

Scientific.

THE TRANSIT OF VENUS IN 1874.

Perhaps there is no datum of astronomical science which is of more fundamental importance than the sun's distance. It is the measuring unit by which space itself is gauged, and the plummet line used in sounding the celestial depths. A trifling error in this distance, when multiplied by the immense remoteness of a fixed star, becomes enormous; an error of one-hundredth of the whole causing a difference of 200 000 miles in the distance of even the nearest fixed star. It is of the utmost importance, therefore, not only to pure astronomy as a science, but also to applied astronomy,—the art by which navigation has been made certain, and by which the measurement of coast surveys and the determinations of longitude have been made exact,—that this distance be accurately determined.

But not only this. One of the most accurate of the methods in use for measuring the velocity of light is by noting the time it takes a light-ray to cross the earth's orbit, and then dividing the diameter of this orbit by this number. Jupiter's satellites are eclipsed by their primary about 8 minutes sooner when the earth and Jupiter are on the same side of the sun, than when they are on opposite sides; hence it takes light 8 minutes to cross the earth's orbit. Evidently then, upon the value determined for this orbit depends the velocity of light. But this is one of the fundamental data of physical science. Optics deduces not only the theory of light itself from this datum, but founds upon it many of those principles which have been applied in practical life, have been the means of advancing our civilization and increasing our wealth.

It must now be clear that, even considered in a purely economical point of view, the precise determination of the sun's distance is a necessity of science. Now, of the four known methods of this measurement, the most promising is that based on a careful determination of the position of Venus on the sun's disk, during a transit of that planet, by two or more observers stationed widely apart on the earth's surface. The parallax or angular distance of the planet's position, as thus measured, gives data by which the solar distance may be calculated. But these transits of Venus are very rare occurrences. The last one took place in 1769; and another as favorable will not occur for another century. Two, however, are to take place before long, one in 1784, the other in 1882. Though unfavorable as regards certain methods of measurement, they are favorable for others; so that varying their methods, astronomers are planning the most delicate observations on the transit of 1874. It may here be observed that the importance of new measurements appears from the fact that the best determinations thus far made differ by three or four per cent. of the whole; a large quantity when applied to celestial distances.

This importance has been already recognized more or less fully by all the civilized nations of Europe. As long ago as 1857, England began to move in the matter. Experiments were made and plans were proposed and tested, for obtaining the best results; and in 1869, £15,500 were granted by the Government, the stations were selected, and the expedition arranged. Prussia has planned a series of observations with great liberality; and a commission, made up of her best astronomers, has the matter now in charge. France moved in the matter before the war which has resulted so disastrously. Since its close the preparations have been continued and are to be liberally sustained by the Government. But until within a short time,—excepting suggestions from several astronomers,—nothing has been done in this country in the way of preparation to observe this transit. Early in April a memorial was presented to a committee of Congress, signed by Professor Henry, by the men of science connected with the Smithsonian Institution, and by the astronomers of the Naval Observatory, urging that an appropriation of \$150,000 be made to enable them to make this rare opportunity available to science. Their proposition is to use the navy for this purpose, sending such vessels as can be spared, equipped with the necessary observers and instruments, to such points in the Indian and Pacific Oceans as shall seem most desirable.

It is already late to begin these preparations. Men must be trained, methods,—especially the photographic,—must be tested; instruments must be constructed, and equipments provided. Concerted observations must also be agreed upon and duties carefully assigned to each individual of the observing parties. All this requires time; but with proper means given by Congress, it may be done and done satisfactorily. In this way a well won reputation for liberality to science, acquired by the appropriations made in recent years for observing solar eclipses, which have yielded results of great value to science, may be sustained.—College Courier.

MUSHROOM SPAWN.—Henderson, in his "Gardening for Profit," tells how to make spawn as follows: "Take equal portions of horse droppings, cow dung or fresh loam, mix the whole thoroughly together as you would make mortar, then form it into cakes about the size of large bricks; place these on edge, under cover, until they become dry: then insert into each a piece of spawn, half an inch or so square; let the bricks remain until they are quite dry; then spread about eight inches of horse dung over the floor of a shed, on which build the bricks in a pile three feet wide by three feet high keeping the side in which the spawn has been put, uppermost; then cover them over with sufficient stable manure, so as to give a gentle heat throughout the whole. In two or three weeks the spawn will have spread itself through the whole mass of each brick; they are then removed to a dry place and will retain their vital properties for many years."

Major Freas says he saves his pumpkins by simply placing them on a scaffold in a dry cellar where they will not freeze. They like an even temperature, and if down to 33 degrees, one degree above freezing, so much the better. They should however be laid singly and not in piles, and if they are kept in a cool dry shed until cold weather sets in, and then removed to a cellar of some sort where frost cannot reach them, they will remain sound not only all the winter, but occasionally until August!

When a farmer loses a horse, a sheep, or any other animal, instead of throwing the carcass to the dogs and crows, or burying it, in this manner losing it, let him throw over it a few handfuls of slaked lime and then from eight to ten times the bulk of the animal of earth. By this means the fertilizing gases which are thrown off during the decomposition of the animal will be absorbed. He will then have one or two cart-loads of manure, which will pay him five times over for his pains.

As children frequently run barefoot in summer, and are liable to get a nail in their feet, it will be of service to any one suffering from an accident of this kind, to know that an application of fresh peach leaves, bruised and applied to the wound and confined with a bandage and renewed twice a day, effects a speedy relief and prevents lock-jaw. Frequently a single application is sufficient.

IMMENSE QUARRIES of soapstone and serpentine marble, of the finest quality, have been found near the eastern entrance of Hoosier Tunnel. The stone is so situated in reference to the railroad, that it can be quarried and placed on cars at so small a cost, as to make competition well-nigh useless.

ANNIHILATING DISTANCE.—A gentleman in New York sent a telegram to Hong Kong, China, in the afternoon of April 17, and received a reply from there early on the 19th, the message and reply containing 41 words, flashing round the world, in less than 39 hours.

If pegged boots are occasionally dressed with petroleum between the soles and upper leather, they will not rip. If the soles of boots and shoes are dressed with petroleum, they will resist wet and wear well.

AN ALLIGATOR eighteen feet in length, and weighing eight hundred pounds, was recently killed near the mouth of the Ocklawaha River, in Florida.

Two valuable diamonds were lately found in the crop of a West Indian pea-hen, on board ship.

HALIFAX, N. S., JUNE 19, 1872. MESSENGER ALMANACK. JUNE, 1872.

New Moon, June 5, 11h. 9m. afternoon. First Quarter, " 11h. 3m. morning. Full Moon, " 21h. 2h. 43m. morning. Last Quarter, " 27h. 5h. 13m. afternoon.

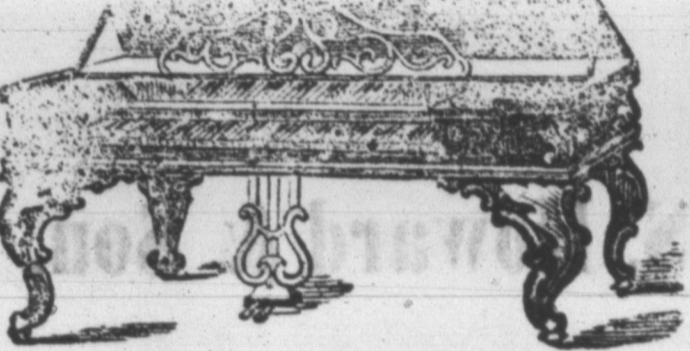
Table with columns: Day, SUN, MOON, High Tide. Rows for days of the month from 1st to 30th.

THE TIDES.—The column of the Moon's Southern gives the time of high water at Parrsboro', Cornwallis, Horton, Hantsport, Windsor, Newport, and Truro.

High water at Pictou and Cape Tormentine, 2 hours and 11 minutes later than at Halifax. At Annapolis, St. John, N. B., and Portland Maine, 3 hours and 25 minutes later, and at St. John's, Newfoundland 30 minutes earlier, than at Halifax. At Charlottetown, 2 hours 56 minutes later. At Westport, 2 hours 54 minutes later. At Yarmouth, 2 hours 20 minutes later.

FOR THE LENGTH OF THE DAY.—Add 12 hours to the time of the sun's setting, and from the sum subtract the time of rising.

FOR THE LENGTH OF THE NIGHT.—Subtract the time of the sun's setting from 12 hours, and to the remainder add the time of rising next morning.



Superior Pianos, IN VARIOUS STYLES.

UPRIGHT, OBLIQUE, SQUARE, &c. With all the latest improvements, manufactured by the subscribers, and especially adapted to this climate. An assortment of

THE "SILVER TONGUE." A very fine toned CABINET ORGAN, by Carhart and Needham, N. Y.

The above are offered to a discriminating public at moderate prices, WM. FRASER & SONS, June 1. 70 & 72 Barrington St.

99 GRANVILLE STREET. 99 S. S. "DACIAN,"

SLIGHTLY DAMAGED. BLACK CRAPES, BLACK FRENCH MERINOS SMITH BROS. May 1.

NOVA SCOTIA Boot & Shoe Factory 22 & 25 GEORGE STREET. (North-end of Provincial Building.)

THE Subscriber begs respectfully to intimate to his Friends, and Public generally, that having fitted up his Establishment with the Latest and most Improved Machinery.

BOOTS AND SHOES, Which for

VARIETY, QUALITY, STYLE, FINISH AND CHEAPNESS cannot be excelled by any goods offered in this market, whether Dominion, English or American. BOOTS AND SHOES, at all Prices BOOTS AND SHOES, in all sizes. BOOTS AND SHOES, made after the latest French, English and American designs.

WHOLESALE BUYERS Will find our Terms Liberal, and we assure them that their interests will receive our best attention.

GEORGE S. YATES, Halifax, N. S., April 24, 1871. May 3.

To Parents and Sabbath School Teachers. JUST PUBLISHED.

SECOND EDITION—REVISED. A SCRIPTURE CATECHISM,

for the Family, the Bible Class, and the Sabbath School, BY S. SELDEN. Price 5 cents or \$5.00 per 100.

WINDSOR & ANNAPOLIS RAILWAY. TIME TABLE No. 11. COMMENCING 1st MAY, 1872.

Table with columns: Stations, Down Trains, Up Trains. Rows for stations from Halifax to Annapolis.

St. John, N. B. (by Steamer).

Table with columns: Stations, Passengers, Express, 1st class only. Rows for stations from Annapolis to Kentville.

Dear Sir,—In the winter of 1858 my wife was attacked with dropsy affection which threatened a fatal termination, as the best physicians we could obtain failed to afford her any relief, but at last, she became so low, that they said she might die at any hour, after suffering for many months, she was advised to try your medicine, which she did. And by the blessing of God, was soon cured. She has had her health ever since, and been able to attend to her domestic affairs. The physicians had abandoned the case as hopeless: before she tried your medicine, which accomplished what they had failed to do.

I make this statement from a sense of obligation to you and hoping that it may carry valuable information to others similarly affected, and induce them to use the same means of cure.

I would also add that your liniment and ointment are a most excellent cure for rheumatism, and it is a real charm for the severest headache, and also your Plaster is excellent for lame back and side.

I am sir very respectfully, RICHARD B. LYON.

PRICE. Bitters \$1 per quart; Syrup 50 cents per pint bottle; Liniment 30 cents per bottle and the ointment 30 cents per box.

Address CALEB GATES & CO., Farmington, Wilmot, Annapolis Co.

A large number of certificates, similar to the above, have been received and will be published at times for the information of the afflicted and the people generally.

AGENTS.—George V. Rand, Wolfville. John Webb, Windsor. J. E. Newcomb, Hantsport. J. L. Cogswell, Kentville. Sheffield & Wickwire, Canning.

GENERAL AGENT, JOHN K. BENT 124 Granville Street, Halifax. June 12.

THE CHRISTIAN MESSENGER

Is published every WEDNESDAY. Terms—Two Dollars a year, when paid in advance; if payment is delayed over three months \$2.25 when over six months \$2.50. Subscribers beyond the Dominion of Canada, must send in addition to the above, 20 cents a year for prepayment of postage.

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PRINTING of Books, Pamphlets, Cards, Handbills, Blank forms, &c., &c., on reasonable terms. Magistrates Blanks always on hand.

HALIFAX, 6th MAY, 1872. C. H. HEPWORTH

most respectfully informs his friends and the public that he has opened the Store, No. 25, GEORGE STREET, immediately below the Parade, where he will carry on the business of

CHEMIST AND DRUGGIST.

The Shop has been newly stocked with genuine Drugs and Chemicals, Patent Medicines, a well assorted stock of Perfumery, Pomades, Scented soaps, TOOTH, NAIL, & HAIR BRUSHES, COMBS & other TOILET REQUISITES, and every thing usually found in a first class Drug Store.

C. H. H. hopes by strict attention to business to share their patronage and support, he also trusts his many years experience as Dispenser to the late firm of Drs. Parker & Cowie will be a sufficient guarantee that all prescriptions entrusted to him will be dispensed and copied with the greatest care and attention.

By permission of the Hon. D. McN. PARKER, M. D., his former prescriptions can be repeated at this establishment. May 15.

GATES' LIFE OF MAN BITTERS, FROM THE

Roots and Plants of Nova Scotia,

formerly manufactured by Mrs. Gates, of Wilmot. Who was pronounced incurable of Liver Complaint and Dropsy by many skillful physicians, when procuring several receipts from an eminent French physician, she was entirely cured; and afterwards cured hundreds of cases for which at first there seemed to be no hope. We offer these remedies to the public through the persuasion of those who at present consider that they are indebted to them for the preservation of their lives. Many certificates can be given for the following diseases:—Dropsy, in its worst form; Liver Complaint, Jaundice, Swelling of the Limbs and Face, Asthma, of whatever kind; Dyspepsia, Biliousness, Spitting of Blood, Bronchitis, Sisk Headache, Diseases of the Blood, Female Diseases, Running Sores, Rheumatism, Erysipelas.

In cases of lung disease, the No. 1 Bitters must be taken with No. 1 Syrup, except in weak cases and young children, when No. 2 Syrup and No. 1 Bitters must be used. These suffering from Lung diseases, should not fail to use in addition to the above, Gates' Vegetable Plaster applied between the shoulders and to the throat and chest with Nerve Ointment.

In Liver complaint and Dyspepsia, No. 2 Bitters must be taken with No. 1 Syrup. In bad cases of Dropsy, No. 2 and No. 3, Bitters must be taken with No. 1 Syrup.

For Gravel No. 3 Bitters and No. 1 Syrup, together with Gates' Vegetable Plaster and Nerve Ointment applied to the back near the kidneys.

For pains and Rheumatism in any part of the body, No. 1 Syrup, and Gates' Nerve Ointment and Aesdian Liniment mixed together applied to the painful parts.

For sore throat, rub the Liniment and Ointment (mixed together) into the parts affected, at the same time taking No. 1 Syrup to cleanse the stomach.

These medicines will be promptly forwarded by the manufacturers when orders are accompanied by the cash. Address CALEB GATES & CO., Middleton, Wilmot, Annapolis Co. Falmouth Oct. 26th 1869.

Dr. Gates.

Dear Sir,—In the winter of 1858 my wife was attacked with dropsy affection which threatened a fatal termination, as the best physicians we could obtain failed to afford her any relief, but at last, she became so low, that they said she might die at any hour, after suffering for many months, she was advised to try your medicine, which she did. And by the blessing of God, was soon cured. She has had her health ever since, and been able to attend to her domestic affairs. The physicians had abandoned the case as hopeless: before she tried your medicine, which accomplished what they had failed to do.

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