

In the solar spectrum there was found in the yellow band a broad line which was found to correspond with the bright yellow line of the artificial flame in which soda was burning. In the solar spectrum there were dark lines occupying exactly the same position as the bright lines in the spectra of potassium, calcium, nickel, copper, iron, zinc, and a number of other substances, which seemed to prove quite satisfactorily that all these substances did exist in the sun; but there was only one thing wanting to render it quite certain, and that was to show how it was that the lines in the solar spectrum were dark, while those of terrestrial spectra were bright. At last it was discovered that, if we allow the light of a flame in which soda is burning to pass through a second and feebler flame in which also soda is burning, before it reaches the prism, instead of the bright line so characteristic of soda, we shall have in its place a dark line. That part of the light of the first flame which would have formed the bright soda line is extinguished in passing through the second flame. The line is said to be reversed. The reversal of the solar lines is thus explained. The body of the sun is in an intensely heated state. Containing various substances found on earth it would give their characteristic bright lines, were it not that these lines are reversed by the light passing through the sun's atmosphere, which is also in an intenser though less heated state, and in which these same substances occur in the form of vapor.

The light of the planets and fixed stars has been analysed. That of the former gives the same results as the analysis of the light of the sun; a thing which we should have expected, since they shine by the reflected light of that luminary; but the light of the fixed stars gives in analysis different results.

The number of simple substances known to enter into the composition of the earth is about 63. Of these some nine have been ascertained to exist in the sun. The spectroscopic has not been able to detect in the sun either gold, silver, or lead, or many other substances found on the earth. Many of the substances common to the earth and sun have not yet been found in the fixed stars.

M. M. Bunsen and Kirchhoff, the two great pioneers in spectral analysis, in examining a flame in which was burning the residue of a mineral water from Drückheim, observed two sets of lines in its spectrum which corresponded to those of no known substances. Suspecting that there existed in this mineral water two new substances they made search for them, and succeeded in extracting one of them from the water, a metal, allied to potassium, which they have called *caesium*. They found that a mineral called *hepidolite* gave with the spectroscopic the characteristic lines of the other substance, and they obtained from it a second new metal which has received the name of *Rubidium*. A third new metal has lately been detected by the same process. *Cesium* and *Rubidium* are found in the sun.

The discoveries of the spectroscopic have opened up a vast field for research, the investigation of which is being eagerly entered upon. These inquiries will, we doubt not, lead to the most interesting results.

Museum of Comparative Geology,
March 25th, 1864.

Christian Messenger.

HALIFAX, APRIL 20, 1864.

We find the following interesting items of information in the London *Freeman*, from their Nova Scotia Correspondence:

Thursday, the 25th ult., was the day of prayer for colleges. It is very generally observed on this continent by the evangelical denominations, and has been often followed by an abundant bestowment of blessing. At Wolfville, where Acadia College is located, a sermon to the young was preached by the pastor in the morning, and in the afternoon a meeting for prayer was held. The president of the college read a number of letters which he had received from former students, who are now labouring in the ministry. Some extracts may be interesting to your readers:—

"The district in which I labour is about seven miles by fifteen in extent. Another labourer is very much needed. . . . I find that our records show thirty-three as the number of baptisms the past year."

"It was a year of unusual prosperity in this church. God graciously visited us with an outpouring of His Holy Spirit, and many sinners were quickened and brought into the enjoyment of spiritual life. It was my privilege to baptize thirty-six happy believers, who are all standing fast in the liberty wherewith Christ has made them free. The church is walking in the fellowship of the Gospel, and evincing a good degree of spiritual life. We thank God, and take courage. My field of labour is now very large, being eighteen miles long by sixteen broad, including three churches and six preaching stations."

"Field-extensive—say a hundred square miles. Three meeting-houses regularly attended, as time will permit, besides seven or more other preaching stations. Baptized during the year—ten."

"I have baptized forty-one during the year ending December 31, 1863, thirty-seven of whom are heads of families, and two of them converts from the Church of Rome. These converts, I am happy to say, are generally walking in the truth. I have now six preaching stations. I am teaching two Bible-classes; the average attendance is about seventy-five, and the interest in these classes seems to be on the increase."

"My field extends about ten miles. I have three preaching stations. I use the Presbyterian catechism to drill my young people. These catechisms are public, before the whole congregation. Young men and young women stand up to recite. I attribute much of the religious interest among the young to this method of teaching. Preaching is often like oil cast upon the water—not coming in contact with mind—and if not followed by teaching, will not have a very lasting impression. We want teaching as well as preaching among our people; and I know no better method than by catechising." This brother baptized one hundred and six persons last year.

"During the past year a gracious revival was enjoyed in a part of my field of labour. Fifteen willing and happy converts were baptized in the name of the Lord Jesus. . . . The more I see of the ministry, and consider the minister's appropriate work, and the end he should have constantly in view, the more I am convinced that the great desideratum in a minister is not piety merely, but deep, full-hearted, growing, and ever-expanding piety; in other words, piety up to the Scripture type and standard. Learning is good, and highly desirable; indeed, almost necessary in this age; but, without piety of the kind named, learning may be only mere polish, without power."

"I have baptized and received into the fellowship of the church fifteen persons. One of them was a man who had passed the meridian of life, and had raised a numerous family, ere he became the subject of a spiritual change. Previous to this he had lived a very wicked life. For years he had been a confirmed drunkard. Horrid oaths often burst from his lips in common conversation. His earnings, instead of being used for the comfort of his family, were spent in drinking and gambling. During the first year of my ministry here I was sent for to visit a daughter of his, who was supposed to be dying, and was in awful agony of mind. It pleased God to restore her to health, and she rose from her sick bed a changed person. After her conversion she sought the salvation of her wicked father. She persuaded him to attend the preaching of the Gospel, and to break off his evil habits. Her labours have been blessed, and he now appears to be a miracle of grace. None are more constant in attending meeting, and none more fervent in social prayer. Is not this 'a brand plucked out of the fire'?"

Twenty-one letters were read on the occasion mentioned above. The writers furnished statistics, showing that during the year 1863 they had occupied ninety-three preaching stations, and baptized 374 persons on a profession of faith. The old and absurd objection, that education spoils a minister, certainly does not apply here, if success be taken into the account. Our educated ministers are among the most useful.

ONE of our correspondents asks if the Baptists of England have any Educational institutions of note. In looking over Dr. Forrester's Educational Report he finds mention made of large sums raised by other denominations for their educational institutions, but no mention made of what is done by the Baptists.

For the information of our worthy friend we may state that the Baptists of England have Collegiate Institutions in the following places:

Bristol,
Rawdon, near Leeds,
Regents Park, London,
Pontypool,
Haverford West,
Chilwell, near Nottingham,
and at the Metropolitan Tabernacle.

They have no Normal School for the training of Teachers belonging especially to the denomination, but they, pretty generally, sustain the British and Foreign School Society's Normal College, Borough Road, London. Baptist Teachers usually get their training at that Institution.

NEWS SUMMARY.

We have received little European news of importance by the steamer *Asia*, which arrived on Thursday last after a very boisterous passage. The British Parliament were in recess during the Easter holidays. The General Revenue of the kingdom shows a surplus of two millions and a half sterling, at the end of the financial year. This, it is supposed, will enable Mr. Gladstone, the Chancellor of the Exchequer, to make a further reduction in some of the taxes. A large amount of prosperity continues to be enjoyed by the Empire at large, and as England is at peace in almost every part of the world, and commerce, East and West, in every portion of the globe, is hourly extending, the present may be fairly considered as

one of the most prosperous periods of her history. Lord Palmerston's government, notwithstanding these facts, seems still to give evidence of increasing weakness, and were there a strong and able opposition, there can be no doubt that it would not survive the end of the existing Parliament. This is in a great measure occasioned by the unpopularity of their foreign policy. Earl Russell (Lord John) the Secretary for foreign affairs, has been particularly unfortunate in his foreign measures, and is accused of having materially lessened, by injudicious meddling and want of due energy, the large influence which England has for many years past exercised over European politics. This Department, until very lately, has been Lord Palmerston's most successful and popular branch of public duty, but the Premier is now in his eightieth year, and it is only wonderful how a man of his age and life-long labours, can continue to bear on his shoulders the enormous burden of directing the affairs of the largest and most powerful Empire on the globe.

The Conference of the different Powers of Europe for the pacification of the Danish and German quarrel was to be opened in London on the 12th inst. In the mean time hostilities do not cease. The Prussians have again been repulsed by the Danes in an attack on Duppel, with considerable loss. It seems quite uncertain, however, whether anything effectual will be done at the Conference. The questions are so complicated, the interests so conflicting, and the parties implicated so numerous, that there is much reason to fear that the peace of all Europe may yet be endangered, by what at first was considered but a petty quarrel about a small German Duchy.

General Garibaldi was on his way on a visit to England. It is said, on account of his health. Great preparations are being made in many quarters to afford him a grand reception. As standing at the very head of the liberators of Italy, so far as that great measure has been yet effected, as well as on account of the honesty, simplicity and rare disinterestedness of his character, he is deservedly admired and esteemed by all classes of the liberty-loving people of England.

We need offer no apology to our readers for the diminished amount of editorial matter in our present issue, seeing that our pages are so well filled with other valuable articles. We shall have less occasion to occupy our space with legislative proceedings after another week or so; those of our friends who are not so much interested in this department will shortly be gratified to find that space filled with subjects more to their taste.

Notices, &c.

Received for Foreign Missions.

Dear Brother,—I here inclose you the sum of \$12 to be forwarded to the Rev. A. R. B. Crawley in India, for the purpose of aiding the support of a native Preacher, to tell the story of peace to sinful men through Jesus, the prince of peace. This little sum was collected by the Juvenile Missionary Society of Central Argyle, during the year, and is the largest offering they have hitherto made. Their annual meeting was exceedingly interesting to all who had the pleasure of being present. Two young girls read, each of them a piece glowing with the missionary spirit, which caused some of our aged brethren to rejoice greatly in God, and in the prospect of our community awakening to a sense of the magnitude and importance of our Foreign Missionary enterprise. This is but as the "widow's mite," yet we know it will not be despised, as it is collected by our little children, who are anxious that the children of the poor heathen should have the same blessings they so richly enjoy.

On behalf of our Argyle children.—Com. by Rev. Augustus Shields.
[The Secretary Rev. Dr. Tupper, will please debit us said amount.—Ed.]

Acadia Athenaeum.

The closing lecture of the season, before the above named Society, will be delivered in the Vestry of the Baptist Meeting House, Wolfville, on Friday evening, April 22nd, by the Rev. A. H. Munro.
Subject—"FAILURE AND SUCCESS."
L. S. MORSE, Cor. Sec'y.

Monthly Meeting of Home Miss. Board.
IN THE VESTRY OF GRANVILLE STREET CHURCH.
Wednesday, April 6th, 1864.

Present.—Rev. A. H. Munro, in the chair.
Revs. David Shaw, R. R. Philip, T. H. Porter, Jr., Brethren S. Seiden, Geo. Robins, H. N. Paint, Alex. Robinson, and Secretary.
Letters read from Revs. Ronald McDonald, R. R. Philip, and Bro. H. R. Cunningham.
Appointments.—Rev. M. A. Bigelow, 3 months at New Harbour, Crow Harbour, and Sand Point, Guysboro Co.
Rev. Ronald McDonald, 6 weeks at Boularderie Island, Cape Breton.
Rev. R. R. Philip, 3 months at Waverly and vicinity, Halifax Co.
Rev. David Shaw, 3 months among the cold population in the Central Association.
R. N. BECKWITH, Sec'y. H. M. Board.

Letters Received.

R. G. Freeman, 11th, \$12. Rev. W. Hall, 5th. C. H. Whitman, 9th. Alex. G. Musgrave, 11th, \$20. S. Fitch, Esq. R. Upham, D. Mosher, Esq., 14th, \$13.50. A. Marshall, Esq., 11th, \$9, and 15th. Rev. A. Shields. Gideon Longille, 6th, \$2.—Yes, we have them all. A. Thompson, 14th. N. Freeman, 2nd, \$5. G. Harpell, Esq. E. Rand, 16th.—Sent last week. C. Jost, Esq.

TO CORRESPONDENTS.—We have been unable to insert all the communications on hand.

A. K.—Your "Other side of the story" shows the abuse of what is good, not the proper use of it.

"One of the Committee" should have given his proper name.

General Intelligence.

Domestic.

EXPLOSION AND LOSS OF LIFE.—On Thursday last a serious accident occurred at Messrs. Cunard's Machine Shop. A boiler of a steam engine was being tested, and suddenly burst, casting the fragments around on every hand. Mr. Muirhead, the chief engineer, was just about to diminish the pressure upon it when the accident occurred. His head was seriously injured and he was badly scalded. He died the same evening. Three others were more or less injured—James Crosby, engineer of Steamer *Merlin*, James Blair and Archibald Warner; the two latter less seriously than the former. The inquest held on the body of Mr. Muirhead returned a verdict of Accidental Death.

The model of a very ingenious self acting gate, invented by a deaf and dumb man named Michael Keating, has been lodged in the Secretary's office. The inventor has taken out a patent.

The Railway Returns for March show an increase of \$254.55 over March 1863.

The next session of the National Division of the Sons of Temperance will be held at Cleveland, Ohio. The Rev. Dr. Cramp has been requested to attend as a Delegate from the Order in this Province.—*Abstainer*.

DISTRESSING MORTALITY.—In our list of Deaths will be seen a melancholy list of eight members of one family—that of Mr. Joseph Seivright, of Windsor—who died from diphtheria, in the short space of about three weeks, being all his family, of various ages, from that of an infant of one and a half, up to twenty-three years.

MAPLE SUGAR.—There is a probability of large quantities of maple sugar being obtained from our woods this spring. One of our contemporaries seems almost as much delighted, over a cone sent him *anonymously* as over the possession of other treasures lately fallen into his lap and that of his friends.

THE LATE MURDER.—A colored seaman, named Jackson, was arrested on Friday last, on board the brig *Princess Royal*, on suspicion of his being concerned in the death of Hume some time ago. He had been on a voyage since. He obtained his release on bail.

SONS OF TEMPERANCE.—A highly successful entertainment was given by the Howard Division last week. Dr. Hamilton, T. W. Chesley, A. Longley and H. Blanchard, Esqrs., were present and contributed to the intellectual festivities.

The City Council have offered to present the Market House Clock to the Commissioners for erecting the contemplated Provincial Building, provided they will place the same in the cupola of that edifice.

It is not expected that the Legislature will rise till the first week in May. The Revised Statutes have made great demands on the time and extended the session to greater length than would otherwise have been required.

INSPECTOR OF GAS METERS.—The Gas Company have signified their willingness to pay into the City Treasury the sum of \$200 annually towards the salary of that officer—without having any control over him.

THE MINERS' STRIKE.—There has been dissatisfaction amongst the colliers at the Sydney Mines with the wages received by them. They have refused to work without an increase,—the hardness of the seam and its greater depth are given as reasons why their demands should be complied with.

THE UNION OF THE PROVINCES.—The resolution agreed to by the House of Assembly in favor of this movement was unanimously adopted by the Legislative Council on Friday last.

AN EXHIBITION OF FLOWERS AND POULTRY is to be held in the Masonic Hall to-morrow. This is got up by Messrs. Downs and Leahy, and we doubt not will be largely patronized. The band of the 16th Regiment will be present and add to the attractions.

GOLD DISCOVERIES AT HAMMOND'S PLAINS.—Some fine specimens of gold having been found at Hammond's Plains, it is reported that an American Company has offered the handsome sum of £1000 for a portion of the property upon which it was discovered. Who says land is not looking up at Hammond's Plains!—*Reporter*.

Dr. J. Denham Hume successfully amputated the injured leg of a convict at the Rockhead Prison, yesterday, and the operation is admitted on all hands to have been most skillfully performed.

ROBBERY.—The office of W. Annand, Esq., Managing Director of the Nova Scotia Land, Gold Mining and Amalgamating Company, was burglariously entered last week, and a small nugget of gold robbed from a cabinet.

A costly Harmonium has been presented to the National School, by Edward Binney, Esq., being an addition to the many substantial proofs he has given of the warm interest he takes in the welfare of that excellent institution.