P. E. Island	... add 2 11
Bonne Esperance Harbor,	Gulf St. Lawrence	Cremailere Harbor, Nfld	... sub 0 36
... add 1 26		Crox Harbor	... sub 1 19
Boston Light, U. S.	... add 3 23	Crow Harbor, N. S.	... add 0 11
Boughtor Harbor, P. E. I.	... add 0 51	Cumberland Basin, Bay of	Fundy
Braha Harbor, Nfld	... sub 0 49	... add 4 5	
Brandy Pots, River St. Law.	sub 4 49	Cutwell Harbor, Nfld.	... sub 0 49
Bridgewater N. S.	... add 0 17	Chignecto Cape, Bay of Fundy	add 3 11
Brig Bay, Nfld.	... add 1 57	Charlottetown, P. E. I.	... add 2 56
Buctouche River, Gulf St. Law	ad 4 19		
Bull Island, Newfoundl'd.	... sub 0 27	Dalhousie Harbr, Glf St. Law.	sub 4 39
Burgeo Island, "	... add 0 43	Deer Harbor, Nfld.	... sub 0 1
Burin Harbor, "	... add 0 56	Digby Gut, Bay of Fundy	... add 3 11
Burnt Island, "	... sub 0 1		
Cambelltown, Gulf St. Law.	sub 3 49	Fast Point, P. E. I.	... add 0 41
Campobello, Bay of Fundy.	add 3 32	Eastport, U. S.	... add 3 14
		Egg Island, Gulf St. Law	... add 5 49

Woodberry Cotton Duck, for sale by PICKFORD & BLACK.

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NAUTICAL ALMANAC.

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MACDONALD & CO., MANUFACTURERS OF BRASS BINNACLE GUARDS.—See adv. p. 3 cover.

	H. M.		H. M.
Ellenwood's Anchorage, Bay		Island (Country) Harb'r, NS sub	0 9
of Fundy	....add 2 5	Isles-au Condres, R St Law	..sub 3 24
Egmont Bay, P. E. I.	....add 4 49	Ipswich, U. S.	....add 3 37
Escumenac Point, Gulf of St.		Leboque, Bay Fundy	....add 2 15
Lawrence	....add 3 39	Jedore, N. S.	....sub 0 32
Fall River, U. S.	....add 0 22	John St., N. B., Bay Fundy	..add 3 32
Famish Gut, Nfld.	....add 0 15	John's St., Nfld.	....sub 0 10
Fear Cape, U. S.	....sub 0 49	Jonriman Island, N. B.	....add 1 41
Ferole Cove, Nfld.	....add 3 1	Kegashka Bay, Gulf St Law	add 2 56
Ferole Harbor Old, Nfld.	....add 1 39	King's Cove, Nfld	....sub 3 34
Fish Heap, Grand Manan,		Kirpon Harbor, Nfld	....sub 0 44
Bay of Fundy	....add 3 27	Le Hune Bay, Nfld	....add 0 51
Flat Island Cove, Nfld.	.. add 0 38	La Polie Bay, "	....add 1 11
Fleur de lis Harbor, Nfld.	....add 0 34	Lamiline, "	....add 1 26
Florida Cape, U. S.	....add 0 40	Lark Harbor, "	.. add 2 48
Fogo Island, Nfld.	.. sub 0 29	Lawn, Great and Little, Nfld	add 0 26
Folly Point, Peticodiac River,		Lawrence St. Harbor, Nfld.	..add 0 41
Bay of Fundy	....add 4 0	LaHave, N. S.	....add 0 2
Francois Bay, Nfld	....add 0 51	Lunenburg, N. S.	....add 0 5
Frechette Island, R. St. Law	add 0 11	Lepreau, Bay of Fundy	....add 3 29
Freshwater Bay, Nfld.	....sub 0 19	L'Etang Harbor, "	....add 3 30
Funk Island, Nfld.	....sub 0 49	Liscomb Harbor, N. S.	....add 0 11
Gander Bay, Nfld.	....add 0 6	Little Metis, Gulf St Law	..sub 5 39
Gaspe Basin, Gulf St. Law	..sub 5 9	Little Netasquan, "	....add 3 11
George Cape, N. S.	....add 1 26	Little Port, Newfoundland	..add 2 53
George Port, Bay Fundy	....add 3 28	Little Placentia, "	....add 0 9
George St. Harbor, Nfld.	....add 2 14	Little River, "	....add 0 51
Georgetown, U. S.	.. add 0 51	Little Tancook Island, N. S.	sub 0 6
Good Bay, Nfld	....add 2 51	Liverpool Bay, N. S.	....add 0 1
Goodbout River, Glf St. Law	sub 5 67	Louisburg Harbor, N. S.	....add 0 11
Goose Bay, Nfld.	....sub 0 27	Lunaire St. Bay, Nfld	....sub 0 43
Grand Harbor, Grand Manan,		Lynn Harbor, U. S.	....add 3 20
Bay of Fundy	....add 3 18	Mabou River, C. B.	....add 1 11
Grand Passage, Bay of Fundy	add 2 54	Machias, Seal Island, Bay	
Grand Rustico, P. E. I.	....sub 1 9	Fundy	....add 3 16
Grande didul Madame, I.C.D.	add 0 6	Magdalen Island, Glt St Law	add 0 31
Great St. Law. Harbor, Nfld.	add 0 41	Magdalen River, R St Law	..sub 6 34
Green Island River, St. Law	sub 5 4	Mahone Bay, N. S.	....add 0 11
Green's Harbor, Nfld.	....sub 1 5	Manicuaگو R, R St Law	....sub 5 24
Grigust Bay, Nfld.	....sub 0 49	Maquereau Port, Glf St Law	sub 5 47
Grindstone Island, Bay Fundy	add 3 58	Marblehead, U. S.	....add 3 41
Guysboro, N. S.	....add 0 31	Margaret's St Bay, N. S.	....sub 0 2
Habitants' Harbor, C. B.	....add 0 31	Mary St Cape, Nfld	....add 2 41
Halifax Harbor, N. S.	.... 0 0	Matan River, Gulf St Law	..sub 5 34
Hands Harbor, Nfld.	....sub 0 36	May Cape, U. S.	....add 0 30
Harbor Grace, Nfld	....sub 0 24	Menadou Cape, C. B.	....add 0 26
Hatteras Cape, U. S.	....add 1 11	Merigomish, N. S.	....add 0 17
Hawke Island, Bay of Fundy	add 3 32	Medway Port, N. S.	....add 0 1
Hawke Bay, Nfld.	....add 3 11	Mingan Harbor, G St Law	..sub 6 33
Hearts Content, Nfld	....sub 0 10	Minemegash, P. E. I.	....add 4 19
Hillsborough River, P. E. I.	..add 2 56	Miquelon Road, Nfld	....add 0 44
Holmes Hole, U. S.	....add 3 54	Miramichi (Bar), G St Law	..sub 2 19
Horton Bluff, Bay Fundy	....sub 7 19		

PICKFORD & BLACK, AMERICAN TAR, PITCH, ROSIN, 51 UPPER WATER ST.

Lead Scupper Pipes, all sizes, MACDONALD & CO.'S.—See p. 3 cover.

PICKFORD & BLACK IMPORTERS NETS, TWINES LINES, 51 UPPER WATER STREET.

MACDONALD & CO., Manufacturers and Fitters of Steam Heating Apparatus.—See adv. p. 3 cover.

	H. M.		H. M.
Micon, Glf St Lawrence....sub	5 19	Roche Cape, River St Law...add	1 41
Moncton (Railway) Bay Fun sub	7 34	Restigouche River, Campbell-	
Monts Point de, Glf St Law...sub	7 49	town, Gulf Lt Law ....sub	3 49
Mount Louis Bay, R St Law sub	5 49		
Moulon Port, N. S. ....add	0 5	Sable Cape, (Clark's Harbor)	
		Bay Fundy ....add	1 9
Nantucket, U. S. ....sub	7 25	Sable Island, N Side, N. S...sub	0 19
Negro Harbor, N. S. ....add	0 23	Sable Island, S Side, N. S...sub	1 19
Neuf Port, Gulf St Law....sub	5 39	Sacred Bay, Nfld ....sub	0 26
New Bedford,(entrance) U.S.add	0 8	Saguenny, Chicoutimi, Gulf	
New Haven, U. S. ....add	3 27	St Lawrence ....sub	3 38
New Pelican Harbor, Nfld ..sub	0 19	Saguenay, Tadousac, Gulf St	
New York, U. S. ....add	0 24	Lawrence ....sub	5 4
Newburyport, " ....add	3 33	Salem, U. S. ....sub	5 4
Nicholas St. Harbor, Gulf of		Sandy Cove, E. Bay Fundy .add	2 24
St Lawrence ....sub	5 54	Sandy Cove, W, " ....add	2 44
Noel Bay, Bay Fundy ....sub	7 8	Sandy Hook, U. S. ....sub	0 20
North Cape, C. B. ....add	0 11	Seal Cove, Grand Manan,	
North Harbor, Nfld ....add	0 11	Bay Fundy ....add	3 6
Oderin, Nfld ....add	0 19	Seal Island, Cape Sable,	
Orleans Islands, Riv St Law sub	2 9	Bay Fundy ....and	2 0
		Seldom-come-by, Nfld ....sub	0 36
Parrsboro', Bay Fundy ....sub	7 32	Seven Islands Bay, Gulf	
Paul St., Gulf St Lawrence..add	0 11	St Lawrence ....sub	0 36
Peter St. Harbor, P. E. I...add	0 41	Sheet Harbor, N. S. ....add	0 17
Petit Passage, Bay Fundy ..add	2 52	Shelburne, " ....add	0 15
Petit Port, B. of Islands, Nfld add	2 53	Sheldrake Is, Glt St Law...sub	1 49
Philadelphia, U. S. ....sub	6 31	Ship Harbor, N. S. ....add	0 5
Pictou Harbor, N. S. ....add	2 11	Sippigan, Gulf St Law ....sub	4 7
Pierre Strait, Nfld ....add	0 44	Smith Sound, Nfld ....sub	0 41
Pillars River, Glf St Law ...sub	2 49	Spaniard's Bay, " ....sub	0 4
Placentia Nfld ....add	1 26	Spencer's Anchorage, B Fun add	3 53
Plymouth, U. S. ....add	3 30	Spicer's Cove, Bay Fundy..add	3 46
Pomquet, N. S. ....add	1 26	Sydney Harbor, C. B. ....add	1 11
Pool's Harbor, Nfld ....sub	0 49		
Port-au Choil, Nfld ....add	2 58	Tatamaguche, N. S. ....add	2 11
Port Hood, C. B. ....add	1 11	Tracadie Harbor, " ....sub	0 19
Portland, U. S. ....add	3 36	Trepassey, Nfld ....sub	0 16
Poulamenta Bay, Madam Is-		Trinity Bay, (Bull's Is) Nfld sub	0 27
land, C. B. ....add	0 1	Trinity Harbor, Nfld ....sub	0 39
Prospect River, N. S. ....sub	0 6	Trinton Harbor, " ....sub	0 19
Providence, U. S. ....add	0 27	Turner C, P. E. I. ....sub	1 39
Provincetown, " ....add	3 33		
Pubnico (Beach Pt) B Fundy add	1 36	Verte Bay, N. S. ....add	2 11
Pugwash Harbor, N. S. ....add	2 41	Vin Harbor, Gulf St Law....sub	2 4
Quaco, Bay Fundy ....add	3 46	Wallace Harbor, N. S. ....add	2 4
Quebec, R St Lawrence ....sub	1 11	Wapitagan Harbor, Gulf St	
		Lawrence ....add	2 41
Race Cape, Nfld ....sub	0 19	Washington, Navy Yard,	
Random Head Harbor, Nfld sub	0 19	United States ....sub	0 6
Rencoutre Bay, (the Cove),		West Quoddy, Bay Fun ....add	3 23
Newfoundland ....add	1 6	Whitehaven, N. S. ....add	0 11
Richibucto River, G St Law sub	4 19	Wilmington, U. S. ....add	1 17
Richmond, U. S. ....sub	3 21		
Richmond Harbor, P.E.I....sub	1 49	Yarmouth, N. S. ....add	2 20
		Yoik Harbor, Nfld ....add	2 48



**A. B. CROSBY & CO.,**  
**SHIP BROKERS,**

**Collins' Building,**

**NORTH SIDE PICKFORD & BLACK'S WHARF,**

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*Wanzer Sewing Machines,*

—AND—

**DOHERTY ORGANS,**

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MACDONALD & CO., MANUFACTURERS OF COMPOSITION BUTT BOLTS AND SPIKES.—See p. 3 cover.

PICKFORD & BLACK, Importers of Wire Rope, Canvas, 51 Upper Water St.

PICKFORD & BLACK, Ship Chandlers, 51 Up. Water St., Halifax.

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ROBERT COGSWELL'S

[1886

JANUARY.

Chronometer of G. M. T.

PICKFORD & BLACK, IRON SPIKES, CUT NAILS, 51 UPPER WATER STREET

VESSELS FITTED WITH PLUMBING FIXTURES, BY MACDONALD & CO.

Day of the Week.	Day of the Month.	THE SUN'S				Equation of time to be added to Apparent Time.	Var. in 1 h'r.	Chronometer of G. M. T.					
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 h'r.			H.	MIN.	SEC.	THS.		
F	1	18 48 8.11	11.041	S. 22 59 24.3	12.70	m. s. 3 52.77	1.181	1					
S	2	18 52 32.94	11.027	22 54 5.8	13.84	4 20.96	1.167	2					
S	3	18 56 57.42	11.012	22 48 20.0	14.97	4 48.80	1.152	3					
M	4	19 1 21.51	10.995	22 42 7.0	16.10	5 16.26	1.135	4					
T	5	19 5 45.18	10.977	22 35 27.0	17.22	5 43.30	1.117	5					
W	6	19 10 8.39	10.957	22 28 20.2	18.34	6 9.89	1.098	6					
T	7	19 14 31.13	10.936	22 20 46.8	19.44	6 35.99	1.077	7					
F	8	19 18 53.34	10.914	22 12 47.1	20.53	7 1.58	1.055	8					
S	9	19 23 15.01	10.891	22 4 21.2	21.62	7 26.62	1.031	9					
S	10	19 27 36.10	10.866	21 55 29.5	22.69	7 51.09	1.007	10					
M	11	19 31 56.60	10.841	21 46 12.1	23.75	8 14.97	0.982	11					
T	12	19 36 16.47	10.815	21 36 29.4	24.80	8 38.22	0.955	12					
W	13	19 40 35.70	10.788	21 26 21.6	25.84	9 0.83	0.928	13					
T	14	19 44 54.27	10.759	21 15 49.1	26.86	9 22.78	0.900	14					
F	15	19 49 12.15	10.730	21 4 52.1	27.88	9 44.05	0.872	15					
S	16	19 53 29.33	10.701	20 53 31.0	28.88	10 4.62	0.842	16					
S	17	19 57 45.80	10.671	20 41 46.0	29.86	10 24.47	0.812	17					
M	18	20 2 1.53	10.640	20 29 37.5	30.84	10 43.60	0.781	18					
T	19	20 6 16.52	10.609	20 17 5.8	31.80	11 1.98	0.750	19					
W	20	20 10 30.76	10.577	20 4 11.2	32.74	11 19.61	0.719	20					
T	21	20 14 44.24	10.546	19 50 54.2	33.67	11 36.49	0.687	21					
F	22	20 18 56.95	10.514	19 37 15.0	34.59	11 52.60	0.655	22					
S	23	20 23 8.89	10.481	19 23 13.9	35.49	12 7.94	0.623	23					
S	24	20 27 20.05	10.449	19 8 51.4	36.38	12 22.51	0.591	24					
M	25	20 31 30.43	10.416	18 54 7.8	37.25	12 36.30	0.558	25					
T	26	20 35 40.03	10.384	18 39 3.4	38.11	12 49.31	0.526	26					
W	27	20 39 48.84	10.351	18 23 38.7	38.95	13 1.53	0.493	27					
T	28	20 43 56.86	10.317	18 7 54.0	39.77	13 12.96	0.460	28					
F	29	20 48 4.08	10.284	17 51 49.7	40.58	13 23.60	0.426	29					
S	30	20 52 10.50	10.250	17 35 26.3	41.36	13 33.43	0.393	30					
S	31	20 56 16.10	10.217	17 18 44.2	42.14	13 42.46	0.359	31					
M	32	21 0 20.90	10.183	S. 17 1 43.7	42.89	13 50.68	0.325	32					
								33					

MACDONALD & CO., Manufacturers of Brass Bolts and Catches.

PICKFORD & BLACK, Importers White Lead, Paints, Oils, 51 Upper Water.

1886]

NAUTICAL ALMANAC.

11

# H. H. FULLER & CO.,

45 to 49 Upper Water Street,

HALIFAX, N. S.

## HARDWARE,

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**NAVAL STORES,  
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**BUILDERS' HARDWARE.**

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SIGN OF THE "CIRCULAR SAW."

MACDONALD & CO., Steam Fitters.—See adv. p. 3 cover.

VESSELS FITTED WITH PLUMBING FIXTURES, BY MACDONALD & CO.—See adv. p. 3 cover

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

VESSELS FITTED WITH PLUMBING FIXTURES

PICKFORD & BLACK, SHIP CHANDLERS, 51 UPPER WATER ST., HALIFAX.

RESIDENCES AND PUBLIC BUILDINGS FITTED WITH STEAM HEATING APPARATUS, BY MACDONALD & CO

12

FEBRUARY.

Chronometer of G. M. T.

Day of the Week.	Day of the Month.	THE SUN'S				Equation of time to be added to Apparent Time.	Var. in 1 h'r.	Chronometer of G. M. T.						
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 h'r.			H.	MIN.	SEC.	THS.			
M	1	21 0 20.90	10.183	S. 17 1 43.7	42.89	m. s. s.	1							
T	2	21 4 24.88	10.149	16 44 25.3	43.63	13 50.68	0.325	2						
W	3	21 8 28.04	10.115	16 26 49.3	44.35	14 4.67	0.258	3						
T	4	21 12 30.38	10.080	16 8 56.3	45.05	14 10.44	9.223	4						
F	5	21 16 31.89	10.046	15 50 46.7	45.74	14 15.39	0.189	5						
S	6	21 20 32.59	10.012	15 32 20.8	46.41	14 19.52	0.155	6						
S	7	21 24 32.47	9.978	15 13 39.1	47.06	14 22.84	0.121	7						
M	8	21 28 31.54	9.944	14 54 42.0	47.69	14 25.35	0.088	8						
T	9	21 32 29.80	9.911	14 35 29.9	48.31	14 27.05	0.054	9						
W	10	21 36 27.26	9.878	14 16 3.3	48.90	14 27.95	0.021	10						
T	11	21 40 23.92	9.845	13 56 22.5	49.49	14 28.06	0.012	11						
F	12	21 44 19.80	9.812	13 36 28.0	50.05	14 27.39	0.044	12						
S	13	21 48 14.90	9.780	13 16 20.3	50.59	14 25.94	0.076	13						
S	14	21 52 9.23	9.748	12 55 59.7	51.12	14 23.72	0.108	14						
M	15	21 56 2.81	9.717	12 35 26.6	51.63	14 20.76	0.139	15						
T	16	21 59 55.65	9.686	12 14 41.5	52.12	14 17.05	0.170	16						
W	17	22 3 47.76	9.656	11 53 44.8	52.60	14 12.62	0.200	17						
T	18	22 7 39.15	9.627	11 32 36.9	53.05	14 7.47	0.229	18						
F	19	22 11 26.86	9.599	11 11 18.2	53.50	14 1.64	0.257	19						
S	20	22 15 19.90	9.571	10 49 48.9	53.93	13 55.15	0.284	20						
S	21	22 19 9.29	9.545	10 28 9.6	54.34	13 48.00	0.311	21						
M	22	22 22 58.05	9.519	10 6 20.6	54.74	13 40.23	0.336	22						
T	23	22 26 46.20	9.494	9 44 22.3	55.11	13 31.85	0.361	23						
W	24	22 30 33.77	9.470	9 22 15.1	55.48	13 22.89	0.385	24						
T	25	22 34 20.76	9.446	8 59 58.4	55.82	13 13.35	0.409	25						
F	26	22 38 7.19	9.423	8 37 35.6	56.15	13 3.26	0.432	26						
S	27	22 41 53.08	9.401	8 15 4.1	56.46	12 52.63	0.454	27						
S	28	22 45 38.45	9.380	7 52 25.3	56.76	12 41.48	0.475	28						
M	29	22 49 23.31	9.359	S. 7 29 39.6	57.04	12 29.82	0.496	29						
								30						
								31						



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RESIDENCES AND PUBLIC BUILDINGS FITTED WITH STEAM HEATING

Residences and Public Buildings Fitted with Plumbing Fixtures, by MACDONALD & CO.—See adv. p. 3 cover

PICKFORD & BLACK, Iron Spikes, Cut Nails, 51 Up. Water St.

1886]

NAUTICAL ALMANAC.

13

ISAAC H. MATHERS,  
**SHIP AGENT**

—AND—

**Commission Merchant.**

*VICE-CONSUL FOR SWEDEN AND  
NORWAY.*

HALIFAX, NOVA SCOTIA.

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**General Insurance Agent,**

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- The Fire Ins. Association, of London.*
- The London & Lancashire Life Ins. Co., of London.*
- Accident Insurance Co. of North America, of Montreal.*

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

Brass Hinges, Hasps and Locks, at MACDONALD & CO.'S.—See cover.

PICKFORD & BLACK, Importers White Lead, Paints, Oils, 51 Upper Water Street

Residences and Public Buildings Fitted with Hot Water Heating Apparatus, by MACDONALD & CO.—See p. 3 cover.

MARCH.										Chronometer of G. M. T.										
Day of the Week.	Day of the Month.	THE SUN'S				Equation of time to be added to Apparent Time.	Var. in 1 h'r.	H.	MIN.	SEC.	THS.									
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 h'r.			1	2	3	4									
M	1	22 49 23.31	9.359	S. 7 29 39.6	57.04	12 29.82	0.496													
T	2	22 53 7.67	9.339	7 6 47.5	57.30	12 17.66	0.516													
W	3	22 56 51.56	9.319	6 43 49.4	57.54	12 5.03	0.536													
T	4	23 0 34.98	9.300	6 20 45.5	57.77	11 51.93	0.555													
F	5	23 4 17.95	9.281	5 57 36.4	57.98	11 38.38	0.574													
S	6	23 8 0.48	9.264	5 34 22.5	58.17	11 24.40	0.591													
S	7	23 11 42.61	9.247	5 11 4.1	58.35	11 10.02	0.608													
M	8	23 15 24.34	9.231	4 47 41.6	58.51	10 55.24	0.624													
T	9	23 19 5.70	9.216	4 24 15.4	58.66	10 40.09	0.639													
W	10	23 22 46.69	9.201	4 0 46.0	58.79	10 24.57	0.654													
T	11	23 26 27.33	9.187	3 37 13.7	58.90	10 8.70	0.668													
F	12	23 30 7.65	9.173	3 13 38.9	58.99	9 52.51	0.681													
S	13	23 33 47.65	9.161	2 50 2.0	59.07	9 36.01	0.693													
S	14	23 37 27.37	9.149	2 26 23.3	59.14	9 19.23	0.705													
M	15	23 41 6.82	9.139	2 2 43.3	59.19	9 2.17	0.716													
T	16	23 44 46.02	9.129	1 39 2.3	59.22	8 44.86	0.726													
W	17	23 48 24.99	9.119	1 15 20.7	59.24	8 27.32	0.735													
T	18	23 52 3.75	9.111	0 51 38.8	59.24	8 9.58	0.743													
F	19	23 55 42.33	9.104	0 27 57.0	59.23	7 51.66	0.750													
S	20	23 59 20.76	9.099	S. 0 4 15.7	59.21	7 33.59	0.756													
S	21	0 2 59.07	9.094	N. 0 19 25.0	59.17	7 15.39	0.760													
M	22	0 6 37.27	9.090	0 43 4.6	59.12	6 57.10	0.764													
T	23	0 10 15.40	9.088	1 6 42.7	59.05	6 38.73	0.766													
W	24	0 13 53.49	9.086	1 30 19.1	58.97	6 20.31	0.768													
T	25	0 17 31.54	9.085	1 53 53.5	58.88	6 1.86	0.769													
F	26	0 21 9.58	9.085	2 17 25.4	58.77	5 43.41	0.769													
S	27	0 24 47.64	9.086	2 40 54.5	58.65	5 24.96	0.768													
S	28	0 28 25.73	9.088	3 4 20.4	58.51	5 6.55	0.766													
M	29	0 32 3.87	9.091	3 27 42.9	58.36	4 48.19	0.764													
T	30	0 35 42.08	9.094	3 51 1.5	58.19	4 29.89	0.761													
W	31	0 39 20.37	9.098	4 14 15.8	58.00	4 11.68	0.757													
T	32	0 42 58.76	9.102	N. 4 37 25.6	57.81	3 53.57	0.752													

1803. **IMPERIAL** 1803.

**FIRE INSURANCE CO'Y**

Of London.


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**Marine, Fire and Life**  
**INSURANCE AGENTS,**

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(FIRE AND MARINE.)

*Providence-Washington Co., Providence, R.I.*

(FIRE AND MARINE.)

*Great Western Insurance Co., N. Y.*

*Union Insurance Co., of Philadelphia.*

*New York Life Insurance Co., of New York.*

MACDONALD & CO., Manufacturers of Copper and Zinc Baths.

MACDONALD & CO., Manufacturers of Ship's Patent Water Closets.—See adv. p. 3 cover.

PICKFORD & BLACK, AGENT FOR TARR & WONSON'S COPPER PAINT.

Residences and Public Buildings Fitted with Hot Water Heating Apparatus, by MACDONALD & CO.

PICKFORD & BLACK, IMPORTERS OF DUCKS AND DRILLINGS, 51 UPPER WATER STREET.

MACDONALD & CO., Manufacturers of COMPOSITION RUBBER BRACES.—See adv. p. 3 over.

APRIL.										Chronometer of G. M. T.							
Day of the Week.		Day of the Month.		THE SUN'S				Equation of Time to be added to sub. from Apparent Time.		Var. in 1 h'r.	H.	MIN.	SEC.	THS.			
		Apparent Right Ascension.		Var. in 1 hour		Apparent Declination.		Var. in 1 h'r.									
		h. m. s.		s.		° ' "		m. s.		s.	1						
T	1	0	42	58.76	9.102	N. 4	37	25.6	57.81	3	53.57	0.752	2	.....	.....	.....	.....
F	2	0	46	37.27	9.108	5	0	30.5	57.59	3	35.58	0.747	3	.....	.....	.....	.....
S	3	0	50	15.92	9.114	5	23	30.1	57.36	3	17.73	0.740	4	.....	.....	.....	.....
S	4	0	53	54.73	9.121	5	46	24.0	57.12	3	0.04	0.734	5	.....	.....	.....	.....
M	5	0	57	33.71	9.128	6	9	11.9	56.86	2	42.51	0.726	6	.....	.....	.....	.....
T	6	1	1	12.87	9.136	6	31	53.4	56.59	1	25.17	0.719	7	.....	.....	.....	.....
W	7	1	4	52.23	9.145	6	54	28.2	56.30	2	8.02	0.710	8	.....	.....	.....	.....
T	8	1	8	31.81	9.154	7	16	56.0	56.00	1	51.09	0.701	9	.....	.....	.....	.....
F	9	1	12	11.62	9.164	7	39	16.4	55.69	1	34.39	0.691	10	.....	.....	.....	.....
S	10	1	15	51.66	9.174	8	1	29.0	55.35	1	17.93	0.680	11	.....	.....	.....	.....
S	11	1	19	31.97	9.185	8	23	33.4	55.01	1	1.73	0.669	12	.....	.....	.....	.....
M	12	1	23	12.55	9.197	8	45	29.4	54.65	0	45.80	0.658	13	.....	.....	.....	.....
T	13	1	26	53.41	9.209	9	7	16.5	54.27	0	30.15	0.646	14	.....	.....	.....	.....
W	14	1	30	34.57	9.222	9	28	54.4	53.88	0	14.81	0.633	15	.....	.....	.....	.....
T	15	1	34	16.06	9.236	9	50	22.9	53.48	0	0.22	0.619	16	.....	.....	.....	.....
F	16	1	37	57.89	9.250	10	11	41.5	53.06	0	14.90	0.604	17	.....	.....	.....	.....
S	17	1	41	40.08	9.266	10	32	49.9	52.64	0	29.23	0.589	18	.....	.....	.....	.....
S	18	1	45	22.65	9.282	10	53	48.0	52.20	0	43.17	0.573	19	.....	.....	.....	.....
M	19	1	49	5.63	9.299	11	14	35.3	51.74	0	56.71	0.555	20	.....	.....	.....	.....
T	20	1	52	49.02	9.317	11	35	11.5	51.27	1	9.83	0.538	21	.....	.....	.....	.....
W	21	1	56	32.86	9.336	11	55	36.4	50.79	1	22.52	0.519	22	.....	.....	.....	.....
T	22	2	0	17.15	9.355	12	15	49.6	50.30	1	34.75	0.500	23	.....	.....	.....	.....
F	23	2	4	1.90	9.375	12	35	50.8	49.79	1	46.51	0.480	24	.....	.....	.....	.....
S	24	2	7	47.14	9.395	12	55	39.7	49.27	1	57.80	0.460	25	.....	.....	.....	.....
S	25	2	11	32.87	9.416	13	15	16.0	48.74	2	8.59	0.439	26	.....	.....	.....	.....
M	26	2	15	19.10	9.437	13	34	39.3	48.19	2	18.88	0.418	27	.....	.....	.....	.....
T	27	2	19	5.85	9.459	13	53	49.3	47.63	2	28.66	0.397	28	.....	.....	.....	.....
W	28	2	22	53.12	9.480	14	12	45.7	47.06	2	37.93	0.375	29	.....	.....	.....	.....
T	29	2	26	40.91	9.503	14	31	28.1	46.47	2	46.66	0.353	30	.....	.....	.....	.....
F	30	2	30	29.25	9.525	14	49	56.3	45.87	2	54.85	0.330	31	.....	.....	.....	.....
S	31	2	34	18.13	9.548	N. 15	8	9.8	45.25	3	2.50	0.307	32	.....	.....	.....	.....



PICKFORD & BLACK, Ship Chandlers, Manilla and Hemp Rope.

1886]

NAUTICAL ALMANAC.

17

# HARDWARE.

COLLIERY SUPPLIES,  
FISHING SUPPLIES,  
GOLD MINING SUPPLIES.  
OILS, &c.

## W. B. REYNOLDS & CO.,

238, 240, 242 Lower Water Street,  
HALIFAX.

### H. F. WORRALL,

SHIPPING AND COMMISSION MERCHANT

AND GENERAL DEALER IN

Choice Brands Canadian and American Flours, Tea,  
Sugar, Molasses, Beef, Pork, Tobacco, Rice,

AND A FULL ASSORTMENT OF

FISHERMAN'S OUTFITS.

ALSO

LOBSTER BOX SHOOKS,  
OF ANY SIZE.

Having large wharf and storage accommodation, can  
accommodate vessels and goods at all times  
with satisfaction to owners.

### POWER'S WHARF, HALIFAX.

MACDONALD & CO., Manufacturers of Manrope Stanchions.—p. 3 cover.

PICKFORD & BLACK, Importers of Wire Rope, Canvas, 51 Upper Water St.

MACDONALD & CO., MANUFACTURERS OF COMPOSITION BUTT BOLTS AND SPIKES.—See p. 3 cover.

MACDONALD & CO., Manufacturers of COMPOSITION BUTT BOLTS AND SPIKES.—See p. 3 cover.

MAY.

Chronometer of G. M. T.

PICKFORD & BLACK, Importers White Lead, Paints, Oils, 51 Upper Water Street.

Day of the Week.		Day of the month.		THE SUN'S				Equation of time to be sub. from Apparent Time.		Var. in 1 h'r.
Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 h'r.	° ' "		m. s.		s.		
S 1	2 34 18.13	9.548	N.15 8 9.8	45.25	3	2.50	0.307			
M 2	2 38 7.57	9.571	15 26 8.5	44.61	3	9.60	0.284			
M 3	2 41 57.56	9.594	15 43 51.9	43.98	3	16.15	0.261			
T 4	2 45 48.10	9.618	16 1 19.7	43.33	3	22.14	0.238			
W 5	2 49 39.21	9.641	16 18 31.7	42.66	3	27.57	0.215			
T 6	2 53 30.88	9.664	16 35 27.4	41.98	3	32.44	0.191			
F 7	2 57 23.10	9.688	16 52 6.6	41.28	3	36.76	0.168			
S 8	3 1 15.89	9.711	17 8 29.0	40.58	3	40.52	0.145			
S 9	3 5 9.23	9.734	17 24 34.3	39.85	3	43.73	0.122			
M 10	3 9 3.12	9.757	17 40 22.0	39.12	3	46.39	0.099			
T 11	3 12 57.56	9.780	17 55 52.0	38.37	3	48.49	0.076			
W 12	3 16 52.55	9.803	18 11 3.8	37.61	3	50.05	0.053			
T 13	3 20 48.10	9.826	18 25 57.3	36.84	3	51.05	0.030			
F 14	3 24 44.21	9.849	18 40 32.1	36.06	3	51.50	0.007			
S 15	3 28 40.87	9.873	18 54 48.0	35.26	3	51.39	0.016			
S 16	3 32 38.10	9.896	19 8 44.8	34.46	3	50.73	0.039			
M 17	3 36 35.89	9.920	19 22 22.1	33.64	3	49.50	0.063			
T 18	3 40 34.24	9.943	19 35 39.6	32.82	3	47.71	0.086			
W 19	3 44 33.15	9.966	19 48 37.3	31.98	3	45.36	0.110			
T 20	3 48 32.62	9.990	20 1 14.8	31.14	3	42.45	0.133			
F 21	3 52 32.65	10.013	20 13 31.8	30.28	3	38.99	0.156			
S 22	3 56 33.22	10.035	20 25 28.2	29.41	3	34.98	0.178			
S 23	4 0 34.33	10.058	20 37 3.6	28.54	3	30.44	0.200			
M 24	4 4 35.98	10.080	20 48 17.9	27.65	3	25.36	0.222			
T 25	4 8 38.15	10.101	20 59 10.8	26.75	3	19.76	0.244			
W 26	4 12 40.83	10.122	21 9 42.1	25.85	3	13.65	0.265			
T 27	4 16 44.02	10.143	21 19 51.6	24.94	3	7.04	0.286			
F 28	4 20 47.70	10.163	21 29 39.0	24.01	2	59.93	0.306			
S 29	4 24 51.86	10.183	21 39 4.1	23.08	2	52.34	0.326			
S 30	4 28 56.48	10.202	21 48 6.7	22.14	2	44.30	0.344			
M 31	4 33 1.55	10.220	21 56 46.7	21.19	2	35.81	0.363			
T 32	4 37 7.05	10.238	N.22 5 3.9	20.24	2	26.89	0.380			

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Residences and Public Buildings Fitted with Hot Water Heating Apparatus, by MACDONALD & CO.—See p. 3 cover.

PICKFORD & BLACK. Importers of Welsh Bolt Iron Spikes.

1886]

NAUTICAL ALMANAC.

19

**HALIFAX SHIP CHANDLERY.**

**PICKFORD & BLACK,**  
**SHIP CHANDLERS**  
— AND —  
**SHIP BROKERS.**  
**Halifax, Nova Scotia.**

Importers of Chains, Anchors, Wire Rope, Paints,  
Oils, Tar, Pitch, Rosin, Clinch Rings, Common  
and Refined Iron, Oakum, Nets, Lines,  
Twines, Cod and Trawl Hooks.

— AGENTS FOR —

**WOODBERRY COTTON MILLS,**  
**Tarr & Wonson's Copper Paint.**

ALSO—**Inman Line of Steamers.**

**"FURNESS" LINE OF**  
**STEAMERS,**

— BETWEEN —

**HALIFAX & LONDON DIRECT.**

The only Direct Line. Fortnightly Sailings.

☞ See Halifax papers for particulars.

Superior Ventilation on these Steamers for **FRUIT & LIVE STOCK.**

Special attention given to the Careful Handling of **FRUIT.**

**PICKFORD & BLACK, - - AGENTS,**  
**HALIFAX, N. S.**

Brass Ventilators made by **MACDONALD & CO.**—See adv. p. 3 cover.

PICKFORD & BLACK, **WOODBERRY COTTON DUCK, No. 1 TO 2.**

**MACDONALD & CO.,** Importers of Steam Pumps, etc.—See adv. p. 3 cover.

St.

Residences and Public Buildings Fitted with Hot Water Heating Apparatus, by **MACDONALD & CO.**—See p. 3 cover.

PICKFORD & BLACK, Importers of Refined Iron Clinch Rings.

20

ROBERT H. COGSWELL'S

[1886

JUNE.

Chronometer of G. M. T.

PICKFORD & BLACK, Importers of Refined Iron Clinch Rings.

Day of the Week.	Day of the Month.	THE SUN'S				Equation of Time to be sub. from added to Apparent Time.	Var. in 1 h'r.
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 h'r.		
T	1	4 37 7.05	10.238	N.22 5 3.9	20.24	2 26.89	0.380
W	2	4 41 12.96	10.254	22 12 58.0	19.27	2 17.57	0.396
T	3	4 45 19.25	10.270	22 20 28.9	18.30	2 7.86	0.412
F	4	4 49 25.91	10.284	22 27 36.4	17.32	1 57.79	0.427
S	5	4 53 32.90	10.298	22 34 20.4	16.34	1 47.38	0.440
S	6	4 57 40.20	10.310	22 40 40.7	15.35	1 36.66	0.453
M	7	5 1 47.79	10.322	22 46 37.2	14.35	1 25.66	0.464
T	8	5 5 55.65	10.333	22 52 9.6	13.35	1 14.39	0.475
W	9	5 10 3.75	10.342	22 57 17.9	12.34	1 2.88	0.484
T	10	5 14 12.08	10.351	23 2 2.0	11.33	0 51.14	0.494
F	11	5 18 20.62	10.360	23 6 21.7	10.31	0 39.19	0.502
S	12	5 22 29.34	10.367	23 10 17.0	9.29	0 27.06	0.509
S	13	5 26 38.23	10.374	23 13 47.7	8.27	0 14.76	0.516
M	14	5 30 47.29	10.380	23 16 53.9	7.24	0 2.30	0.522
T	15	5 34 56.46	10.384	23 19 35.4	6.22	0 10.23	0.527
W	16	5 39 5.74	10.389	23 21 52.3	5.19	0 22.98	0.531
T	17	5 43 15.12	10.393	23 23 44.4	4.16	0 35.77	0.534
F	18	5 47 24.58	10.395	23 25 11.8	3.13	0 48.63	0.537
S	19	5 51 34.08	10.397	23 26 14.4	2.09	1 1.54	0.539
S	20	5 55 43.62	10.398	23 26 52.2	1.06	1 14.49	0.540
M	21	5 59 53.16	10.397	23 27 5.2	0.03	1 27.44	0.539
T	22	6 4 2.69	10.396	23 26 53.5	1.01	1 40.37	0.538
W	23	6 8 12.18	10.394	23 26 16.9	2.04	1 53.27	0.536
T	24	6 12 21.62	10.392	23 25 15.5	3.07	2 6.12	0.534
F	25	6 16 30.98	10.388	23 23 49.3	4.10	2 18.89	0.530
S	26	6 20 40.24	10.383	23 21 58.5	5.13	2 31.56	0.525
S	27	6 24 49.38	10.378	23 19 43.0	6.15	2 44.10	0.520
M	28	6 28 58.37	10.371	23 17 2.9	7.18	2 56.50	0.513
T	29	6 33 7.19	10.363	23 13 53.3	8.20	3 8.73	0.505
W	30	6 37 15.81	10.355	23 10 29.3	9.22	3 20.76	0.497
T	31	6 41 24.21	10.345	N.23 6 35.9	10.23	3 32.57	0.487

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MACDONALD & CO., Manufacturers of Plumbers' Brass Goods.—See adv. p. 3 cover.

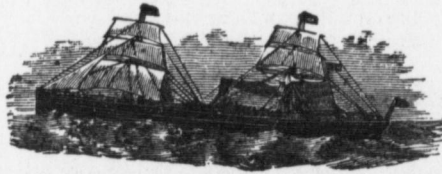
MACDONALD & CO., Manufacturers of Lead Water Marks.



# W. STAIRS, SON & MORROW, MERCHANTS,

AND IMPORTERS OF

## CORDAGE, CANVAS, CHAIN CABLES,



### Anchors and Ship Chandlery,

Bar and Bolt Iron, Copper Bars, Muntz Metal Bars and Sheathings,  
Nets, Lines, Twines and Fishing Implements,  
White Lead, Paints and Linseed Oil

George Street & Bedford Row,  
**HALIFAX, N. S.**

## CORDAGE & OAKUM.

THE DARTMOUTH ROPEWORK COMPANY

Are prepared to execute orders for the following descriptions of Cordage  
and Oakum:—

MANILLA CORDAGE, 6 thread to 20 in., 3 and 4 Strand, and Hawser.

do. BOLT ROPE and POINT ROPE all sizes.

do. Tarred Hawsers and Warps.

TARRED RUSSIAN HEMP CORDAGE, 6 thread and upwards.

do. do. Seizings, Hambroline, Housline, Marline, Point  
Yarn and Spun yarn.

do. do. Bolt Rope, all sizes.

OAKUM, CARDED RUSSIAN—Oakum, No. 1. Navy.

do. EXTRA NAVY— do. No. 2. Navy.

Address,—The Dartmouth Ropework Company, Halifax.

Brass Hinges, Hasps and Locks, at MACDONALD & CO.'S.—See cover.

Residences and Public Buildings Fitted with Plumbing Fixtures, by MACDONALD & CO.—See adv. p. 3 cover.

MACDONALD & CO., Manufacturers of Plumbers' Brass Goods.—See adv. p. 3 cover.

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

JULY.

Chronometer of G. M. T.

PICKFORD & BLACK, AMERICAN TAR, FITCH, ROSIN, 51 UPPER WATER ST.

MACDONALD & CO, MANUFACTURERS OF BRASS BINNACLE GUARDS.—See adv. p. 3 cover.

Day of the Week.		Day of the Month.		THE SUN'S				Equation of time to be added to Apparent Time.		Var. in 1 h'r.	Chronometer of G. M. T.			
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 h'r.						H.	MIN.	SEC.	THS.
		<i>h. m. s.</i>	<i>s.</i>	<i>° ' "</i>	<i>"</i>	<i>m. s.</i>	<i>s.</i>							
F	1	6 41 24.21	10.345	N. 23 6 35.9	10.23	3 32.57	0.487				1			
F	2	6 45 32.35	10.333	23 2 18.3	11.24	3 44.13	0.476				2			
S	3	6 49 40.21	10.321	22 57 36.6	12.24	3 55.40	0.463				3			
S	4	6 53 47.76	10.307	22 52 30.9	13.23	4 6.36	0.450				4			
M	5	6 57 54.97	10.293	22 47 1.4	14.22	4 16.99	0.435				5			
T	6	7 2 1.83	10.278	22 41 8.1	15.21	4 27.25	0.420				6			
W	7	7 6 8.30	10.261	22 34 51.2	16.19	4 37.14	0.404				7			
T	8	7 10 14.37	10.244	22 28 10.8	17.17	4 46.63	0.387				8			
F	9	7 14 20.03	10.227	22 21 7.1	18.14	4 55.71	0.369				9			
S	10	7 18 25.26	10.209	22 13 40.2	19.10	5 4.36	0.351				10			
S	11	7 22 30.04	10.198	22 5 50.4	20.05	5 12.56	0.332				11			
M	12	7 26 34.36	10.170	21 57 37.9	20.99	5 20.31	0.313				12			
T	13	7 30 38.21	10.150	21 49 2.8	21.93	5 27.58	0.293				13			
W	14	7 34 41.58	10.130	21 40 5.2	22.86	5 34.38	0.273				14			
T	15	7 38 44.45	10.109	21 30 45.5	23.78	5 40.68	0.252				15			
F	16	7 42 46.82	10.088	21 21 3.9	24.69	5 46.47	0.231				16			
S	17	7 46 48.67	10.066	21 11 0.5	25.59	5 51.75	0.209				17			
S	18	7 50 50.00	10.044	21 0 35.5	26.49	5 56.51	0.187				18			
M	19	7 54 50.79	10.022	20 49 49.2	27.37	6 0.74	0.165				19			
T	20	7 58 51.05	9.999	20 38 41.8	28.24	6 4.45	0.142				20			
W	21	8 2 50.76	9.976	20 27 13.5	29.11	6 7.57	0.120				21			
T	22	8 6 49.92	9.954	20 15 24.6	29.96	6 10.17	0.097				22			
F	23	8 10 48.53	9.930	20 3 15.3	30.81	6 12.22	0.074				23			
S	24	8 14 46.58	9.907	19 50 45.8	31.64	6 13.71	0.050				24			
S	25	8 18 44.06	9.883	19 37 56.5	32.46	6 14.63	0.026				25			
M	26	8 22 40.97	9.860	19 24 47.5	33.28	6 14.98	0.003				26			
T	27	8 26 37.32	9.836	19 11 19.1	34.08	6 14.77	0.021				27			
W	28	8 30 33.08	9.811	18 57 31.7	34.87	6 13.98	0.045				28			
T	29	8 34 28.25	9.786	18 43 25.5	35.64	6 12.60	0.070				29			
F	30	8 38 22.82	9.761	18 29 0.9	36.41	6 10.62	0.095				30			
S	31	8 42 16.79	9.736	18 14 18.0	37.16	6 8.04	0.120				31			
S	32	8 46 10.15	9.711	N. 17 59 17.3	37.90	6 4.86	0.145							

Woodberry Cotton Duck, for sale by PICKFORD & BLACK.

1886]

NAUTICAL ALMANAC.

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# BLACK BROS. & CO.,

— IMPORTERS OF —

American and Canadian Ducks,  
English Sail and Repairing Hemp,  
Manilla and Hemp Cordage,  
Wire Ropes, Anchors, Chains,  
Paints, Oils, Naval Stores,  
Patent Logs, Compasses, Lights.

CALL AND GET OUR PRICES.

HALIFAX, N. S.

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## J. E. WILSON,

DEALER IN

Stoves, Ships' Castings, Register Grates,  
SLATE MANTELS.

208 HOLLIS STREET, HALIFAX, N. S.

Agent for the Windsor Foundry, Windsor; Milton Foundry, Yarmouth.



Largest Variety of Ships'  
Castings and Vessel Stoves  
to be found in the Province.

Broken Windlasses and  
other gear repaired.

Stoves fitted up by  
Experienced Tinsmiths at  
Short Notice.

Sheet Iron, Tin & Copper  
Ware made to Order.

MACDONALD & CO., Manufacturers of Copper and Zinc Baths.

MACDONALD & CO., MANUFACTURERS OF COMPOSITION CLINCH RINGS.—See adv. p. 3 cover.

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

MACDONALD & CO., MANUFACTURERS OF COMPOSITION CLINCH RINGS.—See adv. p. 3 cover.

**AUGUST.**

Chronometer of  
G. M. T.

PICKFORD & BLACK, SHIP CHANDLERS, MANILLA AND HEMP ROPE.

MACDONALD & CO, Manufacturers of Patent Roller Bushings.—See adv. p. 3 cover.

		THE SUN'S				Equation of time to be added to sub. from Apparent Time.		Var. in 1 h'r.		Chronometer of G. M. T.			
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 h'r.					H.	MIN.	SEC.	THS.
Day of the Week.	Day of the Month.	h. m. s.		° ' "		m. s.							
S	1	8 46 10.15	9.711	N. 17 59 17.3	37.90	6 4.86	0.145			1			
M	2	8 50 2.90	9.685	17 43 59.0	38.63	6 1.06	0.171			2			
T	3	8 53 55.02	9.659	17 28 23.3	39.34	5 56.64	0.197			3			
W	4	8 57 46.52	9.633	17 12 30.7	40.04	5 51.60	0.223			4			
T	5	9 1 37.40	9.607	16 56 21.3	40.74	5 45.94	0.249			5			
F	6	9 5 27.67	9.582	16 39 55.5	41.41	5 39.67	0.274			6			
S	7	9 9 17.32	9.556	16 23 13.6	42.07	5 32.79	0.299			7			
S	8	9 13 6.37	9.531	16 6 16.0	42.73	5 25.30	0.324			8			
M	9	9 16 54.82	9.506	15 49 2.8	43.37	5 17.22	0.349			9			
T	10	9 20 42.67	9.482	15 31 34.4	43.99	5 8.54	0.374			10			
W	11	9 24 29.94	9.458	15 13 51.2	44.60	4 59.28	0.398			11			
T	12	9 28 16.64	9.434	14 55 53.4	45.20	4 49.45	0.421			12			
F	13	9 32 2.77	9.410	14 37 41.4	45.79	4 39.06	0.445			13			
S	14	9 35 48.34	9.388	14 19 15.4	46.37	4 28.11	0.468			14			
S	15	9 39 33.38	9.365	14 0 35.7	46.93	4 16.62	0.490			15			
M	16	9 43 17.88	9.344	13 41 42.7	47.48	4 4.60	0.511			16			
T	17	9 47 1.87	9.323	13 22 36.5	48.02	3 52.07	0.532			17			
W	18	9 50 45.36	9.302	13 3 17.6	48.55	3 39.04	0.553			18			
T	19	9 54 28.36	9.282	12 43 46.2	49.06	3 25.53	0.573			19			
F	20	9 58 10.90	9.263	12 24 2.6	49.56	3 11.55	0.592			20			
S	21	10 1 52.98	9.244	12 4 7.2	50.05	2 57.11	0.611			21			
S	22	10 5 34.61	9.226	11 44 0.2	50.53	2 42.24	0.629			22			
M	23	10 9 15.82	9.209	11 23 42.0	50.99	2 26.94	0.646			23			
T	24	10 12 56.62	9.192	11 3 12.8	51.44	2 11.23	0.663			24			
W	25	10 16 37.02	9.175	10 42 33.0	51.87	1 55.12	0.679			25			
T	26	10 20 17.03	9.159	10 21 43.0	52.20	1 38.62	0.695			26			
F	27	10 23 56.66	9.144	10 0 43.1	52.70	1 21.75	0.711			27			
S	28	10 27 35.93	9.129	9 39 33.6	53.09	1 4.51	0.726			28			
S	29	10 31 14.83	9.114	9 18 14.8	53.47	0 46.91	0.741			29			
M	30	10 34 53.39	9.100	8 56 47.1	53.83	0 28.96	0.755			30			
T	31	10 38 31.62	9.086	8 35 10.8	54.18	0 10.68	0.768			31			
W	32	10 42 9.52	9.073	N. 8 13 26.3	54.52	0 7.91	0.781						

Iron Pipe, all sizes, at MACDONALD & CO'S.—See p. 3 cover.

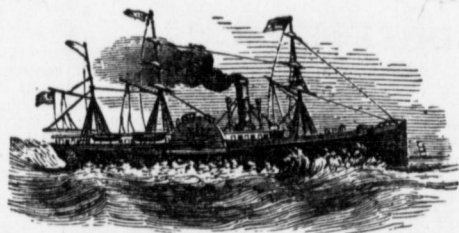


PICKFORD & BLACK, Importers Ducks and Drillings. 51 Up. Water St.

1886

NAUTICAL ALMANAC.

25



**JAS. F. PHELAN & SON,**  
Commission Merchants,

AGENTS FOR THE

**BOSTON, HALIFAX**

AND

Prince Edward Island

**STEAMERS.**

**Esson's Wharf,**

Lower Water Street,

**HALIFAX, N. S.**

PICKFORD & BLACK, IMPORTERS OF WELSH BOLT IRON SPIKES.

MACDONALD & CO., Manufacturers of Brass Binnacles and Stands.—See adv. p. 3. cover.

MACDONALD & CO., Manufacturers of Deep Sea and Hand Leads.

MACDONALD & CO., Manufacturers of Deep Sea and Hand Leads.

SEPTEMBER.

Chronometer of G. M. T.

PICKFORD & BLACK, IRON SPIKES, CUT NAILS, 51 UPPER WATER STREET.

VESSELS FITTED WITH PLUMBING FIXTURES, BY MACDONALD & CO.

Day of the Week.	Day of the Month.	THE SUN'S				Equation of time to be sub. from Apparent Time.	Var. in 1 h'r.	Chronometer of G. M. T.				
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 h'r.			H.	MIN.	SEC.	THS.	
		<i>h. m. s.</i>	<i>s.</i>	<i>° ' "</i>	<i>"</i>	<i>m. s.</i>	<i>s.</i>	1				
W	1	10 42 9.52	9.073	N. 8 13 26.3	54.52	0 7.91	0.781	2				
T	2	10 45 47.12	9.060	7 51 33.9	54.84	0 26 81	0.794	3				
F	3	10 49 24.42	9.049	7 29 33.9	55.15	0 46.01	0.806	4				
								5				
S	4	10 53 1.45	9.038	7 7 26.6	55.45	1 5.48	0.817	6				
S	5	10 56 38.22	9.027	6 45 12.5	55.73	1 25.31	0.827	7				
M	6	11 0 14.75	9.018	6 22 51.8	55.99	1 45.18	0.837	8				
								9				
T	7	11 3 51.06	9.009	6 0 24.8	56.25	2 5.37	0.846	10				
W	8	11 7 27.16	9.000	5 37 52.0	56.49	2 25.77	0.854	11				
T	9	11 11 3.08	8.993	5 15 13.5	56.71	2 46.34	0.861	12				
								13				
F	10	11 14 38.83	8.987	4 52 29.8	56.92	3 7.08	0.867	14				
S	11	11 18 14.45	8.981	4 29 41.1	57.12	3 27.97	0.873	15				
S	12	11 21 49.94	8.977	4 6 47.8	57.31	3 48.97	0.877	16				
								17				
M	13	11 25 25.34	8.973	3 43 50.2	57.49	4 10.06	0.880	18				
T	14	11 29 0.66	8.971	3 20 48.5	57.65	4 31.23	0.883	19				
W	15	11 32 35.94	8.969	2 57 43.1	57.79	4 52.45	0.885	20				
								21				
T	16	11 36 11.19	8.969	2 34 34.4	57.93	5 13.70	0.885	22				
F	17	11 39 46.44	8.969	2 11 22.5	58.05	5 34.94	0.885	23				
S	18	11 43 21.71	8.970	1 48 7.9	58.16	5 56.16	0.883	24				
								25				
S	19	11 46 57.02	8.973	1 24 50.9	58.25	6 17.34	0.881	26				
M	20	11 50 32.41	8.976	1 1 31.7	58.34	6 38.45	0.878	27				
T	21	11 54 7.88	8.980	0 38 10.7	58.40	6 59.47	0.874	28				
								29				
W	22	11 57 43.45	8.985	N. 0 14 48.3	58.46	7 20.39	0.869	30				
T	23	12 1 19.16	8.991	S. 0 8 35.2	58.49	7 41.18	0.863	31				
F	14	12 4 55.01	8.997	0 31 59.4	58.52	8 1.33	0.857					
S	25	12 8 31.02	9.004	0 55 24.0	58.53	8 22.31	0.850					
S	26	12 12 7.21	9.012	1 18 48.7	58.52	8 42.62	0.842					
M	27	12 15 43.60	9.021	1 42 13.0	58.50	9 2.73	0.834					
T	28	12 19 20.20	9.030	2 5 36.7	58.46	9 22.63	0.824					
W	29	12 22 57.03	9.040	2 28 59.3	58.41	9 42.29	0.814					
T	30	12 26 34.11	9.050	2 52 20.4	58.34	10 1.71	0.804					
F	31	12 30 11.45	9.062	S. 3 15 39.8	58.26	10 20.87	0.792					

# GEO. S. GRANT & CO.

DEALERS IN

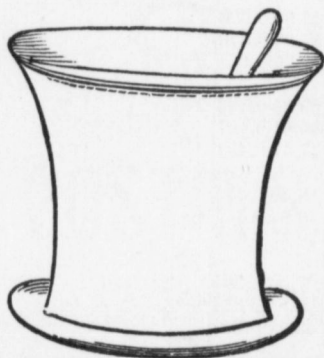
## Beef, Pork, Mutton, LAMB, VEAL AND POULTRY.

Foreign and Domestic Vegetables and Fruit.

GOODS DELIVERED FREE.

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215 BARRINGTON ST., - HALIFAX.



### MEDICINE CHESTS

Furnished and Fitted at the LONDON DRUG STORE, 147 Hollis St., J. GODFREY SMITH, Dispensing Chemist, Proprietor.

Captains and Masters of vessels will please note that the only Diploma for Excellence in Fitting out Medicine Chests, was awarded at the Dominion Exhibition of 1881 to

## J. GODFREY SMITH,

AGENT FOR

## B. LAURANCE, THE ENGLISH OPTICIAN,

whose Glasses and Spectacles will enable Captains and the man at the wheel to descry more clearly objects at sea.

MACDONALD & CO., Manufacturers of Copper and Lead Tanks.

MACDONALD & CO., MANUFACTURERS OF BRASS SLIDING-DOOR ROLLERS.—See adv. p. 3 cover.

PICKFORD & BLACK, Importers of Chain Cables and Anchors, 51 Up. Water St.

VESSELS FITTED WITH PLUMBING FIXTURES BY MACDONALD & CO.

**OCTOBER.**

**Chronometer of G. M. T.**

PICKFORD & BLACK, SHIP CHANDLERS, 51 UPPER WATER ST., HALIFAX.

RESIDENCES AND PUBLIC BUILDINGS FITTED WITH STEAM HEATING APPARATUS, BY MACDONALD & CO.

Day of the Week. Day of the Month.		THE SUN'S								Chronometer of G. M. T.					
		Apparent Right Ascension.		Var. in 1 hour	Apparent Declination.			Var. in 1 h'r.	Equation of time to be sub. from Apparent Time.		Var. in 1 h'r.	H.	MIN.	SEC.	THS.
		<i>h. m. s.</i>	<i>s.</i>		<i>° ' "</i>	<i>"</i>	<i>m. s.</i>	<i>s.</i>			1				
F	1	12 30	11.45	9.062	S. 3 15	39.8	58.26	10 20.87	0.792		2				
S	2	12 33	49.08	9.075	3 38	57.0	58.16	10 39.74	0.780		3				
S	3	12 37	27.00	9.087	4 2	11.7	58.05	10 58.32	0.767		4				
M	4	12 41	5.24	9.100	4 25	23.5	57.93	11 16.58	0.754		5				
T	5	12 44	43.81	9.116	4 48	31.9	57.78	11 34.51	0.740		6				
W	6	12 48	22.74	9.130	5 11	36.7	57.62	11 52.08	0.724		7				
T	7	12 52	2.05	9.146	5 34	37.5	57.44	12 9.28	0.708		8				
F	8	12 55	41.76	9.163	5 57	33.9	57.25	12 26.08	0.691		9				
S	9	12 59	21.88	9.181	6 20	25.6	57.05	12 42.47	0.674		10				
S	10	13 3	2.44	9.200	6 43	12.2	56.83	12 58.42	0.655		11				
M	11	13 6	43.47	9.220	7 5	53.3	56.59	13 13.90	0.635		12				
T	12	13 10	24.98	9.240	7 28	28.6	56.34	13 28.90	0.614		13				
W	13	13 14	7.00	9.262	7 50	57.7	56.08	13 43.39	0.593		14				
T	14	13 17	49.55	9.285	8 13	20.4	55.80	13 57.35	0.570		15				
F	15	13 21	32.66	9.308	8 35	36.1	55.50	14 10.76	0.547		16				
S	16	13 25	16.34	9.332	8 57	44.6	55.20	14 23.60	0.523		17				
S	17	13 29	0.61	9.358	9 19	45.5	54.87	14 35.84	0.497		18				
M	18	13 32	45.50	9.388	9 41	38.4	54.53	14 47.47	0.471		19				
T	19	13 36	31.03	9.411	10 3	23.0	54.18	14 58.47	0.445		20				
W	20	13 40	17.21	9.438	10 24	58.8	53.80	15 8.82	0.417		21				
T	21	13 44	4.05	9.466	10 46	25.4	53.41	15 18.50	0.389		22				
F	22	13 47	51.58	9.495	11 7	42.6	53.01	15 27.50	0.361		23				
S	23	13 51	39.80	9.524	11 28	49.8	52.58	15 35.81	0.331		24				
S	24	13 55	28.74	9.554	11 49	46.7	52.15	15 43.41	0.302		25				
M	25	13 59	18.39	9.584	12 10	32.8	51.69	15 50.29	0.271		26				
T	26	14 3	8.78	9.615	12 31	7.7	51.21	15 56.44	0.241		27				
W	27	14 6	59.91	9.646	12 51	31.1	50.72	16 1.85	0.210		28				
T	28	14 10	51.79	9.677	13 11	42.5	50.22	16 6.51	0.178		29				
F	29	14 14	44.42	9.709	13 31	41.5	49.69	16 10.41	0.147		30				
S	30	14 18	37.82	9.741	13 51	27.6	49.15	16 13.55	0.115		31				
S	31	14 22	32.00	9.774	14 11	0.5	48.59	16 15.92	0.083						
M	32	14 26	26.95	9.806	S. 14 30	19.7	48.01	16 17.52	0.050						



**JOHN STRACHAN,**  
**Adjuster of**  
**MARINE LOSSES,**

— AND —

**Insurance Broker.**

**No. 54 BEDFORD ROW,**  
**HALIFAX.**

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THAT AT

**COSTIN'S OLD STAND,**

**144 Lower Water Street,**

(OPPOSITE QUEEN'S WHARF.)

The Choicest Wines, Liquors, English and  
Domestic Ales and Porters, Aerated  
Waters, &c., &c.,

**ARE TO BE HAD.**

MACDONALD & CO., Manufacturers of Copper and Lead Tanks.

MACDONALD & CO., Manufacturers of Ship's Patent Water Closets.—See adv. p. 3 cover.

PICKFORD & BLACK, AGENTS FOR TARR & WONSON'S COPPER PAINT.

RESIDENCES AND PUBLIC BUILDINGS FITTED WITH STEAM HEATING APPARATUS BY MACDONALD & CO.

**NOVEMBER.**

**Chronometer of G. M. T.**

PICKFORD & BLACK, IMPORTERS OF DUCKS AND DRILLINGS, 51 UPPER WATER STREET.

MACDONALD & CO., Manufacturers of COMPOSITION RUBBER BRACES. — See *odr.* p. 3 *over.*

Day of the Week, Day of the Month.		THE SUN'S				Equation of time to be sub. from Apparent Time.	Var. in 1 h'r.
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 h'r.		
M	1	14 26 26.95	9.806	S. 14 30 19.7	48.01	m. s. s.	
T	2	14 30 22.68	9.839	14 49 24.8	47.41	16 17.52 0.050	
W	3	14 34 19.21	9.872	15 8 15.3	46.79	16 18.34 0.018	
T	4	14 38 16.53	9.905	15 26 50.9	46.16	16 18.37 0.015	
F	5	14 42 14.66	9.939	15 45 11.2	45.51	16 17.60 0.049	
S	6	14 46 13.61	9.974	16 3 15.6	44.85	16 16.03 0.082	
S	7	14 50 13.38	10.008	16 21 3.9	44.17	16 13.65 0.116	
M	8	14 54 13.97	10.042	16 38 35.8	43.47	16 10.44 0.151	
T	9	14 58 15.40	10.077	16 55 50.6	42.76	16 6.41 0.185	
W	10	15 2 17.67	10.112	16 55 50.6	42.76	16 1.55 0.220	
T	11	15 6 20.80	10.148	17 12 48.1	42.03	15 55.85 0.255	
F	12	15 10 24.77	10.183	17 29 27.8	41.28	15 49.30 0.291	
S	13	15 14 29.60	10.219	17 45 49.5	40.52	15 41.90 0.326	
M	14	15 18 35.29	10.255	18 1 52.7	39.74	15 33.65 0.362	
M	15	15 22 41.84	10.291	18 17 37.0	38.94	15 24.54 0.398	
T	16	15 26 49.25	10.326	18 33 2.0	38.14	15 14.57 0.433	
W	17	15 30 57.51	10.362	18 48 7.5	37.31	15 3.75 0.469	
T	18	15 35 6.63	10.398	19 2 52.9	36.47	14 52.07 0.504	
F	19	15 39 16.60	10.433	19 17 17.9	35.61	14 39.54 0.540	
S	20	15 43 27.40	10.468	19 31 22.2	34.74	14 26.07 0.575	
S	21	15 47 39.04	10.502	19 45 5.4	33.85	14 11.96 0.609	
M	22	15 51 51.50	10.536	19 58 27.0	32.95	13 56.92 0.644	
T	23	15 56 4.77	10.569	20 11 26.8	32.03	13 41.06 0.678	
W	24	16 0 18.83	10.602	20 24 4.3	31.09	13 24.39 0.711	
T	25	16 4 33.67	10.634	20 36 19.3	30.15	13 6.93 0.744	
F	26	16 8 49.27	10.665	20 48 11.3	29.18	12 48.70 0.775	
S	27	16 13 5.60	10.695	20 59 40.0	28.20	12 29.71 0.806	
S	28	16 17 22.63	10.724	21 10 45.1	27.21	12 9.99 0.836	
M	29	16 21 40.36	10.753	21 21 26.3	26.21	11 49.57 0.865	
T	30	16 25 58.76	10.780	21 31 43.1	25.19	11 28.45 0.894	
W	31	16 30 17.79	10.806	21 41 35.4	24.16	11 6.67 0.921	
				S. 21 51 2.7	23.11	10 44.26 0.947	

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**HARNES AND TRUNKS**

On Hand and Made to Order.

WHOLESALE AND RETAIL,

— AT —

**J. F. KELLY'S,**

35 Buckingham St., Halifax.

ALSO—A FIRST CLASS LINE OF

BELLS, WHIPS, OILS,  
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 ETC., ETC.  
  
 FURS, BLANKETS, RUBBER HORSE COVERS, KNEE WRAPS,

**CHEAP FOR CASH.**

**MACGREGOR & KNIGHT,  
STATIONERS, BOOKSELLERS & IMPORTERS,**

DEALERS IN

Fine Writing and Jobbing Papers, Account and Memo. Books, Manilla and Brown Wrappings, Envelopes, &c., &c.

Every Description of Staple Stationery and Stationers' Sundries.

SCHOOL BOOKS AND SCHOOL STATIONERY.

Bibles and Prayer Books, Toy and Gift Books, &c.

**CORNER GRANVILLE AND DUKE STS., HALIFAX.**

MACDONALD & CO., Steam Fitters.—See adv. p. 3 cover.

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

VESSELS FITTED WITH PLUMBING FIXTURES, BY MACDONALD & CO.—See adv. p. 3 cover.

MACDONALD & CO., Manufacturers of COMPOSITION RUBBER BRACES & STAPLES.

DECEMBER.

Chronometer of G. M. T.

PICKFORD & BLACK, IMPORTERS NETS, TWINES, LINES, 51 UPPER WATER STREET.

MACDONALD & CO., Manufacturers and Fitters of Steam Heating Apparatus.—See ads p. 3 cover.

Day of the Week.	Day of the Month.	THE SUN'S				Equation of time to be sub. from added to Apparent Time.	Var. in 1 h'r.	
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 h'r.			
		<i>h. m. s.</i>	<i>s.</i>	<i>° ' "</i>	<i>"</i>	<i>m. s.</i>	<i>s.</i>	
W	1	16 30 17.79	10.806	S. 21 51	2.7	23.11	10 44.26	0.947
T	2	16 34 37.45	10.831	22 0	4.8	22.06	10 21.22	0.972
F	3	16 38 57.70	10.856	22 8	41.4	20.99	9 57.59	0.997
S	4	16 43 18.53	10.879	22 16	52.3	19.91	9 33.38	1.020
T	5	16 47 39.91	10.902	22 24	37.2	18.83	9 8.62	1.042
M	6	16 52 1.82	10.923	22 31	55.8	17.72	8 43.34	1.064
T	7	16 56 24.23	10.944	22 38	47.9	16.61	8 17.56	1.084
W	8	17 0 47.12	10.963	22 45	13.3	15.50	7 51.30	1.104
T	9	17 5 10.46	10.982	22 51	11.9	14.38	7 24.59	1.122
F	10	17 9 34.24	10.999	22 56	43.4	13.24	6 57.45	1.139
S	11	17 13 58.41	11.015	23 1	47.6	12.11	6 29.90	1.156
S	12	17 18 22.96	11 030	23 6	24.5	10.96	6 1.98	1.170
M	13	17 22 47.86	11.044	23 10	33.8	9.81	5 33.72	1.184
T	14	17 27 13.08	11.057	23 14	15.4	8.65	5 5.14	1.197
W	15	17 31 38.59	11.069	23 17	29.2	7.50	4 36.26	1.209
T	16	17 36 4.37	11.079	23 20	15.2	6.33	4 7.12	1.219
F	17	17 40 30.37	11.088	23 22	33.1	5.16	3 37.76	1.228
S	18	17 44 56.58	11.096	23 24	22.8	3.99	3 8.19	1.236
S	19	17 49 22.96	11.102	23 25	44.4	2.81	2 38.45	1.242
M	20	17 53 49.47	11.107	23 26	37.8	1.64	2 8.57	1.247
T	21	17 58 16.08	11.110	23 27	2.9	0.46	1 38.60	1.250
W	22	18 2 42.76	11.112	23 26	59.7	0.72	1 8.56	1.252
T	23	18 7 9.46	11.112	33 26	28.2	1.90	0 38.50	1.252
F	24	18 11 36.15	11.111	23 25	28.5	3.08	0 8.45	1.251
S	25	18 16 2.78	11.108	23 24	0.5	4.26	0 21.54	1.248
S	26	18 20 29.31	11.103	23 22	4.2	5.43	0 51.43	1.243
M	27	18 24 55.71	11.096	23 19	39.8	6.60	1 21.19	1.236
T	28	18 29 21.94	11.088	23 16	47.3	7.77	1 50.78	1.229
W	29	18 33 47.95	11.079	23 13	26.7	8.94	2 20.16	1.219
T	30	18 38 13.72	11.068	23 9	38.2	10.10	2 49.29	1.208
F	31	18 42 39.21	11.056	23 5	21.9	11.26	3 18.15	1.196
S	32	18 47 4.39	11.042	S. 23 0	37.8	12.41	3 46.69	1.182

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MACDONALD & CO., MANUFACTURERS OF COMPOSITION CLINCH RINGS.—See ads. p. 3 cover.



PICKFORD & BLACK, Importers of Welsh Bolt Iron Spikes.

NAUTICAL ALMANAC.

**ROBERT H. COGSWELL,**

ESTABLISHED 1880.

Headquarters in Halifax for

Chronometers, Watches & Clocks,

JEWELRY—GOLD, SILVER AND PLATED,

Quadrants & Sextants,

PATENT LOGS, THERMOMETERS,

**SHIP & DORY COMPASSES,**

Telescopes and Marine Glasses,

ANEROID BAROMETERS,

*Charts and Nautical Works.*

CHEAPEST IN THE CITY.

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

MACDONALD & CO., MANUFACTURERS OF COMPOSITION CLINCH RINGS.—See adv. p. 3 cover.

MACDONALD & CO., MANUFACTURERS OF COPPER AND LEAD SHEETS.

MACDONALD & CO., Manufacturers and Fitters of S...

PICKFORD & BLACK, 51 Upper Water St., Halifax, N. S.

ROBERT H. COGSWELL'S

[1886

Medal Awarded at Centennial Exhibition.

**Nova Scotia Brewery,**

**ALEX. KEITH & SON,**

(ESTABLISHED IN 1820.)

Manufacturers of

**India Pale Ale,**

**X, XX AND XXX**

**ALES AND PORTER.**

Importers and Bottlers of

**English Ale & Brown Stout.**

**IMPORTERS & WHOLESALE DEALERS.**

**Lower Water St., - HALIFAX, N. S.**

MACDONALD & CO., Makers of Tumbler Racks, &c.—See p. 3 cover.

PICKFORD & BLACK IMPORTERS NETS, TWINES LINES, 51 UPPER WATER STREET.

MACDONALD & CO, Manufacturers and Fitters of Steam Heating Apparatus.—See adv. p. 3 cover.

PICKFORD & BLACK, American Tar, Pitch, Rosin, 51 Up. Water St.

1886]

NAUTICAL ALMANAC.

# J. GORDON BENNET, M. D.

Any patient, traveller or resident, to or in England, can get Dr. J. Gordon Bennet's appliances, or have them sent by mail, on receipt of cash, with all information free, in England, at his office, NEWLANDS, SHERBORNE, DORSETSHIRE. No cases treated unless unable to get benefit elsewhere. 17,000 patients treated last year.

DR. BENNETT:

YARMOUTH, N. S., April 12th, 1884.

Dear Sir,—Words cannot express the deep gratitude I feel for all you have been the means in God's hands of doing for me. I have not been as well as I am at present for nearly seven years. During that time I have been carried to Boston twice in order to receive medical treatment, and whilst there employed three of the best doctors I could get. I would rally for a short time and then find myself as bad as ever again. The weakness that held me down and prevented me either sitting up or walking for nearly five years, you have entirely cured, which no other doctor I have ever employed could do. It gives me great pleasure to be able, conscientiously, to give this testimonial, feeling that under God I owe my health to you. May your life long be spared for the sake of poor suffering humanity.

Yours respectfully, MRS. LOIS B. KILLAM.

N. B.—This lady is now quite well. Before going to Boston eleven physicians tried the case, but with no result.—J. G. B.

Dr. Bennett's Electro Magnetic Batteries, worn on the body \$5 or £1 each. Electro Magnetic Digesters, by which any food can be easily digested, in conjunction with belt worn over underflannel, \$10 or £2; separate, \$5 or £1. Fever Pads, for prevention of any fever, especially "Yellow Jack," \$3 or 12s. each.

Branches—HALIFAX, N. S. & ST. JOHN'S, NFLD.

A LARGE STOCK OF

Hats,



Furs,

AND

Caps,

Trunks,

—AT—

## T. E. EVERETT & CO.'S,

164 GRANVILLE ST., HALIFAX.

MACDONALD & CO., Manufacturers of Deep Sea and Hand Leads.

PICKFORD & BLACK, WOODBERRY COTTON DUCK, No. 1 TO 2.

MACDONALD & CO., Importers of Steam Pumps, etc.—See adv. p. 3 cover.

MACDONALD & CO., Manufacturers and Fitters of Steam Heating Apparatus.—See adv. p. 3 cover.

PICKFORD & BLACK, Agents for Tarr & Wonson's Copper Paint.

ROBERT H. COGSWELL'S

[1886

## SHIP STORES.

The Subscriber respectfully calls the attention of Ship Captains and Owners of Vessels coming into the Port of Halifax, to his large and varied assortment of

### Groceries & Provisions,

SUITABLE FOR FIRST-CLASS SHIP STORES,

Consisting in part of the following Goods, viz.:

Beef, Pork, Ham, Fish, Flour, Meal, Beans, Peas, Barley,  
Rice, Sugar, Tea, Coffee, Molasses, Vinegar, Lard, Butter,  
Cheese, Eggs, Potatoes, Turnips, Navy Bread, Fancy Biscuits,  
COLZA, SEAL, OLIVE AND KEROSENE OILS.

The above are put up at the Lowest Prices and Shortest Notice, and delivered free of cartage on the wharf at which the vessel is lying.

**P. DOYLE,** LOWER WATER STREET,  
HALIFAX, N. S.

### N. SARRE & SONS,

27 George Street, - Halifax.

DEALERS IN

Virginia Tobacco, Havana Cigars and Cigarettes,

MEERSCHAUM AND BRIAR ROOT PIPES,

Salmon, Lake and Sea Trout Tackle,

Wade & Butcher's Razors, Westenholm & Sons' Fine  
Pocket Cutlery,

Cricketing and Baseball Goods, Forbes' Acme  
Club Skates.

SMOKE SARRE'S GOLDEN MAGNET MIXTURE. IT IS THE BEST.

### PEART'S CENTRAL BAZAAR,

16 GEORGE STREET,  
HALIFAX, N. S.

Picture Frames and Mouldings,  
Largest and Best Assorted Stock.

### TOYS AND NOVELTIES.

MACDONALD & CO., Brass Founders.—See adv. p. 3 cover.

PICKFORD & BLACK, SHIP CHANDLERS, 51 UPPER WATER ST., HALIFAX.

RESIDENCES AND PUBLIC BUILDINGS FITTED WITH STEAM HEATING APPARATUS, BY MACDONALD & CO.



PICKFORD & BLACK, Iron Spikes, Cut Nails, 51 Up. Water St.

1886]

NAUTICAL ALMANAC.

**R. H. COGSWELL**

REPAIRS

PATENT LOGS,

COMPASSES,

TELESCOPES,

Quadrants,

Barometers,

&c., &c.

**Watches and  
Repairs  
Carefully  
Clocks**

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

Brass Hinges, Hasps and Locks, at MACDONALD & CO.'S.—See cover.

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RESIDENCES AND PUBLIC BUILDINGS FITTED WITH STEAM HEATING APPARATUS, BY MACDONALD & CO.  
Residences and Public Buildings Fitted with Plumbing Fixtures, by MACDONALD & CO.—See *atlc.* p. 3 cover

PHENOMENA, 1886.

PICKFORD & BLACK, Importers of Refined Iron Clinch Rings.

	<i>h.</i>		<i>h.</i>		
Jan. 2	18	↑ greatest Hel. Lat. N.	Mar. 21	23	♄ □ ☽
2	19	♄ ☾ ... 2 34 S.	25	—	at greatest brilliancy.
3	9	in ☽	25	1	♄ at greatest Hel. Lat. N.
8	14	at greatest elong. 23 21 W.	25	22	♄ ☽ ☽
8	18	♄ ☾ ... ♀ 0 38 S.	29	14	Stationary.
10	0	♄ μ Geminor. * 0 0	31	8	♄ ☾ ... ♀ 1 52 N.
11	16	♄ Stationary.	April 4	12	♄ ☽ ... ♀ 6 25 N.
13	—	at greatest brilliancy.	8	16	♄ Inf. ☽ ☽
18	1	♄ ☾ ... ♀ 4 8 N.	10	0	♄ ☾ ... ♀ 4 24 N.
19	14	♄ in ☽	14	13	♄ ☾ ... ♀ 3 44 N.
20	11	♄ Stationary.	16	0	♄ ☾ ... ♀ 0 29 N.
23	14	♄ ☾ ... ♀ 2 56 N.	17	13	♄ in ☽
24	6	♄ ☾ ... ♀ 0 17 S.	17	18	♄ Stationary.
26	4	♄ Stationary.	21	2	♄ Stationary.
26	9	♄ Stationary.	24	22	♄ in ☽
29	18	♄ in Aphelion.	27	18	♄ in Aphelion.
Feb. 2	8	♄ ☾ ... ♀ 5 24 S.	29	5	♄ at greatest elong. 46 8 W.
5	7	♄ ☾ ... ♀ 5 59 N.	29	17	♄ ☾ ... ♀ 0 19 N.
5	21	♄ in Perihelion.	May 1	13	♄ ☾ ... ♀ 0 6 S.
6	18	♄ in Aphelion.	6	13	♄ at greatest elong. 26 16 W.
14	9	♄ ☾ ... ♀ 4 21 N.	7	10	♄ ☾ ... ♀ 4 13 N.
18	7	Inf. ☽ ☽	12	0	♄ ☾ ... ♀ 2 6 N.
18	16	♄ ♀ ... ♀ 11 22 S.	13	4	♄ ☾ ... ♀ 0 25 N.
19	4	at greatest Hel. Lat. S.	18	4	♄ greatest Hel. Lat. S.
19	18	♄ ☾ ... ♀ 3 50 N.	23	8	♄ Stationary.
20	14	♄ ☾ ... ♀ 0 8 S.	29	1	♄ in Aphelion.
24	4	♄ Sup. ☽ ☽	29	13	♄ ☾ ... ♀ 1 18 N.
27	21	at greatest Hel. Lat. N.	June 1	1	♄ ☾ ... ♀ 4 3 N.
Mar. 2	17	♄ Stationary.	3	22	♄ ☾ ... ♀ 4 1 N.
3	10	♄ ☾ ... ♀ 6 10 N.	6	3	♄ in ☽
5	—	☽ eclipsed, invis. at Green'h.	8	21	♄ ☾ ... ♀ 0 6 N.
6	0	♄ ☽ ☽	9	10	♄ ☾ ... ♀ 0 1 N.
6	6	♄ ☾ ... ♀ 0 8 N.	10	16	♄ ☽ ☽
9	14	♄ Stationary.	10	17	♄ in Perihelion.
10	4	♄ in ☽	10	18	♄ Stationary.
13	16	♄ ☾ ... ♀ 4 27 N.	11	14	♄ Sup. ☽ ☽
14	18	♄ in Perihelion.	17	22	♄ ☽ ☽
18	14	♄ ☾ ... ♀ 4 27 N.	20	13	♄ ☽ ♀ ... ♀ 2 16 N.
19	20	♄ ☾ ... ♀ 0 13 N.	20	19	♄ greatest Hel. Lat. S.
20	4	☽ enters ♍, Spring comm's.	21	0	♄ greatest Hel. Lat. N.
21	7	♄ ☽ ☽	21	1	☽ enters ♍, Summer comm's.
21	14	♄ at greatest elong. 18 31 E.	24	20	♄ ☽ ☽
			27	22	♄ ☽ ♀ ... ♀ 0 59 S.

MACDONALD & CO., Manufacturers of Plumbers' Brass Goods.—See adv. p. 3 cover.

PHENOMENA, 1886.

	h.	o	'			h.	o	'			
June	28	12	0	♁ ☾	2 57 N.	Sep.	27	23	27	♁ ☾ ☽	2 9 S.
July	14	14	0	♁ ☽	3 51 N.	29	6	0	♁ ☽ ☽	0 34 N.	
	2	4	0	☽ in Apogee.							
	3	1	0	♁ ☽	4 35 N.	30	22	0	♁ ☽ ☽		
	3	14	0	♁ ☽		30	22	0	♁ ☽ ☽	6 11 S.	
	6	19	0	♁ ☽ ☽	0 33 S.	Oct.	3	14	0	♁ ☽ ☽	0 22 S.
	7	1	0	♁ ☽ ☽	2 1 S.	9	5	0	♁ ☽ ☽		
	8	0	0	♁ ☽ greatest Hel. Lat. N.		10	11	0	♁ ☽ in ☽		
	9	2	0	♁ ☽ ☽	0 34 S.						
	14	12	0	♁ ☽ in ☽		10	14	0	♁ ☽ greatest Hel. Lat. N.		
	18	22	0	♁ at greatest elong.	26 52 E.	14	0	0	♁ ☽ ☽	0 52 N.	
	19	9	0	♁ in ☽		15	3	0	♁ ☽ ☽		
	24	17	0	♁ in Aphelion.		19	19	0	♁ ☽ ☽	3 16 N.	
	28	10	0	♁ ☽ μ Geminor. *	0 6 N.	20	16	0	♁ ☽ in Aphelion.		
	28	11	0	♁ ☽ ☽	3 46 N.						
	29	6	0	♁ ☽ ☽	3 45 N.	22	9	0	♁ ☽ ☽	0 18 N.	
Aug.	1	3	0	♁ Stationary.		25	19	0	♁ ☽ ☽	2 35 S.	
	1	4	0	♁ ☽ ☽	3 5 S.	26	1	0	♁ ☽ ☽	2 36 S.	
	3	9	0	♁ ☽ ☽	1 8 S.	28	1	0	♁ ☽ ☽	7 3 S.	
	4	11	0	♁ ☽ ☽	3 57 S.	29	22	0	♁ ☽ ☽	6 5 S.	
	8	2	0	♁ ☽ ☽	0 1 S.						
	14	3	0	♁ ☽ ☽ greatest Hel. Lat. S.		Nov.	3	11	0	♁ Stationary.	
	15	20	0	♁ ☽ ☽ Inf. ☽ ☽		10	2	0	♁ ☽ ☽ greatest Hel. Lat. S.		
	16	2	0	♁ ☽ in ☽		13	5	0	♁ ☽ ☽ at greatest elong.	22 29 E.	
	16	7	0	♁ ☽ ☽	0 31 N.	16	1	0	♁ ☽ ☽	3 3 N.	
	22	0	0	♁ ☽ in Aphelion.		22	13	0	♁ ☽ ☽	3 0 S.	
	24	23	0	♁ Stationary.							
	25	22	0	♁ ☽ ☽	3 39 N.	23	2	0	♁ Stationary.		
	27	8	0	♁ ☽ ☽	3 0 N.	25	2	0	♁ ☽ ☽	4 41 S.	
	27	21	0	♁ ☽ ☽	0 14 N.	26	9	0	♁ ☽ ☽	5 41 S.	
	29	—	0	☽ eclipsed, invis. at Green'h.		28	2	0	♁ ☽ ☽	5 8 S.	
	31	3	0	♁ ☽ ☽	1 51 S.	29	2	0	♁ ☽ in ☽		
Sep.	1	23	0	♁ ☽ ☽ at greatest elong.	18 5 W.	Dec.	2	17	0	♁ ☽ Sup. ☽ ☽	
	2	2	0	♁ ☽ ☽	5 26 S.	3	0	0	♁ ☽ ☽ Inf. ☽ ☽		
	2	3	0	♁ ☽ in ☽		3	1	0	♁ ☽ ☽	1 14 N.	
	6	17	0	♁ ☽ in Perihelion.		3	16	0	♁ ☽ ☽ in Perihelion.		
	17	0	0	♁ ☽ ☽ greatest Hel. Lat. N.		5	15	0	♁ ☽ in ☽		
	18	9	0	♁ ☽ ☽ in Perihelion.		12	18	0	♁ Stationary.		
	22	10	0	♁ ☽ ☽	3 29 N.	13	5	0	♁ ☽ ☽	2 59 N.	
	22	15	0	☽ enters ♄, Autumn comm's.		13	23	0	♁ ☽ ☽ greatest Hel. Lat. N.		
	26	5	0	♁ ☽ ☽	0 34 N.	20	3	0	♁ ☽ ☽	3 24 S.	
	27	8	0	♁ ☽ ☽	1 6 S.	21	9	0	☽ enters ♃, Winter comm's.		
	27	15	0	♁ ☽ ☽ Sup. ☽ ☽		22	2	0	♁ ☽ ☽ at greatest elong.	21 52 W.	
						23	2	0	♁ ☽ ☽	3 5 S.	
						23	3	0	♁ ☽ ☽ greatest Hel. Lat. S.		
						25	10	0	♁ ☽ ☽	4 39 S.	
						27	17	0	♁ ☽ ☽	3 29 S.	

PICKFORD & BLACK, Importers of Wire Rope, Canvas, 51 Upper Water St.

MACDONALD & CO., MANUFACTURERS OF COMPOSITION BUTT BOLTS AND SPIKES.—See p. 3 cover.  
 MACDONALD & CO., Manufacturers of Plumbers' Brass Goods.—See adv. p. 3 cover.

PICKFORD & BLACK, Importers Nets, Lines, Twines, 51 Up. Water St.

ROBERT H. COGSWELL'S

[1886

# WEATHER PROBABILITIES

FOR

## LATITUDE OF HALIFAX,

### FOR 1886.

Jan. 2-4.	Snow.	Aug. 3-5.	Rainy.	} May expect a very foggy month.
8-10.	Snow and rain.	8-10.	Rain.	
17-19.	Milder weather.	16-20.	Rain.	
23-26.	Stormy.	25th.	Stormy.	
Feb. 1-5.	Stormy.	29th.	Rain.	
11-14.	Milder with rain.	31st.	Rain storm.	
16-18.	Rain storm.			
21st.	Rain or snow.			
25-28.	Snow storms.	Sept. 3.	Stormy.	
Mar. 3-6.	Stormy.	5th.	Fog and rain.	
8-10.	do.	10-12.	High winds and rain.	
13-14.	do.	21-25.	Heavy storm.	
18-20.	Rain storm.	27-29.	Unsettled.	
25-26.	Stormy.	31st.	Rain.	
30-31.	do.			
Apl. 3-5.	Heavy snow storm.	Oct. 2-4.	Rain.	
10-16.	Stormy.	9th.	Stormy.	
21st.	Rain.	14th.	Weather unsettled.	
29-30.	High winds and rain.	19th.	High winds and rain.	
May 2nd.	Stormy.	25-27.	Rain.	
8th.	Rain.	28-31.	Snow flurries.	
10-13.	Fog and rain.			
15-17.	Rain.	Nov. 2-4.	Stormy.	
20th.	Unsettled weather.	8-10.	Rain.	
28-30.	Rain.	16-18.	Rain or snow.	
June 3-6-10.	High winds and rain.	21-23.	High winds.	
19-21.	Rain, thunder & lightning.	26-28.	High winds and snow.	
26-29.	Unsettled weather.			
July 2nd.	Rain.	Dec. 2-4.	Snow squalls.	
6-7.	Stormy.	6-8.	Rain.	
10th.	Rain.	13th.	Rain.	
24-25.	Unsettled weather.	18-21.	Stormy.	
27-31.	Stormy.	24-25.	Rain or snow.	

## T. C. ALLEN & COMP'Y.,

Booksellers, Stationers,

COPPERPLATE PRINTERS, &c. &c.

124 GRANVILLE ST.

MACDONALD & CO., Manufacturers of Hand and Power Presses.

PICKFORD & BLACK, IMPORTERS OF DUCKS AND DRILLINGS, 51 UPPER WATER STREET.

MACDONALD & CO., Manufacturers of COMPOSITION RUBBER BRACES.—See adv. p. 3 cover.

MACDONALD & CO., MANUFACTURERS OF BRASS SLIDING-DOOR ROLLERS.—See adv. p. 3 cover.



PICKFORD & BLACK, Woodberry Cotton Duck, No. 1 to 2.

1886]

NAUTICAL ALMANAC.

33

**ROBERT H. COGSWELL,**

ESTABLISHED 1830.

HEADQUARTERS IN HALIFAX FOR

**Chronometers, Watches & Clocks,**

**JEWELRY—GOLD, SILVER AND PLATED,**

**Quadrants & Sextants,**

**PATENT LOGS, THERMOMETERS,**

**SHIP & DORY COMPASSES,**

**Telescopes and Marine Glasses,**

**ANEROID BAROMETERS,**

*Charts and Nautical Works,*

**CHEAPEST IN THE CITY.**

MACDONALD & CO., Manufacturers of Copper and Lead Tanks.

PICKFORD & BLACK, Importers of Chain Cables and Anchors, 51 Up. Water St.

MACDONALD & CO., MANUFACTURERS OF BRASS SLIDING-DOOR ROLLERS.—See adv. p. 3 cover.

MACDONALD & CO., MANUFACTURERS OF COMPOSITION RUBBER BRACES.—See adv. p. 3 cover.

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1886

1886

See adv. p. 3 cover.

## RULES AND REGULATIONS

For the Government of the Port of Halifax, in Nova Scotia,  
and of the Office of Harbour Master for the said Port.

**RULE I.**—It shall be the duty of the Harbour Master of the said port in person, at such times and on such occasions as he shall think it necessary, to go on board every ship or vessel which shall arrive within the port of Halifax, to see that she is moored only in such a manner or position as shall be assigned to her by the following regulations.

**RULE II.**—In case of any dispute arising between masters, owners, or other persons engaged in hauling ships or vessels in or out of any of the docks or wharves, it shall be the duty of the Harbour 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 Harbour Master, in these respects, under a penalty of fifty dollars, for each and every neglect or refusal so to do.

**RULE III.**—If any ship or vessel arriving and anchoring, or being moored or fastened to any wharf, or vessel in the said Harbour, shall be so moored or placed as to be unsafe and dangerous to any other ship or vessel previously lying at anchor in the said Harbour, or moored or fastened as aforesaid, the said Harbour Master is hereby authorized and required to forthwith order and direct the situation of such ship or vessel so arriving and anchored, moored or fastened as aforesaid, to be altered in such a manner, as to prevent such insecurity and danger; and the master, pilot or other person having charge of such ship or vessel shall comply with the orders and directions of the said Harbour Master, in this respect, under a penalty of fifty dollars for each and every offence.

**RULE IV.**—It shall be the duty of the Harbour Master to see that the track be kept open for the Ferry Steamers between the City and Dartmouth, and that a space of two hundred fathoms easterly from the line of wharves be reserved as a passage for the Royal Mail and other steamers

**RULE V.**—If any ship or vessel is moored or anchored in the stream in such a position as to obstruct or prevent the docking or undocking of any other ship or vessel or in any way impeding the navigation of the Harbour, the Harbour Master is hereby authorized and required to forthwith order and direct the removal of such ship or vessel so moored or anchored, as aforesaid; and the master, pilot or other person having charge of such ship or vessel shall comply with the

orders and directions of the Harbour Master in this respect under a penalty of fifty dollars for each and every offence.

**RULE VI.**—No steamer entering or leaving Halifax Harbour, (those of Her Majesty and the Government of the Dominion of Canada excepted), shall, while inside of George's Island, proceed at more than half her usual speed, under a penalty of one hundred dollars, to be paid by the owner, master or agent of the vessel violating the law.

**RULE VII.**—Whenever it shall happen that any ship or vessel is short of hands, so that she cannot be moved when ordered under the provisions of this Bye-law, it shall and may be lawful for the Harbour Master to employ a sufficient number of hands to effect such removal and to remove or assist in removing such vessel as required or may be necessary, and that at the expense of such vessel.

**RULE VIII.**—The Harbour Master shall have power to order the removal of any scow, boat or any other vessel, loaded or unloaded, or anything calculated to interfere with the mooring or moving of vessels from any part of the Harbour to any other part thereof; and the owner or person in charge of such scow, boat, vessel or other obstruction failing to make such removal in one hour after having been notified so to do by the Harbour Master, shall forfeit and pay a sum not exceeding twenty-five dollars; and after one hour shall have elapsed the Harbour Master shall have power to remove the same and that at the expense of the owner or person in charge thereof.

**RULE IX.**—It shall be the duty of the Harbour Master to see that the docks, water privileges and landing places belonging to, owned by or known as the "Water Property of the City of Halifax," and fronting on the Harbour be kept open and free from all obstructions. Any person or persons failing to comply with the orders and directions of the Harbour Master in this respect shall be liable to a penalty of fifty dollars for each and every offence.

**RULE X.**—All ships or vessels loading or discharging in the stream coal, ballast or such like materials, shall have a sufficient piece of canvas or tarpaulin so placed as to prevent any portion thereof from falling into the Harbour, under the penalty of fifty dollars for each and every offence to be paid by the owner, master or person in charge of such ship or vessel.

**RULE XI.**—It shall be the duty of the masters and other persons in charge of ships or vessels lying at the wharves, with their main jib or spanker booms projecting beyond the end of the wharves, to have the same rigged in, and in the event of non-compliance, all accidents to the same shall be at the risk of the person so offending.

**RULE XII.**—Whenever the Harbour Master shall find ships or vessels at the wharves or in the stream with main, jib or spanker booms rigged out or yards braced so as to incommode other vessels, it shall be the duty of the Harbour Master to direct such booms to be rigged in, and such yards to be braced by or cock-billed; and the

Brass Hinges, Hasps and Locks, at **MACDONALD & CO.'S.**—See cover.

Residences and Public Buildings Fitted with Plumbing Fixtures, by **MACDONALD & CO.**—See *oth.* p. 3 cover.

**PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.**

RESIDENCES AND PUBLIC BUILDINGS FITTED WITH STEAM HEATING APPARATUS, BY **MACDONALD & CO.**

masters, pilots or other persons in charge of such ships or vessels shall comply with the directions of the Harbour Master in this respect, under a penalty of fifty dollars for each and every offence.

**RULE XIII.**—No vessel shall be left without some person to take care of her, by night or by day, when anchored in the stream.

**RULE XIV.**—All vessels lying at anchor in the Harbour shall keep a clear and bright light burning, at least twelve feet from the uppermost deck from sunset until sunrise.

**RULE XV.**—No vessel lying in the stream shall have any tow line hawser, or other thing made fast to any wharf or to shore, except for the purpose of hauling in or out.

**RULE XVI.**—No boat or vessel which may come into any of the slips, or to any pier or wharf in the said City, laden or partly laden with hay or straw, have any fire on board the same, under the penalty of fifty dollars, to be paid by the owner, master or other person having charge of such boat or vessel.

**RULE XVII.**—No ballast, stone, gravel, earth or rubbish of any kind shall be unladen, cast or emptied out of, or thrown overboard, from any ship or vessel whatever in the Harbour of Halifax, or at the entrance thereof, (except in places set apart for that purpose by the Harbour Master), under the penalty of one hundred dollars for each and every offence, to be paid by the owner, master or other person having charge of any such ship or vessel.

**RULE XVIII.**—No ballast, stone, gravel, earth, or rubbish of any kind shall be unladen, discharged, deposited, thrown or laid, either from any vessel, boat, scow or other such craft, or in any other manner, or by any person, from any part of the beach or shore of the city, into any part of the Harbour, or upon the beach and shore thereof, either below low water mark or between high and low water mark, under the penalty of one hundred dollars for each and every offence, to be paid by the owners, master or person having charge of any vessel, boat, scow, or other craft from which such matter as aforesaid shall have been discharged, or by any person or persons violating this law.

**RULE XIX.**—No cast-off wharf piles, saw logs, log ends, refuse timber or rubbish of a like nature shall be thrown into the water or allowed go adrift into the Harbour of Halifax, under a penalty of fifty dollars for each and every offence to be paid by the person or persons violating this law.

**RULE XX.**—No explosive material, such as nitro-glycerine, or compounds of the same, gun cotton or petroleum, shall be landed in the City of Halifax, (except in such quantities as shall be stated in writing by the Harbour Master), under a penalty of one hundred dollars for each and every offence, to be paid by the owners, master or person having charge of the ship or vessel from which explosive material has been landed.



**RULE XXI.**—If any ship or vessel arriving and coming into the Harbour of the said City, (those belonging to or employed by Her Majesty, and the Government of the Dominion of Canada, excepted), shall have any gunpowder on board exceeding the quantity of twenty-five pounds, such gunpowder exceeding that quantity shall be unladen and discharged from such ship or vessel within forty-eight hours after her arrival, and before such ship or vessel shall be brought alongside of any pier or wharf in the said City, under the pain of forfeiture of such gunpowder, and under the penalty of one hundred dollars for each and every offence, to be paid by the owner or owners of such ship or vessel, or by the master or person having charge or command thereof; and that whenever any gunpowder is discharged from any ship or vessel, in the said Harbour, the same shall be conveyed by water, in a boat or boats, to some safe and secure place for the deposit of gunpowder without the limits of the said City, during which conveyance such gunpowder shall be covered with a tarpaulin or other secure covering, under the penalty of fifty dollars 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.

**RULE XXII.**—No gunpowder shall be taken or received on board of any ship or vessel bound to sea (those belonging to or employed by Her Majesty and the Government of the Dominion of Canada excepted), while such ship or vessel shall be and remain at any pier or wharf in the said city, and until such ship or vessel shall be cleared at the Custom House and ready for sea, except with the knowledge and sanction of the Harbour 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 under the further penalty of one hundred dollars for each and every offence, to be paid by the owner or owners of any 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 such ship or vessel; and when it is intended to take or load any gunpowder on board of any ship or vessel lying in the said Harbour, the same shall be conveyed by water to such ship or vessel, during all which conveyance such gunpowder shall be covered in the manner hereinbefore mentioned, under the penalty of fifty dollars 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.

**RULE XXIII.**—All gunpowder forfeited under and by virtue of this law, shall and may be seized by the Harbour Master, or person deputed by him, and when seized shall be conveyed to and deposited in some secure place without the limits of the said city, and upon conviction of the offender, the said Harbour Master shall and may, and he is hereby authorized and empowered, within three days after

MACDONALD & CO., Manufacturers of Copper and Lead Tanks.

PICKFORD & BLACK, AGENTS FOR TARR & WONSON'S COPPER PAINT.

MACDONALD & CO., Manufacturers of Ship's Patent Water Closets.—See adv. p. 3 cover.

MACDONALD & CO., Manufacturers of Plumbers' Brass Goods.—See adv. p. 3 cover.

such conviction, to sell such gunpowder at public auction, by sample, in the said city, and the proceeds of such sale, after deducting the necessary costs and charges of prosecution and sale, shall be paid by the said Harbour Master to the credit of the Receiver General of the Dominion of Canada.

RULE XXIV.—Any person or persons who shall or may hinder, oppose, molest or obstruct the Harbour Master, in the discharge of his duty, shall, on conviction, pay a penalty of fifty dollars for each and every offence.

RULE XXV.—The penalty for violation of, or not conforming to the provisions of the law, and for disobeying the lawful orders or directions of the Harbour Master in respect to any provision for which no penalty is hereinbefore prescribed, shall be fifty dollars, to be imposed upon the owner or person in charge of the ship or vessel not conforming to the particular requirements.

E. O'BRYAN,  
*Harbour Master.*

# CHARTS!

Cheapest place in the City.

## R. H. COGSWELL,

175 Barrington Street,

### HALIFAX.

PICKFORD & BLACK IMPORTERS NETS, TWINES LINES, 51 UPPER WATER STREET.

MACDONALD & CO., Manufacturers and Fitters of Steam Heating Apparatus.—See adv. p. 3 over.

INDICATIONS

OF THE

Barometer, Thermometer and Hygrometer,  
AS AIDS IN FORTELLING WEATHER.

Weather is the condition of the air at any time as regards heat, moisture, wind, rain, cloud, and electricity; and a change of weather implies a change in one or more of these atmospheric elements.

Difficult as it is to foretell weather accurately, much useful foresight may be acquired by combining the indications of instruments (such as the barometer, thermometer, and hygrometer), with atmospheric appearances.

1. The barometer shows the *pressure of the air*.
2. The thermometer (in the shade) shows the heat and cold, or the *temperature of the air*.
3. The hygrometer shows the degree of *moisture*, or the *dampness of the air*.
4. It should always be remembered that changes in weather almost always give signs of their coming, for the instruments are affected before the wind actually begins to blow or the rain to fall; thus the instruments may be said to enable us to "feel the pulse" of the atmosphere. It must not be forgotten that the length of time which passes between the first appearance of a change of weather and its actual setting is not always the same. It is much greater when a southwest wind is going to succeed a northeast wind, than when the opposite change is going to take place. We shall see further on why this is the case, and also how the appearance of the sky will aid us in forming an opinion as to probable weather.
5. The general principles on which the following explanation is founded have been laid down by Professor Dové, and may be briefly stated thus: \*

\* "EXPLANATORY CARD."

"In south latitude read south for north."

"WEATHER GLASS.

"The barometer rises for northerly wind (including from northwest, by the north, to the eastward), for dry or less wet weather; for less wind, or for more than one of these changes, except on a few occasions, when rain, hail or snow comes from the northward with strong wind.

"The barometer falls for southerly wind (including from southeast by the south, to the westward) for wet weather; for stronger wind, or for more than one of these changes, except on a few occasions when moderate wind with rain (or snow) comes from the northward.

"For change of wind toward northerly directions—a thermometer falls.

"For change of wind toward southerly directions—a thermometer rises."

PICKFORD & BLACK, Importers of Wire Rope, Canvas, 51 Upper Water St.

MACDONALD & CO., MANUFACTURERS OF COMPOSITION BUTT BOLTS AND SPIKES.—See p. 3 cover.

MACDONALD & CO., Manufacturers and Fitters of Steam Heating Apparatus.—See adv. p. 3 cover.

PICKFORD & BLACK, SHIP CHANDLERS, MANILLA AND HEMP ROPE.

MACDONALD & CO., Manufacturers of Patent Roller Bushings.—See adv. p. 3 cover.

a. If the level of the mercury in the barometer is about at its average height, viz, 30 inches, at the sea level, and is steady or rising while the weather gets colder and the air becomes drier, northwesterly, northerly, northeasterly winds, or less wind, less rain or snow may generally be expected.

b. On the contrary, if the level of the mercury falls while the weather gets warmer and the air becomes damper, wind and rain may be looked for from the southeast, or southwest.

c. If these rules are broken in any way, there is reason to fear.

d. If the weather gets warmer while the barometer is high and the wind northeasterly (polar current), we may look for a sudden shift of wind to the south. On the other hand, if the weather becomes colder while the wind is southwesterly (equatorial current), and the barometer low, we may look for a sudden squall or severe storm from the northwest, with a fall of snow if it be winter time.

e. Slight exceptions to these rules sometimes happen; the commonest are with northeast winds, which sometimes bring rain, sleet or snow, especially during heavy gales, although the barometer may be rising. On the other hand, when the wind is northeasterly and light, and the barometer begins to fall, rain may set in before the wind begins to blow from east or east-southeast.

f. Besides these rules for the instruments, there is one about the way in which the wind changes, which is very important. It is well known to every seaman, and is contained in the following couplet:

“When the wind veers against the sun,  
Trust it not, for back it will run.”

The wind almost always shifts *with the sun*, i. e., from left to right in front of you. A change in this direction is called *veering*.\*

g. Thus, an east wind shifts to west through southeast, south and southwest, and a west wind shifts to east through northwest, north and northeast.

“Moisture, or dampness in the air (as shown by the hygrometer), increases before rain, fog or dew.

“Admiral Fitz Roy proposed the following words for barometer scales:  
“Rise for northeasterly, N. W., N. E.; dry or less wind, except wet from northeastward.

“Fall for southwesterly, S. E. S., W.; wet or more wind, except wet from northeastward.

“When rise begins after low,  
Squalls expect and clear blow.  
Long foretold - long last,  
Short notice—soon past.  
First rise after low,  
Foretells stronger blow.

Also, generally speaking:

When the glass falls low,  
Prepare for a blow;  
When it rises high,  
Let all your kites fly.

“These rules will suit the southern hemisphere exactly, if we put N. for S., and S. for N., throughout.”

\* With watch-hands in the northern hemisphere; but the *contrary* in south latitude. This, however, is only *apparent*, the wind is actually circulating in the *contrary* direction.

Iron Pipe, all sizes, at MACDONALD & CO.'S.—See p. 3 cover.



h. If the wind shifts the opposite way, viz. : from the west to southwest, south and southeast, the change is called *backing*, and it seldom occurs unless the weather is unsettled.

i. However, slight shifts of wind do not follow the rule exactly ; thus, for instance, the wind often shifts from southwest to south and back again.

6. In Great Britain there are only two quarters from which the wind ever blows for many days together. They are opposite to each other, and are the southwest and northeast. In most other parts of the world the same remark is true as to the two wind currents, but they do not always blow from the same points as they do in Great Britain. What is it that causes these winds to blow, and makes them so different from each other as they are known to be? The simplest account for them is that the air is always flowing to the equator from the poles and back again. It then forms two great currents: one is called the polar current, as it flows from the pole, and is felt in Great Britain as a northeast wind. The other is called the equatorial current, as it flows from the equator, and is felt as a southwest wind. The equatorial current blows over Great Britain nearly ten times as many days as the polar current does.

7. The air of the equatorial current has been heated, and so it is light, warm and moist; while it is blowing, the barometer is low and the weather usually wet.

8. The air of the polar current has been chilled, and so it is heavy, cold and dry; while it is blowing, the barometer is high and the weather dry.

9. If we keep the idea of these two great currents clearly in our heads, we shall easily understand most of the signs of weather which are noticed.\*

10. To know the state of the air not only barometers, thermometers and hygrometers must be noticed, but the appearance of the sky must be vigilantly watched also.

11. When the barometer rises, owing to a change of wind, the weather gets colder; while when the barometer falls, owing to a change of wind, the weather gets warmer.

12. If the barometer be high (above 30 inches), and remains steady for some days, the wind will probably be from some point between north and east, and the weather will be dry.

13. If the barometer be low (below 29.5 inches), and remains steady, the wind will probably be from some point between south and west, and the weather will be cloudy and wet.

14. If the barometer rises slowly, the weather will become drier and the wind will become lighter, and perhaps die away. There may also be local fogs.

15. If the barometer falls gradually, the weather will become

\* See Dove's Law of Storms : London, 1862.

PICKFORD & BLACK, IMPORTERS OF WELSH BOLT IRON SPIKES.

MACDONALD & CO., Manufacturers of Brass Binnacles and Stands.—See adv. p. 3 cover.

MACDONALD & CO., Manufacturers of Patent Roller Bushings.—See adv. p. 3 cover.

MACDONALD & CO., Manufacturers of Deep Sea and Hand Leads.

wetter and more unpleasant, and there will never be a certainty of having a fine day, though there need not be much wind.

16. In general, whenever the level of the mercury continues steady, there is very little danger of a storm, but when it is unsteady, great care is necessary to avoid being surprised by a squall or a serious gale

17. When the barometer is steady, there is no great likelihood of a storm being near us, while, when it is unsteady, there is great danger of the wind freshening into a gale. This unsteadiness may be due to mere local causes, so that it is at times very hard to say whether it shows that a serious storm or only a slight squall is coming on.

18. A sudden rise of the barometer is very nearly as dangerous as a sudden fall, because it shows that the level is unsteady. In an ordinary gale the wind often blows hardest when the barometer is just beginning to rise, directly after having been very low.

19. When the barometer at any place rises very high (above 30.5 inches) and continues so for some days, it is because there is, so to speak, too much air at the place, and the winds will be very light. A gale can only set in when the wind flows away, and it will not at first be severe at the place.

20. When the barometer is very low (below 29.0 inches), and continues so, there may be calm and even dry weather for a short time,—what is called “pet day” or “weather breeder,”—but there is great danger of a serious storm, because the air will try to force its way into the district where the readings are low, and increase the pressure there. The storm will probably be worst where the barometer has been lowest.

21. The air of the equatorial current is lighter than that of the polar current, and so southerly winds will begin to blow aloft before they are felt below, while the northerly winds will begin to blow below. Accordingly, south-west winds give much more warning of their coming than north-easterly ones. The south-west wind will show itself first by long streaks of clouds at a great height, called “mares' tails,” or, when the gale is very near, by a driving scud.\*

22. Signs of weather, such as those first noticed, are very important to any one watching for changes, as they will often enable him to confirm the opinions formed from the behaviour of his instruments.

23. The change from a clear sky to a cloudy one almost always begins with the appearance of long streaks of clouds, which show the track of the wind in the sky. At night we often see rings around the moon when such clouds as these are observed. If they stretch right across the sky, forming what is called “Noah's Ark,” we know that the wind above us has set in, in earnest, and that wet weather is sure to follow.

\* “Mackerel skies and mares' tails, make tall ships carry low sails.”

24. The reason that the air clears and that mountains look near just before rain, is that after a long spell of dry weather there is a great deal of dust in the air, and when the air gets damp, as it does just before rain, the moisture settles on the dust and makes it sink, leaving the air clear.

25. In the morning the sun is to the east of us, and the clouds which occasion the rainbow are to the west, and therefore likely to come over us. In the evening, if we see a rainbow, it must be in the east, and the sun must be shining in the west; hence the saying:

“A rainbow in the morning, is the sailor’s warning;  
A rainbow in the night, is the shepherd’s delight.”

26. However, after a wet day, the whole of the sky often clears at night. This is not a certain sign of fine weather. The clouds may, and often do, form just as heavily after sunrise next morning.

27. Thunder-storms almost always occur when the weather is hot for the season; they are generally caused by a cold wind coming over a place where the air is much heated. They do not cool the air; it is the wind that brings them which makes the weather cooler. If a thunder-storm comes up from the east, the weather will not be cooler after it. This will not happen till another storm comes up from the west. Thunder-storms are more violent the greater the difference of temperature between the two currents of wind which produce them.

28. If in winter the barometer suddenly rises very high, and a thick fog sets in, it is a sure sign that the south-west and the north-east winds are “fighting each other.” Neither of them can make head against the other, and there is a calm; but there is great danger of such a state of things being followed by a bad gale.

29. The changes shown by the instruments in stormy weather are like those just described, but they take place more quickly, and are greater when they come.

30. In winter, after a prevalence of easterly winds, if the barometer begins to fall and the thermometer to rise, a gale which commences to blow from the south-east will veer to south-west, while the barometer falls constantly. As soon as the wind passes the south-west point, the barometer begins to rise, a heavy shower of rain falls, and a strong west-north-west or north-west wind may follow, after which the sky clears and the weather becomes colder.

31. In some rare cases this north-west wind may be followed by north or north-east wind.

32. If the wind “backs” from the north west towards west and south-west and continues strong, bad weather is almost sure to continue.

33. The (north-east) polar storms do not “veer” to the same extent as the equatorial (south-west) winds; they very seldom change their direction more than two or three points, while the shift of wind with the sun through six or seven points is very common in the case of south-west storms.

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

MACDONALD & CO., MANUFACTURERS OF COMPOSITION CLINCH RINGS.—See adv. p. 3 cover.

MACDONALD & CO., Manufacturers of COMPOSITION RUBBER BRACES.—See adv. p. 3 cover.

MACDONALD & CO., Manufacturers of Copper and Zinc Baths.

34. A fall, with the thermometer low, for the season and place, foretells snow.

35. Exceptions to these rules occur when a north-easterly wind, with wet (rain, hail or snow), is impending, before which the barometer often rises (on account of the *direction* of the coming wind), and deceives persons who from that sign only (the rising) expect fair weather.

36. When the barometer is rather below its ordinary height, say down to nearly 29½ inches (at sea level), a rise foretells less wind, or a change in its direction towards the north, or less wet; but when it has been very low (about 29 inches), the first rising usually precedes or indicates strong wind, at times heavy squalls from the northwestward, northward, or northeastward, *after* which violence, a gradually rising glass foretells improving weather—if the thermometer falls. But, if the warmth continue, probably the wind will back (shift against the sun's course), and more southerly, or southwesterly wind will follow, especially if the barometer rise is sudden.

37. The most dangerous shifts of the wind, or the *heaviest* northerly gales, happen *soon* after the barometer *first* rises from a very low point; or, if the wind veers, *gradually*, at some time afterwards.

38. Indications of approaching changes of weather, and the direction and force of winds, are shown less by the *height* of the barometer than by its falling or rising. Nevertheless, a *steady height* of more than 30.0 inches at the level of the sea, is indicative of fine weather and *moderate* winds, *except occasionally* those from east to north.

39. A rapid rise of the barometer indicates unsettled weather. A slow movement indicates the contrary; as likewise a *steady* barometer, which, when continued, and with dryness, foretells very fine weather.

40. A rapid and considerable fall is a sign of stormy weather with thunder and lightning, and rain, hail or snow. Alternate rising and sinking indicates unsettled and threatening weather.

41. The greatest depressions of the barometer are with gales from the southeast, south or southwest; the greatest elevations, with wind from northwest, north or northeast, with calm.

42. Though the barometer generally falls with a southerly, and rises with a northerly wind, the contrary *sometimes* occurs; in which case the southerly wind is equally dry with fine weather, or the northerly wind is violent and accompanied by rain, snow or hail; perhaps with lightning.

43. When the barometer sinks considerably, much wind, rain, (perhaps hail), or snow, will follow; with or without lightning.\* The

\* "When the glass falls low, prepare for a blow;  
When it rises high, let all your kites fly."



wind will be from the northward if the thermometer is low (for the season); from the southward if the thermometer is high. Occasionally a low glass is followed or attended by lightning *only*, while a storm is beyond the horizon.

44. A sudden fall of the barometer, with a westerly wind, is sometimes followed by a violent storm from the northwest, or north, or northeast.

45. If a gale sets in from the east or southeast, and the wind veers by the south, the barometer will continue falling until the wind is near a marked change, when a lull *may* occur; after which the gale will soon be renewed, perhaps suddenly and violently, and the veering of the wind toward the northwest, north, or northeast, will be indicated by a rising of the barometer with a fall of the thermometer.

46. Three causes (at least)\* appear to affect the barometer:

47. I. The direction of the wind, the northeast wind tending to raise it most, the southwest to lower it the most, and wind from points of the compass between them proportionately as they are nearer one or the other extreme point.

48. Northeast and southwest may appropriately be called the wind *poles* (as Dove showed.)

49. The range, or difference of height shown, due to change of direction *only* from one of the bearings to the other (supposing force and moisture to remain the same), amounts in the latitudes of Great Britain to about half an inch (as read off.)

50. II. The quantity, taken by itself, of vapour, moisture, rain or snow, in the wind, or current of air (direction and strength remaining the same), seems to cause a change amounting in an extreme case to about half an inch.

51. III. The force alone of wind from any quarter (moisture and direction being unchanged) is preceded, or foretold, by a fall or rise, according as the strength will be greater or less, ranging in an extreme case to more than two inches.

52. Hence, supposing the three causes to act together, in extreme cases, the height would vary from near thirty-one inches, (30.9) to about twenty-seven (27.0) inches, which has happened, though rarely, (and even in *tropical* latitudes.)

53. In general, the three causes act much less strongly, and are less in accord, so that ordinary varieties of weather occur much more frequently than extreme changes.

54. It is not by any means intended to discourage attention to what is called "weather wisdom." On the contrary, every prudent person will combine actual observation of the elements with such indications as he may obtain from instruments, and will find that the more accurately the two sources of foreknowledge are compared and combined, the more satisfactory their results will prove.

\* Electric effects are yet uncertain.

PICKFORD & BLACK, IRON SPIKES, CUT NAILS, 51 UPPER WATER STREET.

VESSELS FITTED WITH PLUMBING FIXTURES, BY MACDONALD & CO.

55. A barometer begins to rise considerably before the conclusion of a gale, sometimes even at its commencement. Although it falls lowest before very high winds, it frequently sinks much before heavy rain. The barometer falls, but *not always* on the approach of thunder and lightning.\* Before and during the *earlier* part of settled weather it usually stands high, and is stationary; the air being dry and comparatively quiet.

56. Instances of fine weather, with a low barometer, occur, however, rarely, but they are always preludes to a duration of wind or rain, *if not both*, or they indicate bad weather in the vicinity.

57. After very warm and calm weather, a storm, or squall, with rain, may follow, as likewise *locally* at any time when the atmosphere is *heated* much above the *usual* temperature of the season.

58. Allowance should *invariably* be made for the previous state of the barometer during *some days as well as some hours*, because its indications *may* be affected by distant causes, or by changes close at hand. Some of the changes may occur at a greater or less distance, influencing neighboring regions, but not visible to each observer whose barometer feels their effect.

59. There may be heavy rains or violent winds, beyond the horizon and the view of the observer, by which his instrument may be affected considerably, though no particular change of weather occurs in his immediate locality.

60. It may be repeated, that the longer a change of wind or weather is foretold before it takes place, the longer the presaged weather will last; and conversely, the shorter the warning, the less time whatever causes the warning, whether wind or a fall of rain or snow will continue.

61. Sometimes severe weather from the southward, *not lasting long*, may cause no great fall, because followed by a *duration of wind* from the northward; and at times the barometer may fall with northerly winds and fine weather, apparently against these rules, because a *continuance* of southerly wind is about to follow. By such changes as these one may be misled, and calamity may be the consequence if not duly forewarned.

62. A few marked signs of weather useful to seamen are following;

63. Whether clear or cloudy, a rosy sky at sunset presages fine weather: † a sickly greenish hue, wind and rain; tawny, or coppery clouds, wind; a dark (or Indian) red, rain; a red sky in the morning, bad weather, or much wind, perhaps also rain; a grey sky in the morning, fine weather; a high dawn, wind; a low dawn, fair weather. †

\* Thunder clouds rising from *northeastward*, against or above the lower wind, do not usually cause a fall of the barometer.

† "When the sun sets in a clear, an easterly wind you need not fear."

‡ A "high dawn" is when the first indications of daylight are seen above a bank of clouds. A "low dawn" is when the day breaks on or near the horizon, the first streaks of light being very low down.

64. Soft looking or delicate clouds foretell fine weather, with moderate or light breezes; hard-edged oily-looking clouds, wind. A dark gloomy blue sky is windy; but a light bright blue sky indicates fine weather. Generally, the *softer* clouds look, the less wind, (but perhaps more rain) may be expected: and the harder, more "greasy," rolled, tufted, or ragged, the stronger the coming wind will prove. Also, a bright yellow sky at sunset presages wind; a pale yellow, wet; orange or copper colored, wind and rain; and thus, by the prevalence of red, yellow, green, grey, or other tints, the coming weather may be foretold very nearly—indeed, if aided by instruments almost exactly.

65. Light, delicate, quiet tints or colors, with soft, indefinite forms of clouds indicate and accompany fine weather; but gaudy or unusual hues, with hard definitely outlined clouds, foretell rain and probably strong wind.

66. Small inky looking clouds foretell rain; light scud clouds driving across heavy masses show wind and rain, but if alone may indicate wind only, proportionate to their motion.

67. High *upper* clouds crossing the sun, moon, or stars, in a direction different from that of the lower clouds, or the wind then felt below, foretell change of wind toward *their* direction.

68. After fine weather, the first signs in the sky of a coming change, are usually light streaks, curls, wisps, or mottled patches of white, distant cloud, which increase, and are followed by an overcast of murky vapor that grows into cloudiness. This appearance more or less oily, or watery, as wind or rain will prevail, is an infallible sign.

69. Usually the higher and more distant such clouds seem to be, the more gradual but general the coming change of weather will prove.

70. Misty clouds forming or hanging on heights, show wind and rain coming, if they remain increase or descend. If they rise, or disperse, the weather will improve or become fine.

71. When sea birds fly out early and far to seaward, moderate wind and fair weather may be expected. When they hang about the land or over it, sometimes flying inland, strong winds with stormy weather are probable. As, besides birds, many creatures are affected by the approach of rain or wind, their indications should not be slighted by an observer who wishes to foresee changes.

72. Dew is an indication of coming fine weather; so is fog. Neither of these two formations *begins* under an overcast sky, or when there is much wind. One occasionally sees fog rolled away, as it were, by wind, but seldom or never *formed* while it is blowing with any considerable force, though it exists with wind.

\* In tropics, or regions of trade winds, there is generally an upper and counter current of air, with very light clouds, which is not an indication of any approaching change. In middle latitude such upper currents are not so frequent (or *evident*?) except before a change of weather.

Brass Ventilators made by MACDONALD & CO.—See adv. p. 3 cover.

PICKFORD & BLACK, WOODBERRY COTTON DUCK, No. 1 TO 2.

MACDONALD & CO., Importers of Steam Pumps, etc.—See adv. p. 3 cover.

VESSELS FITTED WITH PLUMBING FIXTURES, BY MACDONALD & CO.

LIGHT HOUSES

OF NOVA SCOTIA, NEW BRUNSWICK, &c.

On December 31st, 1879. Arranged from the Dominion Official List.

[All bearings are *magnetic*, and are given from seaward ; height of light from high water, and of building from base to vane on Lantern.]

GEORGE'S ISLAND, west side of Island, Halifax Harbor, lat 44 38 30 N, lon 61 33 20 W, two fixed white lights, vertical, 20 feet apart, 50 and 30 feet high, drab square building, 21 feet high. Lights shew seaward, on the S ; into harbor on N side. On W side upper light only seen. Vessels going into Halifax Harbor, passing Meagher's Beach, to keep the light on starboard bow. The light is for the purpose of guiding vessels in and out of the Harbor, through the channel west of the Island. Lighted 1876. These lights open to westward of Meagher's Beach, clear the westward of Thrum Cap Shoal.

WEST FROM HALIFAX, N. S.

CHEBUCTO HEAD, west side of entrance to Halifax Harbor, lat 43 30 20 N, lon 63 30 50 W, white light, revolving every minute, visible 18 miles, 132 feet high, white square wooden building, height 22 feet. Lighted 1872. An Automatic Signal Buoy, placed in lat 44 31 42 N, lon 63 29 28 W, in 21 fathoms water, N E ½ E, 1 7-8 mile from Chebucto Head, sound a ten inch whistle. From this buoy Chebucto Head bears S W ½ W, magnetic, 1 7-8 mile. Sandwich Point N by W, 4 miles. Passing to the westward of the Buoy at a distance of half a cable and steering a N ½ W course, magnetic, will lead up the Harbor to the eastward of the Neverfail Shoal, and at a distance of two cables to the westward of Meagher's Beach light house. Similar buoys in lat 44 28 25 N, lon 63 22 10 W, in 36 fathoms. From this Buoy Sambro Island light bears W 1-3 N 8 1-3 miles ; Devil's Island N 7-8 W 7 1-3 miles, and the inner signal Buoy N W ½ N 6 miles.

SAMBRO, middle of Island, lat 44 26 10 N, lon 63 33 30 W, fixed white light, visible 20 miles, 115 feet high, building white, octagonal, 60 feet high. Lighted 1758. A steam fog whistle, erected on south side of Island, and elevated 90 feet above high water, in thick weather, fogs and snow-storms, sounds each minute a blast of 10 seconds duration, with an interval, of 50 seconds. A Spar Buoy has been placed off S W Breaker, Sambro, and one on the Pollok, and another on the Whippey Shoal, near Sambro.

SHIPLEY HEAD, Terence Bay, lat 44 27 40 lon 63 42 8 fixed red, on mast, 55 feet high, visible 7 miles.

BETTY'S ISLAND, on Big Point, near Prospect, lat 44 26 21 N, lon 63 45 54 W, revolving red light, greatest brilliancy every two minutes, 75 feet high, visible 14 miles, building white, with two horizontal red bands square, wood, height 54 feet, dwelling attached. Lighted 1875. Coast Light.

PEGGY POINT, east side of entrance to St. Margaret's Bay, lat 44 29 30 N, lon 63 55 W, fixed red light, 65 feet high, building, building white, square 26 feet high. Lighted 1868. Lantern on dwellin'.

MARGARET'S BAY, on Green Island, Lunenburg County, lat 44 23 N, lon 64 2 45 W, red and white light, alternating every half minute, building white square, wood, 28 feet high, with dwelling attached. Coast Light.

CROUCHERS ISLAND LIGHT, lat 44 38 14 N, lon 63 57 20 W fixed white light, 90 feet high, visible 15 miles, building 50 feet high, square, of wood, painted white, with keeper's dwelling on summit of island, and 83 yards from south end, a guide up St. Margaret's Bay.

Lead Scupper Pipes, all sizes, MACDONALD & CO.'S.—See p. 3 cover.

PICKFORD & BLACK, AMERICAN TAR, PITCH, ROSIN, 51 UPPER WATER ST.

MACDONALD & CO., MANUFACTURERS OF BRASS BINNACLE GUARDS.—See adv. p. 3 cover.



HUBBARDS COVE—A lighthouse in course of erection.

CHESTER, E Ironbound Island, a little to the eastward of centre of Island, in Mahone Bay, lat 44 26 10 N, lon 64 4 50 W, fixed white light, visible 16 miles, 150 feet high, white oblong tower on dwelling, 46 feet high, wood lantern. Lighted 1871. Seen from all points of approach. The lantern alone is visible, being hidden by trees.

QUAKER ISLAND, off Chester, lat 44 30 55 N, lon 64 13 50 W, fixed red light, 109 feet high, visible 11 miles, building white, square, wood, with dwelling attached, 35 feet high. To guide into Chester Basin.

WESTHAVER ISLAND, Mahone Bay, lat 44 26 12 N, lon 64 20 5 W, fixed white light, visible 13 miles, building white, square, wood, height 59 feet.

HOBSON'S NOSE, Mahone Bay, lat 44 25 N, lon 64 13 46 W, red fixed light, visible 11 miles, 68 feet high, building white, square, wood, 29 feet high. Lighted 1872.

CROSS ISLAND, east point Lunenburg Bay, lat 44 18 15 N, lon 64 10 W, 2 white lights, vertical, 35 feet apart, upper intermittent, bright 45 sec., dark 15 sec., and visible 14 miles, 100 feet high; lower fixed, visible 6 miles, and 65 feet high, building red, octagonal base, height 58 feet. Lighted 1832. Pilots resort here, and vessels may take refuge in case of necessity. Fog Horn will be sounded during thick weather, fogs and snow-storms, for 10 seconds, in every 1½ minutes, leaving an interval of 80 seconds between each blast. N. B.—Care should be taken to distinguish this alarm from the Sambro Whistle, which sounds ten seconds in each minute, with an interval of fifty seconds.

BATTERY POINT, Lunenburg, lat 44 21 45 N, lon 64 17 30 W, fixed white light, visible 11 miles, 50 feet high, white, square tower on dwelling, height 24 feet. Lighted 1864. This harbor is easy of access, buoys are placed in the Bay and entrance to the harbor on Sculpin rock, Haddock Shoal, Battery Point Shoal and Head Shoal. In approaching the harbor from seaward the buoy on Sculpin Rock, painted red and black, in horizontal stripes, may be left on either hand, giving it a berth of two cables length. The other buoys are painted black, and must be left on the port hand going in. Iron can buoys in summer, spar buoys in winter.

WEST IRONBOUND ISLAND, near Cape LaHave, mouth of LaHave River, lat 44 13 45 N, lon 64 16 20 W, white light revolving every 30 seconds, visible 13 miles, 72 feet high, building white, square, height 29 feet. Near edge of cliff 40 feet high. Lighted 1855.

LAHAVE, on Fort Point, lat 44 17 20 N, lon 64 21 W, fixed red light, visible 8 miles, 48 feet high, building white, square, wood, height 35 feet. Lighted 1875. Bell Buoy.

MOSHER'S ISLAND, on island, west side of entrance to LaHave River, lat 44 14 15 N, lon 64 18 15 W, fixed red light, visible 8 miles, 55 feet high, building white, square, height 26 feet. Lighted 1868.

MEDWAY HEAD, Port Medway west side of entrance, lat 44 6 10 N, lon 63 62 15 W, fixed white light, visible 10 miles, 44 feet high, building white, square, with black square seaward, height 23 feet. Like a dwelling house. Lighted 1851. Spar buoys are placed in the channel to Port Medway Harbor, on the breaking ledges Nautilus Rock, corner ground and edge of flats of Bang's Point. In passing in from seaward the red buoys must be left on the starboard, and the black buoys on the port hand.

COFFIN ISLAND, south point, Liverpool Bay, lat 44 2 N, lon 64 37 0 W, white light, revolving every two minutes, light 30 seconds, dark 90 seconds, visible 16 miles, 65 feet high, building octagonal, horizontal stripes, red and white, 8 in number, height 50 feet. Lighted 1812. An automatic whistle buoy, colored white and black, in vertical stripes is moored in 20 fathoms in fair way off Liverpool, lat 44 0 20 N, lon 64 36 55. From the buoy Coffin Island Light bears N ¼ E, 1 11-16 miles Fort Point Light, N W ¼ N and Western Head W ¾ S 2 ¼ miles. From the buoy a course N W ¾ N for 4 miles will clear all danger to anchorage off Brooklyn Pier.

MACDONALD & CO., Manufacturers of Copper and Lead Tanks.

PICKFORD & BLACK, AGENTS FOR TARR & WONSON'S COPPER PAINT.

MACDONALD & CO., Manufacturers of Ship's Patent Water Closets.—See adv. p. 3 cover.

MACDONALD & CO., MANUFACTURERS OF BRASS BINNACLE GUARDS.—See adv. p. 3 cover.

PICKFORD & BLACK, Importers of Refined Iron Clinch Rings.

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ROBERT H. COGSWELL'S

[1886

PICKFORD & BLACK, Importers of Refined Iron Clinch Rings.

- BROOLYN PIER, on end of breakwater, Liverpool, lat 44 2 40 N, lon 64 41 30 W, fixed light, white seaward, red towards harbor, visible 10 miles, 32 feet high, tower white, square, wood, height 33 feet. Building erected 1878.
- FORT POINT, Liverpool Bay, south entrance lat 44 2 30 N, lon 64 42 20 W, fixed red light, visible 7 miles, 30 feet high, building white, square, height 17 feet. Left on port side when entering the harbor. Lighted 1855.
- PORT MOUTON, north-east point of Spectacle Island, Queen's County, lat 43 55 N, lon 64 48 W, fixed red light, visible 11 miles, 47 feet high, square wooden building, height 20 feet. For guiding vessels into harbor. Lighted 1873.
- LITTLE HOPE, nearly on centre of Island, lat 43 48 30 N, lon 64 47 15 W, red light revolving every minute, visible 12 miles, 40 feet high, square with building, height 36 feet. Lighted 1865, Centre of keeper's dwelling. Visible around horizon.
- PORT HERBERT, on Shingle Point, east side of Harbor, lat 43 48 40 N, lon 64 55 30 W, fixed red light, visible 10 miles, 33 feet high, white square wooden building, height 29 feet. Lighted 1872.
- CARTER'S ISLAND, Ragged Island Harbor, lat 43 42 15 N, lon 65 5 30 W, fixed red light, visible 11 miles, 67 feet high, white square wooden building, height 29 feet. Lighted 1872.
- RAGGED ISLAND HARBOR, Gull Rock, lat 43 39 15 N, lon 65 5 50 W, fixed white light visible 10 miles, 56 feet high, white square building, height 31 feet. Lighted 1853.
- SAND SPLIT, at E side of entrance to Shelburne Harbor, lat 43 41 25, lon 65 19 28 W, fixed red, 47 feet high, building white, square, wood, on pier 44 feet high, visible 10 miles.
- SHELburne HARBOR. —A red iron can Buoy has been placed in 4½ fathoms on west side of Middle Rock Shoal; a red can Buoy off extreme of Split, in 4 fathoms, and a black spar Bnoy on east end of Adamant Shoal.
- BULL ROCK. —A spar Buoy, painted black, has been placed in ten fathoms water SSW ¼ W, about 150 yards from the Bull Rock, off Western Head, Shelburne.
- CAPE ROSEWAY, near south-east corner of McNutt's Island, Shelburne Harbor, lat 43 37 15 N, lon 65 15 45 W, 1 fixed white lights, vertical 55 feet apart, upper light visible 18 miles, and 120 feet high, lower 65 feet high, and visible 10 miles, octagonal building, vertical black and white stripes, height 77 feet. Lighted 1788, repaired 1858. A black can Buoy S S E from the Jig Rocks, in 9 fathoms water. A Fog alarm to be established here.
- NEGRO ISLAND, on north side, lat 43 30 54 N, lon 65 28 58 W, red and white light revolving every minute, visible 12 miles, 48 feet high, white square wooden building, height 29 feet. Lighted 1872. For guiding vessels in and out of Clyde River or Negro Harbor.
- BACCARO, on west side of entrance to Barrington Harbor, lat 43 26 54 N, lon 65 28 12 W, fixed red light, visible 10 miles, 49 feet high, white square wooden building with black ball seaward, height 35 feet. Lighted 1850. A spar Buoy to the south of Bantam.
- BARRINGTON E. BAY LIGHTSHIP, 43 31 5 N, lon 65 34 25 W, fixed white light, hull and spars painted red, with word "Barrington" in white letters on both sides, height 30 feet above deck. Moore: in six fathoms low water. Wessex' Ledge bearing S W by W ½ W, 3-8 mile; Baccaro light S S E ¾ E, 6 3-18 miles, and Bantom Rocks, S by E 7-8, 16½ miles. To guide vessels into Barrington East Bay, and through Barrington Passage. Lighted 1875, A red can Buoy on Angle Rock.
- CAPE SABLE, on Cape, lat 43 23 19 N, lon 65 37 11 W, white revolving light, bright 15 seconds, dark 25 seconds, visible 12 miles, 53 feet high, white

MACDONALD & CO., Manufacturers of Plumbers' Brass Goods.—See *adv.* p. 3 cover.

VESELS FITTED WITH PLUMBING FIXTURES, BY MACDONALD & CO.—See *adv.* p. 3 cover.

MACDONALD & CO., Manufacturers of Lead Water Marks.

octagonal building 50 feet high. Lighted 1861. A steam fog whistle on southern point of Cape, elevated 40 feet above high water, sounds in thick weather, fogs and snow storms a blast of ten seconds duration each minute.

**BRAZIL ROCK**, red and black Buoy, horizontal stripes, moored in 15 fathoms water, S S E half mile from rocks.

**STODDARD ISLAND**, on N W point of Island, lat 43 28 30 N, lon 65 43 10 W, fixed red light, visible 9 miles, 23 feet high, 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 27 16 N, lon 65 44 39 W, red light revolving every minute, visible 12 miles, 45 feet high, white square wooden building, height 28 feet. Lighted 1874. For guiding vessels into Barrington West Bay and Shag Harbor.

**SEAL ISLAND**, south point,  $\frac{1}{2}$  mile inland, lat 43 23 34 N, lon 66 0 52 W, fixed white light, visible 18 miles, 98 feet high, white octagonal building, height 60 feet. Lighted 1830. The Blonde Rock lies S by W  $3\frac{1}{2}$  miles from light house. Between this rock and the Island, there are some dangers, the ground is rocky throughout, and large vessels ought not to attempt passing between them. A fog whistle near light house during fogs and snow storms in each minute a blast of 5 seconds' duration, and after an interval of 5 seconds gives another blast of 5 seconds.

Automatic Whistle Buoy, colored black, and marked B in white has been placed in  $12\frac{1}{2}$  fathoms water, south about half a mile from the Blonde Rock, off Seal Island.

**PUEBICO HARBOR**, Beach point, east side of entrance, 120 yards from low water mark, lat 43 35 45 N, lon 65 46 54 W, fixed white light, visible 8 miles, 28 feet high, square white building, height 20 feet. 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. Spar buoys mark the channel. Black left on port hand, red on starboard in approaching the harbor.

**ARGYLE**, on south point Whitehead Island, Yarmouth County, lat 43 39 40 N, lon 65 52 4 W, fixed red light, visible 12 miles, 115 feet high, building white, square, wood, with dwelling attached, height 28 feet. Lighted 1874. For guiding vessels into Argyle Harbor.

**TUSKET RIVER**, Big Fish Island, south-west point, lat 43 42 10 N, lon 65 57 15 W, 2 fixed white lights, horizontal, 8 yards apart, visible 12 miles, 50 feet high, white, square, wooden building, height 23 feet. Visible seaward; in windows each end of a dwelling house. Lighted 1864.

**PEASE'S ISLAND**, on S point, one of the Tusket Islands, lat 43 37 35 N, lon 66 1 40 W, 2 lights, 16 feet apart, vertically, upper light revolving, red and white, each color visible 16 seconds; 45 seconds between flashes, visible 12 miles, 56 feet high. Sea lights visible from all points of approach from the southward, also through Schooner and Ellenwood Passages. Lower light fixed red, visible 4 miles, 40 feet high. 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 FORCHU**, east cape, south point, lat 43 47 28 N, lon 66 9 21 W, white light intermittent, light  $1\frac{1}{4}$  minute, dark half minute, visible 18 miles, 117 feet high, octagonal tower, vertical stripes, red and white, height 59 feet. Lighted 1839. Fog whistle on left side, sounds in fog and snow storms 10 seconds in every minute. Automatic whistle Buoy has been placed in 13 fathoms water  $\frac{1}{2}$  mile W from the Lurcher Shoal which lies 15 miles W N W of this light.

**BUNKER'S ISLAND**, on end of reef, off S W Point of Island, east side of entrance to Yarmouth Harbor, lat 43 48 30 N, lon 66 8 45 W, fixed red

VESSELS FITTED WITH PLUMBING FIXTURES, BY MACDONALD & CO.—See adv. p. 3 cover

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.



PICKFORD & BLACK, Importers White Lead, Paints, Oils, 51 Upper Water St.

Residences and Public Buildings Fitted with Hot Water Heating Apparatus, by MACDONALD & CO.—See p. 3 cover.

- light, visible 10 miles, 27 feet high, the lantern on a dwelling house, built on a wooden pier. Lighted 1874. A red beacon light to guide vessels into harbor. Visible from the southward between N E by 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, the only entrance to harbor being through Yarmouth Sound and round Cape East.
- TRINITY LEDGE, an iron bell Buoy, painted red, has been moored to the westward of Trinity Ledge, off Cape St. Mary.
- CAPE ST. MARY'S, east side of Bay, lat 44 5 20 N, lon 66 12 40 W, red and white, light, alternating every 30 seconds, visible 17 miles, 103 feet high, octagonal white building, height 43 5 feet. Light 1868.
- TEGHAN RIVER, at extreme end of Breakwater, lat 44 13 43 N, lon 68 8 12 W, fixed green light, visible 6 miles, 22 feet high building vertical, red stripes on seaward side, 21 ft high, lantern painted black. 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, east side of St. Mary's Bay, Digby County, lat 44 19 55, N, lon 66 7 35 W, fixed red light, visible 10 miles, 36 feet high, square white wooden building, height 20 feet. Lighted 1874. For guarding against dangers in vicinity of Church Point.
- SISSIBOO, south side of entrance to river, lat 44 26 30 E, lon 66 1 15 W, fixed white light, visible 8 miles, 36 feet high, white square wooden building, height 33 feet. Lighted 1870.
- WESTPORT, Peter's Island, entrance to Grand Passage, lat 44 15 30 N, lon 66 20 20 W, 2 fixed white lights, horizontal, 24 feet apart, visible 10 miles, each 40 feet high, square white towers, height 15 feet. Lighted 1850. Visible from the northward between the bearings S by W and S S W and from the southward between the bearings of N E by E and N W  $\frac{1}{2}$  W. Bell Buoy painted red, north side of N W Ledge.
- BRIER ISLAND, north west Point, lat 44 14 57 N, lon 66 23 30 W, fixed white light, visible 13 miles, 92 feet high, white octagonal building, height 55 feet. Lighted 1809. A steam fog whistle on N W of Brier Island, south side of light house, sounds during thick and foggy weather and snow storms, three blasts of 4 seconds duration, with intervals of 4 seconds between them, in each minute.
- BOAR'S HEAD, 17 yards from edge of cliff, lat 44 24 16 N, lon 66 13 W, red and white light, alternating every minute, visible 14 miles, 70 feet high, white, square building. Lighted 1864. On south entrance to Petit Passage.
- POINT PRIM, south point of entrance to Annapolis Basin, lat 44 41 34 N, lon 65 47 20 W, fixed white light, visible 13 miles, 76 feet high, square tower, vertical, red and white stripes, height 22 feet. Lighted 1817. Fog whistle on Prim Point sounds in snow storms and in thick or foggy weather 8 seconds in each minute, making an interval of 52 seconds between each blast.
- SHAFNER'S POINT.—Light house in course of erection.
- PORT WILLIAMS OF MARSHALL COVE, south shore, lat 44 56 52 N, lon 65 16 W, 2 fixed white lights, vertical, 22 feet apart, upper 92 feet high, lower 70 feet, visible 10 miles, white square building, height 22 feet. 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 points, south shore, lat 45 2 57 N, lon 65 4 W, fixed red light, visible 8 miles, square building, horizontal white and black stripes, height 22 feet. Lighted 1859. Visible from W S W round N to E N E.
- ISLE HAUTE, on highest point lat 45 14 55 N, lon 65 0 45 W, white light, intermittent, 40 seconds in every minute, visible 20 miles, 165 feet high, tower white, square, wood, dwelling attached, almost hidden by trees, height 53 feet. Lighted 1878.

MACDONALD & CO., MANUFACTURERS OF BRASS SLIDING-DOOR ROLLERS.—See adv. p. 3 cover.



**BLACK ROCK**, south shore, lat 45 10 10 N, lon 64 56 W, fixed white light, visible 12 miles, 45 feet high, square white building, height 35 feet. Lighted 1848. Light on top of dwelling.

**CAPE D'OR FOG WHISTLE**, on extreme point, opposite side of Channel from Black Rock, sounds during thick weather, or 6 seconds in every 30 seconds.

**KINGSPOINT**, on Oak Point pear, lat 45 9 30 N, 64 21 45 W, fixed white light, visible 3 miles, 30 feet high, tower, upper enclosed part white, open frame, brown, height 24 feet. Lighted 1878. Visible from S W  $\frac{1}{2}$  W round by E to N W by W  $\frac{1}{2}$  W.

**HORTON**, on bluff, west side of Avon River, lat 45 6 15 N, lon 64 10 45 W, fixed white light, visible 20 miles, 92 feet high, white square building, height 20 feet. Lighted 1851. Light in window.

**WALTON HARBOR**, Basin of Minas, Hants County, lat 45 14 N, lon 64 13 30 W, fixed white light, visible 10 miles, 60 feet high, square white wooden building, height 20 feet. Lighted 1873. For guiding vessels into Walton harbor.

**BURNTCOAT**, Basin of Minas, north-west extremity of head, south shore, lat 45 18 40 N, lon 63 48 30 W, fixed white light, visible 13 miles, 75 feet high, square white building, height 35 feet. On dwelling, visible from all points of approach. Lighted 1859.

**SPENCER POINT**, on north shore, Cobequid Bay, lat 45 23 30 N, lon 63 37 W, fixed white light, visible 6 miles, 35 feet high, window in building 20 feet high. Lighted 1863.

**PARRSBORO'**, on Partridge Island, west side of river, lat 45 23 N, lon 64 19 W, fixed white light, visible 9 miles, 37 feet high, white square building, height 32 feet. Lighted 1852. Lantern on dwelling.

**CAPE SHARP**—building.

**APPLE RIVER**, on Cape Capston, or Hetty's Point, north entrance, lat 45 28 20 N, lon 64 51 30 W, fixed white light, visible 12 miles, 64 feet high, building white, oblong, with tower, height 45 feet. Lighted 1870. Rebuilt about 33 yards S S E from old one.

**EAST FROM HALIFAX.**

**MEAGHER BEACH**, Sherbrook Tower, east side of entrance to Halifax Harbor, lat 44 36 N, lon 63 31 50 W, fixed white light, visible 12 miles, 58 feet high, building white, with red roof, granite, height 48 feet. Lighted 1815. When Sambro Light bears W S W, this light should not be brought to the westward of north, which clear the Thrump Cap Shoal. A fog bell here strikes 7 times in each minute.

**DEVIL'S ISLAND**, on south point of Island, at the eastern entrance to Halifax Harbor, two fixed white lights, horizontally, E  $\frac{3}{4}$  N, and W  $\frac{3}{4}$  S, 175 yards apart, visible 13 miles, the light E 59 feet high, W light 52 feet, both buildings white, octagonal, wood, height E 63 feet, lighted 1877, W 45 feet, lighted 1872, lat 44 34 50 N, lon 63 27 15 W. The eastern light open to the southward of western, clears to southward of Thrum Cap Shoal. Pilots are stationed here.

**JEDDORE ROCK**, lat 44 39 45 N, lon 63 0 W, fixed red, visible 12 miles.

**EGG ISLAND**, centre of Island, lat 44 39 50 N, lon 62 51 32 W, red and white light alternating every minute, visible 15 miles, 80 feet high, octagonal building, black and white vertical stripes on seaward side, height 45 feet. Visible around horizon. Lighted 1865.

**POPE'S HARBOR**, on west point of Harbor Island, lat 44 47 40 N, lon 62 38 50 W, fixed red light, visible 9 miles, 45 feet high, tower white, square, wood, with dwelling attached, height 37 feet. Lighted 1877.

**SHEET ROCK**, entrance to Sheet Harbor, lat 44 49 55 N, lon 62 29 40 W, red light, revolving every 40 seconds, visible 10 miles, 75 feet high, white square wooden tower, with dwelling attached, height 41 feet. Lighted 1879. Light seen from N W  $\frac{3}{4}$  W round by N to E E by E  $\frac{3}{4}$  E. Rock

**MACDONALD & CO., Manufacturers of Copper and Lead Tanks.**

MACDONALD & CO., MANUFACTURERS OF BRASS SLIDING-DOOR ROLLERS.—See adv. p. 3 cover.

PICKFORD & BLACK, Importers of Chain Cables and Anchors, 51 Up. Water St.

Residences and Public Buildings Fitted with Hot Water Heating Apparatus.

PICKFORD & BLACK, SHIP CHANDLERS, MANILLA AND HEMP ROPE.

MACDONALD & CO., Manufacturers of Patent Roller Bushings.—See ad'r. p. 3 cover.

- lies nearly in mid channel of harbor entrance, its western end partly a wash, distance 350 yards from light house.
- BEAVER ISLAND, S E part of East Beaver, or William Island, lat 44 48 10 N, lon 62 20 30 W, white light, revolving every 2 minutes, visible 12 miles, 70 feet high, white building, with two black balls to seaward, S S W, 35 feet high. On dwelling.
- LISCOMB, on Island, lat 44 59 20 N, lon 61 57 50 W, red and white light, alternating every two minutes, visible 15 miles, 64 feet high, white square wooden building, height 28 feet.
- WEDGE ISLAND, mouth of St. Mary's River, lat 45 0 35 N, lon 61 52 35 W, revolving red light, shows 1 minute in 3 minutes, visible 12 miles, 71 feet high, tower white, square, wood, with dwelling attached, height 44 feet.
- ISAAC'S HARBOR, on Holy Point, west side of entrance to harbor, lat 45 10 N, lon 61 39 12 W, 2 fixed white lights, vertically, 20 feet apart, visible 9 miles, 30 feet high, square, white building, 20 feet high.
- COUNTRY HARBOR, on Green Island, Guysboro' County, lat 45 6 15 N, lon 61 32 30 W, fixed white light, visible 14 to 16 miles, 51 feet high, white square, wooden building, height 28 feet. Coast light and to guide vessels frequenting Country and Fisherman's Harbors.
- TORBAY, on eastern point of Berry Head, W side of entrance to Bay Guysboro' County, lat 45 11 37 N, lon 61 18 35 W, fixed light, red to seaward, white to northward into Bay, and towards Molasses Harbor, visible 10 miles, square, wooden building, white with vertical red stripes, top of lantern black. Height of lantern 51 feet, tower 36 feet.
- THREE TOP ISLAND, S E Point of Island, entrance to Whitehaven, lat 45 12 40 N, lon 61 9 40 W, fixed white light, visible 11 miles, 48 feet high, tower white, square, wood, with dwelling attached, height 32 feet. To guide vessels into Whitehaven. To point out dangers on the N side of W passage, light is obstructed when bearing to eastward of N E by E. Visible from all other points except when intercepted by high land of Whitehead Is.
- WHITEHEAD ISLAND, S W extremity of the Island, Guysboro' County, lat 45 12 N, lon 61 8 15 W, white light, revolving every 20 seconds, visible 11 miles, 55 feet high, pyramidal wooden building, 25 feet high, octagonal lantern. Light not totally obscured during the eclipses; 10 seconds duration of flash, and 10 seconds eclipse.
- CRANBERRY ISLAND, N part of Island, off Cape Canso, lat 45 19 50 N, lon 60 55 30 W, 2 fixed white lights in one tower, vertically 36 feet apart, upper visible 15, lower 12 miles, 89 and 54 feet respectively, high, octagonal wooden building, horizontally striped red and white, height 78 feet. A steam fog whistle, about 100 yards south of the light house, in thick weather sounds a blast of 8 seconds in each minute. Automatic Buoy at the grimes Rock, off Cape Canso.
- SABLE ISLAND, W end lat 43 57 N, lon 60 8 W, a white light revolves three flashes at intervals of half a minute, then a cessation of light during 1½ minute, visible 18 miles, 118 feet high, white octagonal wooden building height 98 feet.
- SABLE ISLAND, 1½ miles from east end, lat 43 58 30 N, lon 59 46 W, fixed white light, visible 18 miles, 128 feet high, octagonal building, white and brown alternately, height 86 feet.
- CANSO HARBOR, on Hart or Cutler Island, lat 45 21 N, lon 60 58 30 W, fixed red light, visible 12 miles, 42 feet high, white square wooden building, height 28 feet.
- CROW HARBOR, on Rock Island, Chedabucto Bay, lat 45 21 5 N, lon 61 16 W, fixed white light, visible 12 miles, 50 feet high, white square wood building 40 feet high. Harbor light.
- GUYSBORO' HARBOR, W side of entrance, near Pear Point, Chedabucto Bay, lat 45 22 50 N, lon 41 29 10 W, fixed white light, visible 8 miles, each 30 feet high, white square wooden building, height 20 feet.

Iron Pipe, all sizes, at MACDONALD & CO.'S.—See p. 3 cover.

- height of tower, on summit of island, can only be seen 3 miles in that direction.
- CREIGHTON'S HEAD**, on the north extremity, lat 45 30 40 N, lon 61 6 W, white light revolving every 40 seconds, visible 10 miles, 26 feet high, square white wooden building, height 20 feet. For guiding vessels into Little or West Arichat. Three buoys placed to mark the dangers of the harbour.
- JERSEYMAN ISLAND**, Arichat Harbor, lat 45 30 20 N, lon 61 3 W, fixed red light, visible 11 miles; 39 feet high, white square wooden building, height 28 feet. This light is for the purpose of guiding vessels through Crib Passage, in and out of Arichat Harbor. There is also a range Beacon on the S E Point of Jerseyman Island, that marks Hautfond Shoal off the entrance to Arichat Harbor. When the beacon and spire of the Roman Catholic Chapel at Arichat are in range it leads over the west part of the shoal, in 10 feet of water. Vessels bound in Arichat, C. B., should pass to the west of the shoal, or bring the beacon in range of the Cupola on the Convent, which stands 130 yards east of R. C. Church, which will lead in clear of the shoal. Only those well acquainted should pass to the eastward of the shoal, or bring the beacon to bear to the N of N E. An iron can Buoy, painted red, has been placed about one cable's length S W of the shoal in six fathoms of water. The Buoy will be placed on or about 1st May in each year, and taken up about the 10th of December.
- ARICHAT**, Marache Point, south entrance to Madame Island, lat 45 29 N, lon 61 1 50 W, fixed white light, visible 8 miles, 34 feet high, square white wooden building, height 25 feet.
- PETITDEGRAT**, on Big Arrow Island, south east of Madame Island, lat 44 29 54 N, lon 60 57 30 W, fixed red light, visible 10 miles, 38 feet high, white square tower, with dwelling attached, height 31 feet.
- GREEN ISLAND**, summit of Island, lat 45 28 50 N, lon 60 53 40 W, red and white light, revolving alternately every 45 seconds. Visible 14 miles, 70 feet high, white square wooden building, height 41 feet. Light, centre of Keeper's dwelling. Visible around horizon.
- CAPE LA RONDE**, west side of entrance to St. Peter's Bay, lat 45 34 45 N, lon 60 53 W, fixed white light, visible 14 miles, 92 feet high, white square wooden building, with dwelling attached, height 28 feet. For guiding vessels into St. Peter's Bay.
- OUETIQUE ISLAND**, on South Point, lat 45 36 40 N, lon 60 57 15 W, fixed red light, visible 9 miles, 78 feet high, white square wooden building, with dwelling attached, height 28 feet. For guiding vessels through Lennox Passage.
- GLASGOW POINT**, Lennox Passage, Lantern on mast with shed at base.
- SEAL, OR DOG ISLAND**, Lennox Passage, Lantern on mast with shed at base.
- GRAND DIQUE**, Lennox Passage, Lantern on mast with shed at base.
- JEROME POINT**, St. Peter's Bay, near entrance to canal, lat 45 39 5 N, lon 60 52 W, fixed red light, visible 10 miles, building white square, wood, with dwelling attached, light 60 feet high, building 40 feet high. To lead vessels up the bay to canal.
- SAINT ESPRIT ISLAND**, south end, lat 45 37 40 N, lon 60 29 20 W, one revolving white catoptric light, flash at interval of 30 seconds, building white, with two red bands, square, wood, with dwelling attached; height of building

**SHEET HARBOR AUTOMATIC BUOY.**—An automatic Whistling Buoy was placed on the 8th October, 1885, off the entrance to Sheet Harbor, lat. 44° 44' 30" N, lon. 62° 28' 37" W. The buoy is striped red and black vertically, and moored in 24 fathoms water. From it, Sheet Rock light house bears approximately N by E  $\frac{1}{2}$  E, distant  $5\frac{1}{8}$  miles, and Taylor's Head N W by N  $\frac{1}{2}$  N, distant  $3\frac{3}{4}$  miles.

PICKFORD & BLACK, SHIP CHANDLERS, MANILLA AND HEMP R

- LISCOMB**, on Island, lat 44 59 20 N, lon 61 57 50 W, red and white light, alternating every two minutes, visible 15 miles, 64 feet high, white square wooden building, height 28 feet.
- WEDGE ISLAND**, mouth of St. Mary's River, lat 45 0 35 N, lon 61 52 35 W, revolving red light, shows 1 minute in 3 minutes, visible 12 miles, 71 feet high, tower white, square, wood, with dwelling attached, height 44 feet.
- ISAAC'S HARBOR**, on Holy Point, west side of entrance to harbor, lat 45 10 N, lon 61 39 12 W, 2 fixed white lights, vertically, 20 feet apart, visible 9 miles, 30 feet high, square, white building, 20 feet high.
- COUNTRY HARBOR**, on Green Island, Guysboro' County, lat 45 6 15 N, lon 61 32 30 W, fixed white light, visible 14 to 16 miles, 51 feet high, white square, wooden building, height 28 feet. Coast light and to guide vessels frequenting Country and Fisherman's Harbors.
- TORBAY**, on eastern point of Berry Head, W side of entrance to Bay Guysboro' County, lat 45 11 37 N, lon 61 18 35 W, fixed light, red to seaward, white to northward into Bay, and towards Molasses Harbor, visible 10 miles, square, wooden building, white with vertical red stripes, top of lantern black. Height of lantern 51 feet, tower 36 feet.
- THREE TOP ISLAND**, S E Point of Island, entrance to Whitehaven, lat 45 12 40 N, lon 61 9 40 W, fixed white light, visible 11 miles, 48 feet high, tower white, square, wood, with dwelling attached, height 32 feet. To guide vessels into Whitehaven. To point out dangers on the N side of W passage, light is obstructed when bearing to eastward of N E by E. Visible from all other points except when intercepted by high land of Whitehead Is.
- WHITEHEAD ISLAND**, S W extremity of the Island, Guysboro' County, lat 45 12 N, lon 61 8 15 W, white light, revolving every 20 seconds, visible 11 miles, 55 feet high, pyramidal wooden building, 25 feet high, octagonal lantern. Light not totally obscured during the eclipses; 10 seconds duration of flash, and 10 seconds eclipse.
- CRANBERRY ISLAND**, N part of Island, off Cape Canso, lat 45 19 50 N, lon 60 55 30 W, 2 fixed white lights in one tower, vertically 36 feet apart, upper visible 15, lower 12 miles, 89 and 54 feet respectively, high, octagonal wooden building, horizontally striped red and white, height 78 feet. A steam fog whistle, about 100 yards south of the light house, in thick weather sounds a blast of 8 seconds in each minute. Automatic Buoy at the grimes Rock, off Cape Canso.
- SABLE ISLAND**, W end lat 43 57 N, lon 60 8 W, a white light revolves three flashes at intervals of half a minute, then a cessation of light during  $1\frac{1}{2}$  minute, visible 18 miles, 118 feet high, white octagonal wooden building height 98 feet.
- SABLE ISLAND**,  $1\frac{1}{4}$  miles from east end, lat 43 58 30 N, lon 59 46 W, fixed white light, visible 18 miles, 128 feet high, octagonal building, white and brown alternately, height 86 feet.
- CANSO HARBOR**, on Hart or Cutler Island, lat 45 21 N, lon 60 58 30 W, fixed red light, visible 12 miles, 42 feet high, white square wooden building, height 28 feet.
- CROW HARBOR**, on Rock Island, Chedabucto Bay, lat 45 21 5 N, lon 61 16 W, fixed white light, visible 12 miles, 50 feet high, white square wood building 40 feet high. Harbor light.
- GUYSBORO' HARBOR**, W side of entrance, near Pear Point, Chedabucto Bay, lat 45 22 50 N, lon 41 29 10 W, fixed white light, visible 8 miles, each 30 feet high, white square wooden building, height 20 feet.

Iron Pipe, all sizes, at MACDONALD & CO.'S.—See p. 3 cover.

MACDONALD & CO., Manufacturers of Patent Roller Bushings.—See adv. p. 3 cover.

MACDONALD & CO., Manufacturers of Brass Binnacles and Stands.—See adv. p. 3 cover.



SAND POINT, or Eddy Point, S entrance, lat 45 31 30 N, lon 61 14 40 W, two fixed white lights, horizontal, 14 feet square, visible 8 miles, each 25 feet high, white square wooden building, height 20 feet. Lights in windows at each end of building.

POINT TUPPER, Ship Harbor or Port Hawkesbury, lat 45 36 40 N, lon 61 22 W, fixed red light, visible 17 miles, 44 feet high, white square building, height 24 feet. In consequence of the intervention of the land on the south side, can only be seen 3 miles in that direction.

CREIGHTON'S HEAD, on the north extremity, lat 45 30 40 N, lon 61 6 W, white light revolving every 40 seconds, visible 10 miles, 26 feet high, square white wooden building, height 20 feet. For guiding vessels into Little or West Arichat. Three buoys placed to mark the dangers of the harbour.

JERSEYMAN ISLAND, Arichat Harbor, lat 45 30 20 N, lon 61 3 W, fixed red light, visible 11 miles; 39 feet high, white square wooden building, height 28 feet. This light is for the purpose of guiding vessels through Crib Passage, in and out of Arichat Harbor. There is also a range Beacon on the S E Point of Jerseyman Island, that marks Hautfond Shoal off the entrance to Arichat Harbor. When the beacon and spire of the Roman Catholic Chapel at Arichat are in range it leads over the west part of the shoal, in 10 feet of water. Vessels bound in Arichat, C. B., should pass to the west of the shoal, or bring the beacon in range of the Cupola on the Convent, which stands 130 yards east of R. C. Church, which will lead in clear of the shoal. Only those well acquainted should pass to the eastward of the shoal, or bring the beacon to bear to the N of N E. An iron can Buoy, painted red, has been placed about one cable's length S W of the shoal in six fathoms of water. The Buoy will be placed on or about 1st May in each year, and taken up about the 10th of December.

ARICHAT, Marache Point, south entrance to Madame Island, lat 45 29 N, lon 61 1 50 W, fixed white light, visible 8 miles, 34 feet high, square white wooden building, height 25 feet.

PETITDEGRAT, on Big Arrow Island, south east of Madame Island, lat 44 29 54 N, lon 60 57 30 W, fixed red light, visible 10 miles, 38 feet high, white square tower, with dwelling attached, height 31 feet.

GREEN ISLAND, summit of Island, lat 45 28 50 N, lon 60 53 40 W, red and white light, revolving alternately every 45 seconds. Visible 14 miles, 70 feet high, white square wooden building, height 41 feet. Light, centre of Keeper's dwelling. Visible around horizon.

CAPE LA RONDE, west side of entrance to St. Peter's Bay, lat 45 34 45 N, lon 60 53 W, fixed white light, visible 14 miles, 92 feet high, white square wooden building, with dwelling attached, height 28 feet. For guiding vessels into St. Peter's Bay.

OUETIQUE ISLAND, on South Point, lat 45 36 40 N, lon 60 57 15 W, fixed red light, visible 9 miles, 78 feet high, white square wooden building, with dwelling attached, height 28 feet. For guiding vessels through Lennox Passage.

GLASGOW POINT, Lennox Passage, Lantern on mast with shed at base.

SEAL, OR DOG ISLAND, Lennox Passage, Lantern on mast with shed at base.

GRAND DIQUE, Lennox Passage, Lantern on mast with shed at base.

JEROME POINT, St. Peter's Bay, near entrance to canal, lat 45 39 5 N, lon 60 52 W, fixed red light, visible 10 miles, building white square, wood, with dwelling attached, light 60 feet high, building 40 feet high. To lead vessels up the bay to canal.

SAINT ESPRIT ISLAND, south end, lat 45 37 40 N, lon 60 29 20 W, one revolving white catoptric light, flash at interval of 30 seconds, building white, with two red bands, square, wood, with dwelling attached; height of building

PICKFORD & BLACK, AMERICAN TAR, PITCH, ROSIN, 51 UPPER WATER ST.

MACDONALD & CO, MANUFACTURERS OF BRASS BINNACLE GUARDS.—See adic. p. 3 cover.

- 55 feet, of light 78 feet. Bad Neighbor Shoal S W  $\frac{3}{4}$  W  $\frac{1}{2}$  mile from this light, is not more than 12 feet below water.
- GUION ISLAND, about 230 yards from west end of Island, lat 45 46 10 N, lon 60 6 20 W, revolving red light, attains its greatest brilliancy every 30 seconds, visible 12 miles, 74 feet high, tower white, square, with dwelling attached, height 54 feet.
- LOUISBURG, north side of entrance to harbor, 120 yards inshore of point, lat 45 54 30 N, lon 59 57 15 W, fixed white light, visible 16 miles, 85 feet high, building white with a black vertical stripe on dwelling, height 85 feet. Automatic Whistle Buoy moored in 30 fathoms,  $1\frac{1}{2}$  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 the fairway of Louisburg Harbor.
- MAINADIEU, on south side of west point of Scatterie Island, lat 46 0 30 N, lon 59 47 30 W, fixed red light, 80 feet high, white square wooden building, height 40 feet.
- SCATTERIE, north east of Trap Rock, lat 46 2 15 N, lon 59 40 15 W, white revolving light, visible a minute, eclipsed half a minute, visible 15 miles, 70 feet height, white, octagonal building, height 70 feet. The light should never be brought to bear to eastward of N N E, or to southward of S S W, nor approach nearer than  $1\frac{1}{2}$  miles. A boat is here to render assistance.
- COW BAY, on outer end of breakwater, 1 fixed white Lantern on frame.
- FLINT ISLAND, on Island, lat 46 11 N, lon 59 46 50 W, white light, revolving every 15 seconds, visible 12 miles, 65 feet high, white octagonal building, height 43 feet, Visible round horizon.
- LINGAN HEAD, north side of entrance to Bridgeport Harbor, lat 46 14 10 N, lon 60 2 40 W, fixed red light, visible 10 miles, 50 feet high, white square wooden building, height 20 feet. For guiding vessels into Bridgeport Harbor.
- LOW POINT, Flat Point, east side Spanish Bay, lat 46 16 30 N, lon 60 7 30 W, fixed white light, visible 14 miles, 70 feet high, building octagonal, red and white, vertical stripes, height 51 feet.
- SYDNEY BAR, on west side of South Bar, lat 46 12 40 N, lon 60 12 40 W, fixed red light, visible 10 miles, 30 feet high, white square wooden building, height 20 feet.
- POINT ACONI, on high cape, north side of entrance to Little Bras D'Or, lat 46 20 30 N, lon 60 17 10 W, fixed red light, visible 11 miles, 91 feet high, square white wooden building, height 20 feet. For guiding vessels into Little Bras D'Or.
- BLACK ROCK POINT, S side of entrance to Big Bras D'Or, lat 46 18 30 N, lon 60 23 30 W, fixed white light, 45 feet high, building white cross on red ground, square wood, height 23 feet.
- CAPE GEORGE, S side of Bras D'Or Lake, W side of entrance to St. Peter's Inlet, lat 45 44 27 N, lon 60 48 20 W, fixed white light, visible 12 miles, 50 feet high, white square wooden building, height 20 feet. To guide vessels through St. Peter's Inlet.
- ISLET, W from Sandy's Point, St. Peter's Inlet, Lantern on mast with shed at base.
- BEAVER ISLAND, St. Peter's Inlet, Lantern on mast with shed at base.
- MACLEAN POINT, St. Peter's Inlet, Lantern on mast, shed at base.
- FREESTONE ISLET, St. Peter's Inlet, Lantern on mast with shed at base.
- PIPER'S COVE, on Derby Point, Grand Narrows. Light house to be erected.
- WHYCOMMAGH, on Fraser's Point, Lantern on mast with shed at base.
- GRAND NARROWS, on Uniacke Point, N side of channel, Barra Straits, lat 45 58 N, lon 60 48 W, fixed white light, visible 10 miles, 2 $\frac{1}{2}$  feet high, white square wooden building, height 20 feet. For guiding vessels through Barra Straits and navigating the Little and Great Bras D'Or Lakes.
- LITTLE NARROWS, at eastern entrance, lat 46 N, lon 60 58 25 W, one fixed white light, visible 10 miles. Building white square wood, 20 feet high.

Lead Scupper Pipes, all sizes, MACDONALD & CO.'S.—See p. 3 cover.

MACDONALD & CO, MANUFACTURERS OF COMPOSITION BUTT BOLTS AND SPIKES.—See p. 3 cover.

PICKFORD & BLACK. Importers of Wire Rope, Canvas, 51 Upper Water St.

- KIDSTON ISLAND, on 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, fixed red light, visible 7 miles, 31 feet high, square wooden building, white.
- MCNEIL'S BEACH, entrance to Big Bras D'Or. Lantern on mast with shed at base.
- McKENZIE'S ISLAND, N side of Bras D'Or Lake, about 2 miles S W of Port Bevis, lat 46 7 15 N, lon 60 30 W, fixed white light, visible 14 miles, 95 feet high, square white wooden tower. For guiding vessels through Bras D'Or Lake.
- BIRD ISLAND, Ciboux Island,  $\frac{1}{3}$  mile from N end, lat 46 23 10 N, lon 60 22 30 W, red light, revolving every minute, visible 14 miles, 77 feet high, white octagonal building, height 38 feet.
- ST. ANN'S HARBOR, on N point of Beach, lat 46 17 30 N, lon 60 32 15 W, fixed white light, visible 8 miles, 24 feet high, white building, height 30 feet. The light exhibited to find entrance through on a dark night.
- INGONISH HARBOR to be erected.
- INGONISH, on island, lat 48 41 20 N, lon 60 20 W, fixed white light, visible 20 miles, 237 feet high, white square building, height 40 feet.
- CAPE NORTH, 2-3 mile S E from Money Point, lat 47 1 45 N, lon 60 23 15 W, red and white light, revolving every 45 seconds, visible 15 miles, 74 feet high, square white wooden building, height 26 feet. Coast light; makes a complete revolution every  $1\frac{1}{2}$  minute.
- CHEVICAMP, near S end of Island, lat 46 36 30 N, lon 61 3 10 W, white light, revolving every 45 seconds, visible 20 miles, 140 feet high, white square wooden building, height 24 feet high.
- ST. PAUL'S ISLAND, on Rock off N E point of Island, lat 47 13 50 N, lon 60 8 20 W, fixed white light, visible 20 miles, 140 feet high, white octagonal building, height 40 feet. Obscured between N by E  $\frac{1}{2}$  and E N E.
- ST. PAUL'S ISLAND, S W point of Island, lat 47 11 20 N, lon 60 9 40 W, white light, revolving every minute, visible 20 miles, 140 feet high, white octagonal building, 40 feet high. Obscured when bearing from S S E to W  $\frac{1}{2}$  N. A fog whistle on the south side of the Island, S W of Atlantic Cove, about half a mile from the Humane Establishment, sounds once for 5 seconds in each minute during thick weather and storms.
- MARGAREE, summit or middle of Sea Wolf Island, lat 46 21 30 N, lon 61 15 30 W, fixed white light, visible 21 miles, 208 feet high, square white building. To vessels in dangerous proximity to the Island the light may become obscured by the abrupt cliffs on the sides of the Island.
- PORT HOOD, S E side of entrance to Harbor. lat 46 N, lon 61 31 40 W, fixed lights, red N, white S, visible 10 miles, 55 feet high. Square white building.
- IRON CAN BUOYS have been placed at the following shoals:—Port Hood Harbor, C.B., Portsmouth Point, Spithead, Smith Pit, Dean Shoal, also one at Judique Shoal. Judique Shoal and Dean Shoal Buoys are painted red, the other three are painted black. These Buoys will be placed on or about the 1st of May in each year, and taken up about the 10th November.
- NORTH CANSO, north entrance, west side, 120 yards inshore, lat 45 41 40 N, lon 61 29 10 W, fixed white light, visible 13 miles, 110 feet high, white square wooden building, height 35 feet. There is good anchorage under the light when the wind is off shore. Lantern on dwelling.
- HARBOR AU BOUCHE, on S W shore of harbor, lat 45 41 40 N, lon 61 31 15 W, fixed white light, visible 9 miles, 36 feet high, building white, square, wood, height 32 feet. Also, 473 yards S W  $\frac{3}{4}$  S from front light, fixed red light, visible 9 miles, 107 feet high, building white, square, wood, height 32 feet. Range light to lead through dredged channel over the bar.
- POMQUET ISLAND, or BAYFIELD, N E end of Island in St. George's Bay, lat

- 45 39 40 N, lon 61 44 30 W, fixed red light, visible 9 miles, 50 feet high, white square building, height 23 feet. Obscured on easterly bearings.
- CAPE ST. GEORGE, north side of Cape, lat 45 52 30 N, lon 61 54 40 W, white light revolving every half minute, visible 25 miles, 250 feet high, white square building.
- PICTOU ISLAND, south-east point, lat 45 49 10 N, lon 61 30 30 W, fixed white light, visible 12 miles, 55 feet high, square white building.
- PICTOU HARBOR, south point of entrance, lat 45 41 30 N, lon 63 30 30 W, two fixed lights, vertical, 25 feet apart, upper white, lower red, visible 11 miles, lantern 65 feet high, building octagonal, striped red and white, vertically, height 55 feet. Lighted when navigation is open. A small red light is seen below lantern; by keeping light W S W vessels clear the east reefs off Pictou Island.
- PICTOU, in tower of new Custom House, lat 45 40 50 N, lon 62 42 10 W, fixed white light, visible 8 miles, 60 feet high. In range with lights at entrance to harbor leads through the channel up to the bar.
- MERIGOMISH, on King Head, lat 45 39 20 N, lon 62 28 30 W, fixed red light, visible 10 miles, white square wood building, 105 feet high.
- CARIBOU ISLAND, north-east part of Island, lat 46 56 N, lon 62 42 10 W, white light, revolving every minute, visible 10 miles, 35 feet high, white square wooden building, height 26 feet. Visible around horizon.
- AMET ISLAND, centre of island, Northumberland Straits, lat 45 50 15 N, lon 63 10 10 W, fixed white light, visible 10 miles, 44 feet high, building white square wood, 26 feet high.
- MULLIN POINT, north side of entrance to Wallace Harbor, Cumberland County, lat 45 49 45 N, lon 63 25 15 W, 2 fixed lights, one white, the other red, visible 11 miles, 39 feet high, white square wooden building, height 26 feet. For guiding vessels in and out of harbor. Red light shown from window in keeper's dwelling. Two lights in one form a range to lead across bar, and in channel up to Mullin's Point. Cask buoys are placed to mark the dangers on entering the harbor, black to the left on port and red on starboard when entering.
- PUGWASH, in harbor, lat 45 52 30 N, lon 63 40 20 W, fixed light, red seaward, white toward harbor, visible 8 miles, 48 feet high, white square building, height 44 feet. Black buoys to be left on port hand and red on starboard when entering the harbor.

NEW BRUNSWICK.—Bay of Fundy.

- HILLSBORO WHARF, Petitediac River, lat 45 55 15, lon 54 37 45 W, fixed white light, visible 5 miles, 14 feet high, structure open frame, height 22 feet. To guide vessels going up the river to the coal and plaster wharves.
- GRINDSTONE, W part of Island, lat 45 43 13 N, lon 64 37 25 W, fixed white light, visible 12 miles, 69 feet high, octagonal white tower. 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 four seconds in every minute.
- CAPE ENRAGE, pitch of Cape, lat 45 35 34 N, lon 64 46 55 W, fixed white light, visible 15 miles, 120 feet high, square white building, height 23 feet. Visible between the bearings of N W round by N E. A steam fog whistle, 150 feet N E from the lighthouse, sounds during thick weather 4 seconds in every minute. Will probably be heard from 3 to 10 miles.
- MARTIN'S HEAD. Steam fog whistle.
- QUACO, on pitch of Cape, west head St. Martin's, lat 45 19 30 N, lon 65 32 0 W, revolving white every 20 seconds, visible 16 miles, height 110 feet, building white, square, wood, 49 feet high. General coast light to guide to St. Martin's Harbor, replaces light on reef. Rebuilt 1883.



- CAPE SPENCER, pitch of Cape, lat 45 12 30 N, lon 65 64 W, red and white light, alternating every 45 seconds, visible 20 miles, 207 feet high, white square building with tower, height 35 feet. Visible between the bearings of E S E round by S to W N W, Partridge Island light bearing by compass N W by W  $\frac{1}{2}$  northerly distant  $6\frac{1}{2}$  miles.
- PARTRIDGE ISLAND, St. John Harbor, lat 45 14 20 N, lon 66 3 20 W, fixed white light, visible 20 miles, 119 feet high, building red and white in vertical stripes, height 40 feet. In foggy weather a steam whistle sounds for 10 seconds every minute. A bell buoy near E side of Partridge Reef.
- NEGRO POINT, on end of Government Breakwater, W entrance to Port of St. John, lat 56 14 26 N, lon 66 4 W, fixed red light, visible 8 miles, 40 feet high, building white, with red lantern, open frame, hexagonal tower on circular stone foundation, 35 feet high. Re-established 1883.
- ST. JOHN HARBOR, lat 45 15 10 N, lon 63 4 40 W, fixed white light, visible 10 miles, 35 feet high, building vertical, red and white stripes, height 15 feet.
- MUSQUASH, E side of entrance, lat 45 8 36 N, lon 66 14 30 W, fixed light, green to seaward, white towards harbor, visible 10 miles, 112 feet high, tower white square, wood, dwelling attached, height 40 feet. An automatic signal buoy moored in 30 fathoms,  $1\frac{1}{2}$  miles S from light, and S W from Split Rock. Lat 45 7 15 N, lon 66 14 50 W.
- LEPREAU, on Point, lat 45 3 40 N, lon 66 27 39 W, 2 fixed white lights, vertical, 27 feet apart, visible 15 miles, upper light 81, lower 53 feet high, octagonal building, striped horizontally red and white, height 31 feet. Visible between the bearings of W N W around by S to E by N. Fog whistle during fogs and storms gives two blasts of 6 seconds duration, with an interval of five seconds.
- DREW HEAD, on W side of Beaver Harbor, Charlotte County, lat 45 3 45 N, lon 66 44 W, fixed white light, visible 10 miles, 45 feet high, white, square, wooden building, height 36 feet. Seen at all points between eastern and western heads of harbor.
- PEA POINT, E side of entrance l'Etang Harbor, lat 45 2 20 N, lon 66 48 40 W, fixed green light, visible 10 miles, 51 feet high, tower white, square wood, dwelling attached, height 31 feet. Visible from E around by S to N.
- BLISS ISLAND, W end of Island, S side of western entrance to Bliss Harbor, lat 45 1 15 N, lon 56 51 W, fixed red light, visible 12 miles, 45 feet high, white, square, wooden building, height 30 feet.
- LETITE PASSAGE, on Mosbabin Point, lat 45 2 20 N, lon 66 53 30 W. A fog trumpet sounds blasts of 7 seconds with an interval of 30 seconds between each.
- MIDJIC BLUFF, Passamaquoddy Bay, Charlotte County, lat 45 6 53 N, lon 66 54 30 W, fixed white light, visible 15 miles, 130 feet high, building white, square, wood, height 29 feet, lantern brown. A bar extends E N E from light house, and vessels require to keep off at a distance of 260 yards to clear it at low water.
- PORT ST. ANDREW'S, on Sand Reef at E entrance, lat 45 3 45 N, lon 67 0 50 W, fixed white light, visible 10 miles, 40 feet high, building, white, square, wood, on a framed pier, 10 feet high. 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 feet of water on the N W extension of the reef towards main land.
- Also, on N point of entrance, lat 45 4 10, lon 77 2 50 N, fixed white, 42 feet high, visible 10 miles, building white octagonal, 22 feet high. Visible between the bearings of N W by N by N and S E by S.
- SPRUCE POINT, St. Croix River, Charlotte County, lat 45 10 N, lon 67 11 W, fixed white light, 32 feet high, white square building, height 28 feet. 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 two 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 10 10 N, lon 67 12 30 W, fixed white light, 32 feet high, square white building, height 28 feet.

CAMPOBELLO ISLAND, N point of Head Harbor, lat 44 57 30 N, 66 54 10 W, fixed white light, visible 15 miles, 64 feet high, white octagonal tower with red cross, height 34 feet. This light enables vessels to enter Head Harbor at all times. It is also a guide to vessels entering the main channel, to West Isles, Moose Island, and the inner Bay of Passamaquoddy. Fog trumpet sounds blast of 8 seconds duration, with intervals of 35 seconds between them.

LEBEC NARROWS, on Mulholland's Point—To be erected.

SOUTH WEST WOLF ISLAND, on S E Point of the Island, lat 44 56 30 N, lon 66 40 10 W, white light revolving every 1 ½ minute, visible 17 to 20 miles, 111 feet high, building white, square, wood, height 35 feet. Lantern on dwelling; visible from points of approach.

SWALLOW TAIL, N E part of Grand Manan, lat 44 45 52 N, lon 64 44 W, fixed white light, visible 17 miles, 148 feet high, white octagonal wooden building, height 50 feet. 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 feet above high water, sounds in thick weather, fogs and snow storms, blasts of 4 seconds duration, with an interval of 16 seconds between intervals.

OLD PROPRIETOR LEDGE—A spindle beacon, painted red, placed in 1875 on Old Proprietor Ledge, on the S E Grand Manan Island, in lat 44 33 10 N, lon 66 40 W, has a cage elevated 31 feet above high water mark, and in clear weather should be seen from a distance of from 8 to 10 miles.

GANNET ROCK, on rock, lat 44 30 38 N, lon 66 47 W, intermittent white light, visible 12 miles, 66 feet high, octagonal tower, height 41 feet, vertical black and white stripes. A gun is fired to answer signals during fogs and snow storms, once every hour. Dangerous rocks extend 4 miles east of the light house. Light 45 seconds, eclipse 5 ½ seconds, flash 4 ½ seconds, eclipse 5 ½ seconds, in every 60 seconds.

MACHIAS SEAL ISLAND, 2 structures, first near middle of Island, lat 44 30 6 N, lon 57 6 13 W, fixed white light, visible 15 miles, 54 feet high, white tower, height 36 feet. In range will lead 4 ¾ miles S of Murr Ledges. Second, 64 yards S E from first, fixed white light, visible 14 miles, 66 feet high, white octagonal wooden building, height 53 feet. A fog whistle sounds in thick weather, fogs and snow storms, 5 seconds in each half minute.

FISH FLUKE POINT, E side of Grand Harbor, lat 44 42 N, lon 66 45 W, fixed white light, visible 11 miles, white square building. Visible from N through E to S W.

SOUTHWEST HEAD, on Gull Cliff, lat 44 36, lon 66 54 16 W, shows each two minutes 3 white flashes, and 3 red flashes, with intervals of eclipse, of 20 seconds, white square building, 100 feet high.

### GULF OF ST. LAWRENCE.

DALHOUSIE, south side of entrance to harbor, lat 48 3 45 N, lon 66 20 50 W, fixed white light, visible 13 miles, 49 feet high, building white, square, wood, height 33 feet, seen from all points of approach.

HERON ISLAND, Chaleur Bay, lat 48 N, lon 66 8 W, fixed white light, visible 15 miles, 66 feet high, building white, square, wood, height 20 feet. Visible from all points seaward.

PETIT ROCHER, on Eden Tree Point, lat 47 48 39 N, lon 65 43 13 W, fixed

Residences and Public Buildings fitted with Plumbing Fixtures, by MACDONALD & CO.—See *alt.* p. 3 cover.

- white light, visible 12 miles, 36 feet high, building white, square, wood, 31 feet high.
- BATHURST, on Carron's Point, lat 47 39 10 N, lon 65 36 40 W, fixed lights, one white, visible 10 miles, building white. One red, visible 14 miles, 43 feet high, tower red and white striped, square, wood. Range lights, to guide vessels in the harbor.
- CARAQUET, on Island, Bay of Chaleur, lat 47 49 40 N, lon 65 54, fixed white light, visible 14 miles, 52 feet high, white square tower on dwelling, height 48 feet.
- POKESUDIE, N E point of Island, lat 47 49 10 N, lon 64 44 40 W, fixed white light, visible 11 miles, 41 feet high, building white, square, wood, 34 feet high.
- GOOSE LAKE, W side of Miscon Island, lat 47 55 43 N, lon 64 35 40 W, white light, revolving every minute, visible 10 miles, 40 feet high, building white, square, wood, height 28 feet. Complete revolution every two minutes.
- SHIPPEGAN, on Island in harbor, lat 47 43 30 N, lon 64 39 25, fixed white light, visible 11 miles, 32 feet high, white square wooden building, height 30 feet.
- MISCON RIVER, Berch Point, lat 48 1 N, lon 64 29 25 W, fixed red light, visible 13 miles, 79 feet high, building white, octagonal, wood, height 74 feet. A steam fog whistle, placed in 1875, and situated 107 yards east from the light house, sounds in thick weather, fogs and storms, blasts of five seconds duration with interval of 25 seconds between each.
- POKEMOUCHE, lat 47 40 5 N, lon 64 45 4 W, fixed green light, visible 8 miles. 35 feet high, tower white, square wood, with dwelling attached, height 37 feet.
- NORTH TRACADIE, one on north side of gully, the other outside of bar, lat 47 33 14 N, lon 64 51 35 W, 2 fixed white lights, visible 22 miles, 32 and 16 feet high, structures white, square, wood, one 30 feet high, and the other 14 feet high. Coast and harbor range lights.
- SOUTH TRACADIE, N side of gully, lat 47 30 N, lon 64 52 10 W, 2 fixed lights, visible 8 miles, back light red, 28 feet high, 166 yards north from front one, front light white, 20 feet high, front building an open framed white tower, 19 feet high, back building, height 26 feet, an enclosed square tower painted red. Vessels crossing the bar from sea should steer N, keeping the lights in range. Width of bar, 2 cable lengths.
- TABUSINTAC, Crab Island, lat 47 18 54, lon 64 59 30 W, 2 fixed lights, front white, back red, visible 7 miles, 32 feet high, building white, square, wood, height 29 feet. Coast and harbor range lights.
- NEGUAC, lat 47 17 47 N, lon 65 3 20 W, 2 fixed white lights, visible 11 miles, 32 feet high, white, square, wooden building, height 30 feet. Coast and harbor range lights, situate N E side of gully.
- HAY ISLAND, lat 47 14 10 N, lon 65 3 40 W, two fixed white lights, front light near east end of Island visible 10 miles, height 22 feet, lantern on mast with red shed at base, height 15 feet, back light 210 feet from front light, visible 11 miles, 30 feet high, building white, square, wood, height 21 feet. Range lights to enable vessels seeking shelter to clear the point of the shoal off the east end of the island.
- PORTAGE ISLAND, on point of Island, lat 47 9 50 N, lon 65 2 40 W, fixed white light, visible 12 miles, 46 feet high, building white, wood, height 42 ft.
- OAK POINT, Miramichi Bay, lat 47 7 40 N, lon 65 15 10 W, 2, fixed white lights, half a mile apart, visible 10 miles, 40 and 60 feet high, building white wood. Range lights.
- SHELDRAKE ISLAND, Miramichi Bay, lat 47 6 50 N, lon 65 18 W, 2 fixed white lights, quarter of a mile apart, visible 9 miles, 48 feet high. Range lights.
- GRANT'S BEACH, Miramichi Bay, lat 47 5 30 N, lon 62 28 10 W, 2 fixed white

PICKFORD & BLACK, IRON SPIKES, CUT NAILS, 51 UPPER WATER STREET.

VESSELS FITTED WITH PLUMBING FIXTURES, BY MACDONALD & CO.

- lights, bearings S W and N E from each other, visible 10 miles, 120 and 140 feet high. Range light.
- MIDDLE ISLAND, Miramichi River, lat 47 0 3 N, lon 65 17 9 W, fixed white light, 45 feet high. Range light.
- NEWCASTLE—Light to be established.
- BAY DU VIN ISLAND, front light on west end of island, lat 47 5 20 N, lon 65 7 5 W, 1 fixed white light, visible 10 miles. Lantern on mast, red shade at base, 30 feet high. Back light 122 feet east from front light, visible 11 miles, lantern on mast, red shed at base 42 feet high. Range light.
- FOX ISLAND, N W point of Island, lat 47 8 10 N, lon 65 2 30 W, 3 fixed white lights on masts and E end of Island, lat 47 6 50 N, lon 65 0 10 W, 2 fixed white lights, visible 10 miles, 30 feet high. Range lights to guide vessels going through the Swashway Channel.
- MIRAMICHI BAY LIGHTSHIP, Horseshoe Bar, between Fox and Portage Islands, lat 47 8 N, lon 65 3 W, fixed red light, visible 8 miles, 35 feet high. A schooner rigged ship.
- PRESTON BEACH, Miramichi Bay, lat 47 4 50 N, lon 65 54 40 W, 2 fixed white lights, visible 10 miles, 55 and 64 feet high.
- ESCUMINAC, on point, lat 47 4 32 N, lon 64 47 30 W, fixed white light, visible 14 miles, 78 feet high, white wooden building, height 58 feet. A steam fog whistle situated 100 yards W of the light house, sounds in thick weather, fogs and snow storms, 10 seconds in each minute, with an interval of 50 seconds between each blast. It should be heard from 3 to 11 miles, according to the state of the weather.
- RICHIBUCTO HARBOR, on outside of bank, S beach, lat 46 42 46 N, 64 16 10 W, fixed white light, visible 12 miles, 40 feet high, tower white, square, wood, dwelling attached, height 33 feet. Also, 102 yards W, by S  $\frac{1}{2}$  S from front light, fixed red light, visible 12 miles, 44 feet high, white square open framed tower, height 43 feet. To replace dry beacons and lead through channel over bar at entrance to river.
- RICHIBUCTO HEAD, on headland, lat 46 39 40 N, lon 64 42 30 W, fixed white light, visible 14 miles, 70 feet high, white square building, height 50 feet.
- BUCTOUCHE INNER LIGHTS, 2 fixed white lights, front light close to shore road on Indian or Church Point, lat 46 20 35 N, visible 9 miles, 23 feet high, building white, square, wood, with red roof, 23 feet high. Back light, 1,980 feet N W N  $\frac{1}{2}$  W from front one, visible 12 miles, 53 feet high, building white, square, wood, with red roof, 23 feet high. Range lights, visible in direction, of range replacing former day beacons. Lead into harbor through deepest channel clear of all obstructions from line of range of Dixon's Point lights to where channel turns abruptly to westward to enter Buctouche River.
- BUCTOUCHE RIVER. S side of entrance, 3 miles N of Dixon's Point, lat 46 28 N, lon 64 38 50 W, 2 fixed white lights, N W by W, 1050 feet apart, visible 11 and 12 miles, square white towers, 36 and 41 feet high, leading lights N W by W.
- CASSIE'S POINT, on Point, lat 46 10 15 N, lon 64 30 20 W, white light, revolving every half a minute, visible 14 miles, 30 feet high, white square wooden building, height 27 feet.
- SHEDIAC ISLAND, lat 46 15 20 N, lon 64 31 50 W, 2 fixed white lights, visible 10 miles, 48 and 56 feet high.
- SHEDIAC HARBOR, Duchene Wharf, lat 46 14 20 N, lon 64 31 W, fixed white light, visible 2 miles, 15 feet high, on a pole. Not under Marine Department.
- JOURIMAIN, on Cape, lat 46 10 N, lon 63 48 30 W, flash white light, 10 seconds, visible 14 miles, 72 feet high, white octagonal tower, height 45 feet. Visible from S E round to N W.



## PRINCE EDWARD ISLAND.

- NORTH POINT**, on Point, lat 47 3 46 N, lon 63 59 10 W, white light, revolving every minute, visible 14 miles, 80 feet high, white octagonal building, height 60 feet.
- WEST POINT**, on Sand Beach, lat 46 37 30 N, lon 64 23 10 W, red and white revolving light, one red, and three white flashes in  $1\frac{1}{2}$  minutes; greatest brilliancy every  $22\frac{1}{2}$  seconds, visible 13 miles, 66 feet high, square wooden building, broad red and white horizontal bands, height 67 feet.
- CAPE EGMONT**—To be erected.
- SUMMERSIDE**, Railway Wharf, Bedeque Bay, lat 46 23 25 N, lon 63 47 30 W, fixed white light, visible 10 miles, 33 feet high, square tower on roof of railway freight shed.
- INDIAN POINT**, east side of Bedeque Bay, lat 46 22 40 N, lon 63 49 W, fixed white with green arc, visible 13 miles, building octagonal, white. Green between E by N  $\frac{1}{2}$  N and E S E over Miscouche shoals only.
- SEA COW HEAD**, or Salutation Head, lat 46 19 10 N, lon 63 48 20 W, fixed white light, visible 15 miles, 88 feet high, white octagonal building, height 6 feet.
- CRAPAUD**, W end of bridge at head of harbor, lat 46 13 N, lon 64 8 W, fixed white and blue, visible 3 miles, 41 feet high, building white square wood, 38 feet high. Inner light, fixed white. The two lights in range will lead to Can Buoy on Cameron's Reef and a 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 7 10 N, lon 63 11 40 W, one fixed red light, visible 12 miles, building white, square, wood, 46 feet high.
- BLOCHOUSE POINT**, at W side of entrance to Charlottetown Harbor, lat 46 11 36 N, lon 63 7 28 W, fixed lights, two in one tower, 21 feet apart vertically, upper white, visible 12 miles, 56 feet high, lower red, 35 feet, visible 3 miles, building white, square, wood, with dwelling and signal mast attached, height 42 feet. The lower light is 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, 1 fixed red light, visible 8 miles, building white, square, wood, height 28 feet, light shows S W.
- POINT PRIM**, S E extremity of Hillsborough Bay, 100 yards from the point, lat 46 3 10 N, lon 63 2 W, fixed white light, visible 12 miles, 68 feet high, building, white, circular, brick, height 55 feet. Bell buoy on east side of channel, black buoy on west side,  $2\frac{1}{4}$  N by E  $\frac{3}{4}$  E from bell buoy harborward.
- WOOD ISLAND**, off south point, lat 45 57 22 N, lon 62 44 30 W, fixed white light, visible 15 miles, 80 feet high, tower white, square, wood, with dwelling attached, height 40 feet.
- CAPE BEAR**, on the headland, lat 46 0 25 N, lon 62 27 15 W, one revolving red, every 30 seconds, visible 12 miles, building white, square, wood, with dwelling attached, 74 feet high.
- MURRAY HARBOR**, on edge of sand bar, S side of harbor, lat 46 1 28 N, lon 62 28 25 W, fixed white light, visible 8 miles, 33 feet high, tower 30 feet. Also, on main land, about a mile W by S from front light, fixed white light, visible 10 miles, 47 feet high, tower white square, height 40 feet. In one, these range lights show the channel to the outer buoy.
- PANMURE HEAD**, S E extremity of Cardigan Bay, lat 46 8 55 N, lon 62 27 40

PICKFORD &amp; BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

MACDONALD &amp; CO., MANUFACTURERS OF COMPOSITION CLINCH RINGS.—See adv. p. 3 cover.

PICKFORD & BLACK IMPORTERS NETS, TWINES LINES, 51 UPPER WATER STREET.

MACDONALD & CO., Manufacturers and Fitters of Steam Heating Apparatus.—See adv p. 3 over.

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX N S

- W, fixed white light, visible 16 miles, 96 feet high, white octagonal wooden building, height 50 feet. This light should be kept open off Terras Point, to clear reef off Cape Bear.
- CARDIGAN RIVER, between Ferry Wharf and Morrison's Beach, W shore of river, lat 46 12 50 N, lon 62 31 45 W, fixed light, green and white, visible 8 miles, 43 feet high, building white, square, wood, 32 feet high. Green seaward, white across river to N eastward on entering the river. Vessels should stand northward inside Boughton Island, until Pannure Island light bears S by W, and Cardigan River light N W, when they can stand in, keeping light open on port bow, when white light is opened, safe anchorage has been reached.
- GEORGETOWN, St. Andrew's Point, lat 46 9 57 N, lon 62 31 23 W, fixed light, red seaward, white in harbor, visible 10 miles, 36 feet high, building white, square, wood, height 20 feet.
- SOURIS, on Knight Point, lat 46 21 N, lon 62 14 W, 1 white light with red sector, fixed, visible 15 miles, situated 100 yards S E of eastern Breakwater. Red sector over the anchorage ground seen when bearing S E by S.
- EAST POINT, 200 yards inshore from south part of point, lat 46 27 9 N, lon 61 58 15 W, white light, revolving every three minutes, visible 17 miles, 130 feet high, building white, octagonal, wood, height 60 feet.
- St. PETER'S, 2 lights, one on outer end of Breakwater, lat 46 26 30 N, lon 62 44 30 W, fixed white light, visible 6 miles, 35 feet high, white, square, wooden tower, height 35 feet. The other light on Sand Beach, 126 yards S W by S from front light, also fixed white and visible 6 miles, 32 feet high, white, square open frame, height 33 feet. Range lights to lead into harbor.
- SAVAGE HARBOR—Range lights to be erected.
- TRACADIE, on beach west side of channel, 233 yards N E by N north from back light, lat 46 25 20 N, lon 63 2 30 W, 2 fixed red lights, visible 10 and 9 miles, height 30 and 19 feet, open square frame work, lanterns white, 32 and 21 feet high. In one, lead through the channel over the bar.
- SOUTH, OR LITTLE RUSTICO, southeast end of Robinson's Sound, about 3 miles S E of Grand Rustico, lat 46 26 25 N, lon 63 13 38 W 2 fixed white lights, visible 6 miles, 26 and 17 feet high, on masts, height 22 and 14 feet. In one, lead through the channel at entrance to harbor.
- COVE HEAD, range lights, 225 feet apart, 2 fixed lights, back light white, front one blue, visible 3 miles. Lantern on masts, 33 and 23 feet high.
- NORTH, OR GRAND RUSTICO, west side of entrance to harbor, lat 46 27 28 N, lon 63 17 W, 2 fixed lights in one tower, 16 feet apart vertically, upper white, lower red, visible 10 and 3 miles, height 40 and 24 feet, white square tower, with dwelling attached, height 35 feet. The tower light is a streak shown from a window, 16 feet below the main light, and can be seen only when vessels are in range with the channel.
- NEW LONDON, W side of entrance to Granville Harbor, lat 46 31 10 N, lon 63 28 45 W, one fixed red light, visible 10 miles, building white, square, wood, with dwelling attached, height 40 feet. Range light 500 feet N E of main light, 1 fixed white, visible 3 miles, white square open frame, 24 feet high. 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 34 44 N, lon 63 42 29 W, 2 fixed white lights, 400 yards apart, E by S and W by N, visible 12 and 6 miles, 50 and 18 feet high, towers higher, white, square, wood, with dwelling attached, 46 feet high; lower, open frame work, lantern white, height 22 feet. The main light is a sea light; the smaller one, in range with it, shows the channel over the bar.
- LITTLE CHANNEL, on Conway Inlet, N side, lat 46 40 N, lon 63 52 40 W, 2 fixed white lights, 66 yards apart, one visible 10 miles, 26 feet high, white square building, height 30 feet; the other visible 3 miles, 16 feet

- high, building open frame work, lantern white, 20 feet high. In one, lead through channel at entrance of harbor.
- CASCUMPEC, S W part of Sandy Island, lat 46 48 22 N, lon 64 2 15 W, 2 fixed lights, 218 yards apart, E by S and W by N, main white, visible 12 miles, 45 feet high, tower white, square, wood, with dwelling attached, height 41 feet; range light red, visible 6 miles, 16 feet high, open frame work, lantern white, 22 feet high. The main light is a sea light; the smaller one, in range with it, shows the channel over the bar.
- BIG TIGNISH, lat 45 57 35 N, lon 63 59 20 W, 1 fixed white light, visible 11 miles, inner end of Breakwater, N side entrance to harbor, 35 feet high, building square, white, with black horizontal band, on outer end of N Breakwater, pier 610 feet S E  $\frac{1}{2}$  E from main light, fixed red light, visible 5 miles, 18 feet high, lantern on mast, 14 feet high.

NEWFOUNDLAND.

- Cape Bauld—On high ground near extremity, lat 51 39 N, lon 55 25 W, red and white alternate 45 seconds, building white, square, 60 feet high, visible 18 miles. Fog horn in thick weather, sounds 10 seconds every minute.
- Cape Norman, Straits of Belle Isle, lat 51 38 N, lon 55 53 40 W, white light, revolving every two minutes, visible 20 miles, 138 feet high, white hexagonal tower, height 40 feet. Visible from all points of approach seaward.
- Point Rich, Straits of Belle Isle, lat 50 41 50 N, lon 57 27 40 W, flash white light, every fifteen seconds, visible 18 miles, 130 feet high, white hexagonal tower, height 40 feet. Visible from all points of approach seaward.
- Cape Ray, on W side of Cape, lat 47 37 N, lon 59 18 W, flash white light every 10 seconds, visible 10 miles, white hexagonal tower, 41 feet high; at a long distance flashes not observed. In thick and foggy weather and during snow storms a steam fog horn gives a blast of 10 seconds in each minute, leaving an interval of 50 seconds between each blast. Heard from 3 to 10 miles, according to the state of the atmosphere and wind.
- Gull Island on Summit lat 50 0 N, lon 55 22 W, one white light, occulting every 20 seconds, building circular, red and white stripes, 43 feet high.
- Long Point, Toulingate, lat 49 41 N, lon 54 49 W, revolving white light, every 30 seconds, visible 27 miles, 331 feet high, tower red, keeper's dwelling attached, white with red roof.
- Can Island, Seldom-come-by, lat 49 25 5 N, lon 44 10 35 W, fixed white light, 85 feet high, visible 10  $\frac{1}{2}$  miles, tower and dwelling of wood and attached, The light illuminates an arc of the horizon of 270°.
- Offer Wadham Island, lat 49 16 N, lon 53 45 W, fixed white light, 100 feet high, visible 10 miles, circular brick tower, dwelling white and detached.
- Cabot, Stinking Island, Bonavista Bay, lat 49 10 26 N, lon 53 21 21 W, white light, making one complete revolution in a minute, appearing about 11 seconds light and 9 seconds dark. Iron light tower in centre of square wooden building. Roofs flat; sides banded horizontally, red and white alternately.
- Puffin Island, Greenspond, lat 49 3 37 N, lon 53 37 27 W, fixed red light, 85 feet high, visible 10  $\frac{1}{2}$  miles, lighthouse granite with dwelling attached. The light is visible from N by E through S to W by N by compass.
- Cape Bonavista, lat 48 41 50 N, lon 53 5 20 W, revolving light, alternately white and red every 90 seconds, 150 feet high, visible 15 miles. By keeping this light open with Cape L'Argent it will carry you clear of the Flower Rocks.
- Green Island, at the entrance of Catalina Harbor, Trinity Bay, lat 48 30 16 N, lon 53 2 40 W, fixed white light, 92 feet above high water, visible

VESSELS FITTED WITH PLUMBING FIXTURES, BY MACDONALD & CO.—See adv. p. 3 cover

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

MACDONALD & CO.

PICKFORD & BLACK, IRON SPIKES, CUT NAILS, 51' UPPER WATER STREET.

VESSELS FITTED WITH PLUMBING FIXTURES, BY MACDONALD & CO.

- from E N E seaward to S W 11 miles. Vessels bound northward by keeping this light open with the North Head of Catalina until Bonavista light opens with Cape LeJean, will give the Flower Rocks an ample berth; or when coming from northward and bound for Catalina, by giving the N Head a moderate berth, will clear the Brandies Rocks by steering from Green Island Light.
- Fort Point, Trinity, lat 48 21 55 N, lon 53 20 51 W, fixed white light, visible 11 miles, upon a wooden tower painted white, 75 feet high. This light illuminates an arc of the horizon of 320°. In entering the harbor the light must be kept on the port hand.
- Baccalieu Island, northern end, lat 48 8 51 N, lon 52 47 50 W, white revolving light, showing a flash every 20 seconds, height 443 feet above high water, visible 24 miles, brick tower, dwelling white with red roof, detached from the tower. When the southern end of the island bears N N E the light will not be visible when nearer the island than 8 miles.
- Carbonear Island, lat 47 44 24 N, lon 53 9 22 W, fixed white light, 195 feet high, visible 16 miles, tower and dwelling in one building; the whole horizon is illuminated.
- Harbor Grace Island, lat 47 42 45 N, lon 53 8 15 W, revolving light, 2 white flashes followed by one red, each attains its greatest brilliancy every 30 seconds, visible 15 miles.
- Harbor Grace Beach Beacon and light, lat 47 41 28 N, lon 53 12 35 W, fixed white light, 40 feet high, in a white tower on the point of beach at the entrance of Harbor Grace; visible 7½ miles. Entering it with a fair or leading wind, bring it to bear W or W by S, and by keeping the light or building a little on the starboard bow, it will bring you clear of the bar, on which at low water there are not more than 8 feet of water.
- Green Point, Bay Roberts, on Point, lat 47 37 N, lon 53 10 W, one white light fixed, visible 8 miles. Building circular, red and white bands immediately beneath the principal light is a projecting lantern from which 3 lights are exhibited. The two outer lights show white and the centre light in line with Southern Rocks bearing S W ½ W show red.
- Cape St. Francis, lat 47 48 30 N, lon 52 46 50 W, fixed red light, 123 feet high, visible 12 miles.
- Cape St. Francis Fog Alarm. During thick weather and snow storms a powerful Siren Trumpet will be sounded 5 seconds—5 second and silent 45 seconds in each minute. The buildings are of wood, painted white, the roofs flat, lantern on higher roof elevated above it on a square block; the lower building is the fog alarm house.
- Fort Amherst, at the entrance of St John's, lat 47 35 54 N, lon 52 40 18 W, fixed white light, 114 feet high, visible 12 miles. When Cape Spear is enveloped in fog a heavy piece of ordnance is also discharged at this fort every hour during daylight, to assist vessels in making the harbor.
- St. John's, 2 red lights intended as leading marks for vessels entering the Narrows. The tower light is on a mast on the roof of the Custom House. The upper light (400 yards in the year) in a small tower, near the N E angle of the Congregational Church, 180 feet high. As leading marks during the day there is a disc on the mast head of the Custom House, and another on the apex of the tower roof—the disc are painted white. By keeping these lights or dics in line the largest vessels will clear all dangers.
- Cape Spear, lat 47 31 11 N, lon 52 36 59 W, white light, revolving every minute, visible 22 miles, 264 feet high.
- Cape Spear Alarm. A trumpet, sounding by the escape of compressed air, was placed in 1878 at this station, in a wooden building on the Bill of the Cape, nearly 600 yards N N E from the light house. It will be sounded for 7 seconds of each minute during thick weather or snow storms. The range of sound will probably be from ½ to 10, according to the direction and intensity of the wind or other atmospheric disturbance.



Woodberry Cotton Duck, for sale by PICKFORD & BLACK.

1886]

NAUTICAL ALMANAC.

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MACDONALD & CO., MANUFACTURERS OF COMPOSITION CLINCH RINGS.—See adv. p. 3 cover.

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

- Ferryland Head, lat 47 0 58 N, lon 52 51 7 W, fixed white light, 200 feet high, visible 16 miles, red brick tower, dwelling white with red roof, detached from the tower.
- Cape Race, lat 46 39 30 N, lon 53 4 30 W, revolving white light, visible to seaward from N E by E round by the S E and S W, 180 feet high, visible 15 miles, tower striped red and white vertically. It stands close to the old Beacon, which has been cut down.
- Cape Race Steam Fog Alarm, a powerful steam whistle, placed about 260 feet S of the lighthouse, sounded during thick weather or snow storms 10 seconds, with interval of 50 seconds in each minute, heard from 10 to 30 miles, according to the wind and weather.
- Cape Pine, lat 46 37 4 N, lon 53 31 48 W, fixed white light, 314 feet high, visible 20 miles, iron tower.
- LeHaye, on point, lat 46 54 N, lon 53 37 W, 1 fixed white light, visible 9 miles. Building circular, red and white bands.
- Cape St. Mary's, lat 46 49 30 N, lon 51 11 34 W, revolving light, producing alternately every minute a brilliant red and white light, 390 feet high, visible 23 miles, brick tower, white dwelling on each side, roofs red.
- Deedding Head, Great Burin Island, lat 47 0 27 N, lon 55 8 47 W, revolving light, producing a brilliant white light every minute, 430 feet high, visible 24 miles.
- Allan Island. Lamslane, lat 46 51 0 N, lon 55 57 50 W, (both approx.), fixed white light, 64 feet high, visible 9 miles, illuminated arc 270°, wood, octagonal tower, red and white on alternate sides.
- Brunet Island, Mercer's Head, Fortune Bay, lat 55 59 30 N, lon 47 16 W, flashing white light, greatest brilliancy, every 10 seconds, 408 feet high, visible 35 miles in every direction from N round E and S to W N W.
- Garnish, Fortune Bay, lat 47 14 N, 55 24 W, a beacon tower of wood, carrying an octagon and lantern in which a red light is exhibited.
- Belloram, Fortune Bay, lat 47 29 N, lon 55 27 15 W, fixed white light 25 feet high, visible 7 miles, white wooden tower. In entering the harbor the light must be kept on the port hand.
- Rocky Point, Harbor Breton, Fortune Bay, lat 47 27 30 N, lon 55 47 45 W, a square wooden tower, carrying an octagon and lantern, in which a fixed white light will be exhibited. The apparatus is a single argand burner, with a red light to mark the Harbor Rock.
- Pass Island, entrance to Hermitage Bay, lat 47 29 15 N, lon 56 12 2 W, fixed white. A fixed red light is placed below the white light to distinguish the rocks and reefs extending from the Wolf Rocks bearing (from the light house) S 74 47 W, to Basseterre Point S, 61 33 E. The reef over the Wolf Rock is about 1¼ miles from the island. At a distance of about 4 miles the two lights merge into one, 281 feet high, visible 19 miles, illuminated arc 360°. Wood house, sides painted white, flat roof on which the principal lantern stands. The one showing red light is 14 feet lower and at the angle of the building.
- Beacon, Ireland's Eye, entrance of La Poil Bay, a square white building with three black bands has been erected on this island; it is 76 feet high and supported on chains.
- Boar Island, Burges, lat 47 36 12 N, lon 57 35 13 W, fixed red light, 240 feet high, visible 17 miles, tower wood, on dwelling.
- Rose Blanche Point, lat 47 35 48 N, lon 58 41 80 W, fixed white, 95 feet high, visible 11 miles, granite light house, upon the eastern head, dwelling and tower attached. The light illuminates the horizon from E by S through S to W by compass. Shag Island Black Rock bears W from the light, and distant about a mile. Rose Blanche Shoals W S W half a mile, and Petitas Black Rock E by S 3 miles.
- Channel Head, Port au Basque, lat 47 33 47 N, lon 59 7 10 W, fixed red

MACDONALD & CO., Makers of Tumbler Racks, &c.—See p. 3 cover.

PICKFORD & BLACK, Importers of Refined Iron Clinch Rings.

MACDONALD & CO., Manufacturers of Plumbers' Brass Goods.—See *date*, p. 3 *cover*.

light, 90 feet high, visible 7 miles, square light tower and keeper's dwelling are detached wooden buildings.

Gallantry Head, Island off St. Peter's, lat 46 45 30 N, lon 58 27 W, flash light, on red after two white flashes, with intervals of 20 seconds about 104 feet high, visible 18 miles. The light is hidden at the northward by the high land of St. Peter's.

South entrance of St. Peter's. The entrance of the harbor of St. Peter's, called South channel, is marked by 2 small fixed lights—one white, illuminating  $\frac{1}{4}$  of the horizon, and placed on the Battery; the other red, on the plain at th N of the town—white lights eleven metres high, visible 3 miles, red, 19 metres high, visible 3 miles. The line connecting these two lights indicates the middle channel. As soon as the red light is seen on the left of Cape Eagle, vessels coming from Columbian in beating into the N E entrance will have nothing to fear from the shoals of Cape Rogers.

Island of Dogs, called Pointe a Leconte. A light is exhibited, on the S W point of this Island, at the place called Pointe a Leconte, 437 feet high, visible 7 miles; the extent of the light is circumscribed in a sector of 163°, presenting two cones of light, one white, 40°, will light the passage to the S E, so as to permit vessels which remain in position within this cone to avoid at the right the shoal Betaille, and to the left the rock of Cape Noir and the rock Bertrand. The second cone is red of 123°; it should be avoided by vessels entering the S E passage, and will enable them, when they have quitted the white cone, to come to anchor in the roadstead or in the Barachois, in following the line of the white light from Point aux Canona, and of the red light from the interior of the city.

POINT VERB, Great Placentia, lat 47 14 11 N, lon 54 1 19 W, a fixed white light will be exhibited nightly, from sunset to sunrise, 98 feet above the level of the sea, and should be visible in clear weather 11 miles. The tower and dwelling are of wood and attached, the vertical parts of the building are painted white, the roof of the dwelling is flat. The illuminating apparatus is dioptric, of the 5th order, with a single argand burner. The whole water horizon is illuminated.

### MAGDALEN ISLANDS.

ENTRY ISLAND, S E side, lat 47 16 30 N, lon 61 41 20 W, fixed red lights, visible 12 miles, square, white, height 90 feet, building 28 feet.

AMHERST ISLAND, lat 47 13 N, lon 61 58 W, revolving red and white, alternating every half minute, visible 20 minutes, hexagonal, white. Attached to keeper's dwelling.

GRINDSTONE ISLAND, west side, lat 47 23 N, lon 61 57, W, revolving white light,  $1\frac{1}{2}$  minute, visible 20 miles, square white, 200 feet high, building 28 feet. In thick, foggy weather or snow storms a whistle will sound a blast of 8 seconds during every half minute.

GREAT BIRD ROCK, lat 47 51 N, lon 61 8 W, fixed white light, visible 21 miles, hexagonal white building, 140 feet high, building 50 feet. Lighted from 1st April to 31st December. Fog guns every half hour during fogs and storms.

LIGHTS IN THE WEST INDIA ISLANDS  
AND ADJACENT COASTS.

[Corrected to 31st Dec., 1881. Arranged from the Admiralty List.]

ABBREVIATIONS AND EXPLANATIONS.

LIGHTS.

- Fixed, or Steady.
- Flashing, Showing flashes at short intervals, or groups of flashes at regular intervals.
- 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.]
- Fixed and Flashing. Fixed light, with addition of white or colored flashes preceded and followed by short eclipse.
- Intermittent or Occulting. A light suddenly and totally eclipsed. When light between eclipses visible less than 30 seconds, term *occulting* applied. When light visible less than half minute, term *intermittent* applied.
- Alternating. Red and white light alternately at equal intervals, without any intervening eclipse.

ABBREVIATIONS.

Da, Danish; Du, Dutch; E, English; Fr, French; Pan, Panama; N. G., Neva Granada; V, Venezuela.

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 nearly all cases taken as above high water to centre of lantern; height of building from base to vane. The geographical portion of the lights must be considered as approximate.

WEST INDIA ISLANDS, ETC.

- Barbadoes, I., (E.)* Ragged Point, (300 yards within), east extreme of the Island, lat 13 10 N, lon 59 26 W, white light, revolving every 2 minutes, 213 feet to centre of lantern, visible in clear weather at 21 miles. Round white coral-stone house, 97 feet high. On account of the prevailing strong current running westward on to the Cobblers, a cluster of dangerous reefs 2½ miles to the southeast of Ragged Point, mariners are cautioned in closing the land to keep well to the north-eastward of the light.
- .... *South Point*, 200 yards from the shore, lat 13 3 N, lon 59 31 W, red light revolving every minute, visible 18 miles, house alternate red and white bands centre of lantern 145 feet high, building 90 feet. Does not show until it bears to the westward of S W by S, and should be kept well open in order to clear the Cobbler Reefs.
- .... *Carlisle Bay, Needham Point*, lat 13 5 N, lon 59 36 W, fixed light, centre of lantern 30 feet high. Red when bearing north to east, and white south of east. Indifferent light. Reported to show white in all directions.
- .... *Lower Wharf, Carenage, Bridgetown*, fixed red light. To mark entrance to Crenago.
- Tabago, I., (E.)* Scarborough, Bacolet or Red Point, lat 11 10 N, lon 60 44 W, fixed white light, 115 feet high, visible 12 miles, pentagon tower, white, height 57 feet. Visible between the bearings of E N E and S W by W. 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.

MACDONALD & CO., Manufacturers of Brass Binnacles and Stands.—See adv. p. 3 cover.

PICKFORD & BLACK, IMPORTERS OF WELSH BOLT IRON SPIKES.

- Trinidad, I., (E.)* Icacos Point, the S W extremity, fixed white light, visible 5 miles, white mast, centre of lantern, 35 feet high.
- ... *Port Espana*, on jetty, lat 10 39 N, lon 61 31 W, fixed white light, visible 10 miles. Hexagonal tower, centre of tower 50 feet high, building 43 feet. Visible between the bearings of N E by N and S E.
- Hulk Ripon*, 1 fixed red light visible 3 miles, to assist in taking up anchorage.
- Grenada, Fort George*, lat 12 N, lon 61 45 W, fixed white light, visible 3 to 4 miles, on flag-staff.
- St. Vincent, I., (E.)* Fort Charlotte, lat 13 9 N, lon 61 14 W, fixed white light, visible 6 miles, centre of lantern 640 feet high. For mail steamer when expected.
- St. Lucia, I., (E.)* Tapion Battery, south side of entrance to Castries Harbor, lat 14 1 N, lon 61 1 W, fixed red light, visible 5 miles, centre of lantern 80 feet high. For mail steamer when expected.
- ... *Vielle Ville Shoal*, fixed red light, red perch. For mail steamer when expected.
- ... *Cocoa Nut Shoal*, fixed green light, perch. For mail steamer when expected.
- Martinique, I., (Fr.)* Point des Negres in the fort, lat 14 36 N, lon 61 9 W, fixed white light, red mast, centre of lantern 62 feet high, height of mast 15 feet.
- ... S W part of *St. Louis*, fixed red light, visible 3 miles, 131 feet high. The buoy at the south-east extremity, of a red light, at the arrival or departure of the mails, or when required.
- St. Marthe Point, St. Pierre*, lat 14 44 N, lon 61 11 W, fixed white light, visible 5 miles.
- ... Westward of former, fixed lights, visible 5 miles. Red to the northward, blue to the westward, and green to the southward. The white and blue lights in line lead to the anchorage.
- ... Edge of the bank, *St. Pierre Bay*, fixed white light, visible 2 miles, lighted on the day the mail is expected, and for three nights after if not arrived.
- ... *Carvelle Peninsula, Caracoli Mount*,  $\frac{1}{4}$  mile inland, lat 14 46 N, lon 60 53 W, fixed white light, visible 12 miles, white tower, centre of lantern 410 feet high. Illuminating apparatus out of repair.
- Dominica, I., (E.)* Roseau Bay, extremity of Mole, lat 15 17 N, lon 61 24 W, fixed red light on a flag-staff. When mail steamer is expected.
- Gaudaloupe, I., (Fr.)* Petite Terre, 202 yards from eastern part, lat 16 10 N lon 61 5 W, fixed white light, visible 15 miles, centre of lantern, 108 feet high, building 75 feet high.
- ... *Gozier Islet*, lat 16 2 N, lon 61 29 W, fixed white light, visible 7 miles.
- ... *Manroux Islet*, lat 16 13 N, lon 61 31 W, fixed white light in lantern.
- ... *Point a Pitra*. 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 Foulhole; and green lights at the buoys on the starboard side of the channel, and at the mooring buoy.
- ... *Port le Meule*, lat 16 20 N, lon 61 20 W, fixed white light, visible 12 miles.
- ... *Basse Terre*, on Mole, lat 16 0 N, lon 61 45 W, 2 fixed red lights, visible 9 miles.
- Antigua, I., (E.)* Sandy Island, lat 17 7 N, lon 61 54 W, fixed white light, visible 12 miles, 56 feet high, black wooden structure, height 53 feet. The light bearing 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, fixed white light, visible 7 miles, centre of lantern 5 feet high.
- Montserrat, I., (E.)* On beach at Plymouth, lat 16 42 N, lon 62 13 W. A light from a lantern is shown when mail schooner is expected.
- St. Christopher I., (E.)* On beach at Basse Terre, lat 17 18 N, lon 62 43 W,



- fixed red light, visible 4 miles, lighthouse wooden frame, 33 feet from base to vane, centre of lantern 37 feet high.
- St. Martin Island, Old Fort of Amsterdam, Grande Bay, fixed white light, visible 8 miles, centre of lantern 150 feet high.
- Sombrero I., (E.) On the S E side of the Island, one-third its length from South Point, lat 18 36 N, lon 63 28 W, white light, revolving every minute, visible 20 miles, red open iron frame work, centre of lantern 150 feet high, height of structure 132 feet.
- Virginia Islands, (Da.) St. Thomas, east side of entrance, Mohlenfel's Point, lat 18 19, N, lon 64 55 W, white fixed light, visible 12 miles, lighthouse white, centre of lantern 118 feet high.
- Santa Cruz or St. Croix Island*, (Da.) Frederickstadt Fort, lat 17 43 N, lon 64 53 W, fixed white light, visible 4 miles.
- .... Christianstadt Fort, lat 17 45 N, lon 64 41 W, fixed white light.
- Puerto Rico Island*, (S.) Morro Point Port, San Juan, lat 18 29 N, lon 66 7 W, white fixed and flash light, a flash of 5 seconds duration every minute, visible 18 miles, centre of lantern 171 feet high, tower white, octagonal, iron.
- .... Mayaguez Bay, Pier Head. Fixed red light. Harbor Light.
- Haiti or San Domingo I., San Jose Fort, lat 18 28 N, lon 69 52 W, alternate red and white light, revolving every minute, visible 15 miles, cupola white, centre of lantern, 95 feet high. None of the lights on the Island of San Domingo are to be depended upon.
- .... Arcadins Isles, lat 18 47 N, lon 72 38 W, one fixed white light, visible 9 miles, from N  $\frac{1}{4}$  to N  $\frac{3}{4}$  E by trees.
- .... Port au Prince, lat 18 33 N, lon 72 25 W, red light, revolving every half minute, 97 feet high, visible 15 miles.
- Plata, port, S S E, 350 yards from extremity of east entrance point, lat 19 49 N, lon 79 41 W, white light, revolving every 20 seconds, visible 14 miles, 137 feet high, octagonal tower, height 60 feet.
- Jamaica, I.*, (E.) Morant Point, lat 17 65 N, lon 76 12 W, white light, revolving every minute, visible 15 miles, white iron tower, height 96 feet, centre of lantern 115 feet high. Visible when bearing from about N N E  $\frac{1}{2}$  E, round by west to S E by S.
- .... Plum Point, 66 yards northward of point, lat 17 56 N, lon 76 47 W, fixed red and white light, visible 12 miles, lighthouse white, centre of lantern 68 feet high. Red between the bearings of N W by W  $\frac{3}{4}$  W, and E  $\frac{1}{2}$  E. White from N  $\frac{1}{2}$  E, round by E to S E.
- .... Fort Augusta, lat 17 58 N, lon 76 52 W, single lamp suspended from the beacon, centre of lantern 40 feet high. Fixed red and white light. The white light visible to the south and west, and red to the seaward.
- Port Antonio, Folly Point, fixed white light on Scaffold, for mail steamers.
- Port Guantomo, angle of Mole's Head, lat 20 1 N, lon 75 61 W, fixed light, one lantern has two white and two red glasses, the colored glasses toward the Bay. The red light marks the northern and the green light the southern angle, showing the sides and head of the Mole.

**CUBA AND BAHAMA ISLANDS.—Cuba with its Islands.**

- Santiago de Cuba, (Sp.) 100 yards east of the Moro Castle, lat 19 58 N, lon 75 54 W, white light, revolving every two minutes, visible 15 miles, lighthouse white, iron, height 20 feet, centre of lantern 226 feet high.
- Cape Cruz, on Cape, lat 19 50 N, lon 77 44 W, white light, with red flash every 3 minutes, visible 16 miles, stone lighthouse, centre of lantern 114 feet high, keeper's dwelling yellow.
- Port Xagua, or Cienfuegos, Colorado, east point of entrance, lat 22 1 N, lon 81 30 W, white light, fixed and flash, every two minutes, visible 14 miles, lighthouse Ville Neuva thereon, height 45 feet, centre of lantern 81 feet high.

PICKFORD & BLACK, SHIP CHANDLERS, MANILLA AND HEMP ROPE.

MACDONALD & CO, Manufacturers of Patent Roller Bushings.—See add. p. 3 cover.

- Cochinos Bay, north part of Cay Piedras, lat 21 58 N, lon 81 3 W, fixed white light, visible 7 miles, lighthouse brown, 26 feet high, centre of lantern 30 feet high. Over keeper's dwelling.
- Batabano, lat 22 41 N, lon 82 18 W, fixed white light, visible 3 miles, lantern on mast, 31 feet high.
- Isles of Pine, lat 21 26 N, lon 83 6 W, revolving light, visible 16 miles. Proposed.
- San Antonio, (Sp.) On Cape, lat 21 53 N, lon 84 58 W, white light, revolving every  $\frac{1}{2}$  minute, visible 20 miles, lighthouse Roncoli thereon, height 107 feet high, centre of lantern 117 feet high.
- Jutias on Cay, lat 22 43 N, lon 84 6 W, fixed and flash light. Proposed.
- Goberhadora, on point, lat 23 N, lon 83 13 W, revolving light, visible 15 miles, centre of lantern 110 feet high. Proposed.
- Havana, Morro Castle, east side of entrance, lat 23 9 N, lon 82 22 W, white light, revolving every  $\frac{1}{2}$  minute, visible 20 miles, lighthouse O'Donnell thereon, extinguished for ten minutes after midnight to clean and trim the lamps.
- Guanos, on point, lat 23 9 N, lon 81 42 W, revolving light every minute, centre of lantern 93 feet high. Proposed.
- Cardenas Bay, Beidras Cay, lat 23 14 N, lon 81 7 W, white light, fixed, with red flash every 2 minutes, visible 25 miles, tower on house, white, 67 feet high, centre of lantern 74 feet high.
- ... Cay Diana, lat 23 10 N, lon 81 7 W, fixed white light, visible 7 miles, iron column, centre of lantern 43 feet high.
- Cruz del Padre Cay, on reef,  $\frac{3}{4}$  of a mile N E of Cay, lat 23 17 N, lon 80 54 W, fixed white light, visible 10 miles, lighthouse conical, white, height 46 feet, centre of lantern, 49 feet high. Not to be depended upon.
- Bahia de Cadiz, N E part of Cay, lat 23 12 N, lon 80 29 W, white light, revolving every minute, visible 24 miles, house iron, white, height 159 feet, centre of lantern 175 feet high.
- Port Sagua le Grande, N W point of Hicacal Cay, lat 23 14 N, lon 80 4 W, fixed white light, visible 6 miles, mast on dwelling, centre of lantern 55 feet high. The keeper's dwelling has red doors and windows, and eastward of it there are a few huts.
- Paredon Grand Cay, north part of Cay, lat 22 29 N, lon 78 10 W, white light, fixed and flash every minute, visible 26 miles, house iron, white, with a brown base, height 117 feet, centre of lantern 159 feet high.
- Newitas Harbor, Barlovento Point, lat 21 37 N, lon 77 5 W, fixed white light, visible 9 miles, on white mast from centre of building, height 44 feet, centre of lantern 49 feet high. Keeper's dwelling is quadrangular yellow.
- ... Maternillos Point, lat 21 40 N, lon 77 9 W, white light with flash every minute, visible 23 miles, house white, Colon thereon, height 170 feet, centre of lantern 273 feet high.
- Lucrecia, on point, lat 21 5 N, lon 75 38 W, red light, revolving every minute, visible 15 miles, house stone, white, centre of lantern 112 feet high.
- Baracoa, 250 yards E S E of Barlovento Point, lat 20 22 N, lon 74 30 W, fixed white light, visible 13 miles, iron column, height 29 feet, centre of lantern 48 feet high. On keeper's dwelling.
- Cape Maysi, east point of Cuba, lat 20 15 N, lon 74 10 W, fixed white light, visible 17 miles, tower circular, centre of lantern 128 feet high.

**Bahama Islands.**

- Lobos Cay, (E.) On Bay, lat 22 22 N, lon 77 35 W, fixed white light, visible 16 miles, house circular, iron, broad block, 7 in number, and white 6 in number, bands height 150 feet, lantern white, centre 146 feet high, base surrounded by keeper's dwelling.
- Cay Sal Bank, N Elbow, Double-headed Shot Cays, lat 23 56 N, lon 80 28 W, fixed white light, visible 15 miles, stone conical tower, white and red

Iron Pipe, all sizes, at MACDONALD & CO'S.—See p. 3 cover.

MACDONALD & CO., MANUFACTURERS OF BRASS SLIDING-DOOR ROLLERS.—See add. p. 3 cover.

upper part, height 58 feet, centre of lantern 96 feet high. Not visible when it bears S W  $\frac{1}{4}$  W, being intercepted by Water Cay when three leagues distant.

Gun Cay, near South Point, lat 25 34 N, lon 79 19 W, red light revolving every minute and a half, visible 12 miles, conical tower, upper part red, lower white, height 79 feet, lantern white, centre 80 feet high. Not seen between the bearings of S by W  $\frac{1}{4}$  W, and S  $\frac{3}{4}$  E, being intercepted by the Bemui Isles when 8 miles distant.

Great Isaac, on the Inland, lat 26 2 N, lon 79 6 W, white light, revolving every half minute, visible 16 miles, house iron with broad red bands, 8 in number, and white, 7 in number, horizontal bands, height 145 feet, lantern white, centre 158 feet high. Eclipses not total within 6 miles.

Great Stirrup Cay, (E.) 600 yards from E end of Cay, lat 25 50 N, lon 77 54 W, fixed white light, visible 12 miles, house circular, five bands, red and white, alternately, height 46 feet, centre of lantern 81 feet high. Visible from seaward from about NW by W, through west and south to about NE.

Nassau Harbor, west point Hog Island, lat 25 6 N, lon 77 22 W, fixed white light, visible 10 miles, conical stone tower, white, height 58 feet, centre of lantern 68 feet high. 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. A red light is exhibited at Hog Island, from a flagstaff on a point near the lighthouse, whenever the state of the bar near the entrance of Nassau Harbor is impassable or dangerous.

Athol Island, cupola of Quarantine officer's dwelling, lat 25 5 N, lon 77 17 W, fixed white light. Visible between N N W  $\frac{1}{4}$  W, and W by N  $\frac{3}{4}$  N.

Aboca, about 4 cables northward of Hole in the Wall, lat 25 51 N, lon 77 11 W, white light, revolving every minute, visible 20 miles, conical stone tower, white lower part and red upper part, height 85 feet, lantern white, centre 160 feet hi h. Visible from seaward from S W to E S E.

... Little Guana, or Elbow Cay,  $\frac{3}{4}$  of a mile inland, lat 26 31 N, lon 76 58 W, fixed white light, visible 15 miles, house circular, with red and white bands, height 77 feet, lantern white, centre 123 feet high.

Crooked I. Passage, Bird Rock, lat 22 51 N, lon 74 22 W, white light, revolving every 1  $\frac{1}{2}$  minutes, 120 feet high, visible 17 miles, building conical, stone, faced with blue bricks, 112 feet high. Vessels approaching Bird Rock light are cautioned to attend to its bearings, 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 miles distant from the light tower. The currents northward of Crooked Island are variable.

... Castle Island, 270 yards within S W part, lat 22 7 N, lon 74 21 W, fixed white light, visible 17 miles, house conical, 3 bands of red brick, height 114 feet, centre of lantern 120 feet high.

Inagua, Great I., 2 miles to the N W of the S W Point, lat 20 56 N, lon 73 41 W, white light, revolving every minute, visible 17 miles, conical building, with two white and two red bands, height 114 feet, centre of lantern 120 feet high.

Turk's Island, 400 yards S W  $\frac{1}{2}$  W from north extremity of island, lat 21 31 N, lon 71 8 W, white light, flash every minute, visible 15 miles, building white, iron, circular, height 60 feet, centre of lantern 108 feet high.

GUYANA COAST.

Cayenne, (Fr.), summit of Hospital on Royal Islet, Salut Islets, lat 5 17 N, lon 52 35 W, fixed white light, visible 13 miles, centre of lantern 197 feet high.

... Eufant Perdu, a rock 6 miles northward of Cayenne, lat 5 3 N, lon 52 21 W, fixed white light, visible 7 miles, house wood frame work, centre of lantern 61 feet high. Visible between S W by S and E S  $\frac{1}{2}$  S, also between N E by N and W by N  $\frac{1}{2}$  N.

... Cepereau Fort, lat 4 56 N, lon 52 20 W, fixed white light, visible 10

PICKFORD & BLACK, Importers White Lead, Paints, Oils, 51 Upper Water Street.

Residences and Public Buildings Fitted with Hot Water Heating Apparatus, by MACDONALD & CO.—See p. 3 cover.

Residences and Public Buildings Fitted with Plumbing Fixtures, by MACDONALD & CO.—See *ath.* p. 3 cover.

- miles, centre of lantern 130 feet high, building 40 feet. The white and green lights in one S E by S, leads over *Amiable* Rock, which is avoided by keeping to westward of this rock.
- .... End of Jetty, fixed red light, centre of lantern 39 feet high.
- .... N W Angle of Infantry Barracks, lat 4 56 N, lon 52 19 W, fixed green light, visible 8 miles, centre of lantern 69 feet high. Obscured westward of S W  $\frac{1}{4}$  S.
- Maroni River*, West side of entrance (D.), lat 5 45 N, lon 54 3 W, fixed white light, visible 10 miles, centre of lantern 75 feet high, building white, pyramid, height 70 feet. Visible from W  $\frac{3}{4}$  S to S  $\frac{3}{4}$  E.
- .... East side of entrance (Fr.), lat 5 42 N, lon 53 58 W, fixed white light, visible 10 miles, building white pyramid, centre of lantern 76 feet high.
- Surinam*, (Du.), Light vessel in 14 feet, 3  $\frac{3}{4}$  miles N W *Brams Point*, lat 6 1 N, lon 55 16 W, fixed white light, visible 10 miles, yellow ball on foremast, centre of lantern 25 feet high. *Surinam* on sides.
- Berbice* (E.), Light vessel moored in 22 feet, N E by N, 9 miles from *St. Andrew Point*, lat 6 29 N, lon 57 24 W, fixed white light, visible 10 miles, vessel red, roofed over, centre of lantern 30 feet high, *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.), Light vessel in 19 feet, with *Georgetown* light house bearing S S W  $\frac{1}{2}$  W, distant 12 miles, lat 6 57 N, lon 58 5 W, fixed white light, visible 12 miles, vessel red, with one mast 60 feet high, and a blue flag by day; centre of lantern 30 feet high. *Guiana* on her sides. Pilots for *Demerara* and *Essequibo* Rivers are on board.
- .... *Georgetown*, east side of entrance, lat 6 49 N, lon 58 11 W, white light, revolving every minute, visible 16 miles, octagonal tower, red and white, vertical, centre of lantern 103 feet high, house 100 feet.
- .... In same tower, fixed red light. Visible from S by E to S E, to indicate to vessels being westward and clear of breakwater.

TERRA FIRME COAST.

- Trinidad* (E.), *Icaos Point*, the S W extremity, fixed white light, visible 5 miles, white mast, centre of lantern 39 feet high.
- .... *Port Espano*, on jetty, lat 10 39 N, lon 61 31 W, fixed white light, visible 10 miles, hexagonal tower, height 43 feet, centre of lantern 50 feet high. Visible between the bearings of N E by N and S E.
- Tobago* (E.), *Scarborough* or *Bacolet Point*, lat 11 10 N, lon 60 44 W, fixed white light, visible 12 miles. Pentagon tower, red and white, height 57 feet, centre of lantern 115 feet high. Visible between the bearings of E S E through south, and S W by W.
- Cumana*, tower on *Custom House*, lat 10 28 N, lon 64 12 W, fixed white light, visible 5 miles.
- Puerto Cabello*, *Brava Point*, lat 10 30 N, lon 68 W, revolving red and white light alternately every 40 seconds, visible 14 miles, building quadrangular, centre of lantern 79 feet high.—Uncertain.
- Cabellos*, Port, white light, visible 3 miles.
- Los Roques*, on the north-east hill (150 feet high) of *El Roque*, lat 11 58 N, lon 66 38 W, white light, revolving every minute, visible 15 miles, centre of lantern 208 feet high. Reported to be irregular in its action from defect in revolving apparatus.
- Buen Ayre* (Du.), *Lacre*, south point of the island, lat 12 2 N, lon 68 22 W, fixed white light, visible 12 miles, building white, with vertical red stripes, height 75 feet, centre of lantern 85 feet high. Lantern destroyed by storm, September, 1877. Temporary light exhibited.



Residences and Public Buildings Fitted with Plumbing Fixtures, by MACDONALD & CO.—See *arb.* p. 3 cover.

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

Orange Battery, at El Puerto, lat 13 10 N, lon 68 19 W, fixed white light, visible three miles.

Little Curacoa (Du.), centre of Island, lat 11 58 N, lon 68 39 W, fixed and flash white light, every minute, visible 14 miles, centre of lantern 75 feet high. The flash is of 6 seconds duration, preceded by an eclipse of 7 seconds.

Great Curacoa Island (Du.), St. Anne Harbor. Rif Fort, lat 12 6 N, lon 68 55 W, fixed white light.

Cumarebo Bay, lat 11 30 N, lon 69 25 W, fixed white light, visible 6 miles, centre of lantern 49 feet high. 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 N, lon 74 58 W, white light, revolving every 2 minutes, visible 16 miles, centre of lantern 98 feet high. The light is not visible when boaring S E  $\frac{3}{4}$  S.

Marycabo, Zapar Island, lat 10 58 N, lon 71 40 W, fixed light, visible 6 miles, stone tower, centre of lantern 30 feet high.

Santa Marta, summit of the Morro, lat 11 15 N, lon 74 16 W, fixed white light, visible 24 miles, centre of lantern 328 feet high.

Colon, or Navy Bay (Pan.), N W part of Manzanillo Island, Colon or Aspinwall, lat 9 23 N, lon 79 53 W, fixed white light, visible 10 miles, wood open white building, height 60 feet, centre of lantern 60 feet high. Reported not to be visible beyond 6 miles.

Limon Port, or Grape Cay, lat 10 N, lon 83 2 W, fixed white light, visible 6 to 8 miles, centre of lantern 60 feet high.

Truxillo Bay, Cape Honduras, lat 16 1 N, lon 86 3 W, fixed white light, centre of lantern 30 feet high. Truxillo lighthouse having been destroyed by a hurricane in 1875, a temporary light visible only 4 miles, is now exhibited.

Bonacca Island, on Cay XII., lat 16 26 N, lon 85 54 W, fixed white and red light, visible 8 miles, on mast. Red towards the anchorage. Proposed to be changed to white.

Coxen Road, westward of Government house, Roaten Island, lat 16 18 N, lon 86 35 W, fixed white light, visible 4 miles, centre of lantern 85 feet high, light house white, square, black top, height 15 feet.

Utila Island, eastern reef, east harbor, fixed white light, visible 4 miles, small wooden building. Not to be depended on.

Half-moon Cay (E.), S E Point, lat 17 12 N, lon 87 32 W, fixed white light, visible 18 miles, iron tower, white, height 80 feet, centre of lantern 70 feet high.

Bokel Cay, on Cay, lat 17 9 N, lon 87 56 W, 2 fixed lights, horizontal, one white, visible 18 miles, and one red, visible 5 miles, flagstaff with a yard on which the lights are displayed, 75 feet high, centre of lantern 60 feet high.

Belize (E.), Eng'ish Cay, south side of channel, lat 17 19 N, lon 88 4 W, white fixed light, visible 7 miles, 45 feet high, white mast.

.... Custom House flagstaff, fixed white light.

Turneff Cays (E.), Mauger Cay,  $1\frac{1}{2}$  mile within north-end reef, lat 17 37 N, lon 87 46 W, 3 fixed white lights, in a triangle, visible 13 miles, tower skeleton iron, upper third black, remainder white, height 57 feet, upper light 53 feet, lower two 47 feet. The bank extends  $1\frac{1}{2}$  mile to the north-east of the light house. The lights can be see 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.

**BERMUDA.**

Gibbs Hill on summit, lat 32 15 N, lon 65 52, revolving white light, every minute, 362 feet high, visible 24 miles, Seen round horizon except between the bearings S 50° W, and S 54° W, also S 55° W to S. Building circular, iron, white.

Mount Hill, near St. David's Head, lat 32 22 N, lon 64 41 W, fixed white, 208 feet high, visible over 270° from N E  $\frac{3}{4}$  E to S E  $\frac{1}{2}$  S, bearing S E by S. The light is hidden by St. George's Island.

MEXICO.

- Progreso, Custom House, lat 21 17 N, lon 89 39 W, fixed white light, visible 6 miles, lamp on N E corner of square white building.
- Sisal, on Castle, lat 21 10 N, lon 90 3 W, fixed white light, visible 10 miles, centre of lantern 60 feet high.
- Celestum, lat 20 51 N, lon 90 25 W, fixed white light, visible 10 miles.
- Campeche, lat 19 50 N, lon 90 33 W, fixed white light, visible 14 miles, centre of lantern 95 feet high.
- Terminos de Laguna, Xicalango Island, Indian Village, lat 18 8 N, lon 91 55 W, white light, revolving every half minute, visible 14 miles, circular white lantern, red and white upper part, 100 feet high.
- Goatzocoalcos River, old look-out tower, west side of entrance, half a mile from beach, lat 18 12 N, lon 94 17 W, fixed white light, visible 12 miles.
- Vera Cruz, San Juan de Ulloa Fort, west part, lat 19 12 N, lon 96 8 W, white light, revolving every 45 seconds, visible 15 miles, building white, height 60 feet, centre of lantern 80 feet high.
- .... Convent of San Francisco, lat 19 11 N, lon 96 9 W, white light, fixed and flash every minute, visible 15 miles, building blue with white stripes at upper part, centre of lantern 102 feet high.
- Tampico, N point of entrance, lat 22 17 N, lon 97 47 W, fixed white light, visible 15 miles. This light is said to be visible only 7 or 8 miles.

TEXAS.

- Brazos Santiago, Isabel Point, lat 26 5 N, lon 97 12 W, white light, fixed and flash every minute, visible 15 miles, building white, 57 feet from base to centre of lantern, centre of lantern 82 feet above mean sea level.
- .... South end of Padre Island, lat 26 4 N, lon 97 8 W, fixed white light, visible 13 miles, 58 feet above sea level, building hexagonal, slate color, on piles.
- Aransas Pass, Low Island, inside Aransas Pass, lat 27 52 N, lon 97 3 W, fixed white light, visible 13 miles, building octagonal, brown, 55 feet from base to centre of lantern, centre of lantern 60 feet above sea level. The light when bearing N W  $\frac{1}{2}$  W will be visible between the two points of the pass. Strangers should not enter without a pilot.
- Matagorda Bay, Half-moon Reef, south extremity of reef, lat 28 33 N, lon 96 15 W, fixed red light, visible 11 miles, building white, centre of lantern 35 feet above sea level, house 40 feet from base to centre of lantern. Fog horn every five minutes.
- .... E end of Matagorda Island, entrance to the Bay, lat 28 20 N, lon 96 25 W, white light, fixed and flash every minute and a half, visible 16 miles, building black truncated cone, height 84 feet, centre of lantern 91 feet above sea level.
- Galveston Light Vessel, in 28 feet, inside the Bar, to guide through the deepest water, lat 29 21 N, lon 94 43 W, fixed white light, visible 12 miles. Light house straw color, centre of lantern 48 feet above sea level. Galveston on sides. Strangers should not approach Galveston Bar from the eastward without a pilot into less than seven fathoms water. They may anchor in this depth with the light bearing N W. In foggy weather a bell and horn will be sounded alternately.
- Bolivar Point, north side of entrance to Galveston Bay, lat 29 22 N, lon 94 46 W, fixed white light, visible 17 miles, building black and white horizontal bands, centre of lantern 117 feet above sea level, house 110 feet from base to centre of lantern.
- Galveston Bay, Half-moon Shoal, between Pelican Island and Dollar Point, lat 29 24 N, lon 94 51 W, fixed white light, visible 11 miles, iron piles, white, centre of lantern 38 feet above sea level. Fog bell, one stroke every 20 seconds.

PICKFORD & BLACK, IMPORTERS OF DUCKS AND DRILLINGS, 51 UPPER WATER STREET.

MACDONALD & CO., Manufacturers of COMPOSITION RUBBER BRACES.—See *odr.* p. 3 cover.

MACDONALD & CO., MANUFACTURERS OF COMPOSITION BUTT BOLTS AND SPIKES.—See p. 3 cover.

- ....Red Fish Bar, to mark channel across Red Fish Bar, lat 29 31 N, lon 94 52 W, fixed white light, visible 11 miles, building white, lantern black, centre of lantern 38 feet above sea level. Fog bell, 2 strokes in succession at intervals of 30 seconds.
- Cloppar Bar, to mark channel, lat 29 41 N, lon 92 56 W, fixed white light, visible 11 miles, building white, lantern black, centre of lantern 38 feet above sea level. Fog bell, one stroke every 30 seconds.

**MISSISSIPPI AND LOUISIANA.**

- Sabine Pass, Brant Point, east side of entrance to River, lat 29 44 N, lon 93 50 W, white light, fixed and flash every minute and a half, visible 15 miles, building white, octagonal, centre of lantern 85 feet above sea level, house 75 feet from base to centre of lantern.
- Colcasieu River, east point of entrance, lat 29 46 N, lon 93 17 W, fixed white light, visible 13 miles, on screw piles.
- S W Reef, in 3 feet water, at entrance of Aschafalay Bay, lat 29 23 N, lon 91 29 W, fixed white light, visible 13 miles, on screw pile, black, centre of lantern 56 feet above sea level, building 60 feet from base to centre of lantern. In thick or foggy weather a fog whistle will give blasts of 10 seconds' duration, at intervals of thirty seconds.
- Ship Shoal, in 10 feet of water, 11 miles S S W of Raccoon Point, lat 28 55 N, lon 91 5 W, white flash light, every half minute, visible 17 miles, iron screw piles, black, centre of lantern 115 feet above sea level, tower 125 feet from base to centre of lantern. Fog bell.
- Timbalier, in 7 feet water, near the east end of the Island, lat 29 1 N, lon 90 18 W, fixed white light, with red flashes ever minute, visible 16 miles, building black, height 118 feet, centre of lantern 110 feet above sea level.
- Barrataria Bay, west end of Grand Terre Island, lat 29 17 N, lon 89 55 W, fixed white light, visible 13 miles, house white, centre of lantern 60 feet above sea level, building 55 feet from base to centre of lantern.
- Mississippi River*, South-West Pass, on west side, near the entrance to the Pass, lat 29 59 N, lon 89 22 W, fixed white light, visible 14 miles, house white, centre of lantern 70 feet from sea level, building 68 feet from base to centre of lantern. Steam fog whistle sounds 5 seconds at alternate intervals of 5 and 45 seconds.
- ....Head of Passes, Dear Island, at the junctions of the S E and N W Passes, lat 29 9 N, lon 89 15 W, fixed white light, visible 5 miles, building white, on keeper's dwelling.
- ....South Pass, on S W side of Gordon Island, near the entrance of South Pass, lat 29 1 N, lon 89 10 W, white flash light, every minute and a half, visible 10 miles, slate-colored wood tower, centre of lantern 60 feet above sea level, house 54 feet from base to centre of lantern. On keeper's dwelling. An automatic signal buoy lies in 10 fathoms about one mile S E by S from ends of jetties.
- ....Pass L'Outre, Middle Ground Island, north side entrance, lat 29 12 N, lon 89 2 W, white light, fixed and every flash 45 seconds, visible 14 miles, house circular, black, centre of lantern 70 feet above sea level, building 70 feet from base to centre of lantern. Steam fog whistle sounds 15 seconds at intervals of 45 seconds. The light house bears W  $\frac{3}{4}$  N from the large Nun buoy outside the bar.
- Chandeleur Island, north end of Island, lat 30 3 N, lon 88 53 W, fixed white light, visible 13 miles, building white, centre of lantern 58 feet above sea level, house 56 feet from base to centre of lantern. A shoal extends three quarters of a mile to N W of the light house.
- Lake Pontchartrain*, Manchac Pass, between Lakes Maurepas and Pontchartrain, south side, lat 30 18 N, lon 90 13 W, fixed white light, visible 11 miles, building white, centre of lantern 48 feet above sea level, house 30 feet from base to centre of lantern.

PICKFORD & BLACK, Importers of Wire Rope, Canvas, 51 Upper Water St.

MACDONALD & CO, MANUFACTURERS OF COMPOSITION BUTT BOLTS AND SPIKES.—See p. 3 cover.

PICKFORD & BLACK IMPORTERS NETS, TWINES LINES, 51 UPPER WATER STREET.

MACDONALD & CO., Manufacturers and Fitters of Steam Heating Apparatus.—See adv. p. 3 cont.

- .... Tchefuncti River, near Madisonville, lat 30 23 N, lon 90 6 W, fixed white light, visible 12 miles, house white, centre of lantern 48 feet above sea level, house 43 feet from base to centre of lantern.
- .... New Canal, entrance 5 miles north of New Orleans, lat 30 2 N, lon 90 7 W, fixed white light, visible 11 miles, house white, centre of lantern 33 feet above sea level, house 28 feet from base to centre of lantern. On keeper's dwelling.
- .... Bayou St. John, 5 miles north of New Orleans, lat 30 2 N, lon 90 5 W, fixed white light, visible 12 miles, building white, centre of lantern 30 feet above sea level, building 28 feet from base to centre of lantern. Cylindrical column on screw piles.
- .... Ponchartrain Port, near east end of railway, lat 30 2 N, lon 90 4 W, white light, fixed and flash every minute and a half, visible 11 miles, house white, centre of lantern 35 feet above sea level, house 29 feet from base to centre of lantern.
- Herbes Point, near extreme of Point, lat 30 9 N, lon 89 51 W, fixed red light, visible 11 miles, tower straw color, on keeper's dwelling, centre of lantern 40 feet above sea level, tower 38 feet to centre of lantern.
- .... West Rigolet, at the east entrance to Lake Pontchartrain, lat 30 11 N, lon 89 45 W, fixed white light, visible 11 miles, building white, centre of lantern 30 feet above sea level. On keeper's dwelling.
- St. Joseph's Island, entrance to Lake Borgne, lat 30 11 N, lon 89 36 W, fixed white light, visible 11 miles, house white, centre of lantern 35 feet above sea level, building 34 feet from base to centre of lantern.
- Merrill Shell Bank, between Cat, St. John and Grand Islands, lat 30 14 N, lon 89 14 W, fixed white light, visible 12 miles, screw piles, centre of lantern 45 feet above sea level, tower 51 feet to centre of lantern. A bell and horn.
- Pass Christian, on the main laid, 6½ miles N W of Cat Island, lat 30 19 N, lon 89 15 W, fixed white light, visible 12 miles, house white, centre of lantern 42 feet above sea level, house 30 feet from base to centre of lantern.
- Cat Island, Western Point, lat 30 14 N, lon 89 10 W, fixed white light, with flashes every minute and a half, visible 12 miles, building white, on screw piles, centre of lantern 45 feet above sea level, building 40 feet from base to centre of lantern.
- Biloxi, west of western entrance to Bay, lat 30 24 N, lon 88 54 W, fixed light, visible 13 miles, building white, centre of lantern 62 feet above sea level, building 48 feet from base to centre of lantern.
- Ship Island, west end, lat 30 13 N, lon 88 58 W, fixed red light, visible 13 miles, building white, centre of lantern 55 feet above sea level, building 50 feet from base to centre of lantern.
- East Pascagoula River, west side of river mouth, lat 30 21 N, lon 88 34 W, fixed white light, visible 11 miles, building white, centre of lantern 38 feet above sea level, tower on keeper's dwelling, 35 feet to centre of lantern.
- Round Island, south end, off Pascagoula, lat 30 17 N, lon 88 35 W, fixed white light, visible 12 miles, building white, centre of lantern 51 feet above sea level, house 45 feet to centre of lantern. Hidden by woods from N W to N ¼ N through N to N E by E ¾ E. A shoal with less than 6 feet of water on it extends a mile south of the light house.
- Horn Island, east end, lat 30 13 N, lon 88 31 W, fixed white light with a red flash every minute, visible 12 miles, house white, lantern black, centre 43 feet above sea level, house 41 feet to centre of lantern.

ALABAMA.

Mobile Point, S W Bastion of Fort Morgan, east side of entrance to the Bay, lat 30 14 N, lon 88 1 W, fixed red light, visible 12 miles, house black, centre of lantern 50 feet above sea level, house 30 feet to centre of lantern.

MACDONALD & CO., Manufacturers of Brass Bolts and Catches.



Sand Island, middle of the low island, about 3 mile S S W of Mobile Point, lat 30 11 N, lon 88 3 W, fixed white light, visible 17 miles, house black, conical, centre of lantern 132 feet above sea level, house 125 feet to centre of lantern.

Choctaw Point, entrance of Mobile River, lat 30 40 N, lon 88 W, fixed white light, visible 22 miles, centre of lantern 47 feet above sea level, house 41 feet to centre of lantern, tower straw color. Screw piles on the ruins of a battery 6 cables east of Choctaw Point. Fog bell.

Pensacola Harbor, west of Fort Barancas, north side of Pensacola Bay, lat 30 21 N, lon 87 19 W, white flash light, every minute, visible 21 miles, house upper two-thirds black, lower third white, centre of lantern 210 feet above sea level, house 180 feet to centre of lantern.

.... Bar Beacon, 150 yards S S E  $\frac{1}{2}$  E from main light house, fixed white light, visible 6 miles, building white. Beacon and main light in line lead over the bar.

Cape San Blas, near the south point of the Cape, lat 29 40 N, lon 85 22 W, white flash light, every minute and a half, visible 19 miles, house white, centre of lantern 102 feet above sea level, house 96 feet to centre of lantern. A dangerous shoal extends 5 or 6 miles southward of the Cape.

Cape St. George, on the Cape, lat 29 35 N, lon 85 3 W, fixed white light, visible 14 miles, house white, 68 feet to centre of lantern, centre of lantern 73 feet above sea level.

St. Mark, east side entrance to harbor, lat 30 5 N, lon 84 11 W, fixed white light, visible 14 miles, house white, centre of lantern 83 feet above sea level, house 75 feet to centre of lantern.

Cedar Eyes, Seahorse Cay, east end of mound, lat 29 6 N, lon 83 5 W, white light, fixed, and flash every minute, visible 14 miles, house red, lantern white, centre of lantern 75 feet above sea level, house 43 feet to centre of lantern. On keeper's dwelling. A reef extends in a S W direction about 12 miles from Cay.

Egmont, Egmont Cay, entrance of Tampa Bay, lat 27 36 N, lon 82 46 W, fixed white light, visible 15 miles, house white, lantern black, centre of lantern 80 feet above sea level, house 81 feet to centre of lantern.

FLORIDA.

Dry Tortugas, Fort Jefferson, Garden Cay, lat 24 38 N, lon 82 53 W, fixed white light, visible 14 miles, house brown, lantern black, centre 70 feet above sea level, house 65 feet to centre of lantern.

.... Loggerherd, or S W Cay, lat 24 38 N, lon 82 56 W, fixed white light, visible 19 miles, house lower part white, upper part black, centre of lantern 152 feet above sea level, house 150 feet to centre of lantern. *Note* —An iron beacon surmounted by a cylindrical cage, and painted black, stands on Rebecca Shoal, and is visible about 7 miles.

Cay West, N W Passage, in 6 feet water, lat 24 37 N, lon 81 54 W, fixed white light, visible 12 miles, tower red, dwelling and lantern white, centre of lantern 40 feet above sea level. Visible between the bearings of S E through E to S W.

.... S W point of Island, lat 24 33 N, lon 81 48 W, fixed white light, visible 14 miles, house white, centre of lantern 72 feet above sea level, house 60 feet to centre of lantern. Visible between the bearings of N N E  $\frac{1}{2}$  E and E by N  $\frac{1}{2}$  N.

Sand Cay, on a sand and shell islet, about  $7\frac{1}{2}$  miles S S W  $\frac{3}{4}$  W from Cay West light house, lat 24 27 N, lon 81 53 W, fixed and flash white light, every two minutes, visible 17 miles, house brown color, height 121 feet, lantern white, centre 110 feet above sea level. It shows for a space of *one minute* a clear steady light; in every alternate minute there is a

MACDONALD & CO., Manufacturers of Ship's Patent Water Closets.—See adv. p. 3 cover.

PICKFORD & BLACK, AGENTS FOR TARR & WONSON'S COPPER PAINT.

PICKFORD & BLACK, AMERICAN TAR, PITCH, ROSIN, 51 UPPER WATER ST.

MACDONALD & CO., MANUFACTURERS OF BRASS BINNACLE GUARDS.—See *adv. p. 3 cover.*

- brilliant flash of ten seconds duration, preceded and followed by partial eclipses of 25 seconds duration.
- American Shoal, in 6 feet, 67 yards N W of Beacon B, lat 24 31 N, lon 81 31 W, fixed white light, flash every 5 seconds, visible 16 miles, 110 feet high, building brown on piles.
- Sombrero Shoal, on shoal near Sombrero Cay, lat 34 38 N, lon 81 17 W, fixed white light, visible 19 miles, tower open frame work, iron, on piles, brown, centre of lantern 144 feet from sea level, tower 149 feet to centre of lantern.
- Alligator Reef, in 5 feet water, near N E part of reef, lat 24 51 N, lon 80 37 W, white and red flash light every 5 seconds, visible 18 miles, house white, lantern black, centre 143 feet above sea level. The light is a flashing white and red light showing a flash every five seconds in the following order, viz., five white flashes and then one red flash.
- Caryfort Reef, near the edge of the Gulf Stream, lat 25 13 N, lon 80 13 W, white flash light every half minute, visible 17 miles, iron piles, dark color, 112 feet high, centre of lantern 106 feet above sea level. The dwelling is octagonal in shape.
- Fowey Rocks. 50 yards south of Beacon P, in 5 feet water, lat 25 35 N, lon 80 6 W, fixed white light, visible 16 miles, 110 feet above sea level, tower dark brown, on piles, keeper's dwelling white.
- Jupiter Inlet, between Jupiter Inlet and Gilbert Bar, lat 26 56 N, lon 80 5 W, white light, fixed and flash every minute and a half, visible 19 miles, house red, brick, lantern brown, centre 146 feet above sea level, house 94 feet to centre of platform. Varied every 1½ minutes by a brilliant flash of 7½ seconds duration, preceded and followed by partial eclipses of about 19 seconds duration.
- Cape Canaveral, north-east pitch of the Cape, lat 28 28 N, lon 80 32 W, white flash light every minute, visible 18 miles, house black and white horizontal bands, centre of lantern 139 feet above sea level, house 55 feet to centre of lantern. Old light tower near is white.

## LIGHTS AND FOG SIGNALS ON THE UNITED STATES COAST.

### FOG SIGNALS ON BOARD UNITED STATES LIGHT-VESSELS.

Notice is hereby given that vessels approaching or passing light vessels of the United States in foggy or thick weather will be warned of their proximity by the ringing of a bell, sounding of a fog-horn or whistle on board of the light vessels, at intervals not exceeding five minutes.

### NOTES AND REFERENCES.

The lights of the United States are arranged in their regular geographical order from East to West, commencing at then orth-eastern boundary, and following the sea-coast to the entrances to the sounds, bays, rivers, &c. The lights of each estuary are arranged in regular order from the sea to the head of navigation under separate references; after which the next sea-coast light will be found in the order.

The names of the lights are printed as follows, viz.:

- 1st. PRIMARY SEA-COAST LIGHTS.
- 2d. SECONDARY SEA-COAST LIGHTS, AND LAKE-COAST LIGHTS.
- 3d. Light-ships.
- 4th. Sound, bay, river, and harbor lights.

Lead Scupper Pipes, all sizes, MACDONALD & CO.'S.—See p. 3 cover.

**NEW HAMPSHIRE.**

- WHALE'S BACK, on east side of outer entrance to Portsmouth Harbor, lat 43 3 31 N, lon 70 41 49 W, a 3d-class Daboll trumpet (in duplicate), giving a blast of 10 seconds duration, at intervals of 30 seconds, fixed white light, varied by white flashes every 1 minute and 30 seconds, visible 13 miles. Building gray, height 65 feet.
- Portsmouth Harbor (New Castle), on Fort Point, south-west side of inner entrance to Portsmouth Harbor, lat 43 4 16 N, lon 70 42 33 W, fixed white light, visible 15 miles. Building white, height 70 feet.
- ISLES OF SHOALS, on White Island, the south-west island of Isles of Shoals, off Portsmouth, lat 42 58 1 N, lon 70 37 26 W, flashing red and white light, every 15 seconds, visible 15 miles. Building white, height 87 feet.

**MASSACHUSETTS.**

- Newburyport Harbor, on north end of Plum Island, south side of entrance to Merrimack River, lat 42 48 54 N, lon 70 49 11 W, fixed white light, visible 12 miles. Building white, height 50 feet.
- Beacon, 336 feet in front of the preceding, fixed white light, visible 10 miles. Building black and white, height 25½ feet.
- Upper Harbor (outer beacon), on Bailey's new wharf, near east corner, lat 42 48 41 N, lon 70 51 55 W, fixed red light, visible 10 miles. Building black, height 25½ feet.
- Upper Harbor (inner beacon) 350 feet in rear of the preceding, lat 42 48 40 N, lon 72 52 W, fixed green light, visible 12 miles. Building red, height 47½ feet.
- Ipswich, south side of entrance to Ipswich Harbor, on Castle Neck, about 1½ miles south-east of Ipswich River, lat 42 41 7 N, lon 70 46 W, fixed white light, varied by white flashes every 1 minute and 30 seconds, visible 12½ miles. Building white, height 50 feet.
- Beacon, 325 feet in front of the preceding, fixed white light, visible 9½ miles. Building white, height 20 feet.
- Annisquam Harbor, on Wigwam Point, east side of the entrance to the harbor, lat 42 39 42 N, lon 70 40 55 W, fixed white light, visible 12½ miles. Building white, height 50 feet.
- Straightsmouth, on north-east point of Straightsmouth Island, north side of Cape Ann, lat 42 39 44 N, lon 70 35 19 W, fixed white light, visible 11 miles. Building white, height 33 feet.
- CAPE ANN, two towers and light on Thatcher's Island, distant about three-fourths of a mile from Cape Ann, one in lat 42 38 21 N, lon 70 34 31 W, the other in lat 42 38 12 N, lon 70 34 32 W, two fixed white lights, visible 19 miles. Buildings gray, height 165½ feet. A ten-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 seconds.
- Eastern Point, eastern side of entrance to Cape Ann or Gloucester Harbor, lat 42 34 48 N, lon 70 39 54 W, fixed red light, visible 13 miles. Building white, height 60 feet. A bell struck by machinery, two blows in quick succession, followed by an interval of 30 seconds; then one blow at an interval of 30 seconds.
- Ten-Pound Island, in Cape Ann or Gloucester Harbor, east side of entrance to inner harbor, lat 42 36 6 N, lon 70 39 57 W, fixed white light, visible 11 miles. Building white, height 50 feet.
- Baker's Island Beacon Range, two towers and lights south side of the north-east entrance to Salem Harbor, north end of Baker's Island, two fixed white lights, visible 13½ and 15 miles. Buildings white, height 64 and 87 feet. A bell.

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

Residences and Public Buildings Fitted with Plumbing Fixtures, by MACDONALD & CO.—See *alt.*, p. 3 cover.

Brass Hinges, Hasps and Locks, at MACDONALD & CO.'S.—See cover.

- Hospital Point, on Hospital point, Beverly, north side of Salem harbor entrance, lat 42 32 47 N, lon 70 51 23 W, fixed white light, visible 13½ miles. Building white, height 63 feet.
- Fort Pickering, on Winter Island, north side of an entrance to Salem harbor, lat 42 31 35 N, lon 70 52 1 W, fixed white light, visible 10¼ miles. Building red, height 32 feet.
- Derby's Wharf, on the end of Derby's wharf, upper part of Salem harbor, lat 42 30 29 N, lon 70 53 3 W, fixed red light, visible 9¼ miles. Building red, height 22 feet.
- Marblehead, south side of entrance to Marblehead harbor, lat 42 30 19 N, lon 70 50 3 W, fixed white light, visible 11 miles. Building white, height 43 feet.
- Egg Rock, off Nahant, three-fourths of a mile from shore, lat 42 26 N, lon 70 53 54 W, fixed red light, visible 12¾ miles. Building white, height 87 feet.
- MINOT'S LEDGE, on the Outer Minot (one of the Cohasset rocks), entrance to Boston bay, lat 42 16 10 N, lon 79 45 35 W, fixed white light, visible 15½ miles. Building granite, height 92 feet. A bell, struck by machinery.
- Boston, on Little Brewster Island, north side of main outer entrance to Boston harbor, lat 42 19 40 N, lon 70 53 26 W, flashing white light, every 30 seconds, visible 16½ miles, height 111 feet. Building white. A first-class Daboll air trumpet (in duplicate), giving a blast of 7 seconds, followed by intervals of 43 seconds.
- Narrows, on the west end of the spit which makes out from the Great Brewster island, Boston Harbor, Mass., north-east side of entrance to Narrows channel, lat 42 19 22 N, lon 70 55 11 W, fixed red light, visible 12 miles. Building brown, height 46 feet. A bell, struck by machinery, at intervals of 20 seconds.
- Long Island Head, on the north-east end of Long Island, and south side of the entrance to main ship-channel to Boston, from head of Broad sound, lat 42 19 47 N, lon 70 57 24 W, fixed white light, visible 17¾ miles. Building white, height 129 feet.
- Plymouth (Gurnet), and Beacon Range, on Gurnet point, north side of entrance to Plymouth harbor, lat 42 0 11 N, lon 70 36 4 W, fixed white lights, visible 15¾ and 6 miles. Buildings white, height 102 feet.
- Duxbury Pier, near Duxbury Pier, Plymouth, Mass., north side of entrance to anchorage in "Cowyard," lat 41 59 14 N, lon 70 38 57 W, fixed white light, visible 11½ miles. Building red, height 40 feet.
- Race Point, northwesterly point of Cape Cod, lat 42 3 44 N, lon 70 14 37 W, fixed white light, varied by white flashes every 1.30 seconds, visible 12½ miles. Building red, height 51 feet. A 12-inch steam whistle (in duplicate), giving a blast of 4 seconds, with alternate intervals of 8 and 44 seconds.
- Wood End, on the beach at Wood End, Cape Cod, lat 42 1 16 N, lon 70 11 38 W, flashing red light, every 15 seconds, visible 12 miles. Building brown, height 45 feet.
- Long Point, on Long Point shoal, south side of entrance to Provincetown harbor, lat 42 1 59 N, lon 70 10 9 W, fixed white light, visible 11¾ miles. Building brown, height 44 feet. A bell, struck by machinery, giving two blows in quick succession, followed by an interval of 30 seconds, then a single blow, followed by an interval of 30 seconds.
- Mayo's Beach, at the head of Wellfleet Bay, lat 41 55 (49) N, lon 70 2 (5) W, fixed white light, visible 11¾ miles. Building white, height 36 feet.
- Billingsgate Island, west side of and near the entrance of Wellfleet Bay, on south-east side of Sandy Neck point, lat 41 52 18 N, lon 70 4 10 W, fixed white light, visible 12½ miles. Building red, height 52 feet.
- Sandy Neck, west side of entrance to Barnstable harbor, lat 41 43 22 N, lon



- 70 16 (58) W, fixed white light, visible  $12\frac{3}{4}$  miles. Building white, 59 feet.
- CAPE COD, (Highlands, Truro,) on the north-east or seaward side of Cape Cod (Highlands, Truro), lat 42 2 22 N, lon 70 3 40 W, fixed white light, visible  $20\frac{1}{4}$  miles. Building white, 195 feet. A first-class Daboll trumpet; a blast of 8 seconds at intervals of 30 seconds.
- NAUSET BEACH (Beacons), three towers and lights at Eastham, on the east side of Cape Cod, lat 41 51 39 N, lon 69 57 5 W, three fixed white lights, visible  $15\frac{1}{4}$  miles. Buildings white, height 93 feet.
- CHATHAM, on the mainland, west side of Chatham Harbor, Mass., two fixed white lights, the one in lat 41 40 18 N, lon 69 57 1 W, the other in lat 41 40 17 N, lon 69 57 1 W, visible  $14\frac{1}{2}$  miles. Buildings white, height 80 feet.
- Pollock Rip Light-ship*, of Chatham,  $3\frac{1}{2}$  miles S E by E  $\frac{1}{4}$  E of Monomoy Point light-house, lat 41 31 (39) N, lon 69 55 (11) W, two fixed red lights, 45 feet high, visible 13 miles. Vessel red. A twelve-inch steam whistle gives blasts of 5 seconds' duration, with intervals of 55 seconds. If whistle is disabled, bell rung by hand.
- MONOMOY POINT, on Monomoy beach, the southern extremity of Cape Cod, lat 41 33 34 N, lon 69 53 39 W, fixed white light, visible  $11\frac{1}{4}$  miles. Building red, height 41 feet.
- Shovelful Shoal Light-ship*, off Chatham,  $1\frac{1}{2}$  miles, S by W from Monomoy Point light-house, lat 41 32 (0) N, lon 69 59 (50) W, fixed red light, 40 feet high, visible  $11\frac{1}{2}$  miles. Vessel green. A bell and horn.
- Handkerchief Light-ship*, off the southern point of the Handkerchief Shoal, in Vineyard Sound. The ship bears S W by W  $\frac{1}{2}$  W from the Shovelful Shoals light-ship, lat 41 29 (38) N, lon 70 3 (41) W, fixed white light, 40 feet high, visible  $11\frac{1}{2}$  miles. Vessel straw. A bell and horn.
- NANTUCKET (Great Point), on Sandy or Great Point, the north-east extremity of Nantucket Island, lat 41 23 24 N, lon 70 2 46 W, fixed white light, visible 14 miles. Building white, height 70 feet.
- SANKATY HEAD, on the south-east extremity of the island of Nantucket, lat 41 17 1 N, lon 60 57 56 W, fixed white, varied by white flashes, every minute, visible  $18\frac{1}{4}$  miles. Building white and red, height 150 feet.
- Nantucket New South Shoals Light-ship*, placed about 3 miles S S E of the shoalest part of Davis New South Shoal, lat 40 56 (2) N, lon 69 51 (51) W, two fixed white lights, 44 feet high, visible 12 miles. Vessel red. A bell and horn.
- GAY HEAD, on the western point of Martha's Vineyard Island, south side of west entrance to Vineyard Sound, lat 41 20 54 N, lon 70 50 8 W, flashing white and red light, fourth flash red, every 10 seconds, visible  $19\frac{1}{4}$  miles. Building red, height 170 feet.
- Brant Point, on Brant Point, west side of entrance to Nantucket Harbor, lat 41 17 23 N, lon 70 5 35 W, fixed white light, visible 12 miles. Building red, height 46 feet.
- Nantucket Cliff Range Beacon (front), and Range Beacon (rear), on the beach north-west of Nantucket Harbor, one lat 41 17 38 N, lon 70 6 24 W, the other lat 41 17 35 N, lon 70 6 25 W, fixed white and fixed red lights, visible  $7\frac{1}{2}$  and 8 miles. Buildings white, height 8 and 10 feet.
- Stage Harbor, on Harding's Beach, west side of Chatham, lat 41 39 32 N, lon 69 59 3 W, fixed white light, visible 12 miles. Building red, height 45 ft.
- Bass River, on the north side of Vineyard Sound, east side entrance to Bass River, lat 41 39 4 N, lon 70 10 10 W, fixed white light, visible  $11\frac{1}{2}$  miles. Building white, height 40 feet.
- Bishops and Clerks, on the north side of Bishops and Clerks Ledge, Vineyard Sound, lat 41 34 27 N, lon 70 15 2 W, flashing white light, every 30 seconds, visible 13 miles. Building granite, 59 feet high. A bell, struck by machinery, every 15 seconds.

- Hyannis, on the mainland, east side of the entrance, and inside of the break-water, to Hyannis Harbor, lat 47 38 11 N, lon 70 17 20 W, fixed red light, visible 11½ miles. Building white, height 42 feet.
- Cross Rip Light-ship*, north-west of Nantucket, off Cross Rip Shoal, lat 41 26 (46) N, lon 70 17 (26) W, fixed white light, height 39 feet, visible 11½ miles. Vessel black and white. A bell and horn.
- Cape Poge, on Chappaquiddick Island, north-east point of Martha's Vineyard, lat 41 25 16 N, lon 70 27 6 W, fixed white light, visible 13 miles. Building white, height 57 feet.
- Succonneset Shoal Light-ship*, between Succonneset Shoal and Eldrige Shoal, Vineyard Sound, Mass., lat 41 32 (2) N, lon 70 26 (41) W, fixed white light, visible 11½ miles, height 40 feet. Vessel straw color. A bell and horn.
- Edgartown, north side of Edgartown Harbor, lat 41 23 27 N, lon 70 30 13 W, fixed white light, visible 11¼ miles. Building white, height 37 feet.
- East Chop, on East Chop, eastern entrance to Vineyard Haven Harbor, lat 41 28 (13) N, lon 70 34 (5) W, fixed red light, visible 14½ miles. Building white, height 79 feet.
- Holmes's Hole (West Chop), on West Chop, western entrance to Vineyard Haven Harbor, lat 41 28 51 N, lon 70 36 1 W, fixed white light, visible 13½ miles. Building white, height 69 feet. A ten-inch steam whistle (in duplicate), blast of 3 seconds, followed by an interval of 27 seconds.
- Nobska Point, E S E side of entrance to Wood's Holl Harbor, lat 41 30 57 N, lon 70 39 20 W, fixed white light, visible 13 miles. Building red, height 89 feet. A bell, struck by machinery, twice quickly alternately with one blow, at intervals of 30 seconds.
- Tarpaulin Cove, west side of the cove on Naushon Island, lat 41 28 8 N, lon 70 45 29 W, fixed white light, varied by white flashes every 30 seconds, visible 14½ miles. Building white, height 80 feet.
- Vineyard Sound Light-ship (Sow and Pigs)*, near the rocks called "Sow and Pigs," lat 41 23 (2) N, lon 70 59 (1) W, two fixed white lights, visible 11 miles, height 34 feet. Vessel red. A twelve-inch steam whistle, blast 6 seconds, at intervals of 45 seconds.
- Hen and Chickens Light-ship*, about a mile south-east of the Hen and Chickens Reef, lat 41 27 (2) N, lon 71 1 (6) W, fixed white light, visible 10 miles, 34 feet high. Vessel lead color.
- Cuttyhunk, on south-west point of Cuttyhunk Island, south-east side of entrance to Buzzard's Bay, lat 41 24 52 N, lon 70 57 W, fixed white light, visible 11½ miles. Building white, height 42 feet.
- Dumpling Rock (Round Hill), off Round Hill, north-west side of Buzzard's bay, S S W of Clark's Point and New Bedford, lat 41 32 18 N, lon 70 55 19 W, fixed white light, visible 11½ miles. Building white, height 42 feet. A bell, struck by machinery, twice quickly, alternately with one blow, at intervals of 30 seconds.
- Clark's Point, on fort at Clark's Point, west side of entrance to New Bedford Harbor, lat 41 35 24 N, lon 70 54 4 W, fixed white light, visible 13 miles. Building 63 feet high.
- Palmer's Island, west side of entrance of New Bedford inner harbor, on north-east extremity of the island in New Bedford Harbor, lat 41 37 37 N, lon 70 54 35 W, fixed white light, visible 11½ miles. Building white, height 38 feet.
- Ned's Point, east side of Mattapoiset Harbor, east of New Bedford, north-west side of Buzzard's Bay, lat 41 39 3 N, lon 70 47 46 W, fixed white light, visible 11 miles. Building white, height 43 feet.
- Bird Island, east side of entrance to Sippican Harbor, off Great Neck Point, west side of entrance to Buzzard's Bay, lat 41 40 10 N, lon 70 43 4 W, fixed white light, varied by white flashes every one minute and thirty seconds, visible 11¼ miles. Building white, height 37 feet.

Wing's Neck, near the head of Buzzard's Bay, east side of entrance to Sandwich Harbor, lat 41 40 49 N, lon 70 39 42 W, fixed white light, visible 12 miles. Building white, height 44 feet.

**CONNECTICUT AND NEW YORK.**

**MONTAUK POINT**, on the extreme end of Long Island, N. Y., lat 41 4 15 N, lon 71 51 27 W, fixed white light, varied by two flashes every two minutes, visible 19½ miles. Building white, height 169½ feet. A first-class Daboll trumpet, (in duplicate) operated by a hot-air engine, blast of 12 seconds at intervals of 50 seconds.

**Stonnington Harbor**, on east side of entrance to Stonnington Harbor, Conn., lat 41 19 43 N, lon 71 54 21 W, fixed white light, visible 11 miles. Building 59½ feet high.

*Eel Grass Shoal Light-ship*, to mark Eel Grass Shoal, in Fisher's Island Sound, of Mystic, Conn., lat 41 18 (22) N, lon 71 56 (45) W, fixed white light, height 32 feet, visible 11 miles. Vessel lead color. A bell and horn.

**Morgan's Point**, (Mystic,) near Mystic, on the north side of Fisher's Island Sound, Conn., lat 41 18 59 N, lon 71 59 23 W, fixed white light, visible 11 miles. Building white, height 61 feet.

**North Dumpling**, in Fisher's Island Sound, N. Y., lat 41 17 16 N, lon 72 1 11 W, fixed red light, visible 11 miles. Building white, height 70½ feet. A bell, struck by machinery, at intervals of 15 seconds.

**New London Harbor**, west side of entrance to Thames River, Conn., lat 41 19 N, lon 72 5 24 W, fixed white light, visible 15 miles. Building white, height 90 feet. A third-class trumpet, (in duplicate) blasts six seconds, at intervals of fourteen seconds.

*Bartlett's Reef Light-ship*, of New London, Conn., lat 41 16 (17) N, lon 72 7 (50) W, 2 fixed white lights, height 28 feet, visible 10 miles. Vessel black and white. A bell and horn.

**Race Rock**, on Race Rock, off Fisher's Island Point, and north side of the entrance to Long Island Sound, N. Y., lat 41 14 37 N, lon 72 2 51 W, fixed red and white light, alternating red and white every 30 seconds, visible 14 miles. Building granite, height 68½ feet. A bell struck by machinery, two blows in quick succession every twenty seconds.

**LITTLE GULL ISLAND**, south side of main entrance to Long Island Sound, N. Y., lat 41 12 23 N, lon 72 6 26 W, fixed white light, visible 17 miles. Building gray, height 92 feet. A second class steam siren, (in duplicate) giving a blast of five seconds, at intervals of forty seconds.

**Gardiner's Island**, on north point of Gardiner's Island, N. Y., lat 41 3 31 N, lon 73 8 44 W, fixed white light, visible 11 miles. Building dark brown, height 33 feet.

**Plum Island**, west end of Plum Island, near north-east extremity of Long Island, and north of Gardiner's Bay, N. Y., lat 41 10 25 N, lon 72 18 23 W, white light, flashing every thirty seconds, visible 14 miles. Building white, height 76 feet. A bell struck by machinery at intervals of 15 seconds.

**Long Beach Bar**, entrance from Gardiner's Bay to Orient and Greenport Harbors, and to Peconic Bay, Long Island, N. Y., lat 41 6 33 N, lon 72 18 23 W, fixed red light, visible 13 miles. Building white, height 54 feet. A bell struck by machinery at intervals of twenty seconds.

**Cedar Island**, entrance to Sag Harbor, Long Island, N. Y., lat 41 2 27 N, lon 72 15 41 W, fixed white light, visible 11 miles. Building granite, height 45 feet.

**Saybrook**, (Lynde Point), on Lynde Point, western side of the mouth of Connecticut River, Conn., lat 41 16 17 N, lon 72 20 37 W, fixed white light, visible 14 miles. Building white, height 73 feet. A bell, struck by machinery, at intervals of 12 seconds.

MACDONALD & CO., MANUFACTURERS OF COMPOSITION CLINCH RINGS.—See adv. p. 3 cover.

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

PICKFORD & BLACK, IRON SPIKES, CUT NAILS, 51 UPPER WATER STREET.

VESSELS FITTED WITH PLUMBING FIXTURES, BY MACDONALD & CO.

- Calves' Island, east side of Connecticut River, 2 miles below the town of Essex, Conn., lat 41 19 26 N, lon 72 21 0 W, fixed white light. visible 5 miles. Building black.
- Brockway's Beach, Connecticut River, lower end of reach, 2 miles above town of Essex, Conn., lat 41 22 20 N, lon 72 23 (50) W, fixed white light, visible 5 miles. Building white.
- Devil's Wharf, west side of Connecticut River, 4 miles above Essex, and below Deep Creek, Conn., lat 41 23 32 N, lon 72 26 (8) W, fixed white light, visible 5 miles. Building white.
- Cornfield Point Light-ship, off Cornfield Point, mouth of Connecticut River, Conn., lat 41 13 (32) N, lon 72 23 (10) W, fixed red light, height 40 feet, visible 12 miles. Vessel red. A bell and horn.
- HORTON'S POINT, on Horton's Point, north side of Long Island, N. Y., lat 41 57 N, lon 72 26 45 W, fixed white light, visible 16 miles. Building white, height 105 feet.
- Falkner's Island, off Guildford Harbor, north side of Long Island Sound, Conn., lat 41 12 43 N, lon 72 30 15 W, fixed white light, varied by white flashes every one minute and thirty seconds, visible 15 miles. Building white, height 96 feet. A ten-inch steam whistle (in duplicate), giving a blast of eight seconds, at intervals of fifty-two seconds.
- New Haven Long Wharf, on end of Long Wharf, New Haven, Conn., lat 41 17 35 N, lon 72 55 (2) W, fixed red light, visible 9 miles. Building drab, height 21 feet.
- SOUTH-WEST LEDGE, on South-west Ledge Reef, entrance to New Haven Harbor, Conn., lat 41 14 4 N, lon 72 54 45 W, fixed white light, visible 13 miles. Building red, height 57 feet. A bell struck by machinery at intervals of fifteen seconds.
- Stratford Point, west entrance to Stratford River, on north side Long Island Sound, Conn., lat 41 9 7 N, lon 73 6 13 W, flashing white light, every 45 seconds, visible 12½ miles. Building white, height 55 feet. A bell struck by machinery at intervals of 15 seconds.
- STRATFORD SHOAL, (Middle Ground) on Middle Ground, Long Island Sound, N. Y., lat 41 3 (34) N, lon 73 5 (45) W, flashing white light every 10 seconds, visible 13½ miles. Building gray, height 63 feet. A Daboll trumpet, operated by two eighteen-inch caloric engines, blast six seconds at intervals of 21 seconds. Bell when necessary.
- Old Field Point, on Long Island, south of Stratford Shoal Light, nearly opposite, Bridgeport, Conn., lat 40 58 36 N, lon 73 7 (8) W, fixed white light, visible 14½ miles. Building gray, height 79 feet.
- Bridgeport Harbor, about 1½ miles S by E of the town of Bridgeport, Conn., lat 40 9 (24) N, lon 73 10 (59) W, fixed red light, visible 12¾ mile. Building white, height 56 feet. Bell struck by machinery at intervals of 15 seconds.
- Black Rock, on Fairweather Island, entrance to Black Rock Harbor, north side of Long Island Sound, Conn., lat 41 8 32 N, lon 73 13 4 W, fixed white light, visible 12 miles. Building white, height 43 feet.
- PENFIELD REEF, on Penfield Reef in Long Island Sound, and off Bridgeport Harbor, Conn., lat 41 7 5 N, lon 73 13 (11) W, flashing red light every 5 seconds, visible 12¾ miles. Building white, height 55 feet. A bell struck by machinery, two blows in quick succession every 20 seconds.
- Norwalk Island, on Sheffield Island, one of the Norwalk group, marks W entrance Norwalk River, Conn., lat 41 2 (55) N, lon 73 25 (10) W, fixed white light, varied by white flashes every one minute, visible 12½ miles. Building gray, height 52 feet.
- EATON'S NECK, east side of entrance to Huntington Bay, Long Island, N. Y., lat 40 57 14 N, lon 73 23 44 W, fixed white light, visible 18 miles. Building white, height 147 feet. A second class steam siren, (in duplicate) giving a blast of 9 seconds at intervals of 35 seconds.
- Lloyd's Harbor, in Huntington Bay, Long Island, N. Y., S E point of Lloyd's



VESSELS FITTED WITH PLUMBING FIXTURES, BY MACDONALD & CO.—See adv. p. 3 cover

PICKFORD & BLACK, 51 UPPER WATER STREET, HALIFAX, N. S.

- Neck, and north side of the entrance to the harbor, lat 40 54 57 N, lon 72 26 (6) W, fixed white light, visible  $11\frac{1}{2}$  miles. Building white, height 40 feet.
- Cold Spring Harbor.
- Stamford Harbor, on the south-west extremity of Harbor Ledge, in Stamford Harbor, Conn. A bell struck by machinery at intervals of 20 seconds.
- Great Captain's Island, near Greenwich Point, north side of Long Island Sound, N. Y., lat 40 58 (57) N, lon 73 37 (25) W, fixed white light, visible 14 miles. Building white, height 74 feet.
- Execution Rocks, in Long Island Sound, of Sand's Point, Long Island, N. Y., lat 40 52 (40) N, lon 73 44 (16) W, fixed white light, visible 18 miles. Building white, height 58 feet. A first-class trumpet, (in duplicate) worked by twenty-four inch caloric engine, blast 7 seconds at intervals of 43 seconds. Anderson fog horn sounded in case of accident to the trumpet.
- Sands' Point, east side of entrance to Cow Bay, Long Island, N. Y., lat 40 51 (57) N, lon 73 43 (47) W, flashing white light every 30 seconds, visible 13 miles, building white, height 68 feet.
- Stepping Stones, on the outer edge of Stepping Stones Reef,  $1\frac{1}{4}$  miles S by W  $\frac{1}{2}$  W of Hart Island, East River, N. Y., lat 40 49 (28) N, lon 73 46 (11) W, fixed red light, visible 12 miles. Building red, height 49 feet. A bell struck by machinery, 2 blows in quick succession every 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 48 (19) N, lon 73 47 29 W, fixed red light, visible  $12\frac{1}{4}$  miles. Building white, height 66 feet. 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 48 N, lon 73 53 (53) W, fixed white light, visible 11 miles. Building white, height 50 feet.
- Blackwell's Island, on northerly point of Blackwell's Island, near Hell Gate, East River, N. Y., lat 40 46 17 N, lon 73 35 (27) W, fixed red light visible  $13\frac{3}{4}$  miles. Building grey, height 54 feet.

NEW YORK AND NEW JERSEY.

- MONTAUK POINT, on extreme end of Long Island, N. Y., lat 41 4 15 N, lon 71 51 27 W, fixed white light, varied by white flashes every 2 minutes, visible  $19\frac{1}{4}$  miles. Building white, height 169 $\frac{1}{2}$  feet. A first-class Daboll trumpet, (in duplicate) operated by a hot-air engine, blast 12 seconds at intervals of 50 seconds.
- GREAT WEST (OR SHINNECOCK) BAY, on Pondquogue point on Long Island, north side of Shinnecock Bay, one mile from the line of the sea beach, and about midway between Montauk and Fire Island lighthouses, N. Y., lat 40 51 2 N, lon 72 30 16 W, fixed white light, visible  $18\frac{3}{4}$  miles. Building red, height 160 feet.
- FIRE ISLAND, on east side of Fire Island Inlet, south side of Long Island, N. Y., lat 40 37 57 N, lon 73 13 9 W, flashing white light every one minute, visible  $19\frac{1}{4}$  miles. Building yellow, height 168 feet.
- Sandy Hook Light-ship*, placed at the entrance of the bar, entrance to New York Bay, N. Y., lat 40 26 (53) N, lon 73 51 (57) W, 2 fixed red lights 45 feet high, visible 12 miles. Vessel red. A bell and a Thiers' automatic fog-horn.
- Wreck of the Scotland Light-ship*, off Sandy Hook, in line with wreck and main light, entrance to New York Bay, N. Y., lat 40 26 (40) N, lon 73 56 (25) W, 2 fixed white lights, 45 feet high, visible 12 miles. Vessel lead color. A bell.
- HIGHLANDS OF NAVESINK, on the Highlands of Navesink, N. J. North light lat 40 23 48, lon 73 59 10 W. South light lat 40 23 46 N,

- lon 73 59 9 W,—2 fixed white lights, visible 22½ miles. Building brown, height 248 feet.
- SANDY HOOK, south-west side of entrance to New York Bay, N. J., lat 40 27 42 N, lon 74 0 9 W, fixed white light, visible 15½ miles. Building white, height 90 feet.
- East Beacon (Hook) on north point of Sandy Hook, N. J., lat 40 28 (18) N, lon 74 0 26 W, fixed white light, visible 12 miles. Building red, height 46 feet. A first-class steam siren, (in duplicate) giving a blast of six seconds at intervals of 40 seconds.
- West Beacon, on the bay side of Sandy Hook, north-west of main light, N. J., lat 40 27 50 N, lon 74 0 26 W, fixed white light, visible 11 miles. Building white, height 40 feet.
- Conover Beacon, near the beach, on the south shore of Sandy Hook Bay, N. J., lat 40 25 16 N, lon 74 3 21 W, fixed white light, visible 13½ miles. Building white red and white, height 60.
- Chapel Hill Beacon, near the beach, on the south shore of Sandy Hook Bay, N. J., lat 40 23 54 N, lon 74 3 33 W, fixed white light, visible 21½ miles. Building white red and white, height 224 feet.
- Point Comfort Beacon, (Bay side), near the beach, bay side, Raritan Bay, lat 40 26 53 N, lon 70 7 17 W, fixed white light, visible 12 miles. Building white, height 45 feet.
- Waackaack (Wilson's), near Waackaack Beach, N. J., lat 40 26 38 N, lon 74 8 11 W, fixed white light, visible 14½ miles. Building white, height 76 feet.
- Elm Tree Beacon, on Staten Island, N. Y., lat 40 33 38 N, lon 74 5 46 W, fixed white light, visible 13½ miles. Building white and red, height 62 feet.
- New Dorp Beacon, on Staten Island, N. Y., lat 40 34 50 N, lon 74 7 13 W, fixed white light, visible 20½ miles. Building white, height 192 feet.
- Great Beds, Raritan Bay. (The soil belongs to New York, jurisdiction to the State of New Jersey.) Lat 40 29 (12) N, lon 74 15 (21) W, fixed red light, visible 13½ miles. Building red, height 57 feet.
- Princess Bay, on Staten Island, N. Y., lat 40 30 28 N, lon 74 12 50 W, fixed white light, varied by white flashes every two minutes, visible 16½ miles. Building brown, height 106 feet.
- Fort Lafayette, near south-west corner of the sea-wall of Fort Lafayette, east side of the Narrows, N. Y., lat 40 36 28 N, lon 74 2 (19) W, a bell struck by machinery, one and two blows alternately, at intervals of 20 seconds.
- Fort Tompkins, on Staten Island, west side of the Narrows, N. Y., lat 40 36 7 N, lon 74 3 17 W, fixed white light, visible 15½ miles. Building drab, height 90 feet.
- Robbin's Reef, off Tomkinsville, lower part of New York Harbor. (Soil belongs to the State of New York, jurisdiction to the State of New Jersey.) Lat 40 39 27 N, lon 74 3 57 W, fixed white light, visible 13½ miles. Building white, height 58 feet. A bell struck by machinery at intervals of 15 seconds.
- Fort Columbus, on north-west end of Governor's Island, New York Harbor, N. Y., lat 40 41 35 N, lon 74 1 (13) W, a bell struck by machinery twice quickly, at intervals of 20 seconds.
- Bergan Point, on reef of rocks near Bergan Point, N. J., lat 40 38 34 N, lon 74 8 55 W, fixed white light, visible 11½ miles. Building white, height 38 feet. A bell struck by machinery at intervals of 15 seconds.
- Corner Stake, opposite Elizabethport, N. J., lat 40 38 46 N, lon 74 10 (6) W, fixed red light.
- Passaic Light, near the mouth of Passaic River, N. J., lat 40 41 46 N, lon 74 7 39 W, fixed white light, visible 11½ miles. Building white, height 48 feet. A bell struck by machinery at intervals of 20 seconds.
- Elbow Beacon, on a shoal point between the Passaic and Hackensack Rivers, N. J., lat 40 42 8 N, lon 74 7 28 W, fixed white light, visible 10½ miles. Building black and red, height 27 feet.

New York and Erie Railroad Landing, on end of wharf opposite Irvington, N. Y.

Stony Point on west side of river, entrance to Highlands and Peekskill bay, N Y, lat 41 14 28 N, lon 73 58 19 W, fixed white light, visible 12 $\frac{3}{4}$  miles. Building white, height 179 feet. 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 23 45 N, lon 73 57 04 W, fixed white light, visible 11 $\frac{1}{2}$  miles. Building white, height 40 feet.

Esopus Meadows, opposite Esopus, west side of the river, N Y, lat 41 52 07 N, lon 73 56 31 W, fixed white light, visible 12 $\frac{3}{4}$  miles. Building white, height 53 feet.

Rondout, on a mud flat at south side of north entrance to Rondout creek, west side of river, N Y, lat 41 55 14 N, lon 73 58 01 W, fixed white light, visible 11 $\frac{1}{4}$  miles. Building dark granite, height 42 feet.

Rondout Dike Beacon (south dike), on end of south dike, mouth of Rondout creek, N Y, lat 41 55 (02) N, lon 73 57 (59) W, fixed white light, visible 9 $\frac{1}{2}$  miles. Building 19 feet high.

Rondout Dike Beacon (end of north dike), on end of north dike, Rondout creek, N Y, lat 41 55 (02) N, lon 73 57 (59) W, fixed red light, visible 9 $\frac{1}{2}$  miles. Building 21 feet high.

Rondout Dike Beacon (middle of north dike), on middle of bend of north dike mouth of Rondout creek, N Y, lat 41 55 (02) N, lon 73 57 (59) W, fixed red light, visible 9 $\frac{1}{2}$  miles. Building 21 feet.

Saugerties, on a mud flat, north side of entrance to Saugerties creek, west side of river, N Y, lat 42 04 14 N, lon 73 55 47 W, fixed white light, visible 11 $\frac{1}{4}$  miles. Building white, height 42 feet.

Hudson City, on south end of Middle Ground mud flat, west of city of Hudson, N Y, lat 42 15 02 N, lon 73 47 (59) W, fixed white light, visible 11 $\frac{3}{4}$  miles. Building red, height 54 feet.

Four-mile Point, west side of river, about half-way between Athens and Cossackie, N Y, lat 42 18 22 N, lon 73 47 01 W, fixed white light, visible 11 $\frac{1}{4}$  miles. Building red, height 93 feet.

Cossackie, north end of low island north of Cossackie, west side of main channel of river, N Y, lat 42 22 47 N, lon 73 47 42 W, fixed white light, visible 11 $\frac{1}{4}$  miles. Building red, height 42 feet.

Stuyvesant, on the east side of the river, N Y, lat 42 24 42 N, lon 73 46 42 W, fixed white light, visible 11 $\frac{1}{4}$  miles. Building red, height 42 feet.

New Baltimore, on little island in the river, main channel to the eastward of it, N Y, lat 42 27 05 N, lon 73 47 02 W, fixed white light, visible 9 miles. Building white, height 16 feet.

New Baltimore Dike, on south end of dike, on the east side of the river, N Y, lat 42 27 14 N, lon 73 46 (57) W, fixed white light, visible 9 $\frac{1}{4}$  miles. Building white, height 18 feet.

Five-hook Island, behind dike, near south end of Calver's Plat Island, east side of river, N Y, lat 42 27 50 N, lon 72 46 (57) W, fixed white light, visible 9 $\frac{1}{4}$  miles. Building white, height 18 feet.

Coeyman's Bar, behind dike, on north end of Poplar or Mull's island, east side of river, N Y, lat 42 28 23 N, lon 74 47 04 W, fixed white light, visible 9 $\frac{1}{2}$  miles. Building white, height 20 feet.

Roha Hook, behind the angle of the dike, south of Roha Hook, west side of river, N Y, lat 42 28 56 N, lon 73 47 (20) W, fixed white light, visible 9 miles. Building white, height 17 feet.

Schodack Channel, behind the dike, west side of Mull's Plat Island, opposite upper end of Schodack island, east side of river, N Y, lat 43 29 56 N, lon 73 46 (36) W, fixed white light, visible 9 $\frac{1}{2}$  miles. Building white, height 20 feet.

MACDONALD & CO., Manufacturers of Ship's Patent Water Closets.—See adv. p. 3 cover.

PICKFORD & BLACK IMPORTERS NETS, TWINES LINES, 51 UPPER WATER STREET.

MACDONALD & CO., Manufacturers and Fitters of Steam Heating Apparatus.—See also p. 3 cover.

- Nine-mile Tree, behind the centre of dike, below Castleton, east side of the river, N Y, lat 42 31 08 N, lon 73. 45 51, W, fixed white light, visible 9½ miles. Building white, height 20 feet.
- Cow Island, on the south end of Cow island, near Castleton, east side of river, N Y, lat 42 32 16 N, lon 73 45 21 W, fixed white light, visible 9¾ miles. Building white, height 22 feet.
- Bear Island, on corner of south end of Government dike, west side of the river, N Y lat 42 33 (44) N, lon 73 44 (59) W, fixed white light, visible 9½ miles. Building white, height 20 feet.
- Van Wies's Point, on south point of stone dike, below Albany, on west side of river, N Y, lat 42 35 08 N, lon 73 45 (39) W, fixed white light, visible 9¼ miles. Building white, height 18 feet.
- Cross-Over, on north end of stone dike, below Albany, on west side of river, N Y, lat 42 36 52 N, lon. 73 45 (43) W, fixed white light, visible 10¼ miles. Building white, height 26 feet.
- Cuyler's Dike, on the lower or south end of dike, on the east side of river, near Albany, N Y, lat 42 37 41 N, lon 73 45 (07) W, fixed white light, visible 9½ miles. Building white, height 20 feet.

## INTERNATIONAL STEERING AND SAILING RULES.

*From the order in Council, dated 11th August, 1884.*

And to come into operation on and after the First day of Sept, 1884.

### REGULATIONS FOR PREVENTING COLLISIONS AT SEA.

#### PRELIMINARY.

ART. 1. In the following rules every steam ship which is under sail and not under steam is to be considered a sailing ship; and every steam ship which is under steam, whether under sail or not, is to be considered a ship under steam.

#### RULES CONCERNING LIGHTS.

ART. 2. The lights mentioned in the following articles, numbered 3, 4, 5, 6, 7, 8, 9, 10, and 11, and no others, shall be carried in all weathers, from sunset to sunrise.

ART. 3. A seagoing steam ship when under way shall carry.—

(a.) ON OR IN FRONT OF THE FOREMAST, at a height above the hull of not less than 20 feet, and if the breadth of the ship exceeds 20 feet, then at a height above the hull not less than such breadth, a bright White light, so constructed as to show a uniform and unbroken light, over an Arc of the Horizon of 20 points of the Compass; so fixed as to throw the light 10 points on each side of the ship; viz.,



from right ahead to 2 points abaft the beam on either side; and of such a character as to be visible on a dark night, with a clear atmosphere, at a distance of at least Five miles.

(b.) ON THE STARBOARD SIDE, a Green Light, so constructed as to show an uniform and unbroken light over an arc of the horizon of 10 points of the Compass; so fixed as to throw the light from right ahead to 2 points abaft the beam on the starboard side; and of such a character as to be visible on a dark night, with a clear atmosphere, at a distance of at least Two miles.

(c.) ON THE PORT SIDE, a Red Light, so constructed as to show an uniform and unbroken light over an Arc of the Horizon of 10 points of the Compass; so fixed as to throw the light from right ahead to 2 points abaft the beam on the Port side; and of such a character as to be visible on a dark night, with a clear atmosphere, at a distance of at least Two Miles.

(d.) The said Green and Red Side Lights shall be fitted with inboard screens projecting at least 3 feet forward from the light, so as to prevent these lights from being seen across the bow.

ART. 4. A STEAM SHIP, when towing another Ship shall, in addition to her side lights, carry Two bright White lights in a vertical line one over the other, not less than 2 feet apart, so as to distinguish her from other steam ships. Each of these lights shall be of the same construction and character, and shall be carried in the same position as the White light which other steam ships are required to carry.

ART 5 (a) A SHIP, whether a steamship or a sailing ship, which from any accident is not under command, shall at night carry, in the same position as the White light which steam ships are required to carry, and, if a steam ship, in place of that light, Three Red lights in globular lantern, each not less than 10 inches in diameter, in a vertical line one over the other, not less than 3 feet apart, and of such a character, as to be visible on a dark night, with a clear atmosphere, at a distance of at least Two miles; and shall by day carry in a vertical line one over the other, not less than 3 feet apart, in front of but not lower than her foremast head, Three Black Balls, or shapes, each 2 feet in diameter.

(b.) A ship, whether a steam ship or a sailing ship, employed in laying or in picking up a Telegraph cable, shall at night carry, in the same position as the White light which steam ships are required to carry, and, if a steam ship, in place of that light, three lights in globular lanterns each not less than 10 inches in diameter, in a vertical line one over another, not less than three feet apart; the highest and lowest of these lights shall be Red, and the middle light shall be the White, and they shall be of such a character that the Red lights shall be visible at the same distance as the White light. By day she shall carry in a vertical line one over the other not less than 6 feet apart, in front of but not lower than her foremast head, three

shapes not less than two feet in diameter, of which the top and bottom shall be globular in shape and Red in colour, and the middle one diamond in shape and White.

(c.) The ships referred to in this Article, when not making any way through the water shall not carry the side lights, but when making way shall carry them.

(d.) The lights and shapes required to be shown by this Article are to be taken by other ships as signals that the ship showing them is not under command, and cannot therefore, get out of the way. The signals to be made by ships in distress and requiring assistance are contained in Article 27.

ART. 6. A SAILING SHIP UNDER WAY, or being towed, shall carry the same lights as are provided by Article 3 for a steam ship under way, with the exception of the White light, which she shall never carry.

ART. 7. Whenever, as in the case of small vessels during bad weather, the Green and Red side lights cannot be fixed, these lights shall be kept on deck, on their respective sides of the Vessels, ready for use; and shall, on the approach of or to other vessels, be exhibited on their respective sides in sufficient time to prevent collision, in such manner as to make them most visible, and so that the Green light shall not be seen on the Port side, nor the Red light on the Starboard side.

To make the use of these portable lights more certain and easy, the lanterns containing them shall each be painted outside with the color of the light they respectively contain, and shall be provided with proper screens.

ART. 8. A ship, whether a steam ship or a sailing ship, when at anchor, shall carry, where it can best be seen, but at a height not exceeding 20 feet above the Hull, a White light, in a globular lantern of not less than 8 inches in diameter, and so constructed as to show a clear, uniform and unbroken light visible all around the horizon, at a distance of at least one mile.

ART. 9. A pilot vessel when engaged on her station on pilotage duty, shall not carry the lights required for other vessels, but shall carry a White light at the mast-head, visible all round the horizon, and shall also exhibit a flare-up light or flare-up lights at short intervals, which shall never exceed fifteen minutes.

A pilot vessel, when not engaged on her station or pilotage duty, shall not carry lights similar to those of other ships.

ART. 10. Open boats and fishing vessels of less than 20 tons net registered tonnage, when under way and when not having their nets, trawls, dredges, or lines in the water, shall not be obliged to carry the colored side lights; but every such boat or vessel shall in lieu thereof have ready at hand a lantern with a Green glass on the one side, and a Red glass on the other side, and on approaching to or being approached by another vessel such lantern shall be exhibited in

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sufficient time to prevent collision, so that the Green light shall not be seen on the Port side nor the Red light on the starboard side.

The following portion of this article applies only to fishing vessels and boats when in the sea off the coast of Europe lying north of Cape Finisterre :—

(a.) All fishing vessels and fishing boats of 20 tons net registered tonnage, or upwards, when under way and when not required by the following regulations in this Article to carry and show the lights therein named, shall carry and show the same lights as other vessels under way.

(b.) All vessels when engaged in fishing with drift nets shall exhibit Two White lights from any part of the vessel where they can be best seen. Such light shall be placed that so the vertical distance between them shall be not less than 6 feet and not more than 10 ft. ; and so that the horizontal distance between them measured in a line with the keel of the vessel shall be not less than 5 feet or not more than 10 feet. The lower of these two lights shall be the more forward, and both of them shall be of such a character, and contained in lanterns of such construction, as to show all round the horizon, on a dark night with a clear atmosphere, for a distance of not less than 3 miles.

(c.) A vessel employed in line fishing, with her lines out, shall carry the same lights as a vessel when engaged in fishing with drift nets.

(d.) If a vessel when fishing, becomes stationery in consequence of her gear getting fast to a rock or other obstruction, she shall show the light and make the Fog Signal for a vessel at anchor.

(e.) Fishing vessels and open boats may at any time use a flare-up in addition to the lights which they are by this article required to carry and show. All flare-up lights exhibited by a vessel when trawling, dredging, or fishing with any kind of drag-net, shall be shown at the after part of the vessel, excepting that, if the vessel is hanging by the stern to her trawl, dredge or dragnet, they shall be exhibited from the bow.

(f.) Every fishing vessel and every open boat, when at anchor between sunset and sunrise, shall exhibit a white light visible all round the horizon at a distance of at least one mile.

(g.) In fog, mist, or falling snow, a drift net vessel attached to her nets and a vessel when trawling, dredging or fishing with any kind of drag-net, and a vessel employed in line fishing with her lines out, shall at intervals of not more than two minutes make a blast with her foghorn and ring her bell alternately.

ART. 11. A ship which is being overtaken by another shall show from her Stern to such last-mentioned ship a White light or a flare-up light.

SOUND SIGNALS FOR FOG, &c.

ART. 12. A steam ship shall be provided with a steam whistle or other efficient steam sound signal, so placed that the sound may not be intercepted by any obstructions, and with an efficient Fog Horn to be sounded by a bell or other mechanical means, and also with an efficient bell. A sailing ship shall be provided with a similar Fog Horn and bell. (Turkish vessels use a drum instead of a bell.)

In fog, mist, or falling snow, whether by day or night, the signals described in this article shall be used as follows; that is to say:—

(a.) A steam ship under way shall make with her steam whistle or other steam sound signal, at intervals of not more than Two minutes, a prolonged blast.

(b.) A sailing ship under way shall make with her Fog Horn, at intervals of not more than Two minutes, when on the starboard tack one blast, when on the port tack two blasts in succession, and when the wind is abaft the beam three blasts in succession.

(c.) A steam ship and a sailing ship when not under way shall, at intervals of not more than Two minutes, ring the bell.

SPEED OF SHIPS TO BE MODERATE IN FOG, &c.

ART. 13. Every ship, whether a sailing ship or a steam ship, shall in fog, mist, or falling snow, go at a moderate speed.

STEERING AND SAILING RULES.

ART. 14. When two sailing ships are approaching one another, so as to involve risk of collision, one of them shall keep out of the way of the other as follows, viz. :—

(a.) A ship which is running free shall keep out of the way of a ship which is close hauled.

(b.) A ship which is close-hauled on the port tack shall keep out of the way of a ship which is close-hauled on the starboard tack.

(c.) When both are running free with the wind on different sides, the ship which has the wind on the port side shall keep out of the way of the other.

(d.) When both are running free with the wind on the same side, the ship which is to windward shall keep out of the way of the ship which is to leeward.

(e.) A ship which has the wind aft shall keep out of the way of the other ship.

ART. 15. If two ships under steam are meeting end on, or nearly end on so as to involve risk of collision, each shall alter her



course to starboard, so that each may pass on the port side of the other.

This Article only applies to cases where ships are meeting end on, or nearly end on, in such a manner as to involve risk of collision, and does not apply to two ships which must, if both kept on their respective courses, pass clear of each other.

The only cases to which it does apply are, when each of the two ships are end on, or nearly end on, to the other; in other words, to cases in which, by day, each ship sees the masts of the other in a line, or nearly in a line, with her own; and by night to cases in which each ship is in such a position as to see both the side lights of the other.

It does not apply by day to cases in which a ship sees another ahead crossing her own course; or by night to cases where the red light of one ship is opposed to the red light of the other, or where the green light of one ship is opposed to the green light of the other, or where a red light without a green light, or a green light without a red light is seen ahead, or where both green and red lights are seen anywhere but ahead.

ART. 16. If two ships under steam are crossing, so as to involve risk or collision, the ship which has the other on her own starboard side shall keep out of the way of the sailing ship.

ART. 17. If two ships, one of which is a sailing ship and the other a steamship, the steamship shall keep out of the way of the sailing ship.

ART. 18. Every steamship, when approaching another ship, so as to involve risk of collision, shall slacken her speed or stop and reverse, if necessary.

ART. 19. In taking any course authorized or required by these regulations, a steamship under way may indicate that course to any other ship which she has in sight by the following signals on her steam whistle, viz:—

One short blast to mean "I am directing my course to starboard."

Two short blasts to mean "I am directing my course to port."

Three short blasts to mean "I am going full speed astern."

The use of these signals is optional; but if they are used, the course of the ship must be in accordance with the signal made.

ART. 20. Notwithstanding anything contained in any preceding Article, every ship, whether a sailing ship or a steamship, overtaking any other, shall keep out of the way of the overtaken ship.

ART. 21. In narrow channels every steamship shall, when it is safe and practicable, keep to that side of the fairway or mid-channel which lies on the starboard side of such ship.

ART. 22. Where by the above rules one of two ships is to keep out of the way, the other shall keep her course.

ART. 23. In obeying and construing these rules due regard shall be had to all dangers of navigation; and to any special circumstances

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which may render a departure from the above rules necessary in order to avoid immediate danger.

NO SHIP, UNDER ANY CIRCUMSTANCES, TO NEGLECT PROPER PRECAUTIONS.

ART. 24. Nothing in these rules shall exonerate any ship, or the owner, or master, or crew thereof, from the consequences of any neglect to carry lights or signals, or of any neglect to keep a proper look-out, or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

RESERVATION OF RULES FOR HARBOURS AND INLAND NAVIGATION.

ART. 25. Nothing in these rules shall interfere with the operation of any special rule, duly made by local authority, relative to the navigation of any harbor, river, or inland navigation.

SPECIAL LIGHTS FOR SQUADRONS AND CONVOYS.

ART. 26. Nothing in these rules shall interfere with the operation of any special rules made by the Government of any nation with respect to additional station and signal lights for two or more ships of war or for ships sailing under convey.

DISTRESS SIGNALS.

ART. 27. When a ship is in distress and requires assistance from other ships or from the shore, the following shall be the signals to be used or displayed by her, either together or separately, that is to say:—

In the daytime—

1. A gun fired at intervals of about a minute ;
2. The international code signal of distress indicated by NC ;
3. The distant signal, consisting of a square flag, having either above or below it a bell, or anything resembling a bell.

At night—

1. A gun fired at intervals of about a minute ;
2. Flames on a ship (as from a burning tar barrel, oil barrel, &c.);
3. Rockets or shells, throwing stars of any colour or description, fired one at a time, at short intervals.

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