

THE DAILY EXAMINER.

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NEW SERIES.

CHARLOTTETOWN, P. E. ISLAND, WEDNESDAY, DECEMBER 14, 1887.

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ALMANAC FOR DECEMBER, 1887.

MOON'S CHANGES.

Last Quarter 7th day, 10h., 58.3m., p. m., N.
W. (below horizon)
New Moon 14th day, 3h., 9.0m., p. m., West.
First Quarter 22nd day, 2h., 48.7m., a. m., N. W. (on horizon.)
Full Moon 30th day, 4h., 1.8m., a. m., S. W.

DAY OF WEEK	Sun		Moon		High		Day	
	rises	sets	rises	sets	water	leth		
1 Thursday	7 24	4 9	5 23	10 59	8 41			
2 Friday	30	9 6	13 11	36	39			
3 Saturday	31	7 9	aft 13	38				
4 Sunday	32	9 8	11 0	52	37			
5 Monday	33	9 9	18 1	36	36			
6 Tuesday	34	8 10	25 2	24	33			
7 Wednesday	35	8 11	38 3	18	31			
8 Thursday	36	8 morn	4 29	39				
9 Friday	37	8 0	51 5	44	29			
10 Saturday	38	8 2	6 7	5	28			
11 Sunday	39	8 3	20 8	11	27			
12 Monday	40	8 4	36 9	3	24			
13 Tuesday	41	8 5	51 9	53	26			
14 Wednesday	42	8 7	2 10	34	26			
15 Thursday	43	9 8	7 11	19	25			
16 Friday	44	9 9	6 morn	25				
17 Saturday	44	9 9	53 0	2	25			
18 Sunday	45	10 10	33 0	43	24			
19 Monday	46	10 11	7 1	24	24			
20 Tuesday	46	10 11	36 2	7	24			
21 Wednesday	47	11 aft	1 2	51	25			
22 Thursday	47	12 0	26 3	44	25			
23 Friday	48	13 0	49 4	44	25			
24 Saturday	48	13 1	12 5	50	26			
25 Sunday	48	14 1	32 6	54	26			
26 Monday	49	15 2	7 7	50	26			
27 Tuesday	49	15 2	40 8	36	27			
28 Wednesday	49	16 3	19 9	20	27			
29 Thursday	49	16 4	6 10	1	28			
30 Friday	49	17 5	0 10	40	28			
31 Saturday	7 49	17 6	1 11	20	28			

—FOR—
B-O-S-T-O-N

WINTER ARRANGEMENT
THE PALACE STEAMERS
OF THE
INTERNATIONAL S.S. CO.

Leave St. John for Boston, via Eastport and Port land, every Monday, and Thursday at 8.00 a. m.
Fare from Charlottetown to Boston, \$6.50, 2nd class; \$9.50, 1st class.
For tickets and other information apply to G. A. S. I. R. P., F. W. HALE, P. E. I. S. T., P. E. I. Steam Nav. Co. or to your nearest Ticket Agent.
Nov. 12, 1887—ad wky

L. ARTHUR & CO.,
COMMISSION MERCHANTS,
RECEIVERS OF
Mackerel, Butter, Cheese EGGS
Poultry, Potatoes, Fruit & Vegetables.
142, 144 Commercial Street,
BOSTON, MASS.
May 18, 1887.

It's an ill wind that blows nobody good.
THE leading Dry Goods firms of the City are selling off at 20 and 30 per cent. discount (see advts.) Perhaps their profits warrant the reductions in price; perhaps not. Anyway, it's a good thing for the purchasers.

OUR ADVICE.
Don't buy any more Dry Goods than you need because they are cheap. Buy just what you would have bought if no reductions had been made. Then you will find that you have a good many dollars on hand that you did not expect to have. Now, bring those dollars over to our store and lay in a stock of

GOOD THINGS TO EAT.
(You can't live on Dry Goods.) Get a box of Raisins, a few pounds of Currants, 5 or 10 lbs. of Tea (or a half chest if you have a large family), a good supply of Sugar, Rice, Spices, a tin of Kerosene Oil, and such other Goods as you need. We have a
BIG STOCK,
WHICH WE WILL SELL
VERY LOW,
and the more you buy, the bigger the discount.
GEO. CARTER & CO.,
MARKET SQUARE,
Next to Chappelle's Bookstore.
Nov 24—law wky

GREAT DRY GOODS SALE.

We intend to make extensive alterations in our premises next spring, and a change in our business, and to do this must clear out our entire stock of Dry Goods, Clothing, Carpets, &c., &c

To dispose of this immense stock within so short a time, it must be sold at a sacrifice, and we shall, therefore, give discounts varying from 20 up to 30 per cent.

The stock consists of Seasonable and Fashionable Goods, which are all marked in plain figures, and at prices that are well known to be the lowest in the market.

This Sale will be for CASH ONLY.

HARRIS & STEWART
SUCCESSORS TO GEO. DAVIES & CO.

Ch'town, Nov. 18, 1887.

CHARLOTTETOWN, MARKET SQUARE.
SUMMERSIDE, WATER STREET.

CASH STORES CASH
NEW DRESS GOODS, MANTLES AND FURS.
JAMES PATON & CO.

Are Showing Very Large Stocks of

DRESS GOODS.
MANTLES,
FURS.
MILLINERY,
UNDERCLOTHING,
MENS OVERCOATS,
CARPETS,
TAPESTRY CURTAINS.
WOOL SCARFS,
GOAT ROBES,
FUR COATS.

TRY US

[FAMILY MOURNING.]

TRY US

JAMES PATON & CO.

h'town, Nov. 30, 1887.

Charlottetown Boot & Shoe Factory

BETTER THAN EVER.
Old Lasts Thrown Away; New Lasts Received.
The Long-looked for Boot at Last.
Great Comfort.
Great Wear.
Best Value.

GOFF BROS

Ch'town, Nov. 14, 1887—cod & wky

Literary and Scientific Institute.

REPORT OF PRESIDENT C. PALMER, ESQ.

(Continued.)

America has her associations for the advancement of science. To show how she is putting forth her energy in this respect, it is only necessary to mention that at the ninth International Medical Congress, held at Washington last month, nearly every civilized nation on the globe was represented. About 4000 were present. Among other subjects discussed was Pasteur's theory of vaccination, as a means of preventing yellow fever. The milk supply of cities was largely dwelt upon. In the progress of intelligence, England and America, it is said, have formed an intellectual union, and share in each others highest thoughts. The printing press is more active than ever. "The art of paper-making," says the Scientific American, "has reached a point where a tree may be cut down, made into paper and turned out as a newspaper in 36 hours." The publication of books, magazines, newspapers and periodicals of all kinds, and in all languages is rapidly increasing, and not satisfied with these, we have exploration societies and arteology, hard at work digging and exhuming the stone libraries and monuments, both in classic and Bible lands, whereby the authenticity, if not the inspiration of the Holy Scriptures, are verified more and more.

Great mechanical public works are in keeping with the age. Prominent among them, the Panama Canal, which M. De Lesseps announces to the Academy of Science, will be opened on the 3rd Feb., 1890. The passage, he says, will then be clear for 20 ships a day, although the work will not then be entirely completed. The annual revenue from the tariff is estimated at one hundred million of francs. The London Daily Telegraph, of 1st Oct. last, speaks of the progress of the London and Southwark Subway under construction, which, in view of Senator Howlan's scheme, is worth noticing. This subway, it says, differs essentially from preceding ways subterranean, 2 distinct tunnels, one for the up and one for the down lines, side by side, or now and then superposed one above the other. Each of these will be, when complete, an iron tube three miles in length and ten feet in diameter, viz.: 18 inches broader than the 2nd class Metropolitan Railway carriage. Mr. Greathead, the engineer, has been greatly praised for a mode of construction which is novel and expeditious. A steel shield overlapping, like the cap of a telescope, the forward end of the iron tunnel is driven forward by hydraulic power as the material in front is carried out and simultaneously, segments of an iron lining are built up inside, under cover of the shield. The shield cuts a circle rather larger than the required tunnel, and the space is filled with cement, a coating impervious to water. An inch of cast iron will offer a resistance to crushing as great as several feet in thickness of brick-work, besides which the metal wall has the advantage of being absolutely water-tight. The new line is 40 to 60 feet under the surface, costing about £200,000 per mile.

A remarkable advance has been made during the past year in the art of photography, as applied to Astronomical observations. This new method of mapping the skies, as distinguished from mere eye observation, recorded by the pencil, was discovered by M. Henry, at the Paris Observatory last year. And the result was a meeting of the Paris Astronomical Congress in April last, in response to an invitation issued by the Academie des Sciences. It was attended by representatives from different countries, eight being from England. The meeting was a great success. The result is that an attempt to obtain a photography autobiography of the heavens, and these charts will be the celestial maps of the future. Ten or 12 observatories in different parts of the world will co-operate in the work. Four square degrees will be the surface of each plate. To take the whole heavens will require about 11,000 plates; this would then be ten years for the whole work, the number of stars altogether amounting to ten or twenty millions—truly a gigantic work. Another remarkable advance has been made in the same art, in taking what is called composite likenesses, that is by reducing any number of persons likenesses into one typical likeness.



Preparations for the observation of a total solar eclipse have been made on an extensive scale as were those for the eclipse of 19th August last. The Russian astronomers were most favorably situated as in the track of totality. The United States sent an expedition to Japan specially, a distance of 16,000 miles, to take observations, and also one to Russia, but both were doomed to disappointment on account of the thick weather. The corona, that wonderful nimbus or aureola which surrounds the sun, was to be the chief object of observation. It is still the great solar puzzle. The green line first seen in 1869, they agree emanates from some substance unknown at present to terrestrial chemistry. The coronal gas is a phenomenon which awakens the keenest curiosity and leads to vigilant study and improved apparatus. Edison's barometer shows that the corona radiates a certain amount of heat. But it is not a solar atmosphere. It does not gravitate on the sun's surface and share his rotation's rotation. These are some of the solar phenomena which perplex astronomers. According to calculations made by Mr. S. Johnston, between A. D. 538 and 2,500, only two eclipses of the sun are distinctly visible at Greenwich.

An extraordinarily ingenious invention as applied to astronomical instruments is worthy of notice. We know that heretofore the thread of a spider's web or rather one strand of it, has been used to divide the glass eye piece of the telescope, mapping it into squares, so that the passage of a star can be noted to the fraction of a second. No thread that man can produce is fine enough, nor will the thread of the common spider do, but a New Zealand spider spins one of three strands which is divided and used. But hitherto the resources of science have been taxed to produce a torsion thread which shall not lose its tension and which would compete with the spider's. Now Professor Boys, of Sikensingham, exhibited at the soiree of the Royal Society his method of producing fine filaments of glass quartz, which, to be drawn out to a fine thread, is attached to the tail of an arrow filled into a fixed cross-bow, which can be discharged by a trigger. The material is heated by oxy-hydrogen flame, and the moment it softens the arrow is discharged, and a thread of extreme fineness is drawn out. The inventor has thus obtained a glass thread a thousandth of an inch in diameter, much finer than the finest web of the Melbourne spiders, and quite free from elasticity. Indeed, it is said quartz can be thus spun so fine as only to be seen under high microscopic power.

The earthquake problems are still occupying the most highly trained minds in all civilized countries. Nearly every astronomical observatory is now filled with refined and delicate instruments, as earthquake indicators. The result has been to show that the vibrations of the earth are so incessant that there is never a second of time of perfect rest in any country where the test has been made. Their primary cause is found not at great plutonic depths, as was commonly supposed, but in the upper layers of the earth's surface. And further, the leading seismologists agree that it is a mistake to look only to the earth itself for the causation of earthquakes. They point to processes external to the earth, as effective causes of shocks. Barometrical conditions are largely connected with them. So is the tidal action of the moon; they are more frequent when the moon is nearest the earth, and when she is on the meridian, than at other times. The French Academy of Science has had its attention called to a geological law (so-called) that the cooling of the earth's crust goes on more rapidly under the sea than on land surfaces, and thence that it thickens under oceans more quickly, and so gives rise to the swelling up and distortion of the thinner portions of the crust, viz., the formation of mountains.

Among the important discoveries of the year is Prof. Blake's proposed method of telephonic communication between ships at sea by talking through the water. In a fog, in the smoke of battle, in a naval conflict that fleet would conquer which (other things being equal) possessed the best method of signaling. Lieut. Fiske, who has been carrying on for many months a laborious series of experiments in this direction, thus writes in the "Electrical World." He says: "Although much has already been done by Prof. Blake and Mr. Edison, the problem has not yet been fully solved. All the navies in the world will be compelled, in self-defence, to adopt the first practical system; and besides, all steamers would gladly adopt it." He proceeds: "I experimented first with a view of signaling by indentation, using a ten foot bar electro-magnet, whose coils were traversed by a current of over 100 amperes, and for a receiver a pair of Bell telephones in circuit, with coils of fine wire wrapped in various ways." Then he went on enlarging his apparatus until at length his sending electro-magnets were the iron masts of a ship wrapped with heavy wire, and finally he made an electro-magnet of the ship itself, and as a receiver he used an iron tug, 150 feet long, wrapped with wire in current, with two Bell telephones. The results were encouraging. They are too lengthy to detail here. Mr. Edison, one of the most remarkable men of the age, is now working out a pyro-magnetic dynamo, that is, electricity direct from iron fuel. It has been long noticed and mentioned in this Institute that if the enormous amount of energy latent in coal could be made to appear in a contributable form, such as electric energy, the present mechanical method of the world would be revolutionized.

It is advertised that 500 of his projected phonographs will be on the market within two months. This instrument will be about the size of a type-writer, and will work automatically by a small electric motor, which is noiseless, and stops at the touch of a spring. Its operation is thus described by Mr. Edison. The person wishing to send a letter has only to set the machine in motion, and to talk in his natural voice into a receiver. He then places the phonogram or sheet receiving the impression into a little box made on purpose for the mails. The receiver of the phonogram will put it into his apparatus, and the message will be given out more clearly and distinctly than the best telephonic message ever sent. These wonderful instruments, which Mr. Edison considers the most marvellous of his inventions, cost about \$60 each. He is now building at his home in Orange, New Jersey, a laboratory, the largest private one in the world, consisting of five immense buildings costing \$180,000. Forty skilled workmen are engaged.

It will be remembered that a fierce controversy raged some years ago on spontaneous generation of life, the supporters of the doctrine contending that the presence of the smallest particle of air was sufficient to determine the generation of low forms of life in certain highly partible substances, such as milk, blood and the like. Prof. Pastern and others contended that it was not the air, but certain living germs suspended in the air, which gaining access to these substances, gave rise to those growths which made their appearances in them. It seems that P. F. Frankland and others have been experimenting during the past year on these micro organisms in the air, and they all agree that important functions are performed by them in the laboratory of nature. Then there is the question of the influence which is exerted by these micro-organisms on health.

The air in the streets of cities is found to contain numbers innumerable in excess of (Concluded on fourth page.)

JAMES A. MORRISON. GEORGE MUSGRAVE
MORRISON & MUSGRAVE,
BROKERS

—AND—
Commission Merchants,
HALIFAX.

Consignments of Island produce will receive prompt attention.

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TEA MERCHANTS,
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LONDON, ENGLAND.
Represented in Canada by MORRISON & MUSGRAVE, Halifax.
Oct. 24, 1887—lmc