

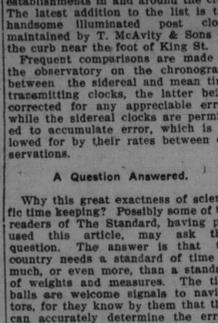
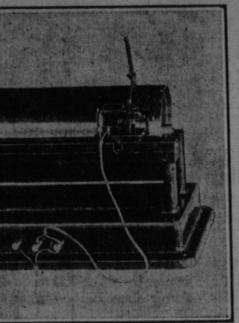
HG BY MARITIME PROVINCES ARE GIVEN STANDARD TIME BY ST. JOHN OBSERVATORY

Continued From Page Nine. It is known for this purpose. When the director requires a new line or two he invokes the help of a friendly spider, gets high on a card with a hole in the centre and as the spider drops from the card and spins his web the card is turned until the necessary amount of web has been secured to renew the lines in the instrument.

Vibrations of the Earth. Explaining the extreme sensitiveness of the transit instrument under notice Mr. Hutchinson stated that it was affected by changes of temperature and by vibrations of the earth's surface which were not sensibly felt by an individual. "Of course," he added, "the amount of disturbance is not large but still it is enough to vitiate

was placed on the North tower and that has been its official place ever since, with the exception of the period, extending over more than a year, while the Custom House was being rebuilt after the fire of 1892. During that interval a temporary time ball, placed on the top of the Post Office building, was used. Every week day in the year, this city's time ball is raised to half mast at 12:45 p.m. and to the top at 12:59 p.m. At one o'clock Atlantic Standard Time, the ball is dropped electrically direct from the Standard Mean Time clock in the Observatory.

The time ball on the citadel at Halifax, which was established in 1859, was on October 1st, 1904, is dropped at the same instant, a special time signal being telegraphed by the Western Union service from the St. John Observatory, each day for this purpose.



THE CHRONOGRAPH.

Distributing the Time.

THE TIME BALL, ST. JOHN.

the observations. Thus in timing the transit of a star, the ideal condition would be a telescope exactly in the meridian, that is, pointing due North and South. Should it deviate to the East and West, the error in the correct time would not be registered. The axis also has to be perfectly level and the centre wire exactly in the optical centre of the telescope. These conditions, no matter how solidly the instrument is mounted and how perfectly it has been adjusted, can never be maintained for any length of time owing to the above mentioned cause of disturbance.

In addition to the time balls, which every one is familiar, time signals are despatched every week day morning by the Western Union service to all their important offices in the Maritime Provinces. This method, which this service is carried out in worth the detailed explanation given to The Standard's representative.

The system in force permits of no mistakes. Ten o'clock in the morning is the hour selected and every Western Union operator knows it. Two minutes before 10 a.m., the Standard Mean Time Clock in the St. John Observatory, being connected by wire with the telegraph system, automatically opens the line and the beats of the various telegraph sounders in all the Western Union offices throughout the Maritime Provinces begin to be heard. Ticking second after second, until the fifty-seventh second is reached. At that point a pause of two seconds is made followed by a dot exactly on the fifty-ninth minute. This is followed by another pause of two seconds, after which dots are made every second up to the fiftieth, another pause following until the hour ten a.m. is reached when the final dot is made. The line then remains open for ten seconds when the transmitting clock automatically closes the circuit.

The Skill Required. "A skilled observer," he continued, "with the modern instruments can determine the time of a star's transit within a small fraction of a second, but it requires a clear head and years of constant practice to become expert and able to judge to the hundredth part of a second when the bisection of the wires are made, and to that degree of nicety is the time observed. Our transit telescope in the observatory here is specially designed for this purpose and has many devices to insure accuracy of results."

A Wide Service. Practically all the timepieces in the Maritime Provinces are regulated by the time signal transmitted on the Western Union wires from the observatory in St. John.

This time signal, through an automatic repeater, is also sent out by wireless from the Marconi Station at Campdown, N. S., for the purpose of chronometer comparison by ships at sea within the zone of that station.

In proceeding to explain how this accuracy is guaranteed, Mr. Hutchinson stated that for the purpose of exactly comparing the Standard Sideral Clock with the time of the meridian passage of a star the Chronograph is used. "This instrument," he continued, "has a cylinder which is revolved approximately once a minute on the cylinder as it revolves. The sideral clock, being fitted with a break circuit attachment, lateral marks are made on the paper each second by this clock, the 60th second being omitted to determine where the minute commences.

Besides the transmitting clock what is known as the Master Clock also stands in the office of the observatory. The Master Clock is engaged in the work for the people of St. John in particular and is used to correct hourly, both by day and by night, a number of clocks throughout the city.

These clocks are of special construction, but not more expensive than an ordinary key-winding clock of similar appearance. The winding is also done by batteries concealed in the case. Each clock is provided with a simple attachment by means of which the

During a star's passage across the field, the transit micrometer, which is fitted to the eye end of the telescope, fifteen records are made on the chronograph along with the seconds from the sideral clock. The chronograph sheets being afterwards read, the precise error of the clock is computed from the recorded observations and the errors and rates of the sideral clocks determined.

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As the word "Meteorological" has appeared in this article it may be well to explain that the object of Meteorology is the study of atmospheric phenomena and the investigations of weather and climate. The Standard's representative during his visits to the Observatory saw many other instruments of interest connected with the Meteorological Service, but it was decided not to lengthen this article by giving a description of them and the methods used in the weather department of the Service. This subject will be dealt with in another article to follow.

Less technical in description and of equal interest is the method by which Time is distributed from the Observatory at St. John throughout the Maritime Provinces. The outward and return signals of the time service are the Time Balls.

The time ball became an institution at St. John forty five years ago. In 1868 a time ball was erected on the building which still crowns the top of Fort Howe. This site was selected as the most conspicuous point in view from the harbor, the ball being principally designed for the use of navigators to time their chronometers.

Given under my hand and the Seal of the said Probate (L.S.) Court, this thirteenth day of October, A. D. 1913. (Sgd.) J. R. ARMSTRONG, Judge of Probate, (Sgd.) H. O. McNEENEY, Deputy Master of the Probate, BAXTER & LOGAN, Proctors.

COLD IN THE CHEST

RUB WELL WITH ZAM-BUK!

For bad colds on the chest, rub the chest and between the shoulders well with Zam-Buk at night. If you suffer from catarrh or cold in the head, just insert a little Zam-Buk at the base of the nostril, and as the balm becomes warm, inhale the healing essences which vaporize. Sores in the nostril, which are sometimes set up by catarrh, will yield to Zam-Buk treatment. Mrs. N. S. Babcock, of Matawatsch, Ont., says: "For a long time I had a very disagreeable sore on the inside of the nostril, which gave me great pain and caused much annoyance. I feared it would turn to cancer, and all I tried proved unavailing. I was glad to say that the sore that I defamed all other remedies was overcome by the use of Zam-Buk and is now quite healed."

been spending a few days with friends here, returned home Monday. Miss B. McInyre, of St. John, is visiting friends here. Wm. Brown is visiting in St. John. As a result of a gale a scow loaded with 400 bags of cement sank at Hart's Lake, where Contractor Corbett is preparing foundations for the erection of the Valley Railway bridge at this place. Preparations are being made for the erection of the Valley Railway station in this town. Weather conditions of late have interfered with the harvesting of crops and much grain has been damaged in consequence. The Thanksgiving ball given by the young ladies of the town in the assembly rooms was a brilliant success.

GAGETOWN NOTES.

Gagetown, Oct. 23.—Kingsley Shields, D. Moore, Fred Corey and Fred Dungey, of St. John, spent Thanksgiving at their homes here. Mr. Davidson, of the Bank of Nova Scotia staff, spent the holiday with friends in Fredericton. K. M. Fluke, B. S. A., Commission of Conservation, Ottawa, is investigating agricultural conditions here. He has been carrying out similar investigations in different sections of the Maritime provinces and it is quite probable that more demonstration farms may be established as a result of his work. E. S. Brodie has been confined to his house on account of illness. Mr. Jacobs, Pittsburg, Pa., spent the weekend at Gray Gables. Kenneth Gillis, of St. John, who has

Who Moses Was.

"Now, Albert," said the Sunday school teacher, "Can you tell me who Moses was?" "Yes, m'am," replied the little fellow, "he was the only man who ever broke all the ten commandments at once."

Just Apply this Paste And the Hairs Vanish

(Beauty Notes.) It is no longer necessary for a woman to go through life with a face disfigured by a fuzzy growth, for if she will apply a plain delatone paste to the objectionable hairs for two minutes, she will rub it off every trace of hair will vanish. To make the paste, mix some water with powdered delatone. After the paste is removed, the skin should be washed to free it from the remaining delatone. Better results are obtained if the delatone is purchased in an original package.

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NOTICE

TENDERS are hereby invited for a service of not less than 9 knots an hour, by a steamer of not less than 200 tons, to ply round the Island of Anticosti, or (2) for:

(a) A steambark service, of not less than 7 knots an hour, 3 days each week, between Anticosti and Port of Montreal, calling at places on the Leeward Coast for freight and passengers—the steamer to be not less than 30 tons; and

(b) A sailing vessel service with an auxiliary screw from Roseau round the Island once a week, calling at Anticosti, and the Leeward Coast for freight and passengers, the vessel employed to be of not less than 75 tons.

Particulars of service, itinerary, etc. may be had on application. Replies to be addressed to Administrator Dominion or before Nov. 30th.

The Administrator does not bind himself to accept the lowest or any tender.

PROBATE COURT, CITY AND COUNTY OF SAINT JOHN.

To the Sheriff of the City and County of Saint John, or any Constable of the said City and County: Greeting: WHEREAS the Administrator do bonis non of the estate of William McKelvey of the City of Saint John in the City and County of Saint John, Yeoman deceased, hath filed in this Court an account of his Administration of the said deceased's estate and hath prayed that the same may be passed and allowed in due form of Law, and the distribution of the said Estate directed according to Law.

You are therefore required to cite the heirs and next of kin of the deceased and all of the creditors and other persons interested in his said estate to appear before me at a Court of Probate to be held in and for the City and County of Saint John, at the Probate Court Room in the Pugsley Building in the City of Saint John, on Monday the twenty-sixth day of January next at eleven o'clock in the forenoon then and there to attend at the passing and allowing of the said accounts and at the making of the order for the distribution of the said estate as prayed for and as by Law directed.

Given under my hand and the Seal of the said Probate (L.S.) Court, this thirteenth day of October, A. D. 1913. (Sgd.) J. R. ARMSTRONG, Judge of Probate, (Sgd.) H. O. McNEENEY, Deputy Master of the Probate, BAXTER & LOGAN, Proctors.

WANTED.

WANTED—Woman to do general cleaning around office, 5 days each week. Position permanent. Apply Standard Office, 82 Prince William Street.

MALE HELP WANTED

BUILDERS' COURSE BY MAIL.—Construction, Plan Reading, Estimating, Architecture, Drawing, Contracting, etc., especially prepared for contractors, builders, bricklayers, carpenters, plasterers, apprentices, Students study plans of buildings and machinery being actually constructed in Chicago. Home study work the same as in our college classes. Mention which is desired when writing for catalogue. Chicago Technical College Room 1036, Lake View Building, Chicago, Ill., U. S. A.

SITUATIONS VACANT.

WANTED—Learn Barber Trade. Few weeks required, tools free. Positions secured. Professors of 15 to 20 years' experience. Write, Modern Barber College, 527 St. Lawrence Blvd., Montreal.

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FOR SALE—Pool table 4 1/2 x 9, and Box Ball, 49 ft. long. Apply to Robert Welch, Queen Street, Woodstock, N. B.

FOR SALE—Second hand steel radiators. Apply to H. Chestnut & Sons, Fredericton.

MOTOR TRUCK FOR SALE.

Tenders will be received until Nov. 1st next, by the undersigned, for 1200 lbs. motor truck, capacity 1 to 1 1/2 tons, suitable for either passenger or freight business. New July, 1912. Delivery Wagon. One rallye four ton carriage, seats nine to twelve people. Family Carriage, six sixes Wagon. One cheap Farm Horse. Send for prices. EDUARD COMBE'S, 115 City Road, House Main 647.

FOR SALE—Tugboat, 65 ft. over all, 14 ft. 3 in. beam, 8 ft. deep, fully equipped with winches, 10 and 20 compound engines, surface condenser and pumps. All connections and pipes and copper. Address T. N. Jacarath, Tusket, N. S.

EDGEcombe CARRIAGE BARGAINS

FOR SALE—One Trotting Car, 44 lbs. Wagonettes, five stunner 1/2 ton Wagon, latest designs. Four Wagonettes. Two covered Delivery Wagons. One rallye four ton carriage, seats nine to twelve people. Family Carriage, six sixes Wagon. One cheap Farm Horse. Send for prices. EDUARD COMBE'S, 115 City Road, House Main 647.

FOR SALE—Second hand safe for sale. Large Herring-Hall-Marvin safe. Nearly new. For full particulars address Box 421, care of Standard.

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