

PICKFORD & BLACK, Importers of Welsh Bell Iron Spikes.

ROBERT H. COGSWELL'S
ABRIDGEMENT OF THE
NAUTICAL ALMANAC.
1879.

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* * * The Equation of Time, and Sun's Right Ascension and Declination are given for Apparent Noon at Greenwich.

MAODONALD & CO., Manufacturers of Patent Ships' Water Closets.—See adv. inside cover.

MAODONALD & CO., Manufacturers of Lead Water Marks.

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527
C

PICKFORD & BLACK, Importers of Refined Iron Clinch Rings.

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NAUTICAL ALMANAC.

[1879

Chronometer Establishment,

ESTABLISHED 1830.

ROBERT H. COGSWELL,
Chronometer Maker,

175 BARRINGTON STREET, HALIFAX,

IMPORTER AND DEALER IN

NAUTICAL GOODS
OF EVERY DESCRIPTION.

IN preparing an abridgement of the Nautical Almanac for this year I have endeavoured to increase its usefulness by the addition of much valuable matter, which I feel assured will render it more worthy of preservation by Ship Masters, as a book of reference. I propose adding, from year to year, such other nautical information as is of importance.

I call the attention of Ship Masters and owners to the following arrangements, which will, no doubt, meet the views of all concerned. As there are a great many vessels passing this harbor from all parts of the world, it is suggested to notify them that if they will hoist their number, showing where from and to, by commercial code list, it will be taken notice of at Sambro, by the Signal Master,—it will be then telegraphed to the Halifax Station, and memorandum sent to Reading Room. Also, vessels owned in Halifax, when coming in, by showing their private signal at Sambro, will be signalled much sooner at the Citadel.

MARINE CHRONOMETERS.

A large assortment of new and second-handed Chronometers, of various makers, at the lowest possible prices consistent with the character of the instrument. No Chronometers are offered from this establishment, either for sale or on hire, but such as have been recently put in thorough order, accurately adjusted for heat and cold, and for performing finely.

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

Vessels Fitted with Plumbing Fixtures, by MACDONALD & CO.—See adv. inside cover.

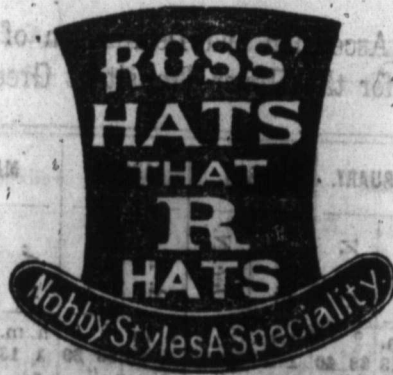
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PICKFORD & BLACK, Importers Nets, Lines, Twines, 51 Upper Water St.

1879]

ROBERT H. COGSWELL'S

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WM. ROSS,
FASHIONABLE HAT, CAP AND FUR STORE,
186 Granville St., Opposite Ordnance Gate,
HALIFAX, N. S.

N. B.—Mariners will find it to their advantage to give us a call, as we keep the best assortment in the city.

R. H. COGSWELL

KEEPS ON HAND—ALL KINDS OF

Specific Gravity Instruments,

THERMOMETERS

OF ALL KINDS,

ELECTRIC BATTERY,

&c. &c. &c.

MACDONALD & CO., Brass Founders.—See adv. inside cover.

MACDONALD & CO., Importers of Steam Pumps, etc.—See adv. inside cover. A.M.O.M.I.A.M.

Apparent Right Ascension and Declination of Ursæ Minoris (Polaris) for the Upper Transit at Greenwich.

MACDONALD & CO., Manufacturers of Composition Butt Bolts and Spikes.—See adv. inside cover.

Day of Month.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h. m. ° /	h. m. ° /	h. m. ° /	h. m. ° /	h. m. ° /	h. m. ° /	h. m. ° /	h. m. ° /	h. m. ° /	h. m. ° /	h. m. ° /	h. m. ° /
1	84.76	17.0	57.52	17.1	37.13	12.3	27.19	63.6	35.33	54.5	53.99	47.9
2	83.96	17.1	56.75	17.0	36.64	12.1	27.07	63.3	33.74	54.2	54.95	47.8
3	83.19	17.2	55.97	17.0	36.12	11.9	26.93	62.9	34.23	53.9	55.92	47.7
4	82.41	17.3	55.14	16.9	35.56	11.6	26.79	62.6	34.80	53.5	56.86	47.6
5	81.62	17.4	54.26	16.9	34.97	11.4	26.69	62.2	35.42	53.2	57.75	47.5
6	80.81	17.5	53.35	16.8	34.37	11.2	26.68	61.9	36.08	53.0	58.58	47.4
7	79.96	17.5	52.42	16.7	33.77	11.0	26.76	61.6	36.73	52.7	59.36	47.4
8	79.05	17.6	51.49	16.6	33.19	10.7	26.92	61.2	37.35	52.5	60.14	47.3
9	78.09	17.7	50.59	16.4	32.66	10.4	* —	* —	37.92	52.3	60.92	47.2
10	77.08	17.8	49.76	16.2	32.21	10.1	27.58	60.4	38.45	52.2	61.72	47.1
11	76.06	17.9	49.01	16.1	31.84	9.7	27.68	60.1	38.96	52.0	62.55	46.9
12	75.06	17.9	48.32	15.9	31.55	9.4	27.78	59.8	39.46	51.8	63.43	46.8
13	74.09	17.8	47.67	15.7	31.29	9.2	27.88	59.6	39.99	51.6	64.37	46.7
14	73.17	17.8	47.03	15.5	31.03	8.9	27.96	59.3	40.54	51.4	65.35	46.6
15	72.31	17.8	46.37	15.3	30.74	8.7	28.05	59.0	41.15	51.1	66.35	46.5
16	71.50	17.8	45.67	15.2	30.40	8.4	28.18	58.7	41.81	50.9	67.37	46.4
17	70.71	17.8	44.94	15.0	30.03	8.2	28.34	58.3	42.51	50.6	68.40	46.4
18	69.92	17.9	44.18	14.9	29.64	7.9	28.55	58.0	43.27	50.4	69.41	46.4
19	69.11	17.9	43.41	14.7	29.25	7.6	28.83	57.7	44.06	50.2	70.39	46.4
20	68.25	18.0	42.62	14.5	28.88	7.3	29.16	57.3	44.87	50.0	71.33	46.4
21	67.33	18.0	41.84	14.3	28.52	7.0	29.54	57.0	45.69	49.8	72.22	46.5
22	66.36	18.0	41.09	14.1	28.22	6.6	29.96	56.7	46.49	49.7	73.09	46.5
23	65.37	18.0	40.39	13.8	27.98	6.3	30.39	56.4	47.26	49.5	73.93	46.5
24	64.38	17.9	39.75	13.6	27.81	6.0	30.82	56.1	47.99	49.3	74.77	46.4
25	63.39	17.8	39.15	13.3	27.68	5.6	31.23	55.9	48.69	49.2	75.65	46.3
26	62.43	17.7	38.61	13.0	27.58	5.3	31.63	55.7	49.36	49.0	76.56	46.3
27	61.51	17.6	38.10	12.8	27.52	5.0	31.99	55.4	50.03	48.9	77.54	46.3
28	60.64	17.5	37.62	12.5	27.48	4.7	32.32	55.2	50.71	48.7	78.57	46.2
29	59.82	17.4	.....	.....	27.44	4.4	32.65	55.0	51.43	48.5	78.64	46.2
30	59.03	17.3	.....	.....	27.38	4.2	32.98	54.8	52.22	48.3	80.74	46.3
31	58.27	17.2	.....	.....	27.30	3.9	.....	.....	53.07	48.1	.....	.....

* On the 9th April this star will pass the meridian twice in the same day, in consequence of the sidereal day being shorter than the solar day. At the first transit the Right Ascension of the star will be 1h. 13m. 27.12s., Declination 88° 40' 0.9"—and at the second its position will be Right Ascension 1h. 13m. 27.33s., and Declination 88° 40' 0.6".

Apparent Right Ascension and Declination of Ursæ Minoris (Polaris) for the Upper Transit at Greenwich.

Day of Month.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h. m. s.	° ' "	h. m. s.	° ' "	h. m. s.	° ' "	h. m. s.	° ' "	h. m. s.	° ' "	h. m. s.	° ' "
1	21.82	46.3	51.06	50.1	14.77	57.9	28.60	8.3	30.45	20.0	78.85	30.0
2	22.84	46.4	51.84	50.3	15.36	58.2	28.93	8.6	30.35	20.4	78.23	30.3
3	23.81	46.5	52.61	50.5	16.00	58.5	29.28	9.0	30.19	20.9	77.55	30.6
4	24.72	46.6	53.40	50.7	16.66	58.8	29.61	9.4	29.98	21.3	76.84	30.9
5	25.58	46.7	54.21	50.8	17.34	59.1	29.93	9.8	29.71	21.7	76.09	31.1
6	26.44	46.7	55.06	51.0	18.03	59.5	30.20	10.3	29.39	22.1	75.84	31.4
7	27.31	46.8	55.95	51.2	18.71	59.8	30.42	10.7	29.02	22.5	74.61	31.6
8	28.20	46.8	56.87	51.3	19.35	60.1	30.58	11.1	28.64	22.8	73.92	31.8
9	29.12	46.8	57.81	51.5	19.96	60.5	30.68	11.5	28.26	23.2	73.29	32.0
10	30.09	46.9	58.75	51.7	20.51	60.9	30.73	11.9	27.91	23.5	72.69	32.3
11	31.11	46.9	59.67	52.0	21.00	61.3	30.76	13.2	27.60	23.8	72.12	32.5
12	32.15	47.0	60.56	52.3	21.44	61.7	30.77	12.6	27.34	24.1	71.53	32.7
13	33.22	47.1	61.42	52.6	21.83	62.0	30.80	12.9	27.11	24.4	70.89	33.0
14	34.28	47.2	62.21	52.8	22.20	62.4	30.87	13.3	26.88	24.8	70.18	33.3
15	35.33	47.3	62.96	53.1	22.59	62.7	31.00	13.6	26.62	25.1	69.40	33.6
16	36.34	47.5	63.65	53.4	23.00	63.0	31.16	14.0	26.29	25.5	68.56	33.8
17	37.31	47.6	64.31	53.7	23.43	63.3	31.34	14.4	25.87	25.8	67.69	34.0
18	38.23	47.7	64.97	53.9	24.00	63.6	31.50	14.8	25.40	26.2	66.81	34.2
19	39.10	47.9	65.65	54.1	24.54	64.0	31.61	15.2	24.87	26.6	65.94	34.4
20	40.00	48.1	66.38	54.4	25.09	64.3	31.63	15.6	24.32	26.9	65.10	34.5
21	40.77	48.2	67.16	54.7	25.62	64.7	31.58	16.0	23.76	27.2	64.31	34.6
22	41.61	48.4	67.98	54.9	26.07	65.1	31.48	16.4	23.21	27.4	63.55	34.7
23	42.49	48.5	68.83	55.1	26.45	65.5	31.35	16.8	22.70	27.7	62.81	34.8
24	43.42	48.6	69.68	55.4	26.77	65.9	31.20	17.2	22.22	28.0	62.08	35.0
25	44.40	48.7	70.49	55.8	27.05	66.3	31.05	17.6	21.76	28.2	61.35	35.3
26	45.42	48.9	71.24	56.1	27.28	66.6	30.91	17.9	21.32	28.5	60.61	35.4
27	46.46	49.0	71.91	56.4	27.50	67.0	30.79	18.3	20.88	28.8	59.84	35.6
28	47.48	49.2	72.54	56.8	27.73	67.4	30.71	18.7	20.43	29.1	59.02	35.7
29	48.48	49.4	73.10	57.1	27.99	67.7	30.64	19.0	19.94	29.4	58.15	35.8
30	49.40	48.6	73.65	57.4	28.28	68.0	30.59	19.3	19.42	29.7	57.25	36.0
31	50.25	49.8	74.20	57.7	.....	.....	30.53	19.6	.....	.....	56.30	36.1

In this arrangement it is necessary in many instances to continue the seconds beyond 60, as the width of the page would not permit of otherwise indicating any change in the minutes.

MACDONALD & CO., Manufacturers of Brass Binnacle Guards.—See adv. inside cover.

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

PICKFORD & BLACK, Importers of Ducks and Drillings, 5 Upper Water.

1879]

ROBERT H. COGSWELL'S

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BLACK BROS. & CO.

IMPORTERS OF

Anchors, Chain Cables, Wire Rope,

ENGLISH, AMERICAN AND RUSSIAN CORDAGE,

Hemp, Canvas, Woodberry Duck, Tar, Pitch, Oakum,
Oils, Paints,

NETS, LINES & TWINES,

BRASS BINNACLES,

Spirit and other Compasses,

PATENT LOGS,

Log Books and Slates, Ship Bells, Side Lights,

ANCHOR, SIGNAL & CABIN LAMPS,

Copper Paint for Vessels' Bottoms, &c.

Together with a Full and Complete Assortment of

SHIP CHANDLERY AND HARDWARE.

AGENTS FOR

MUNTZ METAL SHEATHING & BOLTS,

MOUNT VERNON DUCK,

PEACOCK & BUCHAN'S PAINT,

THE STEEL WIRE TOWING HAWSER,

Fast superseding Hemp, being lighter, cheaper and more durable.

47 and 49 Upper Water Street,

HALIFAX, N. S.

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

Residences and Public Buildings Fitted with Steam Heating Apparatus by MACDONALD & CO. See adv. inside cover.

FEBRUARY.

Chronometer of G. M. T.

MACDONALD & CO., Manufacturers of Engineers' Brass Goods.—See adv. inside cover.

Day of the Week.	Day of the Month.	THE SUN'S				Equation of time to be added to Apparent Time.	Diff. for 1 h'r.	Chronometer of G. M. T.			
		Apparent Right Ascension.	Diff. for 1 hour	Apparent Declination.	Diff. for 1 h'r.			H.	MIN.	SEC.	THS.
S	1	20 59 8.94	10.188	S. 17 6 59.4	42.66	13 49.69	0.331	1			
S	2	21 3 13.05	10.154	16 49 46.5	43.40	13 57.22	0.297	2			
M	3	21 7 16.32	10.119	16 32 16.0	44.13	14 3.93	0.262	3			
T	4	21 11 18.76	10.085	16 14 28.4	44.83	14 9.80	0.227	4			
W	5	21 15 20.38	10.050	15 56 24.1	45.52	14 14.84	0.193	5			
T	6	21 19 21.17	10.016	15 38 3.5	46.19	14 19.06	0.159	6			
F	7	21 23 21.14	9.982	15 19 26.9	46.85	14 22.47	0.125	7			
S	8	21 27 20.31	9.949	15 0 34.8	47.49	14 25.07	0.092	8			
S	9	21 31 18.69	9.916	14 41 27.6	48.11	14 26.89	0.060	9			
M	10	21 35 16.29	9.884	14 22 5.5	48.72	14 27.94	0.028	10			
T	11	21 39 13.12	9.852	14 2 28.9	49.31	14 28.22	0.004	11			
W	12	21 43 9.20	9.821	13 42 38.4	49.89	14 27.74	0.035	12			
T	13	21 47 4.54	9.791	13 22 34.2	50.45	14 26.53	0.066	13			
F	14	21 50 59.15	9.760	13 2 16.8	50.99	14 24.59	0.096	14			
S	15	21 54 53.04	9.731	12 41 46.7	51.51	14 21.93	0.125	15			
S	16	21 58 46.22	9.701	12 21 4.1	52.02	14 18.57	0.155	16			
M	17	22 2 38.70	9.672	12 0 9.7	52.51	14 14.50	0.184	17			
T	18	22 6 30.49	9.644	11 39 3.8	52.98	14 9.75	0.212	18			
W	19	22 10 21.59	9.615	11 17 46.9	53.43	14 4.31	0.241	19			
T	20	22 14 12.02	9.588	10 56 19.4	53.86	13 58.20	0.268	20			
F	21	22 18 1.79	9.560	10 34 41.7	54.27	13 51.43	0.296	21			
S	22	22 21 50.90	9.533	10 12 54.3	54.67	13 44.01	0.322	22			
S	23	22 25 39.38	9.507	9 50 57.6	55.05	13 35.96	0.349	23			
M	24	22 29 27.23	9.481	9 28 52.0	55.41	13 27.28	0.374	24			
T	25	22 33 14.48	9.456	9 6 38.0	55.75	13 18.00	0.399	25			
W	26	22 37 1.13	9.432	8 44 15.9	56.08	13 8.12	0.424	26			
T	27	22 40 47.21	9.408	8 21 46.1	56.38	12 57.67	0.447	27			
F	28	22 44 32.72	9.385	7 59 9.1	56.68	12 46.66	0.470	28			
S	29	22 48 17.68	9.363	S. 7 36 25.3	56.97	12 35.10	0.492	29			
	30							30			
	31							31			

Brass Ventilators Made by MACDONALD & CO.—See adv. ins. cover.

Woodberry Cotton Ducks for sale by PICKFORD & BLACK.

1879]

NAUTICAL ALMANAC.

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FASHIONABLE HAT DEPOT.

JOHN H. PHILP.

IMPORTER AND DEALER IN

Hats, Caps, Furs, Buffalo Robes,

TRUNKS, VALISES, LEATHER HAT CASES, CARPET BAGS, ETC.,

WHOLESALE & RETAIL.

82 Upper Water Street, - Halifax, N. S.

Sign of the Gilt Hat and Cap, Opposite Tobin's Wharf.

A Splendid Stock of Ladies' Furs, and Gentlemen's Fur and Heavy Caps of every description, will be offered to intending purchasers at the lowest prices for cash. Please give me a call.

JOHN H. PHILP, Opp. Tobin's Wharf.

R. H. COGSWELL,

(Successor to WM. CRAWFORD.)

Watch and Chronometer Maker,

175 BARRINGTON STREET,

HALIFAX, N. S.

JEWELRY, WATCHES, CLOCKS, AND NAUTICAL INSTRUMENTS,

For Sale and Repaired.

MACDONALD & CO., Importers of Engineers' Rubber Goods.

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

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

MARCH.										Chronometer of G. M. T.							
Day of the Week. Day of the Month.		Apparent Right Ascension.		Diff. for 1 hour		Apparent Declination.		Diff. for 1 h'r.		Equation of time to be added to Apparent Time.		Diff. for 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>								
S	1	22 48 17.68	9.363	S.	7 36 25.3	56.97	12 35.10	0.492									
S	2	22 52 2.13	9.341		7 13 35.1	57.22	12 23.03	0.514									
M	3	22 55 46.07	9.320		6 50 38.9	57.46	12 10.45	0.535									
T	4	22 59 29.51	9.300		6 27 37.1	57.69	11 57.37	0.555									
W	5	23 3 12.48	9.281		6 4 30.0	57.90	11 43.83	0.574									
T	6	23 6 55.00	9.263		5 41 18.1	58.09	11 29.83	0.592									
F	7	23 10 37.09	9.245		5 18 1.6	58.27	11 15.41	0.609									
S	8	23 14 18.77	9.229		4 54 41.0	58.44	11 0.58	0.626									
S	9	23 18 0.08	9.214		4 31 16.6	58.59	10 45.37	0.641									
M	10	23 21 41.03	9.199		4 7 48.7	58.73	10 29.81	0.655									
T	11	23 25 21.65	9.186		3 44 17.6	58.85	10 13.92	0.668									
W	12	23 29 1.97	9.174		4 20 43.7	58.96	9 57.73	0.680									
T	13	23 32 42.01	9.163		2 57 7.4	59.06	9 41.26	0.691									
F	14	23 36 21.79	9.153		2 33 28.9	59.14	9 24.54	0.702									
S	15	23 40 1.33	9.144		2 9 48.7	59.20	9 7.57	0.711									
S	16	23 43 40.66	9.135		1 46 7.2	59.25	8 50.39	0.720									
M	17	23 47 19.79	9.126		1 22 24.8	59.28	8 33.02	0.728									
T	18	23 50 58.73	9.119		0 58 41.9	59.29	8 15.46	0.735									
W	19	23 54 37.51	9.113		0 34 58.8	59.29	7 57.73	0.742									
T	20	23 58 16.15	9.107	S.	0 11 15.9	59.27	7 39.86	0.747									
F	21	0 1 54.65	9.102	N.	0 12 26.4	59.24	7 21.87	0.752									
S	22	0 5 33.05	9.098		0 36 7.7	59.19	7 3.76	0.756									
S	23	0 9 11.36	9.095		0 59 47.6	59.12	6 45.56	0.760									
M	24	0 12 49.59	9.092		1 23 25.7	59.04	6 27.29	0.763									
T	25	0 16 27.76	9.090		1 47 1.8	58.95	6 8.96	0.765									
W	26	0 20 5.90	9.089		2 10 35.3	58.84	5 50.59	0.766									
T	27	0 23 44.02	9.088		2 34 6.0	58.71	5 32.21	0.766									
F	28	0 27 22.13	9.088		2 57 33.4	58.57	5 13.82	0.766									
S	29	0 31 0.26	9.090		3 20 57.3	58.41	4 55.45	0.765									
S	30	0 34 38.43	9.091		3 44 17.2	58.24	4 37.11	0.763									
M	31	0 38 16.64	9.094		4 7 32.8	58.05	4 18.82	0.761									
T	32	0 41 54.93	9.097	N.	4 30 43.8	57.85	4 0.60	0.757									
	31																

MACDONALD & CO., Manufacturers of Manrope Stanchions.—Ins. cover.

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MACDONALD

Water St.

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

[1879

1879]

NAUTICAL ALMANAC.

11

Barometer
G. M. T.

MIN. SEC. THS.

S. CUNARD & CO.

Commission Merchants,

HALIFAX, N. S.

COAL FREIGHTS

FROM

Pictou, Sydney & Lingan Mines,

TO THE

WEST INDIES,

— ALSO —

DEAL CHARTERS.

MACDONALD & CO., Manufacturers of Brass Sliding Door Rollers.—See adv. inside cover.

—Ins. cover.

MACDONALD & CO., Makers of Tumbler Racks, etc.—See inside cover.

APRIL.

Chronometer of G. M. T.

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

Day of the Week.	Day of the Month.	THE SUN'S				Equation of time to be added to sub. from Apparent Time.	Diff. for 1 h'r.	Chronometer of G. M. T.				
		Apparent Right Ascension.	Diff. for 1 hour	Apparent Declination.	Diff. for 1 h'r.			H.	MIN.	SEC.	THS.	
T	1	0 41 54.93	9.097	N. 4 30 43.8	57.85	4 0.60	0.757	1				
W	2	0 45 33.30	9.101	4 53 49.8	57.64	3 42.47	0.753	2				
T	3	0 49 11.77	9.106	5 16 50.4	57.41	3 24.44	0.749	3				
F	4	0 52 50.38	9.112	5 39 45.3	57.16	3 6.54	0.743	4				
S	5	0 56 29.13	9.118	6 2 34.3	56.91	2 48.79	0.736	5				
S	6	1 0 8.05	9.126	6 25 17.0	56.64	2 31.21	0.729	6				
M	7	1 3 47.17	9.138	6 47 53.1	56.36	2 13.82	0.720	7				
T	8	1 7 26.52	9.145	7 10 22.3	56.07	1 56.66	0.710	8				
W	9	1 11 6.12	9.155	7 32 44.4	55.76	1 39.75	0.699	9				
T	10	1 14 45.98	9.167	7 54 58.9	55.44	1 23.10	0.688	10				
F	11	1 18 26.13	9.179	8 17 5.7	55.11	1 6.74	0.675	11				
S	12	1 22 6.58	9.192	8 39 4.3	54.76	0 50.68	0.662	12				
S	13	1 25 47.35	9.206	9 0 54.4	54.40	0 34.95	0.649	13				
M	14	1 29 28.47	9.220	9 22 35.6	54.03	0 19.55	0.634	14				
T	15	1 33 9.93	9.235	9 44 7.7	53.64	0 4.50	0.620	15				
W	16	1 36 51.76	9.251	10 5 30.1	53.23	0 10.19	0.604	16				
T	17	1 40 33.97	9.267	10 26 42.6	52.81	0 24.49	0.588	17				
F	18	1 44 16.57	9.284	10 47 44.9	52.37	0 38.40	0.571	18				
S	19	1 47 59.58	9.301	11 8 36.5	51.92	0 51.91	0.554	19				
S	20	1 51 43.00	9.318	11 29 17.1	51.46	1 5.01	0.537	20				
M	21	1 55 26.86	9.337	11 49 46.5	50.98	1 17.67	0.518	21				
T	22	1 59 11.16	9.355	12 10 4.2	50.49	1 29.89	0.500	22				
W	23	2 2 55.91	9.374	12 30 9.8	49.98	1 41.66	0.481	23				
T	24	2 6 41.12	9.393	12 50 3.1	49.46	1 52.98	0.462	24				
F	25	2 10 26.79	9.413	13 9 43.8	48.92	2 3.83	0.443	25				
S	26	2 14 12.93	9.433	13 29 11.4	48.37	2 14.22	0.423	26				
S	27	2 17 59.56	9.453	13 48 25.7	47.81	2 24.12	0.402	27				
M	28	2 21 46.68	9.473	14 7 26.3	47.23	2 33.53	0.382	28				
T	29	2 25 34.29	9.494	14 26 12.9	46.64	2 42.45	0.361	29				
W	30	2 29 22.40	9.515	14 44 45.2	46.04	2 50.87	0.340	30				
T	31	2 33 11.02	9.536	N.15 3 2.8	45.42	2 58.79	0.319	31				

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

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JUNE.

Chronometer of G. M. T.

Day of the Week.	Day of the Month.	THE SUN'S				Equation of time to be sub. from added to Apparent Time.	Diff. for 1 h'r.	Chronometer of G. M. T.					
		Apparent Right Ascension.	Diff. for 1 hour	Apparent Declination.	Diff. for 1 h'r.			H.	MIN.	SEC.	THS.		
S	1	4 35 54.74	10.225	N.22 2 56.1	20.50	2 28.40	0.367	1					
M	2	4 40 0.34	10.241	22 10 56.7	19.54	2 19.39	0.383	2					
T	3	4 44 6.32	10.257	22 18 34.2	18.58	2 10.00	0.399	3					
W	4	4 48 12.66	10.272	22 25 48.4	17.60	2 0.23	0.414	4					
T	5	4 52 19.36	10.286	22 32 39.1	16.62	1 50.12	0.428	5					
F	6	4 56 26.40	10.300	22 39 6.3	15.64	1 39.67	0.442	6					
S	7	5 0 33.77	10.313	22 45 9.7	14.64	1 28.89	0.455	7					
S	8	5 4 41.44	10.326	22 50 49.2	13.65	1 17.81	0.468	8					
M	9	5 8 49.40	10.337	22 56 4.7	12.64	1 6.54	0.480	9					
T	10	5 12 57.63	10.348	23 0 56.1	11.64	0 54.79	0.490	10					
W	11	5 17 6.12	10.359	23 5 23.2	10.62	0 42.90	0.500	11					
T	12	5 21 14.84	10.368	23 9 25.8	9.60	0 30.77	0.510	12					
F	13	5 25 23.77	10.376	23 13 4.0	8.58	0 18.43	0.518	13					
S	14	5 29 32.88	10.383	23 16 17.6	7.56	0 5.91	0.525	14					
S	15	5 33 42.16	10.390	23 19 6.6	6.53	0 6.78	0.531	15					
M	16	5 37 51.58	10.395	23 21 30.9	5.50	0 19.60	0.537	16					
T	17	5 42 1.11	10.399	23 23 30.4	4.46	0 32.54	0.541	17					
W	18	5 46 10.72	10.402	23 25 5.2	3.43	0 45.56	0.544	18					
T	19	5 50 20.40	10.404	23 26 15.1	2.40	0 58.64	0.546	19					
F	20	5 54 30.11	10.404	23 27 0.2	1.36	1 11.75	0.546	20					
S	21	5 58 39.81	10.404	23 27 20.5	0.33	1 24.87	0.546	21					
S	22	6 2 49.49	10.402	23 27 16.0	0.71	1 37.95	0.544	22					
M	23	6 6 59.12	10.399	23 26 46.6	1.74	1 50.98	0.541	23					
T	24	6 11 8.66	10.395	23 25 52.5	2.77	2 3.93	0.537	24					
W	25	6 15 18.09	10.390	23 24 33.6	3.80	2 16.76	0.532	25					
T	26	6 19 27.38	10.384	23 22 50.0	4.83	2 29.46	0.526	26					
F	27	6 23 36.51	10.377	23 20 41.7	5.86	2 42.00	0.519	27					
S	28	6 27 45.46	10.369	23 18 8.9	6.88	2 54.36	0.511	28					
S	29	6 31 54.20	10.360	23 15 11.5	7.90	3 6.51	0.502	29					
M	30	6 36 2.73	10.350	23 11 49.8	8.91	3 10.44	0.492	30					
T	31	6 40 11.01	10.340	N.23 8 3.7	9.92	3 30.13	0.482	31					

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

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

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

1879]

NAUTICAL ALMANAC.

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MACKASEY & CO.,
Shipping Brokers

AND

COMMISSION MERCHANTS,

DEALERS IN

Ship Chandlery, Provisions, &c.

American Fishing Supplies a Specialty.

OFFICE ON BENNETT'S WHARF,
HALIFAX, N. S.

A. V. ALLEN,
Sailmaker,

A. G. JONES & CO.'S WHARF, LOWER WATER ST.,
HALIFAX, N. S.

Cork Fenders and Life Preservers

CONSTANTLY ON HAND OR MADE TO ORDER.

MACDONALD & CO., Makers of Patent Roller Bushings.—See adv. cover.

MACDONALD & CO., Manufacturers of Ships' Deck Pumps.—See adv. inside cover.

1879

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Vessels Fitted with Plumbing Fixtures by MACDONALD & CO.—See adv. inside cover.

JULY.										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.	Diff. for 1 h'r.	Diff.	H.	MIN.	SEC.	THS.	
		Apparent Right Ascension.	Diff. for 1 hour	Apparent Declination.	Diff. for 1 h'r.								
		<i>h. m. s.</i>	<i>s.</i>	<i>° ' "</i>	<i>" "</i>	<i>m. s.</i>	<i>s.</i>						
T	1	6 40 11.01	10.340	N.23 8 3.7	9.92	3 30.13	0.482						
W	2	6 44 19.03	10.329	23 3 53.5	10.93	3 41.57	0.471						
T	3	6 48 26.78	10.317	22 59 19.1	11.93	3 52.73	0.459						
F	4	6 52 34.23	10.304	22 54 20.7	12.93	4 3.59	0.446						
S	5	6 56 41.37	10.291	22 48 58.4	13.92	4 14.14	0.433						
S	6	7 0 48.18	10.276	22 43 12.3	14.91	4 24.36	0.419						
M	7	7 4 54.64	10.262	22 37 2.5	15.90	4 34.25	0.404						
T	8	7 9 0.75	10.247	22 30 29.2	16.88	4 43.77	0.389						
W	9	7 13 6.49	10.231	22 23 32.5	17.85	4 52.92	0.373						
T	10	7 17 11.84	10.214	22 16 12.5	18.81	5 1.69	0.357						
F	11	7 21 16.78	10.197	22 8 29.4	19.77	5 10.05	0.340						
S	12	7 25 21.30	10.179	22 0 23.4	20.72	5 17.99	0.322						
S	13	7 29 25.39	10.161	21 51 54.7	21.66	5 25.50	0.304						
M	14	7 33 29.02	10.142	21 43 3.5	22.60	5 32.56	0.284						
T	15	7 37 32.19	10.122	21 33 49.9	23.53	5 39.15	0.264						
W	16	7 41 34.87	10.101	21 24 14.2	24.44	5 45.25	0.244						
T	17	7 45 37.05	10.080	21 14 16.6	25.35	5 50.86	0.223						
F	18	7 49 38.72	10.058	21 3 57.4	26.25	5 55.96	0.201						
S	19	7 53 39.85	10.036	20 53 16.7	27.14	6 0.52	0.179						
S	20	7 57 40.44	10.013	20 42 14.9	28.01	6 4.54	0.156						
M	21	8 1 40.46	9.989	20 30 52.2	28.87	6 8.00	0.132						
T	22	8 5 39.91	9.965	20 19 8.9	29.73	6 10.88	0.107						
W	23	8 9 38.77	9.940	20 7 5.2	30.58	6 13.17	0.083						
T	24	8 13 37.03	9.915	19 54 41.3	31.41	6 14.87	0.058						
F	25	8 17 34.69	9.890	19 41 57.6	32.23	6 15.97	0.033						
S	26	8 21 31.74	9.864	19 28 54.4	33.04	6 16.47	0.008						
S	27	8 25 28.18	9.839	19 15 31.8	33.84	6 16.35	0.018						
M	28	8 29 24.00	9.813	19 1 50.2	34.62	6 15.61	0.044						
T	29	8 33 19.20	9.787	18 47 49.9	35.40	6 14.26	0.069						
W	30	8 37 13.79	9.762	18 33 31.1	36.16	6 12.30	0.095						
T	31	8 41 7.76	9.736	18 18 54.1	36.91	6 9.72	0.120						
F	32	8 45 1.11	9.710	N.18 3 59.2	37.66	6 6.52	0.146						

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

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Brass Hinges, Hasps and

PICKFORD & BLACK, Importers of Welsh Bolt Iron Spikes.

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ROBERT H. COGSWELL'S

[1879

SEPTEMBER.

Chronometer
of G. M. T.

MACDONALD & CO., Manufacturers of Engineers' Brass Goods.—See adv. inside cover.

Day of the Week.	Day of the Month.	THE SUN'S				Equation of time to be sub. from Apparent Time.	Diff. for 1 h'r.	Chronometer of G. M. T.			
		Apparent Right Ascension.	Diff. for 1 hour	Apparent Declination.	Diff. for 1 h'r.			H.	MIN.	SEC.	THS.
M	1	10 41 4.56	9.070	N. 8 20 2.7	54.39	0 2.22	0.785	1			
T	2	10 44 42.08	9.058	7 58 13.3	54.72	0 21.20	0.797	2			
W	3	10 48 19.32	9.046	7 36 16.2	55.04	0 40.46	0.808	3			
T	4	10 51 56.31	9.036	7 14 11.5	55.35	0 59.97	0.818	4			
F	5	10 55 33.07	9.027	6 51 59.6	55.64	1 19.71	0.827	5			
S	6	10 59 9.61	9.019	6 29 40.9	55.92	1 39.67	0.836	6			
S	7	11 2 45.96	9.011	6 7 15.6	56.18	1 59.82	0.843	7			
M	8	11 6 22.13	9.004	5 44 44.2	56.43	2 20.15	0.850	8			
T	9	11 9 58.14	8.998	5 22 6.8	56.67	2 40.63	0.856	9			
W	10	11 13 34.02	8.992	4 59 23.9	56.90	3 1.26	0.862	10			
T	11	11 17 9.77	8.988	4 36 35.7	57.11	3 22.00	0.866	11			
F	12	11 20 45.42	8.984	4 13 42.7	57.30	3 42.85	0.870	12			
S	13	11 24 20.98	8.980	3 50 45.2	57.49	4 3.78	0.874	13			
S	14	11 27 56.47	8.978	3 27 43.4	57.65	4 24.78	0.876	14			
M	15	11 31 31.91	8.976	3 4 37.9	57.80	4 45.84	0.878	15			
T	16	11 35 7.31	8.975	2 41 28.9	57.94	5 6.93	0.879	16			
W	17	11 38 42.70	8.975	2 18 16.8	58.06	5 28.04	0.880	17			
T	18	11 42 18.09	8.975	1 55 2.0	58.17	5 49.15	0.880	18			
F	19	11 45 53.48	8.975	1 31 44.8	58.26	6 10.26	0.879	19			
S	20	11 49 28.90	8.977	1 8 25.5	58.34	6 31.33	0.877	20			
S	21	11 53 4.37	8.979	0 45 4.6	58.40	6 52.35	0.875	21			
M	22	11 56 39.91	8.983	N. 0 21 42.4	58.45	7 13.31	0.871	22			
T	23	12 0 15.54	8.987	S. 0 1 40.8	58.48	7 34.18	0.867	23			
W	24	12 3 51.27	8.991	0 25 4.6	58.50	7 54.95	0.863	24			
T	25	12 7 27.12	8.997	0 48 28.7	58.50	8 15.59	0.857	25			
F	26	12 11 3.12	9.004	1 11 52.8	58.50	8 36.09	0.851	26			
S	27	12 14 39.29	9.011	1 35 16.6	58.48	8 56.42	0.843	27			
S	28	12 18 15.65	9.020	1 58 39.7	58.44	9 16.56	0.835	28			
M	29	12 21 52.23	9.029	2 22 1.8	58.39	9 36.48	0.825	29			
T	30	12 25 29.05	9.040	2 45 22.6	58.33	9 56.15	0.814	30			
W	31	12 29 6.14	9.051	S. 3 8 41.8	58.26	10 15.56	0.803	31			

Iron Pipe, all sizes, at MACDONALD & CO.'S.—See adv. inside cover.

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Chronometer
of G. M. T.

MACDONALD & CO., Manufacturers of Brass Binnacle Guards.—See adv. inside cover.

Day of the Week.	Day of the Month.	THE SUN'S				Equation of time to be sub. from Apparent Time.	Diff. for 1 h'r.	Chronometer of G. M. T.			
		Apparent Right Ascension.	Diff. for 1 hour	Apparent Declination.	Diff. for 1 h'r.			H.	MIN.	SEC.	THS.
W	1	12 29 6.14	9.051	S. 3 8 41.8	58.26	10 15.56	0.803	1			
T	2	12 32 43.52	9.064	3 31 59.0	58.17	10 34.68	0.790	2			
F	3	12 36 21.22	9.078	3 55 13.9	58.06	10 53.48	0.776	3			
S	4	12 39 59.25	9.092	4 18 26.2	57.95	11 11.95	0.762	4			
S	5	12 43 37.65	9.108	4 41 35.5	57.82	11 30.06	0.746	5			
M	6	12 47 16.43	9.124	5 4 41.4	57.65	11 47.78	0.730	6			
T	7	12 50 55.62	9.142	5 27 43.7	57.51	12 5.10	0.713	7			
W	8	12 54 35.23	9.160	5 50 41.9	57.33	12 22.00	0.695	8			
T	9	12 58 15.28	9.178	6 13 35.7	57.14	12 38.46	0.676	9			
F	10	13 1 55.79	9.198	6 36 24.7	56.93	12 54.45	0.656	10			
S	11	13 5 36.79	9.219	6 59 8.4	56.71	13 9.97	0.636	11			
S	12	13 9 18.29	9.240	7 21 46.6	56.47	13 24.98	0.615	12			
M	13	13 13 0.30	9.261	7 44 18.8	56.21	13 39.48	0.593	13			
T	14	13 16 42.84	9.284	8 6 44.6	55.93	13 53.45	0.571	14			
W	15	13 20 25.94	9.308	8 29 3.6	55.64	14 6.87	0.548	15			
T	16	13 24 9.60	9.331	8 51 15.4	55.33	14 19.74	0.524	16			
F	17	13 27 53.84	9.355	9 13 19.6	55.01	14 32.02	0.499	17			
S	18	13 31 38.66	9.380	9 35 15.8	54.67	14 43.71	0.475	18			
S	19	13 35 24.09	9.406	9 57 3.6	54.31	14 54.81	0.450	19			
M	20	13 39 10.13	9.431	10 18 42.5	53.93	15 5.29	0.424	20			
T	21	13 42 56.80	9.458	10 40 12.3	53.54	15 15.15	0.398	21			
W	22	13 46 44.11	9.485	11 1 32.4	53.13	15 24.38	0.371	22			
T	23	13 50 32.06	9.512	11 22 42.5	52.70	15 32.95	0.343	23			
F	24	13 54 20.69	9.541	11 43 42.2	52.26	15 40.85	0.315	24			
S	25	13 58 10.01	9.569	12 4 31.2	51.81	15 48.08	0.286	25			
S	26	14 2 0.02	9.599	12 25 9.0	51.33	15 54.60	0.257	26			
M	27	14 5 50.76	9.629	12 45 35.2	50.84	16 0.40	0.226	27			
T	28	14 9 42.23	9.660	13 5 49.5	50.34	16 5.47	0.195	28			
W	29	14 13 34.46	9.692	13 25 51.6	49.82	16 9.78	0.164	29			
T	30	14 17 27.45	9.724	13 45 41.0	49.29	16 13.33	0.132	30			
F	31	14 21 21.23	9.957	14 5 17.3	48.73	16 16.10	0.099	31			
S	32	14 25 15.80	9.791	S. 14 24 40.1	48.16	16 18.08	0.066				

MACDONALD & CO., Brass Founders.—See adv. inside cover.

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MACDONALD & C

son's Copper Paint.

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Chronometer of G. M. T.				
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h'r.	4			
	5			
	6			
066	7			
032	8			
003	9			
037	10			
072	11			
107	12			
143	13			
179	14			
215	15			
251	16			
287	17			
323	18			
359	19			
394	20			
430	21			
464	22			
499	23			
532	24			
564	25			
596	26			
628	27			
659	28			
690	29			
720	30			
750	31			

—See adv. inside cover.

Woodberry Cotton Ducks for sale by PICKFORD & BLACK.

1879]

NAUTICAL ALMANAC.

27

JAS. HERTLE,

Ship Carver,

MUIR & SCOTT'S WHARF.

Orders Solicited and Promptly Attended to.

MACKENZIE & MUNRO,

General Commission Merchants,
WHOLESALE AND RETAIL GROCERS,

DEALERS IN

Flour, Meal, Molasses, Teas, Sugars,
KEROSENE OIL, LAMPS, &c.

Corner Sackville and Lower Water Streets, Halifax.

JOHN EGAN,

ESTABLISHED 1847.

33 WATER STREET, FOOT DUKE STREET, HALIFAX, N. S.

FOWLING PIECES,

REVOLVERS,



RIFLES, &c.

BREECH LOADERS,

Also—500 MUSKETS, Good Quality, at \$3.00 each; 200 GUNS, Good Quality, at \$4.00 each.

Best Qualities Gunpowder. Cartridges of all kinds.

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

Lead Scupper Pipes, all sizes, at MACDONALD & CO.'S.—See ins. cover.

28

ROBERT H. COGSWELL'S

[1879

DECEMBER.

Chronometer of G. M. T.

Day of the Week.	Day of the Month.	THE SUN'S								Chronometer of G. M. T.			
		Apparent Right Ascension.		Diff. for 1 hour	Apparent Declination.		Diff. for 1 h'r.	Equation of time to be sub. from added to Apparent Time.		Diff. for 1 h'r.	H.	MIN.	SEC.	THS.
M	1	16 28 59.53	10.794	S.21	48 27.4	23.42	10 51.94	0.935	1				
T	2	16 33 18.91	10.821	21 57 37.0	22.37	10 29.18	0.962	2					
W	3	16 37 38.92	10.847	22 6 21.3	21.31	10 5.78	0.988	3					
T	4	16 41 59.55	10.872	22 14 40.0	20.24	9 41.77	1.013	4					
F	5	16 46 20.78	10.896	22 22 32.9	19.16	9 17.17	1.037	5					
S	6	16 50 42.58	10.920	22 29 59.7	18.06	8 52.00	1.060	6					
S	7	16 55 4.92	10.942	22 37 0.0	16.96	8 26.29	1.062	7					
M	8	16 59 27.79	10.963	22 43 33.7	15.84	8 0.05	1.104	8					
T	9	17 3 51.16	10.983	22 49 40.6	14.72	7 38.31	1.124	9					
W	10	17 8 14.99	11.002	22 55 20.5	13.60	7 6.12	1.142	10					
T	11	17 12 39.25	11.019	23 0 33.2	12.46	6 38.49	1.160	11					
F	12	17 17 3.92	11.035	23 5 18.5	11.31	6 10.46	1.175	12					
S	13	17 21 28.94	11.049	23 9 36.2	10.16	5 42.07	1.190	13					
S	14	17 25 54.29	11.062	23 13 26.2	9.00	5 13.36	1.202	14					
M	15	17 30 19.93	11.073	23 16 48.4	7.84	4 44.36	1.213	15					
T	16	17 34 45.80	11.082	23 19 42.7	6.68	4 15.12	1.222	16					
W	17	17 39 11.88	11.090	23 22 9.0	5.51	3 45.68	1.230	17					
T	18	17 43 38.13	11.096	23 24 7.2	4.34	3 16.07	1.236	18					
F	19	17 48 4.51	11.101	23 25 37.1	3.16	2 46.33	1.241	19					
S	20	17 52 31.00	11.105	23 26 38.9	1.99	2 16.48	1.245	20					
S	21	17 56 57.56	11.107	23 27 12.4	0.81	1 46.57	1.247	21					
M	22	18 1 24.14	11.108	23 27 17.6	0.37	1 16.62	1.248	22					
T	23	18 5 50.73	11.107	23 26 54.5	1.55	0 46.67	1.247	23					
W	24	18 10 17.29	11.105	23 26 3.1	2.73	0 16.75	1.245	24					
T	25	18 14 43.79	11.102	23 24 43.5	3.91	0 13.11	1.242	25					
F	26	18 19 10.20	11.098	23 22 55.6	5.08	0 42.87	1.238	26					
S	27	18 23 36.48	11.092	23 20 39.6	6.25	1 12.51	1.232	27					
S	28	18 28 2.60	11.085	23 17 55.5	7.42	1 42.00	1.225	28					
M	29	18 32 28.54	11.076	23 14 43.3	8.59	2 11.30	1.216	29					
T	30	18 36 54.26	11.066	23 11 3.2	9.75	2 40.38	1.207	30					
W	31	18 41 19.73	11.056	23 6 53.3	10.91	3 9.22	1.196	31					
T	32	18 45 44.93	11.044	S.23	2 19.6	12.06	3 37.78	1.184					

MACDONALD & CO., Importers of Ships' Well Pumps.—See adv. inside cover.

MACDONALD & CO., Hot Water and Steam Engineers.—See inside cover.

1879]

W. STA
M

Cordage

ANCHO

Bar and Bolt Iron
Nets, Lin

George S

CORD

THE DA

Are prepared to

MANILLA CORDA

do. BOLT R

do. TARRE

TARRED RUSSIAN

do. do.

do. do.

OAKUM, CARDED

do. EXTRA N

Address

MACDONALD & CO.

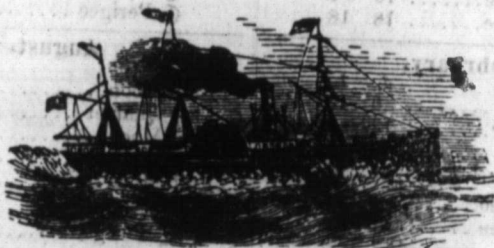
Chronometer
of G. M. T.

	H.	MIN.	SEC.	THS.
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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,
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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.
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- OAKUM, CARDED RUSSIAN—Oakum, No. 1, Navy.
- do. EXTRA NAVY—Oakum, No. 2, Navy.

Address: The Dartmouth Ropework Company, Halifax.

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

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

PHASES OF THE MOON—1879.

Mean Time at Greenwich.

MACDONALD & CO., Manufacturers of Composition Clinch Rings.—See inside cover.

January.				July.			
	d.	h.	m.		d.	h.	m.
○ Full Moon	7	23	47.7	○ Full Moon	3	9	37.7
☾ Last Quarter	14	23	1.9	☾ Last Quarter	10	20	54.2
● New Moon	21	23	50.8	● New Moon	18	21	5.9
☽ First Quarter	29	23	44.8	☽ First Quarter	25	22	35.6
☾ Perigee	15	4		☾ Apogee	12	15	
☽ Apogee	18	18		☽ Perigee	27	16	
February.				August.			
	d.	h.	m.		d.	h.	m.
○ Full Moon	6	13	47.5	○ Full Moon	1	19	12.0
☾ Last Quarter	13	6	53.4	☾ Last Quarter	9	14	8.7
● New Moon	20	16	3.0	● New Moon	17	8	10.5
☽ First Quarter	28	19	58.3	☽ First Quarter	24	3	11.7
☾ Perigee	9	12		○ Full Moon	31	6	57.8
☽ Apogee	25	12		☾ Apogee	9	10	
				☽ Perigee	21	18	
March.				September.			
	d.	h.	m.		d.	h.	m.
○ Full Moon	8	1	9.3	☾ Last Quarter	8	8	4.0
☾ Last Quarter	14	15	40.8	● New Moon	15	17	56.7
● New Moon	22	9	4.4	☽ First Quarter	22	9	19.4
☽ First Quarter	30	13	4.7	○ Full Moon	29	21	17.0
☾ Perigee	9	13		☾ Apogee	6	4	
☽ Apogee	25	2		☽ Perigee	18	1	
April.				October.			
	d.	h.	m.		d.	h.	m.
○ Full Moon	6	10	24.4	☾ Last Quarter	3	1	43.2
☾ Last Quarter	13	2	9.0	● New Moon	15	3	8.9
● New Moon	21	1	55.5	☽ First Quarter	21	18	18.0
☽ First Quarter	29	2	16.3	○ Full Moon	29	14	9.5
☾ Perigee	6	22		☾ Apogee	3	21	
☽ Apogee	21	6		☽ Perigee	16	5	
				☽ Apogee	31	8	
May.				November.			
	d.	h.	m.		d.	h.	m.
○ Full Moon	5	18	11.8	☾ Last Quarter	6	17	55.3
☾ Last Quarter	12	14	35.7	● New Moon	13	12	38.4
● New Moon	20	17	50.4	☽ First Quarter	20	6	55.0
☽ First Quarter	28	11	36.6	○ Full Moon	28	8	57.4
☾ Perigee	6	9		☾ Perigee	13	16	
☽ Apogee	18	10		☽ Apogee	27	8	
June.				December.			
	d.	h.	m.		d.	h.	m.
○ Full Moon	4	1	35.5	☾ Last Quarter	6	7	43.0
☾ Last Quarter	11	4	56.6	● New Moon	12	23	4.1
● New Moon	19	8	19.5	☽ First Quarter	19	23	15.7
☽ First Quarter	25	17	55.9	○ Full Moon	28	4	15.6
☾ Perigee	2	17		☾ Perigee	12	5	
☽ Apogee	14	22		☽ Apogee	24	15	
☾ Perigee	30	7					

Showing the app...
which will b...
Water at Ha...

- Amet Sound, N.
- Andrews St, N. E.
- Annapolis, N. S.
- Anne, St B., C. B.
- Anthony Strait, N.
- Anticosti Island, C.
- rence, East C.
- Antigonish Harb'
- Antrobous Island,
- Appetetat Bay, C.
- Argyle, Bay of F.
- Arichat, C. B.
- Avon River, N. S.
- Baltimore, U. S.
- Barbe, St, Harbou
- Bangor, U. S.
- Barnstable, U. S.
- Barrow Harbour,
- Basque Port, Nfld.
- Bathurst, Gulf St L.
- Batican, R. St L.
- Bear Cape, P. E. I.
- Bear Head, C. B. I.
- Beaubère Island, G.
- Beaver Harbour, N.
- Bedeque Harbor, I.
- Bermuda, Ireland I.
- Bersimis R. Gulf
- Bechewen Harbou
- Lawrence
- Bic Island, Gulf St
- Black Rock, Bay of
- Blind Bay, N. S.
- Bonavista, Nfld.
- Bonne Esperance H
- St Lawrence
- Boston Light, U. S.
- Boughton Harb'r, I.
- Braha Harbour, Nfld.
- Brandy Pots, River
- Bridgewater, N. S.
- Brig Bay, Nfld.
- Buctouche River, G.
- Bull Island, Newfou
- Burgeo Islands,
- Burin Harbour,
- Burnt Island,
- Campbelltown, Gulf
- Campobello, Bay of
- Canso Gut, (N. entr

TIDE TABLE

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 :

July.

d.	A.	m.
3	9	37.7
10	20	54.2
18	21	5.9
25	22	35.6
12	15	
27	16	

August.

d.	A.	m.
1	19	12.0
9	14	8.7
17	8	10.5
24	3	11.7
31	6	57.8
9	10	
21	18	

September.

d.	A.	m.
8	8	4.0
15	17	56.7
22	9	19.4
29	21	17.0
6	4	
18	1	

October.

d.	A.	m.
3	1	43.2
15	3	8.9
21	18	18.0
29	14	9.5
3	21	
16	5	
31	8	

November.

d.	A.	m.
6	17	55.3
13	12	38.4
20	6	55.0
28	8	57.4
13	16	
27	8	

December.

d.	A.	m.
6	7	43.0
12	23	4.1
19	23	15.7
28	4	15.6
12	5	
24	15	

	H. M.	H. M.	
Amet Sound, N. S.	add 2 41	Canso Gut, (Plaister Cove) ...	add 1 21
Andrews St, N. B.	add 3 1	Canso Harbor, C. B. Island ..	sub 0 1
Annapolis, N. S.	add 3 11	Caraquette Harbour, Gulf St.	Lawrence
Anne, St B., C. B.	add 0 45	.....sub 5 9	
Anthony Strait, Nfld.	sub 0 39	Carbonear, Newfoundland....	sub 0 29
Anticosti Island, Gulf St. Law-		Cardigan Bay, P. E. I.	add 0 51
rence, East Cape .....sub	6 49	Caribou Harbour, N. S.	add 2 11
Antigonish Harb'r, R. St Law	add 1 11	Carleton Point, Gulf St. Law	sub 4 49
Antrobus Island, Gulf St Law	add 2 41	Carouge River, R. St. Law....	sub 0 34
Appetetat Bay, Gulf St Law	add 3 21	Cascumpeque Harbour, P.E.I.	sub 2 9
Argyle, Bay of Fundy .....add	1 38	Castors Harbor, Nfld.	add 3 1
Arichat, C. B.	add 0 21	Catalina Horbor, "	sub 0 59
Avon River, N. S.	add 4 41	Cawee Islands, Gulf St. Law	sub 5 59
Baltimore, U. S.	sub 1 16	Champlain, R. St. Lawrence ..	add 1 56
Barbe, St, Harbour, Nfld.	add 2 11	Change Island, Newfoundland	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 Harbour, Nfld.	sub 1 36	Civil East Cove, Long Harbor,	Newfoundland
Basque Port, Nfld.	add 1 6	.....add 0 19	
Bathurst, Gulf St Law'nce....	sub 4 34	Clam Point, Bay of Fundy....	add 0 38
Batiscan, R. St Lawrence....	add 1 59	Clarke Harbor, Bay of Fundy	add 0 51
Bear Cape, P. E. Island	add 1 11	Clearwater Point, Gulf St. Law	add 3 21
Bear Head, C. B. Island	add 0 41	Coacoacha Bay, "	sub 3 19
Beaubere Island, Gulf St Law	sub 1 19	Cocagne River, "	sub 0 19
Beaver Harbour, N. S.	sub 0 9	Cod Cape, United States	add 3 41
Bedeqne Harbor, P. E. I.	add 2 26	Codroy Island, Nfld.	add 1 26
Bermuda, Ireland Island	sub 0 35	Conway Cove, Ship Harbour,	Newfoundland
Bersimis R. Gulf St Law....	sub 5 49	.....add 0 11	
Bechween Harbour, Gulf St		Cook Harbour, Newfoundland	sub 0 11
Lawrence .....add 3 43		Coudres 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	Cow Head Harbour, Nfld.	add 2 52
Blind Bay, N. S.	sub 0 3	Crane Island, R. St. Lawrence	sub 2 25
Bonavista, Nfld.	sub 0 24	Crapaud, P. E. I.	add 2 11
Bonne Esperance Harbour, Glf		Crémaillere Harbour, Nfld....	sub 0 36
St Lawrence .....add 1 26		Crox Harbour, "	sub 1 19
Boston Light, U. S.	add 3 23	Crow Harbour, N. S.	add 0 11
Boughton Harb'r, P. E. I.	add 0 51	Cumberland Basin, Bay of	Fundy
Braha Harbour, Nfld.	sub 0 49	.....add 4 6	
Brandy Pots, River St Law....	sub 4 49	Cutwell Harbour, 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	sub 4 19	Dalhousie Harb'r, Glf St. Law	sub 4 39
Bull Island, Newfoundland....	sub 0 27	Deer Harbour, Nfld.	sub 0 1
Burgeo Islands, "	add 0 43	Digby Gut, Bay of Fundy....	add 3 11
Burin Harbour, "	add 0 56	East Point, P. E. I.	add 0 41
Burnt Island, "	sub 0 1	Eastport, U. S.	add 3 14
Campbelltown, Gulf St Law...sub	3 49	Egg Island, Gulf St. Law....	sub 5 49
Campobello, Bay of Fundy....	add 3 32	Egmont Bay, P. E. I.	sub 4 49
Canso Gut, (N. entrance) N.S.	add 1 26		

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

MACDONALD & CO., Importers of Steam and Vacuum Guages.—See adv. inside cover.

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

MACDONALD & CO., Copper Smiths.—See adv. inside cover.

Mount Louis Bay,
Mouton, Port, N. S.
Nantucket, United
Negro Harbour, N.
Neuf, Port, Gulf St.
Neuf, Port, River St.
New Bedford (entra
ed States
New Haven, United
New Perlican Harbo
New York, United S
Newburyport, Nfld
Nicholas, St., Harbo
Lawrence
Noel Bay, Bay Fund
North Cape, C. B.
North Harbour, Nfld.
Oderin, Nfld.
Orleans Island, River
Parrsboro', Bay Fund
Paul, St., Gulf St. La
Peter, St., Bay, C. B.
Peter, St., Harbour,
Petit Passage, Bay F
Petit Port, B. of Islan
Philadelphia, United
Pictou Harbour, N. S.
Pierre Strait, Nfld.
Pillars, River St. Law
Placentia, Nfld.
Plymouth, United Sta
Pomquet, N. S.
Pool's Harbour, Nfld.
Port-au-Choit, Nfld.
Port Hood, C. B.
Portland, United State
Poullante Bay, Mad
C. B.
Prospect River, N. S.
Previdence, United Sta
Provincetown, U. S.
Pubnico (Beach Pt.), I.
Pugwash Harbour, N.
Quaco, Bay Fundy
Quebec, River St. Law
Race, Cape, Newfoundl
Random Head Harbour
Rencontré Bay (the
Newfoundland
Richibucto River, G. St.
Richmond, United State
Richmond Harbour, P. I.

MACDONALD

PICKFORD & BLACK, Importers of Ducks and Drillings, 51 Upper Water.

1879]

NAUTICAL ALMANAC.

33

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

MACDONALD & CO., Manufacturers of Copper Work for Steamers.—See adv. inside cover.

MACDONALD & CO., Plumbers.—See adv. inside cover.

TIDES—1879.

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

Residences and Public Buildings Fitted with Steam Heating Apparatus by MACDONALD & CO.—See adv. inside cover.

Day Mon.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.
	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	0 51	1 13	1 23	1 51	—	0 16	1 7	1 42	2 1	2 41	3 48	4 19
2	1 36	2 0	2 24	3 1	0 38	1 4	2 24	3 13	3 22	3 59	4 51	5 22
3	2 29	3 2	3 50	4 34	1 35	2 11	4 0	4 40	4 32	5 3	5 52	6 18
4	3 40	4 15	5 14	5 53	2 56	3 48	5 14	5 27	5 31	5 57	6 46	7 13
5	4 50	5 24	6 25	6 54	4 39	5 20	6 15	6 37	6 21	6 45	7 40	8 6
6	5 55	6 24	7 17	7 39	5 56	6 25	6 58	7 19	7 9	7 33	8 32	8 58
7	6 49	7 12	7 59	8 19	6 49	7 12	7 40	8 0	7 55	8 19	9 22	9 47
8	7 35	7 57	8 38	8 56	7 34	7 53	8 20	8 42	8 44	9 7	10 12	10 35
9	8 16	8 35	9 15	9 35	8 11	8 31	9 4	9 25	9 32	9 56	10 59	11 22
10	8 54	9 14	9 54	10 14	8 49	9 9	9 47	10 10	10 21	10 46	11 46	—
11	9 33	9 54	10 35	10 54	9 29	9 49	10 32	10 55	11 10	11 36	0 9	0 33
12	10 15	10 34	11 14	11 33	10 9	10 30	11 19	11 44	—	0 3	0 58	1 23
13	10 55	11 14	11 54	—	10 50	11 10	—	0 12	0 32	1 2	1 48	2 15
14	11 35	11 58	0 17	0 42	11 33	11 56	0 42	1 16	1 33	2 5	2 45	3 17
15	—	0 21	1 9	1 39	—	0 22	1 54	2 35	2 39	3 14	3 49	4 21
16	0 44	1 9	2 16	2 58	0 50	1 22	3 19	4 2	3 50	4 21	4 51	5 20
17	1 37	2 7	3 49	4 37	2 1	2 47	4 41	5 13	4 51	5 19	5 47	6 12
18	2 41	3 21	5 24	6 3	3 41	4 28	5 42	6 8	5 45	6 9	6 35	6 58
19	4 4	4 46	6 37	7 3	5 11	5 49	6 29	6 49	6 29	6 48	7 19	7 40
20	5 28	6 6	7 26	7 48	6 20	6 43	7 8	7 25	7 8	7 27	7 59	8 17
21	6 41	7 9	8 8	8 25	7 4	7 23	7 41	7 56	7 45	8 1	8 36	8 54
22	7 36	7 59	8 41	8 56	7 42	7 58	8 12	8 26	8 17	8 34	9 12	9 31
23	8 20	8 40	9 12	9 27	8 13	8 27	8 42	8 56	8 51	9 9	9 51	10 10
24	9 0	9 18	9 43	9 57	8 42	8 57	9 12	9 28	9 26	9 44	10 30	10 49
25	9 36	9 54	10 12	10 26	9 11	9 25	9 45	10 2	10 3	10 21	11 10	11 30
26	10 11	10 28	10 40	10 55	9 41	9 55	10 19	10 35	10 40	10 59	11 54	—
27	10 44	11 0	11 9	11 23	10 10	10 24	10 52	11 11	11 20	11 45	0 18	0 44
28	11 15	11 30	11 38	11 56	10 39	10 54	11 31	11 55	—	0 11	1 9	1 36
29	11 45	—	—	—	11 10	11 28	—	0 22	0 38	1 6	2 5	2 35
30	0 2	0 20	—	—	11 48	—	0 51	1 23	1 35	2 7	3 9	3 44
31	0 39	1 0	—	—	0 11	0 37	—	—	2 40	3 16	—	—

MACDONALD & CO., Manufacturers of Lead Water Marks.

JULY.

Day Mon.	JULY.	
	Morn.	After.
	H. M.	H. M.
1	4 19	4 5
2	5 31	6 5
3	6 36	7 0
4	7 34	8 0
5	8 25	8 49
6	9 13	9 36
7	9 57	10 19
8	10 40	10 59
9	11 18	11 37
10	11 57	—
11	0 17	0 37
12	0 58	1 20
13	1 43	2 8
14	2 38	3 13
15	3 51	4 27
16	5 2	5 36
17	6 7	6 35
18	6 59	7 20
19	7 40	8 1
20	8 20	8 39
21	8 57	9 15
22	9 35	9 54
23	10 14	10 33
24	10 52	11 12
25	11 33	11 53
26	—	0 16
27	0 39	1 4
28	1 34	2 2
29	2 39	3 18
30	4 1	4 45
31	5 28	6 5

MACDONALD & CO.

Spikes.

[1879

JUNE.	
Morn.	After.
H. M.	H. M.
3 48	4 19
4 51	5 22
5 52	6 18
6 46	7 13
7 40	8 6
8 32	8 58
9 22	9 47
10 12	10 35
10 59	11 22
11 46	
0 9	0 33
0 58	1 23
1 48	2 15
2 45	3 17
3 49	4 21
4 51	5 20
5 47	6 12
6 35	6 58
7 19	7 40
7 59	8 17
8 36	8 54
9 12	9 31
9 51	10 10
10 30	10 49
11 10	11 30
11 54	
0 18	0 44
1 9	1 36
2 5	2 35
3 9	3 44

Marks.

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

1879]

NAUTICAL ALMANAC.

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TIDES—1879.

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

Day Mon.	JULY.		AUGUST.		SEPTEMBER		OCTOBER.		NOVEMBER.		DECEMBER.	
	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.
	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	4 19	4 54	6 36	7 4	8 0	8 17	8 7	8 23	8 43	8 58	8 57	9 14
2	5 31	6 5	7 31	7 55	8 34	8 51	8 38	8 53	9 14	9 30	9 31	9 50
3	6 36	7 6	8 17	8 38	9 7	9 24	9 8	9 24	9 46	10 3	10 8	10 25
4	7 34	8 0	8 58	9 16	9 40	9 56	9 40	9 54	10 19	10 37	10 44	11 3
5	8 25	8 49	9 35	9 54	10 12	10 26	10 9	10 25	10 55	11 15	11 23	11 45
6	9 13	9 36	10 12	10 28	10 40	10 55	10 41	10 58	11 38			0 9
7	9 57	10 19	10 45	11 1	11 10	11 27	11 16	11 35	0 3	0 31	0 36	1 3
8	10 40	10 59	11 17	11 33	11 46		11 58		1 1	1 34	1 32	2 3
9	11 18	11 37	11 50		0 7	0 30	0 25	0 55	2 11	2 51	2 36	3 11
10	11 57		0 9	0 27	0 56	1 28	1 30	2 12	3 31	4 5	3 45	4 17
11	0 17	0 37	0 49	1 12	2 5	2 50	2 56	3 43	4 36	5 6	4 50	5 22
12	0 58	1 20	1 40	2 11	3 39	4 23	4 23	4 57	5 34	7 59	5 53	6 20
13	1 43	2 8	2 49	3 36	5 3	5 37	5 26	5 51	6 23	6 45	6 48	7 16
14	2 38	3 13	4 19	4 59	6 6	6 29	6 14	6 35	7 8	7 31	7 43	8 9
15	3 51	4 27	5 37	6 9	6 50	7 10	6 56	7 16	7 55	8 20	8 34	9 0
16	5 2	5 36	6 35	6 58	7 30	7 49	7 37	7 57	8 44	9 8	9 25	9 49
17	6 7	6 35	7 20	7 40	8 7	8 25	8 17	8 38	9 33	9 57	10 14	10 38
18	6 59	7 20	8 0	8 18	8 44	9 3	8 59	9 22	10 22	10 47	11 1	11 23
19	7 40	8 1	8 36	8 54	9 23	9 43	9 43	10 6	11 12	11 38	11 46	
20	8 20	8 39	9 12	9 30	10 4	10 25	10 31	10 55		0 7	0 10	0 33
21	8 57	9 15	9 49	10 9	10 45	11 7	11 20	11 48	0 36	1 6	0 58	1 23
22	9 35	9 54	10 28	10 47	11 31	11 58		0 17	1 36	2 9	1 49	2 16
23	10 14	10 33	11 6	11 27		0 26	0 49	1 26	2 45	3 21	2 47	3 21
24	10 52	11 12	11 49		0 56	1 33	2 6	2 49	3 55	4 27	3 57	4 30
25	11 33	11 53	0 14	0 41	2 18	3 7	3 34	4 11	4 58	5 26	5 2	5 32
26		0 16	1 10	1 43	3 56	4 38	4 46	5 17	5 52	6 14	6 1	6 27
27		1 4	2 21	3 8	5 15	5 47	5 44	6 8	6 35	6 55	6 51	7 11
28	1 34	2 2	4 0	4 45	6 15	6 38	6 28	6 47	7 14	7 33	7 32	7 52
29	2 39	3 18	5 27	6 2	6 59	7 18	7 6	7 24	7 51	8 7	8 10	8 27
30	4 1	4 45	6 31	6 56	7 36	7 52	7 40	7 56	8 24	8 41	8 44	9 2
31	5 28	6 5	7 19	7 41			8 12	8 27			9 19	9 37

MACDONALD & CO., Manufacturers of Composition Rudder Braces.—See inside cover.

MACDONALD & CO., Makers of Tumbler Racks, etc.—See inside cover.

PHENOMENA—1879.

Mean Time, Greenwich.

MACDONALD & CO., Manufacturers of Brass Composition Goods.—See adv. inside cover.

h.	o	'		h.	o	'	
Jan. 1.	23		♂ greatest Hel. Lat. N.	Apr. 16.	12	2	♂ ☾
2.	8		♂ in Perigee.	16.	23		♂ Inf. ♂ ☽
5.	6		♂ Stationary.	19.	11	h	♂ ☾
9.	13		♂ in ☽	20.	16	♂	♂ ☾
9.	16		♀ in Aphelion.	23.	10		♀ in ☽
16.	8		♂ greatest elong. 24 0 W.	24.	3	♀	♂ ☾
18.	18		♂ ☾ ♂ 3 41 N.	29.	7		♂ Stationary.
20.	1		♂ ☾ ♂ 3 16 N.	May 2.	2		♀ in Perihelion.
21.	—		☽ eclipsed, invis. at Green'h.	3.	15		♂ in Aphelion.
23.	1		♀ ☾ ♀ 2 37 S.	7.	19		♂ Stationary.
23.	2	2	♂ ☾ ♀ 1 54 S.	9.	3	♂	♂ ☽
23.	15		♀ ☽ ♀ 0 47 S.	14.	3	2	♂ ☾
25.	11		♂ in ☽	14.	10		♂ ☾
26.	19		♂ ☾ ♀ 7 18 S.	14.	16		♂ greatest elong. 25 40 W.
Feb. 1.	10		♀ greatest Hel. Lat. S.	16.	23	h	♂ ☾
4.	16		♂ in Aphelion.	18.	17		♂ ☾
8.	3		2 ♀ ☽	21.	4		♂ ☽
16.	12		♂ ☾ ♂ 1 47 N.	24.	1		♂ greatest Hel. Lat. S.
19.	22		♂ ☽ ♂ 1 28 S.	24.	4		♀ greatest Hel. Lat. N.
19.	23		2 ♀ ☾ ♀ 2 36 S.	24.	6		♀ ☾
19.	23		♂ ☾ ♀ 4 4 S.	June 1.	18		2 ♀ ☽
20.	16		♂ ☽ ♀ 5 51 S.	10.	17		2 ♀ ☾
22.	13		♂ ☾ ♀ 7 19 S.	12.	1		♂ in ☽
23.	8		♂ ☾ ♀ 7 19 S.	12.	12		♂ ☾
25.	2		♂ greatest Hel. Lat. S.	13.	11		♂ ☾
Mar. 2.	21		♀ ☽ ♀ 1 11 N.	15.	6		♂ greatest Hel. Lat. S.
3.	20		Sup. ♂ ☽	16.	15		♂ in Perihelion.
15.	0		♂ ☽ ♀ 2 7 N.	18.	12		♂ Sup. ♂ ☽
16.	1		♂ in ☽	19.	11		♂ ☾ ♀ 1 4 S.
17.	8		♂ ☾ ♂ 0 38 S.	21.	8		☽ enters ♄, Summer com.
19.	18		2 ♀ ☾ ♀ 3 19 S.	23.	5		♀ ☾ ♀ 4 1 N.
20.	12		☽ enters ♃, Spring com.	26.	22		♂ greatest Hel. Lat. N.
20.	15		♂ in Perihelion.	30.	8		♂ ☽ ♂ 0 1 N.
22.	22		♂ ☾ ♀ 7 23 S.	July 1.	12		♂ Stationary.
24.	2		♂ ☾ ♀ 3 37 S.	2.	11		☽ in Apogee.
24.	23		♀ ☾ ♀ 5 37 S.	7.	12		♂ ☽
26.	6		♂ ☽	8.	3	2	♂ ☾
29.	2		♂ greatest elong. 18 47 E.	9.	7		♂ in Perihelion.
29.	17		♂ in ☽	10.	21	h	♂ ☾
30.	23		♂ greatest Hel. Lat. N.	11.	11		♂ ☾
Apr. 6.	18		♂ Stationary	15.	18		♀ greatest elong. 45 33 E.
15.	8		♂ ☾ ♂ 3 24 S.	18.	—		☽ eclipsed, invis. at Green'h.

Patent Side Lights and Patent Roller Bushings—MACDONALD & CO.

July 19.	6		♂ ☽
20.	10		♂ ☽
21.	3		♂ ☽
21.	24		♂ ☽
22.	16		♀ ☽
26.	19		♂ ☽
28.	23		♂ ☽
30.	14		♂ ☽
Aug. 4.	8		♂ ☽
7.	6		♂ ☽
9.	1		♂ ☽
9.	5		♂ ☽
18.	2		♂ ☽
18.	22		♂ ☽
20.	0		♂ ☽
20.	6		♀ ☽
22.	10		♀ ☽
23.	16		♂ ☽
27.	20		♂ ☽
31.	1		♀ ☽
31.	10		2 ♀ ☽
31.	10		2 ♀ ☽
Sept. 1.	12		♂ ☽
3.	12		♂ ☽
6.	14		♂ ☽
8.	0		♂ in ☽
9.	6		♂ gre
12.	14		♂ in ☽
14.	3		♀ gre
14.	16		♀ ☽
16.	11		♀ ☽
22.	21		♂ gre
22.	22		☽ ent
23.	14		♀ Inf
27.	11		2 ♀ ☽
30.	15		♂ ☽
Oct. 4.	8		♂ ☽
5.	11		♂ ☽
5.	14		♂ Sup
5.	20		♂ Stat
12.	8		♀ Stat

MACDONALD &

[1879]

... 2 4 6 S.
 ... 7 32 S.
 ... 4 31 S.
 ... 2 48 S.
 ... 0 53 S.
 ... 4 49 S.
 ... 6 0 S.
 long. 25 40 W.
 ... 7 48 S.
 ... 8 47 S.
 Hel. Lat. S.
 Hel. Lat. N.
 ... 1 1 N.
 ... 5 23 S.
 ... 7 45 S.
 ... 8 6 S.
 Hel. Lat. S.
 ... 1 4 S.
 Summer com.
 ... 4 1 N.
 Hel. Lat. N.
 ... 0 1 N.
 ... 5 42 S.
 ... 8 20 S.
 ... 8 20 S.
 long. 45 33 E.
 vis. at Green'h.

PICKFORD & BLACK, Importers Chain Cables and Anchors, 51 U. Water.

1879]

NAUTICAL ALMANAC.

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PHENOMENA—1879.

Mean Time, Greenwich.

Month	Day	Time	Phenomenon	Direction
July	19	6	☉ in ♍	
	20	10	☉ in ♍	
	21	3	☉ ☽	2 46 N.
	21	24	☉ ☽	
	22	16	☉ ☽	4 8 N.
	26	19	☉ greatest elong.	27 9 E
	28	23	☉ Stationary.	
	30	14	☉ in Aphelion.	
Aug.	4	8	☉ ☽	5 41 S.
	7	6	☉ ☽	8 26 S.
	9	1	☉ Stationary.	
	9	5	☉ ☽	7 55 S.
	18	2	☉ ☽	1 27 S.
	18	22	☉ at greatest brilliancy.	
	20	0	☉ greatest Hel. Lat.	S.
	20	6	☉ ☽	0 27 N.
	22	10	☉ in Aphelion.	
	23	16	☉ Inf. ☽	
	27	20	☉ ☽	
	31	1	☉ ☽	
	31	10	☉ ☽	5 28 S.
	31	10	☉ Stationary.	
Sept.	1	12	☉ Stationary.	
	3	12	☉ ☽	8 25 S.
	6	14	☉ ☽	6 55 S.
	8	0	☉ in ♍	
	9	6	☉ greatest elong.	17 57 W.
	12	14	☉ in Perihelion.	
	14	3	☉ greatest Hel. Lat.	S.
	14	16	☉ ☽	5 14 N.
	16	11	☉ ☽	4 7 S.
	22	21	☉ greatest Hel. Lat.	N.
	22	22	☉ enters ♋, Autumn com.	
	23	14	☉ Inf. ☽	
	27	11	☉ ☽	5 16 S.
	30	15	☉ ☽	8 22 S.
Oct.	4	8	☉ ☽	5 45 S.
	5	11	☉ ☽	
	5	14	☉ Sup. ☽	
	5	20	☉ Stationary.	
	12	8	☉ Stationary.	
	13	3	☉ ☽	0 51 S.
	15	18	☉ ☽	5 19 N.
	16	9	☉ in ♍	
	24	13	☉ ☽	5 17 S.
	26	14	☉ in Aphelion.	
	27	18	☉ ☽	8 23 S.
	28	12	☉ Stationary.	
	30	15	☉ at greatest brilliancy.	
	31	5	☉ ☽	4 41 S.
Nov.	9	9	☉ in ♍	
	9	16	☉ in ♍	
	10	13	☉ ☽	5 36 N.
	12	8	☉ ☽	
	15	0	☉ ☽	0 13 N.
	15	23	☉ greatest Hel. Lat.	S.
	20	21	☉ ☽	5 30 S.
	20	22	☉ greatest elong.	21 56 E.
	23	21	☉ ☽	8 26 S.
	26	7	☉ ☽	
	26	18	☉ ☽	3 51 S.
	30	6	☉ Stationary.	
	30	23	☉ ☽	
Dec.	4	1	☉ greatest elong.	46 47 W.
	5	0	☉ in ♍	
	9	13	☉ in Perihelion.	
	9	20	☉ ☽	8 2 N.
	9	23	☉ Inf. ☽	
	12	16	☉ ☽	5 6 N.
	12	20	☉ Stationary.	
	12	23	☉ in Perihelion.	
	14	14	☉ Stationary.	
	16	10	☉ Stationary.	
	18	11	☉ ☽	5 49 S.
	19	21	☉ greatest Hel. Lat.	N.
	21	3	☉ ☽	8 28 S.
	21	16	☉ enters ♋, Winter com.	
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MACDONALD & CO., Manufacturers of Brass Hinges, Plain and Finished.—See adv. inside cover.

MACDONALD & CO.

MACDONALD & CO., Manufacturers of Brass Binnacles—See ins. cover.

SUN'S SEMI-DIAMETER.

Mean Noon, Greenwich.

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

Day	Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.											
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MACDONALD & CO., Manufacturers of Hand and Power Pumps.

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LIGHT HOUSES

OF NOVA SCOTIA, NEW BRUNSWICK, &c.

On December 31st, 1877. 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.]

GEORGE'S ISLAND, west side of Island, Halifax Harbor, lat 44 38 30 N, lon 63 33 20 W, two fixed white catoptric lights, vertical, 20 feet apart, 50 and 30 feet high, drab square building, 21 feet high. Lights show seaward on the S, and into harbor on N side; on W side the upper light only can be seen. Vessels going into Halifax Harbor, passing Meagher's Beach, will 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 44 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 of water, N E 1/2 E, 1 7-8 mile from Chebucto Head, sounds a ten inch whistle. From the Buoy Chebucto Head bears S W 1/2 W, magnetic, 1 7-8 mile. Sandwich Point N by W, 4 miles. Passing to the westward of the Buoy at the distance of half a cable and steering a N 1/2 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. It is proposed to moor another of these buoys to the south-eastward of the present one, about 6 miles distant, so that ships making the outer buoy can steer for the present one and so shape their course up the Harbor.

SAMBRO, middle of Island, lat 44 26 10 N, lon 63 33 30 W, fixed white catoptric light, visible 20 or 21 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. Guns formerly in use, discontinued. A Spar Buoy has been placed off the S W Breaker, Sambro, and one on the Pollock, and another on the Whippy Shoal, near Sambro.

BETTY'S ISLAND, on Brig Point, near Prospect, lat 44 26 22 N, lon 63 45 54 W, revolving red catoptric light, greatest brilliancy every 2 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 catoptric light, 65 feet high, building white, square, 26 feet high. Lighted 1868. Lantern on dwelling.

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

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 dioptric light,

MACDONALD & CO., Manufacturers of Manrope Stanchions.—Ins. cover.

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

MACDONALD & CO., Manufacturers and Fitters of Hot Water Heating Apparatus.—See adv. inside cover.

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, building hidden by trees.

HONSON'S NOSE, Mahone Bay, lat 44 25 N, lon 64 13 46 W, red fixed catoptric 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 45 N, lon 64 10 W, 2 white catoptric lights, vertical, 45 feet apart, upper intermittent, revolving every minute, and visible 14 miles, 100 feet high, lower fixed, visible 6 miles, and 65 feet high, building red, octagonal base, height 53 feet. Lighted 1832. Pilots resort here, and vessels may take refuge in case of necessity. Upper bright 45 seconds, dark 15 seconds.

BATTERY POINT, Lunenburg, lat 44 21 45 N, lon 64 17 30 W, fixed white catoptric 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 catoptric 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 catoptric light, visible 8 miles, 48 feet high, building white, square, wood, height 35 feet. Lighted 1876.

MOSHER'S ISLAND, on island, west side of entrance to LaHave River, lat 44 14 15 N, lon 64 18 50 W, fixed red catoptric 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 64 32 15 W, fixed white catoptric 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 off 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 30 W, white catoptric light, revolving every two minutes, light 30 seconds, dark 90 seconds, visible 16 miles, 65 feet high, building octagonal, horizontal stripes, red and white, eight in number, height 50 feet. Lighted 1812.

BROOKLYN PIER, on end of Breakwater, Liverpool, lat 44 2 45 N, lon 64 41 15 W, fixed light, white seaward, green towards harbor, visible 3 miles. A lantern exhibited from end of pier.

FORT POINT, Liverpool Bay, south entrance, lat 44 2 30 N, lon 64 42 20 W, fixed red catoptric 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 catoptric light, visible 11 miles, 47 feet high, square wooden building, height 20 feet. For guiding vessels into harbor. Lighted 1873.

LITTLE HOBE, nearly on centre of Island, lat 43 48 30 N, lon 64 47 15 W, red catoptric light, revolving every minute, visible 12 miles, 40 feet high, square white building, height 26 feet. Lighted 1865. Centre of keeper's dwelling. Visible around horizon.

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

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Woodberry Cotton Ducks for sale by PICKFORD & BLACK.

1879]

NAUTICAL ALMANAC.

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- SHINGLE POINT**, east side of Port Herbert Harbor, lat 43 48 40 N, lon 64 55 30 W, fixed red catoptric 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, 66 feet high, white square wooden building, height 29 feet. Lighted 1872.
- RAGGED ISLAND**, Gull Rock, lat 43 39 15 N, lon 65 5 50 W, fixed white catoptric light, visible 10 miles, 56 feet high, white square building, height 31 feet. Lighted 1853.
- SAND POINT**, at east side of entrance to Shelburne harbor, lat 43 41 15 N, lon 65 19 W, fixed red catoptric light, visible 11 miles, 67 feet high, white square wooden building, height 20 feet. [Burnt down.]
- SHELburne HARBOUR**.—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 Spit, in 4 fathoms, and a black spar Buoy on East end of Adamant Shoal.
- BULL ROCK**, a Spar Buoy, painted black, has been placed in 10 fathoms water S S W ¼ W, about 150 yards from the Bull Rock, off Western Head, Shelburne County.
- CAPE ROSEWAY**, near south-east Point of MacNutt's Island, Shelburne harbor, lat 43 37 15 N, lon 65 15 45 W, 2 white catoptric lights, vertical, 21 yards apart, upper light visible 18 miles, and 120 feet high, lower 65 feet 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.
- NEGRO ISLAND**, on north side, lat 43 30 54 N, lon 65 20 58 W, red and white catoptric 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 catoptric light, visible 10 miles, 49 feet high, white square building, with black ball seaward, height 35 feet. Lighted 1850. A spar Buoy to the South of Bantan.
- BARRINGTON E. BAY LIGHTSHIP**, lat 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. Moored in 6 fathoms at low water. Wesses' Ledge bearing S W by W ¼ W, distant 3-8 mile, Baccaro light bearing S S E ¼ E, distant 6 ⅜ miles, and Bantan Rocks, bearing S by E 7-8 E, distant 6½ 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 catoptric revolving light, bright 15 seconds, dark 25 seconds, visible 12 miles, 53 feet high, white octagonal building, 50 feet high. Lighted 1861. A steam fog whistle on southern point of Cape, elevated about 40 feet above high water, sounds in thick weather, fogs and snow storms a blast of ten seconds' duration each minute, with an interval of 50 seconds between each blast.
- BRAZIL ROCK**, red and black buoy, horizontal stripes, moored in 15 fathoms water, S S E half a mile from rocks.
- STODDART ISLAND**, on N W point of Island, lat 43 28 30 N, lon 65 43 10 W, fixed red catoptric light, visible 9 miles, 22 feet high, white small square tower. To guide vessels into the anchorage of Stoddart Harbor and Shag Harbor Sound.
- BON PORTAGE ISLAND**, on S Point, lat 43 27 16 N, lon 55 44 39 W, red catoptric light, revolving every minute, visible 12 miles, 46 feet high, white square wooden building, height 28 feet. Lighted 1874. For guiding vessels into Barrington West Bay and Shag Harbor.

MACDONALD & CO., Manufacturers of Ships' Wheel and Forward Belts.—See adv. inside cover.

MACDONALD & CO., Manufacturers of Brass Skylight Guards.

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

PUBNICO 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 catoptric 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 of Whitehead Island, Yarmouth County, lat 43 39 40 N, lon 65 52 4 W, fixed red catoptric 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 catoptric 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.

SEAL ISLAND, south point, 1-8 mile inland, lat 43 23 34 N, lon 66 0 52 W, fixed white light, dioptric, 2nd order, visible 18 miles, 98 feet high, white octagonal building, height 60 feet. Lighted 1830. The Blonde Rock lies S by W 3 1-3 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, sounds in each minute a blast of 5 seconds' duration, and after an interval of 5 seconds gives another blast of 5 seconds, with an interval of 45 seconds.

A Spar Buoy, painted black, has been placed in 12½ fathoms water, south about half a mile from the Blonde Rock, off Seal Island.

YARMOUTH OR CAPE FOURCHU, east cape, south point, lat 43 47 28 N, lon 66 9 21 W, white catoptric light, revolving every minute and 45 seconds—light 1½ minute, dark ¼ minute, visible 18 miles, 117 feet high, octagonal tower, vertical stripes, red and white, height 59 feet. Lighted 1839. Fog whistle on west side, sounds in fogs and snow storms 10 seconds in every minute.

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 catoptric light, visible 10 miles, 27 feet high, the lantern on a dwelling house, built on a wooden pier. Lighted 1874. A red beacon light, for the purpose of guiding vessels into the harbor. Visible from the southward between the bearings of N E by N and N ½ E. It can also be seen on Stanwood's Beach, when bearing from S ½ E to S E ½ E, but cannot be run for on these bearings, the only entrance to the 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, east side of Bay, lat 44 5 20 N, lon 66 12 40 W, red and white catoptric light, revolving alternately every 30 seconds, visible 17 miles, 103 feet high, octagonal white building, height 43 feet. Lighted 1868.

METEGHAN RIVER, at entrance end of breakwater, lat 44 13 43 N, lon 66 8 12 W, fixed green catoptric light, visible 6 miles, 23 feet high, building vertical, red stripes on seaward side, 21 feet 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 catoptric light, visible 10 miles, 36 feet high, square white wooden building, height 20 feet. Lighted 1874. For guiding against dangers in vicinity of Church Point.

Brass Step Plates Manufactured by MACDONALD & CO.—See ins. cover.

SISSIBOO, south side white catoptric pyramidal, height

WESTPORT, Peter's 66 20 20 W, 2 ft 10 miles, each 4 1850. Visible 1 W, and from th ½ W. Bell Buoy

BRIER ISLAND, north catoptric light, height 55 feet.

Island, south side snow storms, as 4 seconds, interv seconds—making Ledge, off Briere and destroyed d moored in its place

BOAR'S HEAD, 17 yard white catoptric light, 70 feet high, white Petit Passage.

POINT PRIM, south point 65 47 20 W, fixed tower, vertical red whistle on Prim Island 8 seconds in each blast.

MARSHALL COVE OR L 2 fixed white catoptric visible 10 miles, vertical on top of dwelling round N to E N E

MARGARETVILLE, on 2 fixed red catoptric building, horizontal Visible from W S W

BLACK ROCK, south side light, visible 12 miles Lighted 1848. Light A fog whistle on the channel from storms, twice in each intervals of 24 seconds calm weather, or in weather, or against atmosphere.

HORTON, on bluff, west white catoptric light height 20 feet. Light

WALTON HARBOR, Basin fixed red catoptric building, height 20 harbor.

BURNTCOAT, Basin of

Street, Halifax.

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For guiding against

CO.—See ins. cover.

PICKFORD & BLACK, Iron Spikes, Cut Nails, 51 Upper Water Street.

1879]

NAUTICAL ALMANAC.

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SISSIBOO, south side of entrance to river, lat 44 26 30 N, lon 66 1 15 W, fixed white catoptric light, visible 8 miles, 36 feet high, white wooden building, pyramidal, 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 catoptric lights, horizontal, 24 feet apart, visible 10 miles, each 40 feet high, square white building, 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 N W 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 catoptric 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, as follows:—Blast of 4 seconds, interval of 4 seconds, blast of 4 seconds, interval of four seconds, blast of four seconds, interval of forty seconds—making 60 seconds. The Bell Buoy placed on the North-West Ledge, off Brier Island, drifted from its moorings and was washed ashore and destroyed during a gale in December last. A spar bell buoy was moored in its place in January, and has remained in position ever since.

BOAR'S HEAD, 17 yards from edge of cliff, lat 44 24 16 N, lon 66 13 W, red and white catoptric light, revolving alternately 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 catoptric 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.

MARSHALL COVE OR PORT WILLIAMS, south shore, lat 44 56 52 N, lon 65 16 W, 2 fixed white catoptric lights, vertical, 20 feet apart, upper 60 feet high, 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 point, south shore, lat 45 2 57 N, lon 65 4 W, 2 fixed red catoptric lights, 30 and 27 feet high, 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.

BLACK ROCK, south shore, lat 45 10 10 N, lon 64 46 W, fixed white catoptric light, visible 12 miles, 45 feet high, square white building, height 35 feet. Lighted 1848. Light on top of dwelling, visible from all points of approach. A fog whistle on the extreme point of Cape d'Or, on the opposite side of the channel from Black Rock, sounds during thick weather, fogs and snow storms, twice in each minute, each blast being of 6 seconds' duration, with intervals of 24 seconds between. The whistle will probably be heard in calm weather, or with the wind, at a distance of 20 miles, and in stormy weather, or against the wind, from 5 to 8 miles, according to the state of the atmosphere.

HORTON, on bluff, west side of Avon River, lat 45 6 15 N, lon 64 13 30 W, fixed white catoptric 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 0 45 W, fixed red catoptric 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

MACDONALD & CO., Brass Founders.—See adv. inside cover.

MACDONALD & CO., Manufacturers of Patent Ships' Water Closets.—See adv. inside cover.

MACDONALD & CO., Importers of Steam and Vacuum Engines.—See adv. inside cover.

- 45 18 40 N, lon 63 48 30 W, fixed white catoptric light, visible 13 miles, 75 feet high, square white building, height 35 feet. On dwelling; visible from all points of approach. Lighted 1859.
- CAPE D'OR. A steam whistle has been erected at Cape d'Or, Cumberland County. PARRSBORO', or Partridge Island, west side of river, lat 45 23 N, lon 64 19 W, fixed white catoptric light, visible 9 miles, 37 feet high, white square building, height 32 feet. Lighted 1852. Lantern on dwelling.
- SPENCER POINT, on north shore, Cobequid Bay, lat 45 23 30 N, lon 63 37 W, fixed white catoptric light, visible 6 miles, 35 feet high, window in building 20 feet high. Lighted 1863.
- APPLE RIVER, on Cape Capston or Hetty Point, north entrance, lat 45 28 20 N, lon 64 51 30 W, fixed white catoptric 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 catoptric 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 clears the Thrum Cap Shoal. A fog bell here.
- DEVIL'S ISLAND, on South point of Island, at the Eastern entrance to Halifax harbor, two fixed white catoptric lights, horizontally, E $\frac{1}{4}$ N, and W $\frac{1}{4}$ S, 175 yards apart, visible 13 miles, the light E 59 feet high, W light 52 feet, both buildings white, octagonal, wood, height E 53 feet, lighted 1877, W 45 feet, lighted 1852, lat 44 34 50 N, lon 63 27 15 W. The eastern light open to the southward of western, clears to southward of the Thrum Cap Shoal. Pilots are stationed here.
- EGG ISLAND, centre of island, lat 44 39 50 N, lon 62 51 32 W, catoptric light, alternate red and white, revolving 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 HARBOUR, on west point of Harbour Island, lat 44 47 40 N, lon 62 38 50 W, fixed red light, catoptric, visible 9 miles, 45 feet high, tower white, square, wood, with dwelling attached, height 37 feet. Lighted 1877.
- BEAVER ISLAND, S E part of East Beaver, or William Island, lat 44 48 10 N, lon 62 20 30 W, white catoptric light, revolving every 2 minutes, visible 12 miles, 70 feet high, white building with 2 black balls to seaward, S S W, 35 feet high. Lighted 1846. On dwelling.
- LISCOMB, on island, lat 44 59 20 N, lon 61 57 50 W, red and white catoptric light, alternating every two minutes, visible 15 miles, 64 feet high, white square wooden building, height 28 feet. Lighted 1872.
- HOLLY POINT, West side of entrance to Isaac's Harbour, lat 45 10 15 N, lon 61 39 W, 2 fixed white catoptric lights, vertically, 20 feet apart, visible 9 miles, 80 feet high, square white building 20 feet high. Lighted 1874.
- COUNTRY HARBOUR, on Green Island, Guysboro' County, lat 45 6 15 N, lon 61 32 30 W, fixed white catoptric light, visible 14 to 16 miles, 51 feet high, white square wooden building, height 28 feet. Lighted 1873. 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 catoptric 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 painted black. Lighted 1876. Height of lantern 51 feet, tower 36 feet.

MACDONALD & CO., Steam Fitters.—See adv. inside cover.

- WHITEHEAD ISLAND, lon 61 8 15 W, 55 feet high, square white building, height 35 feet. On dwelling; visible from all points of approach. Lighted 1859.
- CANSO CAPE, N E part of Cape d'Or, fixed white catoptric light, visible 15, lower building, horizontal, height 32 feet. A steam fog whistle on weather sound. Grimes Rock, Cobequid Bay.
- SABLE ISLAND, W side of entrance to Halifax harbor, lat 45 28 20 N, lon 64 51 30 W, fixed white catoptric 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.
- SABLE ISLAND, 1 $\frac{1}{2}$ miles, 55 feet high, square white building, height 35 feet. On dwelling; visible from all points of approach. Lighted 1859.
- CANSO HARBOR, on north shore, Cobequid Bay, lat 45 23 30 N, lon 63 37 W, fixed white catoptric light, visible 6 miles, 35 feet high, window in building 20 feet high. Lighted 1863.
- GUYSBORO' HARBOR, on east side of entrance to Halifax harbor, lat 45 22 50 N, lon 63 27 15 W, fixed white catoptric 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.
- SAND POINT, or Eddystone Point, lat 45 22 50 N, lon 63 27 15 W, fixed white catoptric 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.
- POINT TUFFER, Ship Point, lat 45 22 50 N, lon 63 27 15 W, fixed red catoptric light, visible 9 miles, 45 feet high, tower white, square, wood, with dwelling attached, height 37 feet. Lighted 1877.
- CREIGHTON'S HEAD, on north shore, Cobequid Bay, lat 45 23 30 N, lon 63 37 W, fixed white catoptric light, visible 6 miles, 35 feet high, window in building 20 feet high. Lighted 1863.
- JERSEYMAN ISLAND, on east side of entrance to Halifax harbor, lat 45 22 50 N, lon 63 27 15 W, fixed white catoptric 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.
- MARACHE POINT, on east side of entrance to Halifax harbor, lat 45 22 50 N, lon 63 27 15 W, fixed white catoptric 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.

MACDONALD & CO.

Duck, No. 1 to 2.

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[1879

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v. inside cover.

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

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NAUTICAL ALMANAC.

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WHITEHEAD ISLAND, S W extremity of island, Guysboro' County, lat 45 12 N, lon 61 8 15 W, white catoptric light, revolving every 20 seconds, visible 11 miles, 55 feet high, pyramidal wooden building, 35 feet high, octagonal lantern. Lighted 1854. Light not totally obscured during the eclipses; 10 seconds duration of flash, and 10 seconds eclipse.

CANSO CAPE, N part of Cranberry Island, lat 45 19 50 N, lon 60 55 30 W, 2 fixed white catoptric lights in one tower, vertically 36 feet apart, upper visible 15, lower 9 miles, 75 and 40 feet respectively, high, octagonal wooden building, horizontally striped red and white, height 60 feet. Lighted 1815. A steam fog whistle, about 100 yards south of the light house, in thick weather sounds a blast of 8 seconds in each minute. Bell Buoy, at the Grimes Rock, off Cape Canso.

SABLE ISLAND, W end, lat 43 57 N, lon 60 8 W, white catoptric revolving light, revolves in 3 minutes, showing three flashes at intervals of half a minute, then a cessation of light during 1 1/2 minute in each revolution, visible 18 miles, 123 feet high, white octagonal wooden building, height 98 ft. Lighted 1873. Steam fog whistle discontinued from July 1st, 1878.

SABLE ISLAND, 1 1/2 mile from East end, lat 43 58 30 N, lon 59 46 W, fixed white dioptric light, 2nd order, visible 18 miles, 128 feet high, octagonal building, white and brown alternately, height 86 feet. Lighted 1873.

CANSO HARBOR, on Hart or Cutler Island, lat 45 21 N, lon 60 58 30 W, fixed red catoptric light, visible 12 miles, 42 feet high, white square wooden building, height 28 feet. Lighted 1872.

GUYSBORO' HARBOR, W side of entrance, near Peart Point, Chedabucto Bay, lat 45 22 50 N, lon 61 29 10 W, fixed white catoptric light, visible 8 miles, 30 feet high, white square wooden building, height 20 feet. Lighted 1864.

SAND POINT, or Eddy Point, S entrance, lat 45 31 30 N, lon 61 14 40 W, two fixed white catoptric lights, horizontal, 24 feet apart, visible 8 miles, each 25 feet high, white square wooden building, with a black diamond. Lighted 1851. Lights in windows at each end of building.

POINT TUPPER, Ship Harbor or Port Hawksbury, lat 45 36 40 N., lon 61 22 W, fixed red catoptric light, visible 7 miles, 44 feet high, white square building, height 24 feet. Lighted 1870. 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, longitude 61 6 W, white catoptric light, revolving every 40 seconds, visible 10 miles, 29 feet high, square white wooden building, height 20 feet. Lighted 1874. For guiding vessels into Little or West Arichat. Three buoys placed to mark the dangers of the harbor.

JERSEYMAN ISLAND, Arichat Harbor, lat 45 30 20 N, lon 61 8 W, fixed red catoptric light, visible 11 miles, 39 feet high, white square wooden building, height 28 feet. Lighted 1872. This light is for the purpose of guiding vessels through Crid Passage, in and out of Arichat Harbor. There is also a Range Beacon on the S E Point of Jerseyman's Island, that marks Hautfond Shoal off the entrance to Arichat Harbor. When the beacon and spire of the Roman Catholic Chapel in Arichat are in range, it leads over the west part of the shoal in 10 feet of water. Vessels bound into 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 the 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 the 1st May in each year and taken up about the 10th December.

ARICHAT, Marache Point, south entrance to Madame Island, lat 45 29 N, lon 61 1 50 W, fixed white catoptric light, visible 8 miles, 34 feet high, square white wooden building, height 25 feet. Lighted 1851.

MACDONALD & CO., Manufacturers of Ships' Deck Pumps.—See adv. inside cover.

MACDONALD & CO., Copper Smiths.—See adv. inside cover.

MACDONALD & CO., Manufacturers of Brass Binnacle Guards.—See adv. inside cover.

- PETITDEGRAT, on Big Arrow Rock, south-east of Madame Island, lat 44 29 25 N, lon 60 57 50 W, fixed red catoptric light, visible 10 miles, 38 feet high, white square tower, with dwelling attached, height 31 feet. Lighted 1877.
- GREEN ISLAND, summit of Island, lat 45 28 50 N, lon 60 53 40 W, red and white catoptric light, revolving alternately every 45 seconds, visible 14 miles, 70 feet high, white square wooden building, height 31 feet. Lighted 1865. 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 catoptric light, visible 14 miles, 92 feet high, white square wooden building, with dwelling attached, height 28 feet. Lighted 1874. For guiding vessels into St Peter's Bay.
- QUETIQUE ISLAND, on south point, lat 45 36 40 N, lon 60 57 15 W, fixed red catoptric light, visible 9 miles, 78 feet high, white square wooden building, with dwelling attached, height 28 feet. Lighted 1874. For guiding vessels through Lennox Passage.
- GUION ISLAND, about 230 yards from west end of Island, lat 45 46 10 N, lon 60 6 20 W, red revolving light, catoptric, attains its greatest brilliancy every 30 seconds, visible 12 miles, 74 feet high, tower white, square, with dwelling attached, height 54 feet. Lighted 1877.
- LOUISBURG, north side of entrance to harbor, 120 yards inshore of point, lat 45 54 30 N, lon 59 57 15 W, fixed white catoptric light, visible 16 miles, 85 feet high, building white, with a black vertical stripe on dwelling, height 35 feet. Lighted 1842.
- MAINADIEU, on south side of west point of Scatterie Island, lat 46 0 30 N, lon 59 47 30 W, fixed red catoptric light, 90 feet high, white square wooden building, height 40 feet. Lighted 1871.
- SCATTERIE, north-east point on Trap Rock, lat 46 2 15 N, lon 59 40 15 W, white catoptric revolving light, visible a minute, eclipsed half a minute, visible 15 miles, 90 feet high, white octagonal building, height 70 feet. Lighted 1839. The light should never be brought to bear to eastward of N N E, or to southward of S S W, nor approached nearer than 1½ mile. A boat is here to render assistance.
- FLINT ISLAND, on island, lat 46 11 N, lon 59 46 50 W, white catoptric light, revolving every 15 seconds, visible 12 miles, 65 feet high, white octagonal building, height 43 feet. Lighted 1856. Visible around horizon.
- LINGAN HEAD, north side of entrance to Bridgeport harbor, lat 46 14 10 N, lon 62 2 40 W, fixed red catoptric light, visible 10 miles, 50 ft high, white square wooden building, height 20 feet. Lighted 1874. For guiding vessels into Bridgeport harbor.
- LOW POINT, Flat Point, east side of Spanish Bay, lat 46 16 30 N, lon 60 7 30 W, fixed white catoptric light, visible 14 miles, 70 feet high, building octagonal, red and white vertical stripes, height 51 feet. Lighted 1832.
- SYDNEY BAR, on west end of South Bar, lat 46 12 40 N, lon 60 12 40 W, fixed red catoptric light, visible 10 miles, 30 feet high, white square wooden building, height 20 feet. Lighted 1872.
- 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 catoptric light, visible 11 miles, 91 feet high, square white wooden building, height 20 feet. Lighted 1874. 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 catoptric light, 45 feet high, white square building, height 23 feet. Lighted 1868.
- CAPE GEORGE, S side of Bras d'Or Lake, W side of entrance to St Peter's Inlet, lat 45 44 28 N lon, 60 48 20 W, fixed white catoptric light, visible 12 miles, 50 feet high, white square wooden building, height 20 ft. Lighted 1875. To guide vessels through St. Peter's Inlet.

MACDONALD & CO., Makers of Patent Roller Bushings.—See adv. cover.

- GRAND NARROWS, N lon 60 48 W, white square w vessels through Lakes.
- KIDSTON ISLAND, d'Or Lake, lat miles, 31 feet h
- MCKENZIE'S POIN Bevis, lat 46 7 miles, 95 feet h ing vessels thro
- BIRD ISLAND, Cibon W, red catoptric white octagonal
- ST. ANN'S HARBOR, white catoptric 30 feet. Lighte dark night.
- INGONISH, on island, order, visible 20 Lighted 1871.
- CAPE NORTH, on Mo 60 23 30 W, red 15 miles, 74 fe Lighted 1875. C
- CHETICAMP, near S e light, revolving e wooden building,
- ST. PAUL'S ISLAND, W, fixed white li white octagonal b N by E ½ E and E
- ST. PAUL'S ISLAND, S dioptric light, 3rd high, white octag when bearing from island, S W of At lishment, sounds o storms.
- MARGAREE, summit of W, fixed white cat building. Lighted the light may beco
- PORT HOOD, S E side catoptric light, red Square white build
- IRON CAN BUOYS have bor, C. B., Portsmo Judique Shoal. Ju other three are pair 1st of May in each
- NORTH CANO, north en 61 29 10 W, fixed w square wooden bul anchorage under the

MACDONALD & CO

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—See adv. cover.

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NAUTICAL ALMANAC.

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- GRAND NARROWS, on Uniacke Point, N side of channel, Barra Straits, lat 45 58 N lon 60 48 W, fixed white catoptric light, visible 10 miles, 29 feet high, white square wooden building, height 20 feet. Lighted 1874. For guiding vessels through Barra Straits, and navigating the Little and Great Bras d'Or Lakes.
- KIDSTON ISLAND, on N E Point, at entrance to Baddeck harbor, N side of Bras d'Or Lake, lat 45 5 58 N, lon 60 44 20 W, fixed red catoptric light, visible 7 miles, 31 feet high, square wooden building, white, lighted 1875.
- MCKENZIE'S POINT, N side of Bras d'Or Lake, about 2 miles S W of Port Bevis, lat 46 7 15 N, lon 60 39 W, fixed white catoptric light, visible 11 miles, 95 feet high, square white wooden tower. Lighted 1874. For guiding vessels through Bras d'Or Lake.
- BIRD ISLAND, Ciboux Island, 1-3 mile from N end, lat 46 23 10 N, lon 60 22 30 W, red catoptric light, revolving every minute, visible 14 miles, 77 feet high, white octagonal building, height 33 feet. Lighted 1863.
- ST. ANN'S HARBOR, on N point of Beach, lat 46 17 30 N, lon 60 32 15 W, fixed white catoptric light, visible 8 miles, 24 feet high, white building, height 30 feet. Lighted 1871. The light exhibited to find entrance through on a dark night.
- INGONISH, on island, lat 46 41 20 N, lon 60 20 W, fixed white light, dioptric, 5th order, visible 20 miles, 237 feet high, white square building, height 40 feet. Lighted 1871.
- CAPE NORTH, on Money Point, 1 mile S E from Cape North, lat 47 2 10 N, lon 60 23 30 W, red and white catoptric light, revolving every 45 seconds, visible 15 miles, 74 feet high, square white wooden building, height 26 feet. Lighted 1875. Coast light; makes a complete revolution every 1½ minute.
- CHEVICAMP, near S end of Island, lat 46 36 30 N, lon 61 3 10 W, white catoptric light, revolving every 45 seconds, visible 20 miles, 149 feet high, white square wooden building, height 24 feet. Lighted 1875.
- 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, dioptric, third order, visible 20 miles, 140 feet high, white octagonal building, height 40 feet. Lighted 1839. Obscured between N by E † E and E N E.
- ST. PAUL'S ISLAND, S W point of island, lat 47 11 20 N, lon 60 9 40 W, white dioptric light, 3rd order, revolving every minute, visible 20 miles, 140 feet high, white octagonal building, 40 feet high. Lighted 1831. Obscured when bearing from S S E to W † 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 catoptric light, visible 21 miles, 298 feet high, square white building. Lighted 1854. To vessels in dangerous proximity to the island the light may become obscured by the abrupt cliffs on the sides of the island.
- PORT HOOD, S E side of entrance to harbor, lat 46 N, lon 61 31 40 W, fixed catoptric light, red N, white S, visible 10 miles, 55 feet high. Lighted 1854. Square white building.
- IRON CAN BUOYS have been placed at the following Shoals:—Port Hood Harbor, C. B., Portsmouth Point, Spithead, Smith Spit, 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 CANSE, north entrance, west side, 120 yards inshore, lat 45 41 40 N, lon 61 29 10 W, fixed white catoptric light, visible 18 miles, 110 feet high, white square wooden building, height 35 feet. Lighted 1842. There is good anchorage under the light when the wind is off shore. Lantern on dwelling.

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

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

MACDONALD & CO., Importers of Ships' Well Pumps.—See adv. inside cover.

POMQUET ISLAND, north-east end of island in St George's Bay, lat 45 39 40 N, lon 61 44 30 W, fixed red catoptric light, visible 9 miles, 50 feet high, square white building, height 23 ft. Lighted 1868. Obscured on easterly bearings.

CAPE ST GEORGE, north side of Cape, lat 45 52 30 N, lon 61 54 40 W, white catoptric light, revolving every half minute, visible 25 miles, 350 feet high, white square building, height 39 feet. Lighted 1861.

PICTOU ISLAND, south-east point, lat 45 49 10 N, lon 62 30 30 W, fixed white catoptric light, visible 12 miles, 52 feet high, square white building. Lighted 1853.

PICTOU HARBOR, south point of entrance, lat 45 41 30 N, lon 62 39 30 W, 2 fixed catoptric 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 1834. 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.

CARIBOU ISLAND, north-east part of Island, lat 45 46 N, lon 62 42 20 W, white catoptric light, revolving every minute, visible 10 miles, 35 feet high, white square building, height 26 feet. Lighted 1868.

AMET ISLAND, centre of island, Northumberland Straits, lat 45 50 15 N, lon 63 10 10 W, fixed white catoptric light, visible 10 miles, 44 feet high, white square wooden building, height 26 feet. Lighted 1868. Visible around horizon.

MULLIN POINT, north side of entrance to Wallace Harbor, Cumberland County, lat 45 49 45 N, lon 63 25 15 W, fixed white catoptric light, visible 11 miles, 39 feet high, white square wooden building, height 25 feet. Lighted 1873. For guiding vessels in and out of harbor. Cask buoys are placed to mark the dangers on entering the harbor, black to be left on port and red on starboard when entering.

PUGWASIT, in harbor, lat 45 52 30 N, lon 63 40 20 W, fixed catoptric light, red seaward, white towards harbor, visible 8 miles, 48 feet high, white square building, height 44 feet. Lighted 1871. Black buoys to be left on port hand, and red on starboard when entering the harbor.

NEW BRUNSWICK.

BAY OF FUNDY.

Hillsboro' Wharf, Petitcodiac River, lat 45 55 15 N, lon 64 37 45 W, fixed white catoptric light, visible 5 miles, 14 feet high, structure open frame, height 22 feet. Lighted 1875. To guide vessels going up the river and to the coal and plaster wharves.

Grindstone, W part of island, lat 45 43 13 N, lon 64 37 25 W, fixed white catoptric light, visible 12 miles, 60 feet high, octagonal white tower. Lighted 1854. Visible from N E by E, round by N to E by S, or 315°. Cape Enrage light house, S W by W ½ W, about 10 miles.

Cape Enrage, pitch of Cape, lat 45 35 34 N, lon 64 46 55 W, fixed white dioptric light, 4th order, visible 15 miles, 120 feet high, square white building, height 23 feet. Lighted 1840. Visible between the bearings of N W round by S to N E. A steam fog whistle, 150 feet N E from the light house, sounds during thick weather 4 seconds in each minute. Will probably be heard in calm weather 10 miles, and in stormy weather from 3 to 5 miles.

Quaco, small rock off head, lat 45 19 20 N, lon 65 31 55 W, white catoptric light, revolving every 20 seconds, visible 15 miles, 58 feet high, octagonal building, horizontally striped red and white, height 46 feet. Lighted 1835. A fog bell in a framed tower on the light house block strikes every 12 seconds during thick and foggy weather and snow storms. Under favorable

circumstances or against the
Cape Spencer, pito-
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Port St Andrews, N p
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 tric light, visible

[1879

1879]

NAUTICAL ALMANAC

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MACDONALD & CO., Manufacturers of Patent Ships' Water Closes. — See adv. inside cover.

circumstances it should be heard two or three miles, and in stormy weather, or against the wind, about a mile.

Cape Spencer, pitch of Cape, lat 45 12 30 N, lon 65 54 W, red and white catoptric light, alternating every 45 seconds, visible 20 miles, 207 ft. high, white square building, with tower, height 35 ft. Lighted 1873. Visible between the bearings from E S E round by S to W N W, Partridge Island light bearing by compass N W by W 1/2 W northerly, distant 6 1/2 miles.

Partridge Island, St John harbor, lat 45 14 20 N, lon 66 3 20 W, fixed white catoptric light, visible 20 miles, 119 ft high, building red and white in vertical stripes, height 40 ft. Lighted 1791. In foggy weather a steam whistle sounds for 10 seconds every minute. A bell buoy near E side of Partridge Island Reef.

St. John Harbour, lat 45 15 10 N, lon 66 3 40 W, white dioptric light, 4th order, visible 10 miles, 35 ft high, building vertical red and white stripes, height 15 ft. Lighted 1828.

Lepreau, on Point, lat 45 3 40 N, lon 66 27 39 W, 2 fixed white catoptric lights, vertical, 27 ft apart, visible 15 miles, upper light 81, lower 53 ft high, octagonal building, striped horizontally red and white, height 31 ft. Lighted 1831. Visible between the bearings of W N W around by S to E by N. Fog whistle during fogs and snow storms sounds twice each minute, first giving a blast of 5 seconds' duration, with an interval of 5 seconds, then a blast of 5 seconds' duration, with an interval of 45 seconds to complete the minute.

Spruce Point, St Croix River, Charlotte County, lat 45 10 N, lon 67 11 W, fixed white catoptric light, 32 ft high, white square building, height 28 ft. Lighted 1876. The course from Spruce Point to ballast ground is E by S 1/2 S, distance 2 miles. From Spruce Point to Mark Point W N W, distance 2 miles. A vessel after leaving Doucet Island, to clear the reef, should steer N until the Spruce Point light bears N W by W, and thence take a W N W course.

Mark Point, St Croix River, Charlotte County, lat 45 10 10 N, lon 67 12 30 W, fixed white catoptric light, 32 ft high, square white building, height 28 feet. Lighted 1876.

Midjie Bluff, Passamaquoddy Bay, Charlotte County, lat 45 6 53 N, lon 66 54 30 W, fixed white catoptric light, visible 15 miles, 130 ft high, building white, square, wood, height 29 ft, lantern brown. Lighted 1876. A bar extends E N E from light house, and vessels require to keep off a distance of 260 yards to clear it at low water.

Drew's Head, on W side of Beaver Harbour, Charlotte County, lat 45 3 45 N, lon 66 44 W, fixed white catoptric light, visible 10 miles, 45 ft high, white square wooden building, height 36 feet. Lighted 1875. Seen at all points between eastern and western heads of harbour.

Bliss Island, W end of Island, S side of western entrance to Bliss Harbour, lat 45 1 45 N, lon 66 51 W, fixed red catoptric light, visible 12 miles, 45 ft high, white square wooden building, height 30 ft. Lighted 1871.

Campobello Island, N point of Head Harbor, lat 44 57 40 N, lon 66 54 10 W, fixed white catoptric light, visible 15 miles, 64 feet high, white octagonal tower with red cross, height 34 ft. Lighted 1829. 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.

Port St Andrews, N point of entrance, lat 45 4 10 N, lon 67 2 50 W, fixed white catoptric light, 42 ft high, visible 10 miles, white octagonal building, height 22 ft. Lighted 1833. Visible between the bearings of N W by N, and S E by S.

... On sand reef at E entrance, lat 45 3 45 N, lon 67 0 50 W, fixed white catoptric light, visible 10 miles, 40 ft high, structure white, square, wood, on a

y, lat 45 39 40 N, feet high, square easterly bearings.

54 40 W, white es, 350 feet high,

0 W, fixed white ilding. Lighted

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2 42 20 W, white 5 feet high, white

45 50 15 N, lon 4 feet high, white Visible around

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e placed to mark port and red on

atoptric light, red igh, white square left on port hand,

37 45 W, fixed ure open frame, the river and to

ixed white catop- tower. Lighted or 315°. Cape

fixed white diop- white building, gs of N W round the light house, probably be heard 5 miles.

white catoptric high, octagonal t. Lighted 1835.

strikes every 12 Under favorable

See inside cover.

MACDONALD & CO., Steam Fitters.—See adv. inside cover.

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

framed pier, height 10 ft. Lighted 1875. To guide to all ports in inner bay, and to vessels going up the River St. Croix from Little Passage or West Quoddy. There is only a depth of 4 ft of water on the N W extension of the reef towards main land.

South West Wolf Island, on S E point of the island, lat 44 56 30 N, lon 66 44 10 W, white catoptric light, revolving every 1½ minute, visible 17 to 20 miles, 111 ft high, building white, square, wood, height 35 ft. Lighted 1871. Lantern on dwelling; visible from all points of approach.

Swallow Tail, N E part of Grand Manan, lat 44 45 52 N, lon 64 44 W, fixed white catoptric light, visible 17 miles, 148 feet high, white octagonal wooden building, height 50 ft. Lighted 1860. Visible between the bearings of S W round by S to N W. A steam fog whistle on extreme N W head of Grand Manan, 80 feet above high water, sounds in thick weather, fogs and snow storms, 3 blasts of 4 seconds' duration in each minute, with an interval of 16 seconds between each blast. A spindle beacon, painted red, placed in 1876 on Old Proprietor Ledge, on the S E of Grand Manan Island, in lat 44 33 10 N, lon 66 40 W, has a cage elevated 31 ft above high water mark, and in clear weather should be seen from a distance from 8 or 10 miles.

Machias Seal Island, on island, lat 44 30 7 N, lon 67 6 13 W, 2 fixed white lights, W by N ½ N, and E by S ½ S, 57 yards apart, one light catoptric, the other dioptric of 2nd order, visible 15 miles, E 58 ft, W 54 ft high, buildings white, each 36 feet high. Lighted 1832. A fog whistle sounds in thick weather, fogs and snow storms, 5 seconds in each half minute.

Gannet Rock, on rock, lat 40 0 38 N, lon 66 47 W, fixed and flash white light, dioptric, 4th order, a flash every 4½ seconds, visible 12 miles, 66 ft high, octagonal tower, height 4½ ft, vertical black and white stripes. Lighted 1831. A gun is fired to answer signals during fogs and snow storms. Dangerous rocks extend 4 miles eastward of the light house. Fixed light 45 seconds, eclipse 5½ seconds, flash 4½ seconds, eclipse 5½ seconds—making 60 seconds.

GULF OF ST. LAWRENCE.

Dalhousie, south side of entrance to harbor, lat 48 3 45 N, lon 66 20 50 W, fixed white catoptric light, visible 13 miles, 49 ft high, building white, square, wood, height 33 ft. Lighted 1870. Seen from all points of approach.

Heron Island, Chaleur Bay, lat 48 N, lon 66 8 W, fixed white catoptric light, visible 12 miles, 66 ft high, building white, square, wood, height 20 ft. Lighted 1875. Visible from all points seaward.

Bathurst, on Alston Point, lat 47 39 10 N, lon 65 36 40 W, fixed red and white catoptric lights, 31½ and 27 ft high, visible 10 miles, building white, hexagonal. Lighted 1871. These beacon lights, when in range, guide vessels into the harbor. Inner light is the higher, and shows red; outer light white.

Caraquet, on Island, Bay of Chaleur, lat 47 49 40 N, lon 65 54 W, fixed white catoptric light, visible 14 miles, 52 ft high, white square tower on dwelling, height 48 ft. Lighted 1870.

Goose Lake, W side of Miscou Island, lat 47 55 43 N, lon 64 35 40 W, white catoptric light, revolving every minute, visible 10 miles, 40 ft high, building white, square, wood, height 28 ft. Lighted 1875. Complete revolution every two minutes.

Shippegan, on Island in harbor, lat 47 43 N, lon 64 38 W, fixed white catoptric light, visible 11 miles, 32 ft high, white square wooden building, height 20 ft. Lighted 1872.

Miscou Island, Birch Point, lat 48 1 N, lon 64 29 25 W, fixed red catoptric light, visible 12 miles, 79 ft high, building white, octagonal, wood, height 74 ft. Lighted 1856. A steam fog whistle, placed in the year 1875, and situated 107 yards east from light house, sounds in thick weather, fogs and snow storms twice in each minute, giving a blast of five seconds' duration at a time, with an interval of 25 seconds.

MACDONALD & CO., Manufacturers of Manrope Stanchions.—Ins. cover.

Pokemouche, lat 44 45 N, lon 64 45 W, visible 35 ft high, 37 ft. Lighted 1875.

North Tracadie, on North Tracadie, lon 64 51 35 W, high, structure the other open.

South Tracadie, N lights, visible 8 one, front light 19 ft high, back the lights in ra Lighted 1877.

Tabusintac, Crab Is catoptric lights height 20 ft. I

Neguac, lat 47 17 47 miles, 35 ft high Coast and harb

Portage Island, on catoptric light, ft. Lighted 18

Oak Point, Miramich lights, half a mi towers. Lighte

Sheldrake Island, M lights, quarter c Beacons.

Middle Island, Mirar visible 7 miles, 4

Fox Island, N W poi Island, lat 47 6 5 apart, visible 10 the Swashway C

Miramichi Bay Ligh lat 47 8 N, lon 65 Lighted 1873. A

Escuminac, on Point, 3rd order, visible Lighted 1841. A

sounds in thick w with an interval c against the wind,

Grant's Beach, Miram catoptric lights, b and 140 ft high.

Preston Beach, Miram catoptric lights, v

Richibucto, on headlan light, 4th order, v ft. Lighted 1864.

Cassie's Point, on Poin revolving every ha building, height 27

MACDONALD & CO.,

[1879]

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Little Passage or
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1875, and situated
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nds' duration at a

ions.—Ins. cover.

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

- Pokemouche, lat 47 40 5 N, lon 64 45 5 W, fixed green catoptric light, visible 8 miles, 35 ft high, tower white, square, wood, with dwelling attached, height 37 ft. Lighted 1876.
- North Tracadie, one on N side of gully, the other outside of bar, lat 47 33 14 N, lon 64 51 35 W, 2 fixed white catoptric lights, visible 12 miles, 39 and 30 ft high, structures each 20 ft high, one white, square, wood, lighted 1872; the other open frame, lighted 1875. Coast and harbor range lights.
- South Tracadie, N side of gully, lat 47 30 N, lon 64 52 10 W. 2 fixed catoptric lights, visible 8 miles, back light red, 26 ft high, 166 yards north from front one, front light white, 20 ft high, front building an open framed white tower, 19 ft high, back building, height 26 ft, an enclosed square tower, painted red. Lighted 1877. 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 N, lon 64 59 30 W, 2 fixed red and white catoptric lights, visible 7 miles, 30 ft high, building white, square, wood, height 20 ft. Lighted 1873. Coast and harbor range lights.
- Neguac, lat 47 17 47 N, lon 65 3 20 W, 2 fixed white catoptric lights, visible 11 miles, 35 ft high, white square wooden building, height 20 ft. Lighted 1873. Coast and harbor range lights, situated N E side of gully.
- Portage Island, on S point of Island, lat 47 9 50 N, lon 65 2 40 W, fixed white catoptric light, visible 12 miles, 46 ft high, building white, wood, height 42 ft. Lighted 1869.
- Oak Point, Miramichi Bay, lat 47 7 40 N, lon 65 15 10 W, 2 fixed white catoptric lights, half a mile apart, visible 10 miles, 40 and 60 ft high, white wooden towers. Lighted 1869. Beacons.
- Sheldrake Island, Miramichi Bay, lat 47 6 50 N, lon 65 18 W, 2 white fixed lights, quarter of a mile apart, visible 9 miles, 48 ft high. Lighted 1873. Beacons.
- Middle Island, Miramichi Bay, lat 47 0 3 N, lon 65 19 9 W, fixed white light, visible 7 miles, 45 ft high. Lighted 1874. Beacon.
- Fox Island, N W point of Island, lat 47 8 10 N, lon 65 2 30 W, and E end of Island, lat 47 6 50 N, lon 65 0 10 W, 2 fixed white catoptric lights, ¼ mile apart, visible 10 miles, 50 and 30 ft high. Beacons to guide vessels through the Swashway Channel.
- Miramichi Bay Lightship, Horseshoe Bar, between Fox and Portage Islands, lat 47 8 N, lon 65 3 W, fixed red catoptric light, visible 8 miles, 35 ft high. Lighted 1873. A schooner rigged ship.
- Escuminac, on Point, lat 47 4 32 N, lon 64 47 30 W, fixed white dioptric light, 3rd order, visible 14 miles, 70 ft high, white wooden building, height 58 ft. Lighted 1841. 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. In calm weather, or with the wind, it should be heard from 9 to 11 miles; and in stormy weather, or against the wind, from 3 to 6 miles.
- Grant's Beach, Miramichi Bay, lat 47 5 30 N, lon 65 28 10 W, 2 fixed white catoptric lights, bearing S W and N E from each other, visible 10 miles, 120 and 140 ft high. Lighted 1869. Beacons.
- Preston Beach, Miramichi Bay, lat 47 4 50 N, lon 65 54 40 W, 2 fixed white catoptric lights, visible 10 miles, 55 and 66 ft high. Lighted 1869. Beacons.
- Richibucto, on headland, lat 46 39 40 N, lon 64 42 30 W, fixed white dioptric light, 4th order, visible 14 miles, 70 ft high, white square building, height 50 ft. Lighted 1864.
- Cassie's Point, on Point, lat 46 19 15 N, lon 64 30 20 W, white catoptric light, revolving every half minute, visible 14 miles, 40 ft high, white square wooden building, height 27 ft. Lighted 1872.

MACDONALD & CO., Manufacturers of Composition Rudder Braces.—See inside cover.

MACDONALD & CO., Makers of Tumbler Racks, etc.—See inside cover.

MACDONALD & CO., Manufacturers of Brass Binnacle Guards.—See adv. inside cover.

Shediac Island, lat 46 15 20 N, lon 64 31 50 W, 2 fixed white catoptric lights, visible 10 miles, 48 and 56 ft high. Lighted 1869. Beacons.
 Shediac Harbor, Duchene Wharf, lat 46 14 20 N, lon 64 31 W, fixed white catoptric light, visible 6 miles, 15 ft high, on a pole. Lighted 1860. Not under Marine Department.

Jourimain, on Cape, lat 46 10 N, lon 63 48 30 W, fixed white catoptric light, visible 15 miles, 72 ft high, white octagonal tower, height 45 ft. Lighted 1870. Visible from S E round by N to W.

PRINCE EDWARD ISLAND.

North Point, on point, lat 47 3 46 N, lon 63 59 10 W, white catoptric light, revolving every minute, visible 14 miles, 80 feet high, white octagonal building, height 60 feet. Lighted 1866, re-built 1875.

West Point, on sand beach, lat 46 37 30 N, lon 64 23 10 W, catoptric red and white revolving light, one red and three white flashes in 1½ minute; greatest brilliancy every 22½ seconds, visible 13 miles, 66 feet high, square wooden building, broad red and white horizontal bands, height 67 feet. Lighted 1876.

Summerside, Railway wharf, Bedeque Bay, lat 46 23 25 N, lon 63 47 30 W, fixed white catoptric light, visible 10 miles, 33 feet high, square tower on roof of railway freight shed, height 30 feet. Lighted 1856, rebuilt 1877. It is intended to establish another light behind this one to form a range.

Sea Cow Head, or Salutation Head, lat 46 19 10 N, lon 63 48 20 W, fixed white catoptric light, visible 15 miles, 88 feet high, white octagonal building, height 60 feet. Lighted 1863.

Crapaud, lat 46 13 N, lon 64 8 W, fixed white catoptric light, visible 3 miles, 30 feet high, post.

Blockhouse Point, at W side of entrance to Charlottetown harbor, lat 46 11 36 N, lon 63 7 28 W, catoptric fixed lights, 2 in one tower, 21 feet apart, vertically, white, visible 12 miles, 56 feet high, red 35 feet, visible 3 miles, building white, square, wood, with dwelling and signal mast attached, height 42 feet. Lighted 1851, rebuilt 1876. 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 ¼ E for 2½ miles, when the port buoy will be made. They should then steer for the entrance to the harbor N ¼ E.

Point Prim, S E extremity of Hillsborough Bay, 100 yards from the point, lat 46 3 10 N, lon 63 2 W, fixed white catoptric light, visible 12 miles, 68 feet high, building white, circular, brick, height 55 feet. Lighted 1846. Bell buoy on east side of channel, black buoy on W side, 2½ N by E ¼ E from bell buoy harborward.

Wood Island, off south point, lat 45 57 22 N, lon 62 44 30 W, fixed white light, dioptric, 4th order, visible 15 miles, 80 feet high, tower white, square, wood, with dwelling attached, height 40 feet. Lighted 1876.

Little Sands, about a mile east of Little Sands Village, lat 45 57 53 N, lon 62 39 41 W, fixed red catoptric light, visible 5 miles, 50 feet high, in a gable window of a house, height 20 feet. Lighted 1877. For guidance of fishing boats.

Murray Harbor, one on edge of sand bar, south side of harbor, the other on mainland, about a mile W by S from front light, lat 46 1 28 N, lon 62 28 25 W, 2 fixed white catoptric lights, one mile apart, visible 5 miles, height 30 feet on post, and 45 in window, one on frame work, and other in gable window of a house. Lighted 1869. 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 W, fixed white catoptric light, visible 16 miles, 96 feet high, white octagonal wooden building, height 50 feet. Lighted 1853. This light should be kept open off Terras Point, to clear reef off Cape Bear.

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

Georgetown, St A light, red seawood, height 3

East Point, 200 ya W, fixed white building white changed to a r

St. Peters, on sand light, lat 46 26 and 20 feet high into harbor.

Tracadie, on beach lat 46 25 20 N, miles, height 3 21 feet high.

South or Little Rust of Grand Rust lights, visible 6 Lighted 1875.

North or Grand Ru 66-17 W, 2 fixe white, lower re tower, with dw light is a streak be seen by vess

New London, W si 63 28 45 W, 2 fi red, lower white square, wood, w light is a streak be seen only wh

Fish Island, entrance 46 34 44 N, lon E by S and W higher white, sq rebuilt 1876; low 1876. The main the channel over

Little Channel, or C white catoptric li square building open frame work 1876. In one, le

Cascumpec, S W part catoptric lights, 2 miles, 45 ft high, 41 ft; lighted 18 open frame work a sea light. The bar.

Big Tignish, lat 46 57 yards apart, E an water, on N side S side of entrance ft. Lighted 1877

MACDONALD &

[1879

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wer Pumps.

1879]

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Georgetown, St Andrew's Point, lat 46 9 57 N, lon 62 31 23 W, fixed catoptric light, red seaward, visible 10 miles, 36 feet high, building white, square, wood, height 20 feet. Lighted 1868.

East Point, 200 yards inshore from south part of point, lat 46 27 9 N, lon 61 58 15 W, fixed white light, dioptric, 4th order, visible 9 miles, 130 feet high, building white, octagonal, wood, height 60 feet. Lighted 1867. To be changed to a revolving white light.

St. Peters, on sand beach, west side of channel, 126 yards N E by N of back light, lat 46 26 30 N, lon 62 44 30 W, 2 fixed white lights, visible 6 miles, 26 and 20 feet high, lanterns on poles. Lighted 1864. Range lights to lead into harbor. New towers in course of erection.

Tracadie, on beach, west side of channel, 233 yards N E by N, from back light, lat 46 25 20 N, lon 63 2 30 W, 2 fixed red catoptric lights, visible 10 and 9 miles, height 30 and 19 feet, open square frame work, lanterns white, 32 and 21 feet high. Lighted 1876. In one, lead through channel over the bar.

South or Little Rustico, south-east 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 catoptric lights, visible 6 miles, 26 and 17 feet high, on masts, height 22 and 14 feet. Lighted 1875. In one, lead through the channel at entrance to harbor.

North or Grand Rustico, west side of entrance to harbor, lat 46 27 28 N, lon 63 17 W, 2 fixed catoptric lights in one tower, 16 feet apart vertically, upper white, lower red, visible 10 and 3 miles, 40 and 24 feet high, white square tower, with dwelling attached, height 35 feet. Lighted 1876. The lower light is a streak shown from a window, 16 feet below the main light, and can be seen by vessels only when they are in range with the channel.

New London, W side of entrance to Greenville harbour, lat 46 31 10 N, lon 63 28 45 W, 2 fixed catoptric lights in one tower, 16 ft apart vertically, upper red, lower white, visible 10 and 3 miles, height 40 and 24 ft, tower white, square, wood, with dwelling attached, 35 ft high. Lighted 1876. The lower light is a streak shown from a window, 16 ft below the main light, and can be seen only when vessels are in range with the channel.

Fish Island, entrance to Malpeque on Richmond Bay, on inside of Island, lat 46 34 44 N, lon 63 42 29 W, 2 fixed white catoptric lights, 400 yards apart, E by S and W by N, visible 12 and 6 miles, and 50 and 18 ft high, towers, higher white, square wood, with dwelling attached, 46 ft high, lighted 1856, rebuilt 1876; lower open frame work, lantern white, height 22 ft. Lighted 1876. The main light is a sea light. The smaller one, in range with it, shows the channel over the bar.

Little Channel, or Conway Inlet, N side, lat 46 40 N, lon 63 52 40 W, 2 fixed white catoptric lights, 66 yards apart, one visible 10 miles, 26 feet high, white square building, height 30 ft, the other visible 8 miles, 16 ft high, building open frame work, lantern white, 20 ft high. Lighted 1872; buildings erected 1876. In one, lead through channel at entrance to harbour.

Casumpec, S W part of Sandy Island, lat 46 48 22 N, lon 64 2 15 W, 2 fixed catoptric lights, 218 yards apart, E by S and W by N, main white, visible 12 miles, 45 ft high, tower white, square, wood, with dwelling attached, height 41 ft; lighted 1856, rebuilt 1876; range light red, visible 6 miles, 18 ft high, open frame work, lantern white, 22 ft high, lighted 1876. The main light is a sea light. The smaller one, in range with it, shows the channel over the bar.

Big Tignish, lat 46 57 27 N, lon 63 59 20 W, 2 fixed white catoptric lights, 345 yards apart, E and W, visible 6 miles, front light on outer end of break-water, on N side of entrance to harbour, 17 ft high, back light on shore, at S side of entrance 26 ft high, lanterns on masts, height front 17 and back 27 ft. Lighted 1877. In one, lead through channel at entrance to harbour.

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

NEWFOUNDLAND.

Cape Norman, Straits of Belle Isle, lat 51 38 N, lon 55 53 40 W, white catoptric light, revolving every 2 minutes, visible 20 miles, 138 ft high, white hexagonal tower, height 40 feet. Lighted 1871. 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 catoptric light, every 15 seconds, visible 18 miles, 130 feet high, white hexagonal tower, height 40 ft. Lighted 1871. Visible from all points of approach seaward.

Cape Ray, on W side of cape, lat 47 37 N, lon 59 18 W, flash white catoptric light, flash every 10 seconds, visible 20 miles, white hexagonal tower, 41 ft high. Lighted 1871. At a long distance flashes not observed. A fog whistle is blown in thick and foggy weather and during snow storms, 10 seconds in each minute, leaving an interval of 50 seconds between each blast. Heard in calm weather or with the wind from 8 to 10 miles, and in stormy weather or against the wind from 3 to 6 miles, according to the state of the atmosphere.

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

LIGHTS IN THE WEST INDIA ISLANDS AND ADJACENT COASTS.

[Corrected to the 31st Dec., 1877.—Arranged from the latest 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 coloured flashes preceded and followed by a 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 longer 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. Neuva Grenada; Spa., Spanish; 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. The Geographical positions 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 9 55 N., lon. 59 25 35 W., white dioptric light, 2nd order, revolving

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- every 2 minutes. Round lighted, 1875.
- on to the Cobble Ragged Point, north-eastward
- ... South Point, 20 catoptric red light house alternate 90 feet from base S. W. by W., and Reefs. Lighted
- ... Carlisle Bay, Ne light, centre of light east. Indifferent 1850.
- Tobago I. (E.) Scar fixed white dioptric between the bearing the mail steamer white beacons 83 borough.
- Trinidad I. (E.) Ica miles, white mast
- ... Port Espana, on light, 4th order, high, building 43 E. by N. and S. I
- Grenada, Fort George miles, on flag staff
- St. Vincent I. (E.) F light, visible 6 miles expected. Light
- St. Lucia I. (E.) Tap 14 1 30 N., lon. 61 80 ft. high. For
- ... Vielle Ville Sho expected. Light
- ... Cocoa Nut Shoal, Lighted 1868.
- Martinique I. (Fr.) Po fixed white light, height of mast, 15
- ... S. W. part of Fort 131 feet high. T exhibits a white light at the arrival or departure
- ... St. Marthe Point, light, visible 5 miles
- ... Westward of former blue to the westward lights in line lead
- ... Edge of the bank 8 on the day the m Lighted 1860.

MACDONALD & CO.

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

every 2 minutes, 213 ft. to centre of lantern, visible in clear weather at 21 miles. Round white coral stone house, 97 ft. from base to vane. Year lighted, 1875. On account of the prevailing strong current running westward on to the Cobblers, a cluster of dangerous reefs, 2½ miles to the south-east of Ragged Point, mariners are cautioned in closing the land to keep well to the north-eastward of the light.

... South Point, 200 yards from the shore, lat. 13 2 55 N., lon. 59 31 20 W., catoptric red light, 3rd order, revolving every minute, visible at 18 miles, house alternate red and white bands, centre of lantern 145 feet high, building 90 feet from base to vane. Does not show until it bears to the westward of S. W. by W., and should be kept well open in order to clear the Cobbler Reefs. Lighted 1852.

... Carlisle Bay, Needham Point, lat. 13 4 55 N., lon. 59 36 20 W., fixed dioptric light, centre of lantern 30 feet high. Red north of east, and white south of east. Indifferent light. Reported to show white in all directions. Lighted 1850.

Tobago I. (E.) Scarborough, Bacolet or Red Point, lat. 11 10 N., lon. 60 44 W., fixed white dioptric light, visible 12 miles, pentagon tower, white. Visible between the bearings of E. N. E. and S. W. by W. Lighted 1842. When the mail steamer is expected two red leading lights are shown from two white beacons 83 yards apart, at the west end of the Lower Town of Scarborough.

Trinidad I. (E.) Icacos Point, the S. W. extremity, fixed white light, visible 5 miles, white mast, centre of lantern 39 ft. high.

... Port Espana, on jetty, lat. 10 38 40 N., lon. 61 31 W., fixed white dioptric light, 4th order, visible 10 miles. Hexagonal tower, centre of lantern 50 feet high, building 43 ft. from base to vane. Visible between the bearings of N. E. by N. and S. E. Lighted 1841.

Grenada, Fort George, lat. 12 N., lon. 61 45 W., fixed white light, visible 3 to 4 miles, on flag staff. Lighted 1877. For mail steamer when expected.

St. Vincent I. (E.) Fort Charlotte, lat. 13 9 10 N., lon. 61 14 15 W., fixed white light, visible 6 miles, centre of lantern 640 ft high. For mail steamer when expected. Lighted 1858.

St. Lucia I. (E.) Tapion Battery, south side of entrance to Castries Harbor, lat. 14 1 30 N., lon. 61 0 50 W., fixed red light, visible 3 miles, centre of lantern 80 ft. high. For mail steamer when expected. Lighted 1843.

... Vielle Ville Shoal, fixed red light, red perch. For mail steamer when expected. Lighted 1868.

... Cocoa Nut Shoal, fixed green light, perch. For mail steamer when expected. Lighted 1868.

Martinique I. (Fr.) Pointe des Negres, in the fort, lat. 14 36 N., lon. 61 9 30 W., fixed white light, visible 11 miles, red mast, centre of lantern 62 feet high, height of mast, 15 feet. Lighted 1855.

... S. W. part of Fort St. Louis, fixed red light, visible 3 miles, centre of lantern 131 feet high. The buoy at the southern extremity of St. Louis bank exhibits a white light, and the buoy at the south-east extremity a red light, at the arrival or departure of the mails, or when required.

... St. Marthe Point, St. Pierre, lat 14 44 5 N., lon. 61 10 45 W., fixed white light, visible 5 miles. Lighted 1860.

... 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. Lighted 1860.

... Edge of the bank St. Pierre Bay, fixed white light, visible two miles, lighted on the day the mail is expected, and for 3 nights after if not arrived. Lighted 1860.

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

Residences and Public Buildings Fitted with Steam Heating Apparatus by MACDONALD & CO.—See adv. inside cover.

- Caravelle Peninsula, Caracoli Mount, $\frac{1}{2}$ mile inland, lat. 14 46 20, lon. 60 52 50, fixed white dioptric light, 1st order, visible 24 miles, white tower, centre of lantern 410 feet high. Lighted 1862.
- Dominica I. (E.) Roseau Bay, extremity of Mole, lat. 15 17 30 N., lon. 61 23 35 W., fixed red light on a flag staff. When mail steamer is expected. Lighted 1867.
- Gaudaloupe I. (Fr.) Petite Terre, 202 yards from eastern part, lat. 16 10 30 N., lon. 61 5 5 W., fixed white dioptric light, 3rd order, visible 15 miles, centre of lantern 108 feet high, building 75 feet from base to vane.
- Gozier Islet, lat. 16 11 55 N., lon. 61 29 5 W., fixed white light, visible 7 miles.
- Manroux Islet, lat. 6 13 15 N., lon. 61 31 30 W., fixed white light in lantern.
- Pointe a Pitre. White light. When the mail is expected a red light is exhibited at the outer buoy, a white light at the buoy marking the reef at Cassan Island, and from a beacon on the shoal opposite Fouillole, and green lights at the buoys on the starboard side of the channel, and at the mooring buoy.
- Porte le Moule, lat. 16 20 N., lon. 61 20 5 W., fixed white light, visible 7 miles. Lighted 1858.
- Basse Terre on Mole, lat. 16 0 15 N., lon. 61 44 50 W., 2 fixed red lights, visible 9 miles. Lighted 1865.
- Antigua I. (E.) English Harbour, Fort Berkeley, 16 59 50 N., lon. 61 45 35 W., three triangular fixed lights on a staff, 5 yards apart, visible 8 miles, centre of lantern 62 feet high, building 42 feet from base to vane. Temporary, for mail steamer when expected. The upper light red, lower white. Lighted 1843.
- Sandy Island, lat. 17 6 50 N., lon. 61 54 30 W., fixed white catoptric light, visible 13 miles, black wooden structure, centre of lantern 56 feet high, building 53 feet from base to vane. The light kept on the bearing of S. S. W. clears the Diamond Bank, and when kept bearing N. by E. clears the Hurst and Irish banks and the shoals to the southward. Lighted 1875.
- Mariagalante I. Grand Bourg, lat. 15 54 N., lon. 61 17 W., fixed white light, visible 7 miles, centre of lantern 45 feet high. Lighted 1867.
- Montserrat I. (E.) On beach at Plymouth, lat. 16 42 10 N., lon. 62 13 W. A white 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 42 50 W., fixed red light, visible 4 miles, light-house wooden frame, 33 feet from base to vane, centre of lantern 37 feet high. Lighted 1846.
- St. Martin Island, Old Fort of Amsterdam, Grande Bay, fixed white light, visible 8 miles, centre of lantern, 150 feet high. Lighted 1875.
- Sombrero I. (E.) On the S. E. side of the Island, one-third its length, from South Point, lat. 18 35 35 N., lon. 63 27 50 W., white light, revolving every minute, dioptric, 2nd order, visible 20 miles, red open iron frame work, centre of lantern 150 feet high, structure 132 feet from base to vane. Lighted 1868.
- Virgin Islands (Da.) St. Thomas, east side of entrance, Mohlenfel's Point, lat. 18 19 20 N., lon. 64 55 10 W., white fixed light, visible 12 miles, dioptric, 5th order, light-house white, centre of lantern 118 feet high. Lighted 1844.
- Santa Cruz or St. Croix Island, (Da.) Frederickstadt Fort, lat. 17 42 40 N., lon. 64 52 40 W., fixed white light, visible 4 miles. Lighted 1857.
- Christianstadt Fort, lat. 17 45 25 N., lon. 64 41 30 W., fixed white light. Lighted 1857.
- Puerto Rico Island. (S.) Morro Point, Port San Juan, lat. 18 28 40 N., lon. 66 6 40 W., white fixed and flash light, a flash of 5 seconds every minute, visible 18 miles, centre of lantern 171 ft high, tower white octagonal, iron. Lighted 1876.

MACDONALD & CO., Manufacturers of Lead Water Marks.

- Mayaguez Bay
- Santo Domingo I. visible 9 miles feet from base Santo Domingo
- Jamaica I. (E.) M revolving ever to vane, centre N. N. E. $\frac{1}{2}$ E.
- Plum Point, 6 fixed light, vis Red when seen White from N
- Fort Augusta, the Beacon, ce white light visi
- Santiago de Cuba, lon. 75 54 20 W. visible, 15 miles, lantern 226 feet
- Cape Cruz, on Cape every 3 minutes centre of lantern
- Port Xagua, or Cien 30 W., white li light-house Villa 81 feet high. L
- Cochinos Bay, north light, dioptric 4th to vane, centre o 1863.
- Batabano, lat. 22 41 lantern on mast 3
- Isle of Pines, lat. 21 visible 16 miles.
- San Antonio (Spa.) on every $\frac{1}{2}$ minute, thereon, height 10 Lighted 1863.
- Jutias, on Cay, lat. 22 2nd order. Prop
- Gobernadora, on Point order, visible 15 n
- Havana, Morro Castle, white light, fixed miles, light house to vane, centre of minutes after mid
- Guanos, on Point, lat. dioptric 3rd order,

Brass Hinges,

- ... Mayaguez Bay, Pier Head. Fixed red light. Harbour light.
- Santo Domingo I. San José fort, lat. 18 28 5 N., lon. 69 52 30 W., fixed white light, visible 9 miles, cupola white, centre of lantern 113 feet high, building 100 feet from base to vane. Lighted 1853. None of the lights at the Island of Santo Domingo are to be depended upon.
- Jamaica I. (E.) Morant Point, lat 17 55 5 N., lon. 76 11 40 W., white light, revolving every minute, visible 15 miles, white iron tower, 96 feet from base to vane, 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. Lighted 1842.
- ... Plum Point, 66 yards northward of point, lat. 17 55 45 N., lon. 76 47 20 W., fixed light, visible 12 miles, light-house white, centre of lantern 68 feet high. Red when seen between the bearings of N. W. by W. $\frac{1}{2}$ W., and N. $\frac{1}{2}$ E. White from N. $\frac{1}{2}$ E. round by E. to S. E. Lighted 1854.
- ... Fort Augusta, lat. 17 58 N., lon. 76 52 20 W., single lamp suspended from the Beacon, centre of lantern 40 feet high. White and red light. The white light visible to the south and west, and the red to the eastward.

CUBA AND BAHAMA ISLANDS.

CUBA WITH ITS ISLANDS.

- Santiago de Cuba, (Spa.) 100 yards east of the Morro Castle. lat 19 57 40 N., lon. 75 54 20 W., white dioptric light, 4th order, revolving every two minutes, visible 15 miles, light house white, iron, 20 feet from base to vane, centre of lantern 226 feet high. Lighted 1861.
- Cape Cruz, on Cape, lat. 19 50 N., lon. 77 44 30 W., white light, fixed and flash every 3 minutes, dioptric, 2nd order, visible 16 miles, stone light house, centre of lantern 114 feet high, keeper's dwelling yellow. Lighted 1871.
- Port Xagua, or Cienfuegos, Colorado, east point of entrance, lat. 22 1 N., lon. 80 30 W., white light, fixed and flash, dioptric 3rd order, visible 14 miles, light-house Villa Nueva thereon, 45 feet from base to vane, centre of lantern 81 feet high. Lighted 1851.
- Cochinos Bay, north part of Cay Piedras, lat. 21 58 N., lon. 81 3 W., fixed white light, dioptric 4th order, visible 7 miles, light house brown, 26 feet from base to vane, centre of lantern 30 feet high. Over keeper's dwelling. Lighted 1863.
- Batabano, lat. 22 41 25 N., lon. 82 18 20 W., fixed white light, visible 3 miles, lantern on mast 31 feet high. Lighted 1854.
- Isle of Pines, lat. 21 26 N., lon. 83 6 W., revolving light, dioptric 2nd order, visible 16 miles. Proposed.
- San Antonio (Spa.) on Cape, lat. 21 52 50 N., lon. 84 58 W., white light, revolving every $\frac{1}{2}$ minute, dioptric 2nd order, visible 20 miles, light house Roncalli thereon, height 107 feet from base to vane, centre of lantern 117 feet high. Lighted 1863.
- Jutias, on Cay, lat. 22 43 20 N., lon. 84 6 30 W., fixed and flash light, dioptric 2nd order. Proposed.
- Gobernadora, on Point, lat. 23 N., lon. 83 13 10 W., revolving light, dioptric 2nd order, visible 15 miles, centre of lantern 110 feet high. Proposed.
- Havana, Morro Castle, east side of entrance, lat. 23 9 30 N., lon. 82 22 10 W., white light, fixed and flash, every $\frac{1}{2}$ minute, dioptric 1st order, visible 21 miles, light house O'Donnell thereon, stone color, height 79 feet from base to vane, centre of lantern 141 feet high. The light is extinguished for 10 minutes after midnight to clean and trim the lamps. Lighted 1845.
- Guanos, on Point, lat. 23 9 N., lon. 81 42 W., revolving light every minute, dioptric 3rd order, centre of lantern 93 feet high. Proposed.

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

MACDONALD & CO., Manufacturers of Composition Butt Bolts and Spikes.—See adv. inside cover.

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- Cardenas Bay*, Piedras Cay, lat. 23 14 20 N., lon. 81 7 15 W., white light, fixed and flash, dioptric 4th order, red flash every $\frac{1}{2}$ minute, visible 15 miles, tower on house, white, 67 feet, centre of lantern 74 feet high. Lighted 1857.
- ... *Cay Diana*, lat. 23 10 N., lon. 81 7 W., fixed white light, visible 7 miles, iron column, centre of lantern 43 feet high. Lighted 1862.
- Cruz del Padre Cay*, on Reef, $\frac{1}{2}$ of a mile N. E. of Cay, lat. 25 17 10 N., lon. 80 54 10 W., fixed white light, dioptric 4th order, visible 10 miles, light house conical, white, 46 feet from base to vane, centre of lantern 49 feet high. Lighted 1862. Not to be depended on.
- Bahia de Cadiz*, N. E. part of Cay, lat. 23 12 30 N, lon 80 29 20 W., white light, fixed and flash every minute, dioptric 1st order, visible 24 miles, house iron, white, 159 feet from base to vane, centre of lantern 175 feet high. Lighted 1862.
- Port Sagua La Grande*, N. W. point of Hicacal Cay, lat. 23 4 N., lon. 80 4 W., fixed white light, dioptric, visible 8 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. Lighted 1872.
- Paredon Grande Cay*, north part of Cay, lat. 22 29 8 N., lon. 78 9 50 W., white light, fixed and flash, every minute, dioptric 1st order, visible 16 miles, house iron, white, with a brown base, height 127 feet from base to vane, centre of lantern 159 feet high. Lighted 1859.
- Nuevitas Harbor*, Barlovento Point, lat. 21 37 30 N., lon. 77 5 20 W., fixed white light, dioptric, 6th order, 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. Lighted 1864.
- ... *Maternillos Point*, lat. 21 40 N., lon. 77 9 W., white light, revolving every minute, dioptric, 1st order, visible 23 miles, house white, Colon thereon, height 170 feet, centre of lantern 173 feet high, duration of eclipse 16 seconds. Lighted 1850.
- Lucrecia*, on point, lat. 21 4 40 N., lon. 75 37 55 W., red light, revolving every minute, dioptric, 2nd order, visible 15 miles, house stone, white, centre of lantern 112 feet high. Lighted 1868.
- Baracoa*, 150 yards E. S. E. of Barlovento point, lat. 20 21 40 N., lon. 74 30 20 W., fixed white light, dioptric, visible 12 miles, iron column, height 29 feet, centre of lantern 48 feet high. On keeper's dwelling. Lighted 1870.
- Cape Maysi*, east point of Cuba, lat. 20 15 10 N., lon. 74 10 20 W., fixed white light, dioptric, 2nd order, visible 17 miles, tower circular, base octagonal, centre of lantern 128 feet high. Lighted 1862.

BAHAMA ISLANDS.

- Lobos Cay*, (E.) on Cay, lat. 22 22 30 N., lon. 77 35 5 W., fixed white light, dioptric, 1st order, visible 16 miles, house circular iron, broad black, 7 in number, and white 6 in number bands, height 150 feet from base to vane, lantern white, centre 146 feet high. Base surrounded by keeper's dwelling. Lighted 1860.
- Cay Sal Bank*, N. Elbow, Double-headed Shot Cays, lat. 23 56 10 N., lon. 80 28 W., fixed white light, dioptric, 2nd order, renewed 1866, visible 8 miles, stone conical tower, white and red upper part, height 58 feet, centre of lantern, 96 feet high. Visible round horizon, except when it bears S. W. $\frac{1}{4}$ W., being intercepted by Water Cay when three leagues distant. Lighted 1839.
- Gun Cay*, near South Point, lat. 25 34 30 N., lon. 79 18 50 W., red light, revolving every minute and a half, catoptric, 2nd order, visible 12 miles, conical tower, upper part red, lower white, height 70 feet from base to vane, lantern white, centre 80 feet high. Not seen between the bearings of S. by W., $\frac{1}{4}$ W., and

Iron Pipe, all sizes, at MACDONALD & CO'S.—See adv. inside cover.

- S. $\frac{1}{4}$ E., being Lighted 1836.
- Great Isaac*, on the revolving every with broad red bands, height 14 light for a dista
- Great Stirrup Cay* (53 55 W., fixe circular, 5 bands 81 feet high. V ward and south
- Nassau Harbor*, west white light, cato height 58 feet fr that this light is seaward when be at Hog Island, fr the state of the dangerous. Ligh
- Athol Island*, cupola W., fixed white l the bearings of N
- Abaco*, about 4 cables W., white light, r conical stone tow from base to van Visible from seaw
- ... *Little Guano* or E W., fixed white l with red and white centre 123 feet hi
- Crooked I: Passage*, B catoptric, 2nd ord miles, building con vane. Vessels app bearing, as the enci in a direction N. by tower. The curren 1876.
- ... *Castle Island*, 270 fixed white light, d of red brick, height high. Illuminates
- Inagua*, Great I., 2 mile 45 W., white light, miles, conical build base to vane, centre
- Turk's Island*, 400 yards N., lon. 77 7 40 W. 15 miles, building v centre of lantern 10
- Cayenne*. (Fr.) summit of 52 32 51 W., fixed w 200 feet high. Ligh

Lead Scupper Pipes, all

MACDONALD & CO., Manufacturers of Brass Sliding Door Rollers.—See adv. inside cover.

S. $\frac{1}{2}$ E., being intercepted by the Bemini Isles when 8 miles distant. Lighted 1836.

Great Isaac, on the Island, lat. 26 2 15 N., lon. 79 6 15 W., white light, revolving every $\frac{1}{4}$ minute, catoptric, 1st order, 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. Shows a fixed light for a distance of 6 miles between the flashes. Lighted 1859.

Great Stirrup Cay (E.) 600 yards from east end of Cay, lat. 25 49 40 N., lon. 77 53 55 W., fixed white light, dioptric, 3rd order, visible 12 miles, house circular, 5 bands, red and white alternately, height 46 feet, centre of lantern 81 feet high. Visible from seaward from about N. W. by W., round westward and southward to about N. E. Lighted 1863.

Nassau Harbor, west point, Hog Island, lat. 25 5 40 N., lon. 77 22 20 W., fixed white light, catoptric, 1st order, visible 10 miles, conical stone tower, white, height 58 feet from base to vane, centre of lantern 68 feet high. It is stated that this light is seen at a greater distance than that given. Visible from seaward when bearing from S. W. round to S. E. A red light is exhibited at Hog Island, from a flagstaff on the point near the light house, whenever the state of the bar at the entrance of Nassau Harbor is impassable or dangerous. Lighted 1816.

Athol Island, cupola of Quarantine officer's dwelling, lat. 25 5 N., lon. 77 17 20 W., fixed white light. The light illuminates an arc of 45 degrees between the bearings of N. N. W. $\frac{1}{4}$ W. and W. by N. $\frac{1}{4}$ N. Lighted 1875.

Abaco, about 4 cables northward of Hole in Wall, lat. 25 51 30 N., lon. 77 11 9 W., white light, revolving every minute, catoptric, 1st order, visible 16 miles, conical stone tower, white lower part and red upper part, height 85 feet from base to vane, lantern white, centre 160 feet high. Lighted 1836. Visible from seaward when bearing from S. W. round to E. S. E.

Little Guano or Elbow Cay, $\frac{1}{4}$ of a mile inland, lat. 26 31 10 N., lon. 76 58 W., fixed white light, dioptric, 1st order, visible 15 miles, house circular, with red and white bands, height 77 feet from base to vane, lantern white, centre 123 feet high. Lighted 1863.

Crooked I. Passage, Bird Rock, lat. 22 50 40 N., lon. 74 22 30 W., white light, catoptric, 2nd order, revolving every $1\frac{1}{4}$ minute, 120 feet high, visible 17 miles, building conical, stone, faced with blue bricks, 112 feet from base to vane. Vessels approaching Bird Rock light are cautioned to attend to its bearing, as the encircling reef on the north side of Crooked Island terminates in a direction N. by W. $\frac{1}{4}$ W., and nearly one mile distant from the light tower. The currents northward of Crooked Island are variable. Lighted 1876.

Castle Island, 270 yards within S. W. part, lat. 22 6 N., lon. 74 20 40 W., fixed white light, dioptric, 2nd order, visible 17 miles, house conical, 3 bands of red brick, height 114 feet from base to vane, centre of lantern 123 feet high. Illuminates 330°. Lighted 1868.

Inagua, Great I., 2 miles to the N. W. of S. W. point, lat. 20 56 N., lon. 73 40 45 W., white light, revolving every minute, dioptric; 2nd order, visible 17 miles, conical building, with 2 white and red bands, height 114 feet from base to vane, centre of lantern 120 feet high. Lighted 1870.

Turk's Island, 400 yards S. W. $\frac{1}{4}$ W. from north extremity of Island, lat. 21 31 N., lon. 77 40 W., white light, flash every half minute, catoptric, visible 15 miles, building white, iron, circular, height 60 feet from base to vane, centre of lantern 108 feet high. Lighted 1845.

GUAYANA COAST.

Cayenne. (Fr.) summit of Hospital on Royale islet, Salut islets, lat. 5 17 N., lon. 52 32 51 W., fixed white light, catoptric, visible 15 miles, centre of lantern 200 feet high. Lighted 1864.

Lead Scupper Pipes, all sizes, at MACDONALD & CO'S.—See ins. cover.

Vessels Fitted with Plumbing Fixtures, by MACDONALD & CO.—See adv. inside cover.

- *Enfant Perdu*, a rock 6 miles northward of Cayenne, lat. 5 2 40 N., lon. 52 15 54 W., fixed white light, catoptric, visible 4 miles, house iron, quadrangular, centre of lantern 61 feet high. Lighted 1864. Visible between N. W. $\frac{1}{4}$ N. and E. by N. $\frac{1}{4}$ N., and between S. W. $\frac{1}{4}$ S. and E. by S. $\frac{1}{4}$ S.
- *Cépéron Fort*, lat. 4 56 30 N., lon. 52 14 37 W., fixed white light, catoptric, visible 10 miles, centre of lantern 130 feet high, building 40 feet from base to vane. The white and green lights in one S. E. by S. leads over *Aimable Rock*, which is avoided by keeping to westward of this line. Lighted 1862.
- *End of Jetty*, fixed red light, catoptric, centre of lantern 39 feet high. Lighted 1862.
- N. W. Angle of Infantry Barracks, lat. 4 56 10 N., lon. 52 18 37 W., fixed green light, visible 8 miles, centre of lantern 69 feet high. Lighted 1850.
- Maroni River*, west side of entrance, (D.), lat. 5 43 N., lon. 54 W., fixed white light, dioptric, 4th order, visible 12 miles, centre of lantern 75 feet high, building 70 feet from base to vane. Lighted 1871.
- East side of entrance (Fr.), lat. 5 42 30 N., lon. 53 58 W., fixed white light, dioptric, 4th order, visible 12 miles, building white, centre of lantern 75 feet high. Lighted 1871.
- Surinam (Du.)*, Light vessel in 14 feet, 3 $\frac{1}{4}$ miles N. W. of *Brams Point*, lat. 6 1 N., lon. 55 16 10 W., fixed red light, dioptric, 6th order, visible 10 miles, red ball at the mast head, centre of lantern 30 feet high. *Surinam* is painted on the vessel's side. Lighted 1858.
- Berbice (E.)* Light vessel moored in 22 feet, N. E. by N., 9 miles from *St. Andrew Point*, lat. 6 29 10 N., lon. 57 23 45 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. Lighted 1850.
- Demerara (E.)*, Light vessel in 19 feet, with *Georgetown lighthouse* bearing S. S. W. $\frac{1}{4}$ W., distant 10 miles, lat. 6 57 15 N., lon. 58 4 45 W., fixed white light, visible 10 miles, vessel red, with one mast about 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. Lighted 1844.
- *Georgetown*, east side of entrance, lat. 6 49 20 N. lon. 58 11 30 W., white dioptric light, 4th order, revolving every minute, visible 16 miles, octagonal tower, red and white vertical, centre of lantern 103 feet high, house 100 feet from base to vane. Lighted 1829.

TIERRA FIRME COAST.

- Orinoco river*, entrance, light-vessel, near *Barima Point*, at entrance of river, fixed white light, visible 9 miles, centre of lantern 55 feet high. Lighted 1875. Pilots for the river are stationed on board the vessel.
- Trinidad (E.)* *Icacos 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 38 40 N., lon. 61 31 W., fixed white light, dioptric, 4th order, visible 10 miles, hexagonal tower, 43 feet from base to vane, centre of lantern 50 feet high. Visible between the bearings of N. E. by N. and S. E. Lighted 1841.
- 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 from base to vane, centre of lantern 115 feet high. Lighted 1842. Visible between the bearings of E. N. E. and S. W. by W. by the south.
- Cumana*, tower on *Custom House*, lat. 10 28 N., lon. 64 12 W., fixed white light, visible 5 miles. To be exhibited in 1877.

- Puerto Cabello, Brava Point, lat. 10 30 N., lon. 68 W., revolving red and white alternately every 40 seconds, visible 14 miles, building quadrangular, centre of lantern 79 feet high. Lighted 1864.
- Caballos, Port, white light, visible 3 miles. Lighted 1876.
- Los Roques, on the north-east hill, (150 feet high) of El Roque, lat. 11 28 15 N., lon. 66 38 30 W., white light, revolving every minute, dioptric, 3rd order, visible 15 miles, centre of lantern 208 feet high. Lighted 1875. Reported to be irregular in its action from defect in revolving apparatus.
- Buen Ayre (Du.) Lacre, south point of the Island, lat. 12 2 10 N., lon. 68 22 20 W., fixed white light, catoptric, 2nd order, visible 12 miles. Building white, with vertical red stripes, 75 feet from base to vane, centre of lantern 85 feet high. Lantern destroyed by storm September, 1877. Temporary light exhibited.
- Little Curacao, (Du.) east side of island, lat. 11 58 N., lon. 68 44 W., fixed white light, catoptric, 2nd order, centre of lantern 40 feet high. Lighted 1850. To be altered to a revolving light.
- Great Curacao Island (Du.) St. Ann Harbor, Rif Fort, lat. 12 6 10 N., lon. 68 55 10 W., fixed white light. Lighted 1850.
- 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. Lighted 1874.
- Savanilla, Cubino Beach, lat. 11 0 15 N., lon. 74 57 40 W., white light, revolving every 2 minutes, 5th order, visible 16 miles, centre of lantern 98 feet high. The light is not visible when bearing southward of S. E. $\frac{1}{4}$ S. Lighted 1872.
- Marycabo, Zapar Island, lat. 10 58 N., lon. 71 40 W., fixed light, visible 6 miles, stone tower, centre of lantern 30 feet high. (Building.)
- Santa Marta, summit of the Morro, lat. 11 15 30 N., lon. 74 15 40 W., fixed white light, visible 24 miles, centre of lantern 328 feet high.
- Limon or Navy Bay, (Pan.) N. W. part of Manzanillo Island, Colon, or Aspinwall, lat. 9 22 50 N., lon. 79 53 W., fixed white light, dioptric, 5th order, visible ten miles, wood, open white building, height 60 feet from base to vane, centre of lantern 10 feet high. Lighted 1852.
- Truxillo Bay, Cape Honduras, lat. 16 1 N., lon. 86 3 15 W., fixed white light, centre of lantern 30 feet high. Lighted 1870. Truxillo lighthouse having been destroyed by a hurricane, 1875, a temporary light, visible only 4 miles, is now exhibited.
- Coxen Road, Roatan Island, lat. 16 18 N., lon. 86 35 W., white light, visible 14 miles, centre of lantern 85 feet high. Lighted 1875.
- Halfnoon Cay, (E.) S. E. Point, lat. 17 12 15 N., lon. 87 32 30 W., fixed white light, catoptric, 2nd order, visible 18 miles, iron tower, white, about 100 feet from base to vane, centre of lantern 88 feet high, visible round horizon. Lighted 1821.
- Bokel Cay, on Cay, lat. 17 8 50 N., lon. 87 56 20 W., 2 fixed lights, horizontal, dioptric, white and red, visible 6 miles, flagstaff, with a yard on which the lights are displayed, 75 feet high, centre of lantern 53 feet high. Lighted 1868.
- Belize (E.) English Cay, south side of channel, lat. 17 19 30 N., lon. 88 3 50 W., 2 white fixed lights, dioptric, 6th order, visible 3 miles. Lighted 1846.
- ... Custom House flagstaff, fixed white light, dioptric, 6th order. Lighted 1863.
- Turneff Cays (E.) Manger Cay, $1\frac{1}{2}$ mile within north end reef, lat. 17 37 15 N., lon. 87 45 45 W., 3 fixed white lights, dioptric, 4th order, in a triangle, visible 13 miles, tower skeleton iron, upper third black, remainder white, height 57 feet from base to vane, upper light 53 feet, lower two 49 feet.

MACDONALD & CO., Manufacturers of Composition Clinch Rings.—See adv. inside cover.

The bank extends $1\frac{1}{2}$ mile to the north-east of the light house. The lights can be seen above the trees from all points of the compass, but the light house is seen from seaward only from N. E. to S. W., by W. Lighted 1846; new 1868.

MEXICO.

- Progresso, Mast on the Custom House, lat. 21 18 N., lon. 89 33 W., fixed white light, visible 6 miles, 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, building 56 feet from base to vane. Lighted 1852.
- Campeche, lat. 19 50 N., lon. 90 33 W., fixed white light, visible 14 miles, centre of lantern 95 feet high. Lighted 1864.
- Terminos de Laguna, Xicalango Island, Indian Village, lat. 18 7 50 N., lon. 91 54 50 W., white light, revolving every half minute, dioptric, 2nd order, visible 14 miles, circular white lantern, red and white upper part, 100 feet high. Lighted 1856.
- Goatzacoalcos 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. Lighted 1860; improved 1869.
- Vera Cruz, San Juan du Ulloa Fort, west part, lat. 19 12 N., lon. 96 8 30 W., white light, revolving every 45 seconds, visible 15 miles, building white, 60 feet from base to vane, centre of lantern 81 feet high.
- ... Convent of San Francisco, lat 19 11 30 N, lon 96 8 50 W, white light, fixed and flash every minute, dioptric, 4th order, visible 15 miles, building blue with white stripes at upper part, centre of lantern 102 ft high. Lighted 1872.
- Tampico, N point of entrance, lat 22 16 45 N, lon 97 47 W, fixed white light, visible 15 miles. Lighted 1865. This light is said to be visible only 7 or 8 miles.

TEXAS.

- Brazos Santiago, Isabel Point, lat 26 4 50 N, lon 97 11 W, white light, fixed and flash every minute, dioptric 3rd order, visible 15 miles, building white, 57 ft from base to centre of lantern, black lantern, centre 82 ft above mean sea level. Lighted 1852.
- ... South side of entrance, lat 26 6 N, lon 97 12 W, fixed white light, dioptric, 5th order, visible 11 miles, building square, white, 35 ft from base to centre of lantern, black lantern, centre 40 ft above mean sea level. Lighted 1852.
- Aransas Pass, Low Island, inside of Aransas Pass, lat 27 51 50 N, lon 97 3 W, fixed white light, dioptric, 4th order, visible 13 miles, building octagonal, brown, 55 ft from base to centre of lantern, centre of lantern 60 ft above mean 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. Lighted 1855.

MATAGORDA BAY.

- Swash, opposite Alligator Head, lat 28 26 30 N, lon 96 22 30 W, fixed white light, dioptric, 5th order, visible 6 miles, house black, screw piles white, centre of lantern 38 ft above mean sea level. A horn sounded every five minutes during fogs. Lighted 1858.
- Half-moon Reef, south extremity of reef, lat 28 33 N, lon 96 15 30 W, fixed red light, dioptric, 6th order, visible 11 miles, building white, centre of lantern 35 ft above mean sea level house 40 ft from base to centre of lantern. Fog horn every five minutes, as above. Lighted 1858.
- Matagorda, E end of Matagorda Island, entrance to the Bay, lat 28 20 20 N, lon 96 25 5 W, white light, fixed and flash, every minute and a half, dioptric,

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

3rd order, visible 15 miles, building black truncated cone, centre of lantern 91 ft above mean sea level, house 84 ft from base to centre of lantern. Lighted 1852.

... West Shoal, port side of entrance, lat 28 25 N, lon 96 21 10 W, fixed white light, dioptric, 4th order, visible 11 miles, building white, centre of lantern 37 ft above mean sea level, house 45 ft from base to centre of lantern. Lighted 1872. Fog bell sounded at intervals of 10 seconds.

... East Shoal, starboard side of entrance, lat 28 25 25 N, lon 96 22 W, fixed red light, dioptric, 4th order, visible 11 miles, building white, centre of lantern 37 ft above mean sea level, house 43 ft from base to centre of lantern. Lighted 1872.

Galveston Light Vessel, inside the Bar, to guide through the deepest water. Fixed white light, visible 12 miles, straw color, centre of lantern 48 ft above mean sea level. *Galveston* on her sides. Strangers should not approach Galveston far 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. Lighted 1849.

Bolivar Point, N side of entrance to Galveston Bay, lat 29 22 3 N, lon 45 34 W, fixed white light, dioptric, 3rd order, visible 17 miles, building white and black, horizontal bands, centre of lantern 117 feet above mean sea level, house 110 feet from base to centre of lantern. Lighted 1852; rebuilt 1872.

Galveston Bay, Half-moon Shoal, between Pelican Island and Dollar Point, lat 29 24 2 N, lon 94 50 33 W, fixed white light, dioptric, 5th order, iron piles, white and red, centre of lantern 35 feet above mean sea level. Fog bell, one stroke every 20 seconds. Lighted 1854.

... Red Fish Bar. To mark channel across Red Fish Bar, lat 29 30 49 N, lon 94 51 42 W, fixed white light, dioptric, 4th order, visible 11 miles, building white and red, horizontal stripes, centre of lantern 35 ft above mean sea level. Fog bell two strokes in succession at intervals of 30 seconds. Lighted 1854.

... Clopper's Bar, to mark channel, lat 29 41 10 N, lon 94 56 30 W, fixed white light, dioptric, 4th order, visible 11 miles, building white, centre of lantern 35 ft above mean sea level. Fog bell, one stroke every 30 seconds. Lighted 1854.

MISSISSIPPI AND LOUISIANA.

Sabine Pass, Brant Point, east side of entrance to River, lat 20 43 55 N, lon 93 50 19 W, white light, fixed and flash every minute and a half, dioptric, 3rd order, visible 15 miles, building white, octagonal, centre of lantern 85 ft. above mean sea level, house 75 ft from base to centre of lantern. To cross bar bring the light house N W by N, and steer N W. Lighted 1856.

S W Reef, in 3 ft water, at entrance of Atchafalaya Bay, lat 29 23 30 N, lon 91 29 13 W, fixed white light, dioptric, 4th order, visible 12 miles, house screw piles, black, centre of lantern 46 ft above mean sea level, building 50 ft 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. Lighted 1859.

Ship Shoal, in 10 ft water, 11 miles S S W of Raccoon Point, lat 28 55 1 N, lon 91 4 W, white flash light, every half minute, dioptric, 2nd order, visible 17 miles, iron screw piles, black, centre of lantern 115 ft above mean sea level, tower 125 ft from base to centre of lantern. Lighted 1859.

Timbalier, in 7 ft water, near the east end of the Island, lat 29 1 N, lon 90 18 W, fixed white light with red flashes every minute, visible 16 miles, building black and white bands, centre of lantern 110 ft above mean sea level. Lighted 1874.

Barrataria Bay, W end of Grande Terre Island, lat 29 16 47 N, lon 89 54 33 W, fixed white light, dioptric, 4th order, visible 13 miles, house white, centre of

MACDONALD & CO., Importers of Engineers' Rubber Goods.

MACDONALD & CO., Manufacturers of Engineers' Brass Goods.—See adv. inside cover.

- lantern 60 ft above mean sea level, building 55 ft from base to centre of lantern. Lighted 1864.
- Mississippi River*, South West Pass, on W side, near the entrance to the Pass, lat 28 58 53 N, lon 89 22 20 W, fixed white light, dioptric, 4th order, visible 14 miles, house white, centre of lantern 70 ft, from mean 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. Lighted 1831.
- Head of Passes, Deer Island, at the junction of the N E and S ~~3~~ passes, lat 29 8 37 N, lon 89 14 8 W, fixed white light, dioptric, 5th order, visible 5 miles, building white. On keeper's dwelling. Lighted 1863.
- South Pass, on S W side of Gordon Island, near the entrance of South Pass, lat 29 1 N, lon 89 9 3 W, white flash light, every minute and a half, dioptric, 3rd order, visible 13 miles, slate colored wood tower, centre of lantern 60 ft above mean sea level, house 54 ft from base to centre of lantern. On keeper's dwelling. This Pass cannot be used. Do not approach the light nearer than 4 miles. Lighted 1831.
- Pass à Loutre, Middle Ground Island, N side entrance, lat 29 11 32 N, lon 89 0 30 W, white light, fixed and flash every 45 seconds, dioptric, 3rd order, visible 14 miles, house circular, black, centre of lantern 77 ft above mean sea level, building 69 feet from base to centre of lantern. Steam fog whistle sounds 15 seconds at intervals of 45 seconds. The light house bears W $\frac{1}{2}$ N, from the large Nun buoy outside the bar. Lighted 1855.
- Chandeleur Island, N end of the island, lat 30 3 8 N, lon 88 51 38 W, fixed white light, dioptric, 4th order, visible 13 miles, building white, centre of lantern 58 ft above mean sea level, house 56 ft from base to centre of lantern. Good anchorage in four fathoms, with light bearing N E about 2 miles distant. A shoal extends three-quarters of a mile to N W of the light house. Lighted 1848.
- Lake Ponchartrain*, Pas Manchac, between Lakes Maurepas and Ponchartrain, S side, lat 30 17 15 N, lon 90 12 40 W, fixed white light, dioptric, 5th order, visible 13 miles, building white, centre of lantern 32 ft above mean sea level, house 30 ft from base to centre of lantern. Lighted 1837.
- Tchefuncti River, near Madisonville, lat 30 23 N, lon 90 6 W, fixed white light, dioptric, 5th order, visible 11 miles, house white, centre of lantern 48 ft above mean sea level, house 43 ft from base to centre of lantern. Lighted 1837.
- New Canal, entrance 5 miles N of New Orleans, lat 30 1 43 N, lon 90 5 50 W, fixed white light, dioptric, 5th order, visible 11 miles, house white, centre of lantern 33 ft above mean sea level, house 28 ft from base to centre of lantern. On keeper's dwelling. Lighted 1855.
- Bayou, St John, 5 miles N of New Orleans, lat 30 1 52 N, lon 90 4 W, fixed white light, dioptric, 6th order, visible 11 miles, building white, centre of lantern 39 ft above mean sea level, building 28 ft from base to centre of lantern. Cylindrical column on screw piles. Lighted 1811.
- Ponchartrain Port, near E end of railway, lat 30 1 47 N, lon 90 2 44 W, white light, fixed and flash every minute and a half, dioptric, 5th order, visible 11 miles, house white, centre of lantern 35 feet above mean sea level, house 29 ft from base to centre of lantern. Lighted 1832.
- West Rigolet, at the E entrance to Lake Ponchartrain, lat 30 10 34 N, lon 89 43 37 W, fixed white light, dioptric, 5th order, visible 10 miles, building white, centre of lantern 30 ft above mean sea level. On keeper's dwelling. Lighted 1855.
- Tower Dupre, at the entrance to Mississippi and Mexican Gulf Ship Canal, lat 29 58 N, lon 89 50 W, fixed white light, dioptric, 6th order, visible 11 miles, building white, centre of lantern 49 feet above mean sea level.
- St Joseph's Island, entrance to Lake Borgne, lat 30 11 9 N, lon 89 24 34 W, fixed white light, dioptric, 5th order, visible 11 miles, house white, centre of

Brass Ventilators Made by MACDONALD & CO.—See adv. ins. cover.

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MACDONALD & CO., Manufacturers of Patent Ships' Water Closets.—See adv. inside cover.

- lantern 35 ft above mean sea level, building 34 feet from base to centre of lantern. Lighted 1865.
- Merrill Shell Bank, between Cat, St Joseph's and Grand Islands, lat 30 14 18 N lon 89 14 28 W, fixed white light, dioptric, 4th order, visible 12 miles, screw piles, centre of lantern 45 ft above mean sea level. A bell and horn in foggy weather. Lighted 1860.
- Pass Christian, on the main land, 6½ miles N W of Cat Island, lat 30 18 54 N, lon 89 14 2 W, fixed white light, dioptric, 5th order, visible 11 miles, house white, centre of lantern 42 ft above mean sea level, house 30 feet from base to centre of lantern. Lighted 1831.
- Cat Island, Western Point, lat 30 13 57 N, lon 89 8 43 W, fixed white light, dioptric, 4th order, visible 11 miles, building white, centre of lantern 39 ft above mean sea level, building 34 ft from base to centre of lantern. Lighted 1831.
- Biloxi, west of Western entrance to bay, lat 30 23 45 N, lon 88 53 6 W, fixed white light, dioptric, 5th order, visible 13 miles, building white, centre of lantern 62 ft above mean sea level, building 48 ft from base to centre of lantern. Lighted 1848.
- Ship Island, west end, lat 30 12 54 N, lon 88 56 58 W, fixed white light, dioptric, 4th order, visible 12 miles, building white, centre of lantern 55 ft above mean sea level, building 50 ft from base to centre of lantern. Lighted 1853.
- East Pascagoula River, East Pascagoula, lat 30 21 3 N, lon 88 33 8 W, fixed white light, dioptric, 5th order, visible 10 miles, building white, centre of lantern 35 ft above mean sea level. Lighted 1854.
- Round Island, S end, off Pascagoula, lat 30 17 30 N, lon 88 34 10 W, fixed white light, dioptric, 4th order, visible 12 miles, building white, centre of lantern 51 ft above mean sea level, house 45 feet from base to centre of lantern. Hidden by woods from N W by N ¼ N, by northward to N E by E ¼ E. A shoal with less than 6 ft water on it extends a mile south of the light house. Lighted 1833.
- Horn Island, E end, lat 30 13 25 N, lon 88 29 56 W, fixed white light, with a red flash every minute, dioptric, 4th order, visible 12 miles, house white, lantern black, centre 42 feet above mean sea level. Lighted 1874.

ALABAMA.

- Mobile Point, S W Bastion of Fort Morgan, east side of entrance to the Bay, lat 30 13 45 N, lon 88 1 27 W, fixed red light, dioptric, 4th order, visible 12 miles, house black, centre of lantern 50 ft above mean sea level, house 30 ft from base to centre of lantern. Lighted 1864.
- Sand Island, middle of the low island about 3 miles S S W of Mobile Point, lat 30 11 20 N, lon 88 3 W, fixed white light, dioptric, 2nd order, visible 17 miles, house black, conical, centre of lantern 132 feet above mean sea level, house 140 ft from base to centre of lantern. Lighted 1838.
- Choctaw Point, entrance of Mobile River, fixed white light, dioptric, 4th order, visible 12 miles, centre of lantern 46 feet above mean sea level, house 41 ft from base to centre of lantern, straw color. Screw piles on the ruins of a battery 6 cables east of Choctaw Point. Fog bell. Lighted 1872.
- Pensacola Harbor, W of Fort Barrancas, N side of Pensacola Bay, lat 30 20 47 N, lon 87 18 23 W, white flash light, every minute, dioptric, 1st order, visible 21 miles, house upper two-thirds black, lower third white, centre of lantern 210 ft above mean sea level, house 160 ft from base to centre of lantern. Lighted 1824.
- Bar Beacon, 150 yards S S E ¼ E from main light house, fixed white light, visible 4 miles, building white. Beacon and main light in line leads over the bar. Lighted 1859.

MACDONALD & CO., Manufacturers of Engineers' Brass Goods.—See adv. inside cover.

Cape San Blas, near the south point of Cape, lat 29 39 46 N, lon 85 21 38 W, white flash light, every minute and a half, dioptric, 3rd order, visible 15 miles, house white, centre of lantern 96 ft above mean sea level, house 96 ft from base to centre of lantern. A dangerous shoal extends 5 or 6 miles southward of the Cape. Lighted 1847.

Cape St George, on the Cape, lat 29 35 15 N, lon 85 2 40 W, fixed white light, dioptric, 3rd order, visible 14 miles, house white, 70 ft from base to centre of lantern. Lighted 1847. Centre of lantern 77 ft above mean sea level.

Dog Island, East side of middle entrance to St George's Sound, lat 29 46 51 N, lon 84 38 37 W. Destroyed by hurricane.

St Mark Harbor, East side of entrance, lat 30 4 26 N, lon 84 10 38 W, fixed white light, dioptric, 4th order, visible 14 miles, house white, centre of lantern 83 ft above mean sea level, house 75 ft from base to centre of lantern. Lighted 1829.

Cedar Cays, Seahorse Cay, East end of mound, lat 29 5 49 N, lon 83 4 46 W, white light, fixed and flash every minute, dioptric, 4th order, visible 14 miles, house red, lantern white, centre of lantern 75 ft above mean sea level, house 43 ft from base to centre of lantern. On keeper's dwelling; a reef extends in a S W direction about 12 miles from Cay. Lighted 1854.

Egmont, Egmont Cay, entrance of Tampa Bay, lat 27 36 5 N, lon 82 46 29 W, fixed white light, dioptric, 4th order, visible 15 miles, house white, lantern black, centre of lantern 86 ft above mean sea level, house 81 ft from base to centre of lantern. Lighted 1848.

FLORIDA.

Dry Tortugas, Fort Jefferson, Garden Cay, lat 24 37 47 N, lon 82 52 53 W, fixed white light, dioptric, 4th order, visible 14 miles, house brown, lantern black, centre 70 ft above mean sea level, house 65 ft from base to centre of lantern. Lighted 1825.

... *Loggerhead or S W Cay*, lat 24 38 5 N, lon 82 55 45 W, fixed white light, dioptric, 1st order, visible 19 miles, house, lower part white, upper part black, centre of lantern 152 ft above mean sea level, house 150 ft from base to centre of lantern. Lighted 1858. *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 ft water, lat 24 37 4 N, lon 81 54 1 W, fixed white light, dioptric, 4th order, visible 12 miles, tower red, dwelling and lantern white, centre of lantern 40 ft above mean sea level. Visible between the bearings of S E by E to S W. Lighted 1854.

... *S W point of island*, lat 24 32 58 N, lon 81 48 7 W, fixed white light, dioptric, 3rd order, visible 14 miles, house white, centre of lantern 72 ft above mean sea level, house 60 feet from base to centre of lantern. Visible between the bearings of N N E $\frac{1}{2}$ E by W, to E by N $\frac{1}{2}$ N. Lighted 1847.

Sand Cay, on a small sand and shell islet about $7\frac{1}{2}$ miles S S W $\frac{1}{4}$ W from Cay West lighthouse, fixed and flash white light every two minutes, dioptric, 1st order, visible 17 miles, house brown colour, lantern white, centre 110 ft above mean sea level. It shows for a space of *one minute* a clear steady light; in every alternate minute there is a brilliant *flash of ten seconds'* duration, preceded and followed by partial eclipses of *25 seconds'* duration. Lighted 1853.

Sombrero Shoal, off dry bank, near Sombrero Cay, lat 24 37 36 N, lon 81 6 43 W, fixed white light, dioptric, 1st order, visible 19 miles, open frame work, iron, on piles, brown, 144 feet from mean sea level to centre of lantern, tower 149 ft from base to centre of lantern. Lighted 1857.

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Alligator Reef, in 5 ft water, near N E part of reef, lat 24 51 N, lon 80 37 10 W, flash light every 5 seconds, dioptric, 1st order, visible 18 miles, house white, lantern black, centre 143 ft above mean sea level. Lighted 1873. The light is a *flashing white and red* light, showing a flash every *five seconds*, in the following order, viz: *five white flashes*, then *one red flash*.

Carysfort Reef, near the edge of Gulf Stream, lat 25 13 15 N, lon 80 12 45 W, white flash light every half minute, dioptric 1st order, visible 17 miles, iron piles, dark color, from base to centre of lantern 112 ft, centre of lantern 106 ft above mean sea level. The dwelling octagonal in shape. Lighted 1852.

Cape Florida, on South point of Cay Biscayne, lat 25 39 56 N, lon 80 9 24 W, fixed white light, dioptric 2nd order, visible 16 miles, house white, centre of lantern 100 feet above mean sea level, house 95 ft from base to centre of lantern. Visible between the bearings of S W and N W. There is a cluster of cocoa-nut trees about the keeper's dwelling. Lighted 1855.

Jupiter Inlet, between Jupiter Inlet and Gilbert's Bar, lat 26 55 26 N, lon 80 5 5 W, white light, fixed and flash every 1 1/2 minute, dioptric 1st order, visible 19 miles, house red, brick, lantern brown, centre 146 feet above mean sea level, house 94 ft from base to centre of lantern. The light is *fixed*, varied every 1 1/2 minute by a brilliant *flash* of 7 1/2 seconds' duration; the flash is preceded and followed by partial eclipses of about *nineteen seconds'* duration. Lighted 1860.

Cape Canaveral, north-east pitch of the Cape, lat 28 27 38 N, lon 80 31 36 W, white flash light every minute, dioptric 1st order, visible 18 miles, house black and white horizontal bands, centre of lantern 139 ft above mean sea level, house 55 feet from base to centre of lantern. Lighted 1847.

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MACDONALD & CO., Manufacturers of Composition Butt Bolts and Spikes.—See adv. inside cover.

ON THE MANAGEMENT OF CHRONOMETERS.

Unless particular care be taken of Chronometers, it is not to be expected that such delicate pieces of mechanism can continue to go with regularity; it may, therefore, be of service to those who have not had much experience in the use of time-keepers to attend to the following remarks:—

1. A Chronometer should be wound up at regular intervals, it being very improper to let one that is generally wound up between 8 and 9 o'clock in the morning run till noon. Great care should be taken to avoid circular motion; therefore, when winding up a Chronometer, it must be kept steady, and the key only turned. The number of turns of the key should be counted, and the last few may be wound gently so as not to butt too sharply.
2. Chronometers should be placed so as to be as little exposed as possible to sudden shocks, from the sea striking the ship, or from the shutting of doors, &c.; they ought not to be exposed to a current of air; and nothing *magnetic* should be allowed to remain near them. They should be placed as near the centre of motion as possible. A small table, secured to the deck (not to a bulkhead), with a stanchion on each side, to prevent people from rolling against it, will be found convenient: the table may have a well in it, capable of holding the requisite number of watches, with a sufficiency of dry sawdust or cotton around them, to break the force of unavoidable concussions upon deck or elsewhere, or a box upon the table may be used instead of a well in it. Watches should always be kept in the same position that they are placed in when first they come on board. As soon as they are placed they should be compared.
3. It is very improper to make a practice of taking a Chronometer on deck when observing altitudes, merely to find the longitude; for, besides the risk of accidents, it is hardly possible to carry about a Chronometer without giving it too much circular motion. Any sudden change of temperature ought also to be avoided: it is therefore proper to take the times of observing the altitudes by a common watch, and find the difference between it and the Chronometer, immediately before or after the observation: then this difference being applied to the mean of the times of observation by the watch, will show the time by the Chronometer answering the mean altitude.
4. If a Chronometer be allowed to run down, it will not commence going again, after being wound up, until it gets one or two pretty quick quarter turns in a horizontal direction, its face being upwards. After being set going, a Chronometer will sometimes keep the

Vessels Fitted with Plumbing Fixtures, by MACDONALD & CO.—See adv. inside cover.

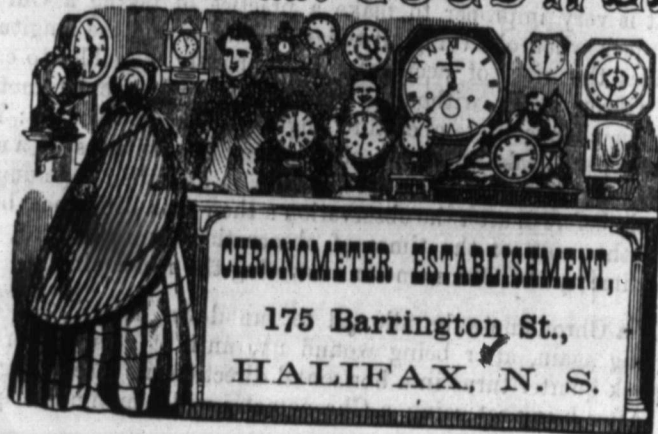
same rate it had before it was let down; this, however, is uncertain, and no dependence can be placed on it, until a fresh rate and error be obtained.

5. When a Chronometer is carried to or from the Ship, it should be fastened by means of the studs and screws, to prevent it from traversing on its gimbles. Great care should be taken by a person carrying a chronometer, that it gets no sudden jerks, or quick circular motion. If the rate of a Chronometer can be properly ascertained, when it is on board, it ought not to be taken on shore for that purpose. Commander Richard Owen, in his "Essay on Chronometers," says that "it may be taken for an absolute maxim in general practice, that the rate of a Chronometer obtained on shore will not be the rate that it will keep when it is removed to a vessel."

6. Change of temperature generally produces the greatest alteration in the rate of a watch. In a paper by Mr. Fisher, published in the "Philosophical Transactions," for 1820, page 196, it is stated that "Chronometers generally go faster on board of a Ship than on shore." Mr Fisher ascribes this to the magnetic effect of the iron in the Ship on the steel part of the balance of a Chronometer. This is a subject that deserves further attention from all intelligent Navigators.

7. The conclusion to be drawn from the foregoing remarks is this: As soon as a Chronometer is in the Navigator's hands, every opportunity should be employed to ascertain its error and rate. The Time Balls at our large sea-ports were established for this object. Head-lands and lights, when in soundings, and lunars, on the ocean, must all be resorted to. In addition to these, the prudent Navigator will not neglect to put into practice the good old maxim, "Latitude, look out, and LEAD."

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MACDONALD & CO., Manufacturers of Composition Clinch Rings.—See, adv. inside cover.

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HARBOR REGULATIONS, PORT OF HALIFAX, N. S.

(Condensed from the "Rules and Regulations for the Government of the Port of Halifax, in Nova Scotia, and of the Office of Harbor Master for the said Port.")

It shall be the duty of the Harbor Master of the said port in person, or by Deputy duly authorized, to go on board of every ship or vessel of the burthen of fifty tons (registered tonnage) and upwards, which shall arrive within the Port of Halifax, within twelve hours after the arrival of such ship or vessel, to see that she is moored only in such a manner or position as shall be assigned to her by the following regulations. And it shall be lawful for such Harbor Master to ask, demand and receive, as a compensation for his services, (vessels belonging to or employed by Her Majesty and the Government of the Dominion of Canada, and ships engaged in trading between Ports and places in the Dominion or in the Fishing trade excepted,) according to the following scale, and under the restrictions mentioned in the Act 35 Vic. Cap. 42, entitled "An Act to provide for the appointment of a Harbor Master for the Port of Halifax."

SCALE OF FEES.

For every ship of 200 tons or under (registered tonnage)	\$1.00
For every ship of more than 200 tons, but not more than 300 tons (registered tonnage)	2.00
For every ship of more than 300 tons, but not more than 400 tons (registered tonnage)	3.00
For every ship of more than 400 tons	4.00

The Harbor Master is authorized to give directions in relation to any dispute that may arise between masters, owners or other persons engaged in hauling vessels in or out of docks or wharves; which directions must be complied with under a penalty of twenty dollars for each neglect or refusal to do so.

The situation of vessels must be changed whenever the Harbor Master or his Deputy may consider a change necessary for the safety of other vessels. Penalty for neglect twenty dollars.

It shall be the duty of the Harbor Master to see that a track be left open for the Ferry Steamers between the City and Dartmouth, and also a space of two hundred fathoms eastwardly from the line of wharves (commencing at Moren's wharf and ending at West's) to be reserved as a passage for the Royal Mail steamers.

No steamer entering or leaving Halifax Harbor (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 forty dollars, to be paid by the owner, master or agent of the vessel violating this Law.

When a vessel arrives short of hands, the Harbor Master may employ additional men, if necessary, to remove it to its appointed station, at the expense of such vessel.

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

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

MACDONALD & CO., Manufacturers of Brass Binnacle Guards.—See adv. inside cover.

All ships or vessels loading or discharging in the stream, coals, ballast, and 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 twenty dollars for each and every offence, to be paid by the owner, master or person in charge of such ship or vessel.

Vessel's main, jib or spanker booms must not be rigged out so as to incommode other vessels.

No vessel shall be left without some person to take care of her, by night and by day, when anchored in the stream.

All vessels lying at anchor in the Harbor shall keep a clear and bright light burning, at least six feet from the uppermost deck, from sunset until sunrise

No vessels 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.

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

No ballast, stone, gravel, earth or rubbish of any kind to be thrown overboard, except in places pointed out by the Harbor Master.

A penalty of forty dollars will be imposed on any parties detected in depositing gravel, stone, rubbish, &c, into any part of the Harbor, or upon the beach.

No explosive material whatever, such as Nitro-Glycerine or compounds of the same, or Petroleum, shall be landed in the City of Halifax without permission, but they may be landed in such quantities as shall be stated in writing by the Harbor Master.

Vessels arriving with gun-powder on board (exceeding 25 lbs.), shall unload the same within forty-eight hours after their arrival, and before coming alongside of any pier or wharf, under penalty of forty dollars and the forfeiture of such gun-powder. Vessels belonging to or employed by Her Majesty and the Government of Canada excepted. Gun-powder discharged from any vessel must be securely covered, and conveyed by water to place of deposit without the limits of the City, under the penalty of twenty dollars.

All shipments of gun-powder must be made after the vessel has cleared at the custom house and ready for sea, except with the sanction and direction of the Harbor Master, under forfeiture of the gun-powder and the further penalty of forty dollars. When it is intended to ship gun-powder on board any vessel, the powder must be conveyed by water and securely covered, under penalty of twenty dollars for every omission.

Forfeited gun-powder to be disposed of by the Harbor Master, as the law directs, and accounted for to the Receiver-General of the Dominion.

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

MACDONALD & CO., Brass Founders.—See adv. inside cover.

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