

be divided, will be found unlike: here, there will be a bone, an artery, or a ligament, and there, the bark, the pith, the leaf-bud, etc. It is essential to the existence of an organized being in its natural condition, that both solids and fluids enter into its composition; living bodies always possess a liquid ever kept in motion, or agitated, by the living solid parts; the water which percolates through mineral substances is not a necessary part of their composition. Inorganic bodies, when resolved into their elements, are found to be very simple in their composition,—some containing not more than two, as water, which is formed of oxygen and hydrogen gases, in fixed and determinate proportions. (And here another remarkable dissimilarity occurs—it was pointed out by Berzelius—it is this: in organized products the elements do not observe a simple, arithmetical ratio in combining; thus many fatty matters have been examined, and have been found to differ only by fractional parts in the numerical proportions of their atoms.) No being, however, in the possession of life, and hence organized, consists of less than four elements, viz. oxygen, hydrogen, carbon, and azote. Nature appears therefore to rise by gradations, from the inorganic mineral, to the organized vegetable, and from thence to the animal, the multiplicity of whose constituents may account for the great tendency to change which exists in them. Minerals are not liable to changes, except acted upon by some cause externally applied.

In a living body, whether it be an animal or vegetable, all the parts appear to tend to one common object—that object being the preservation and reproduction of the individual. Each organ, no matter what its more immediate office, has this ultimate object in view, and the result of this harmony is life. But each part of an inorganic mass is independent of the other, and they are merely retained in contact by cohesive attraction. All the individuals which compose a class, whether of animals or vegetables, are the exact counterparts of each other, have the same number of limbs, their internal anatomical structure is precisely similar. The shapes then of all organized bodies are unalterably fixed; but the shape of a rock, or piece of metal, is not a property by which we can recognize it. Even crystals vary in shape, when produced under different circumstances, from the same substances: thus, a combination of carbonic acid and lime, during crystallization, will perhaps assume the shapes of the rhomboid, six-sided prism, and many others, as detailed by the celebrated Hally. But the most marked distinction between organic and inorganic bodies—the most visible and palpable—is their mode of increase and nutrition; the latter, that is the inorganic, are increased by the addition of matter to their surface; whilst the former assimilate to themselves particles which penetrate and pervade them—nutrition being the effect of the internal mechanism alluded to above, and may be called the vital process. An organised being is produced from a germ, which was at one time attached to, and part of another being exactly similar. Bodies not possessing organization have no germ; the elements of which they are composed come into contact, and form masses of no determinate weight or shape. Having thus drawn the line between the two great families of natural objects, the next thing will be to mark the differences, which may enable us to distinguish an animal from a vegetable; then the actions and phenomena belonging to each, will present themselves to our notice, and here commences the legitimate pursuit of the Physiologist.

#### PICTOU LITERARY AND SCIENTIFIC SOCIETY.

On Wednesday evening, 26th Dec. last, Mr. J. D. R. Fraser, according to announcement, lectured on the nature and properties of Hydrogen and its compounds. The interest excited by his former essays, and the success which had uniformly attended the performance of the various interesting experiments, necessary for the illustration of this subject, did not fail to be the means of collecting on the occasion a large audience, who had the pleasure of witnessing a series of beautiful, and to most of them novel experiments. After some introductory remarks the Lecturer explained the various ways of obtaining Hydrogen, and shewed how it was produced by the decomposition of water, and after collecting a quantity, he performed experiments in illustration of its levity, expansibility, etc. etc. A Balloon was inflated early in the evening—a stream of the gas was afterwards directed on a small piece of spongy platina, to shew the singular property which this substance possesses of producing the inflammation of the gas; the simple apparatus for lighting candles to which this discovery gave origin, was also alluded to.

The preparation of the hydrosol of carbon, or coal gas, now so extensively employed in lighting the streets and houses in cities, and the different appearances which it presents, when inflamed in its pure and adulterated states, were explained, and afforded subjects for some very pretty experiments. The Lecturer referred to the danger to which Miners are exposed from the presence of this gas, (which is naturally evolved in mines,) and which when mixed with a certain proportion of atmospheric air and ignited, produces the most dreadful and destructive explosions. The "Davy" was produced, and the principles of its construction and its uses shewn.

Experiments were made with phosphuretted Hydrogen, and the brilliancy of its combustion in Oxygen contrasted with its inflammation in atmospheric air.

Mr. Fraser for want of a proper apparatus could not shew the proportion in which Oxygen and Hydrogen combine to form water, but by directing an inflamed stream of Hydrogen, into a globe containing atmospheric air, illustrated its production in that manner, and called the attention of the Society to the loud and deep musical tones, which he stated were supposed to be caused by a rapid succession of explosions.

After a series of pleasing and most interesting experiments, Mr. Fraser finished with one dazzlingly beautiful, one which perhaps has seldom or ever been performed or witnessed in this Province—the production of that brilliant and intense light which is emitted from a piece of lime under the action of the Oxy-Hydrogen blowpipe—and which it has been proposed to substitute in the place of those in present use in light houses.—Mr. F. was more than usually successful in the results of his experiments, which were witnessed with marked approbation. After the lecture a short conversation ensued, during which the cause of the Aurora Borealis was discussed, and referred by some to the inflammation of Hydrogen, and various plausible reasons in support of the theory were adduced.

In continuation of Mr. Fraser's lecture it may be remarked, that the production of the tones of "Musical Glasses" was formerly supposed to be due to the affections of watery vapours; but Mr. Faraday has proved, by a number of ingenious experiments, that such is not the case, and that, agreeably to Sir H. Davy's views of the constitution of flame, they are nothing but the reports of a rapid and continued succession of explosions, produced by the combustion of Hydrogen, Carbonic Oxide, Vapour of Ether or Oiliant gas, jetted upon glass or other tubes. Mr. Faraday gives the result of experiments with all these gases, on air jars, globes, Florence flasks and tubes of various sorts and sizes. A very pleasing succession of distinct and modulated tones may be produced by the action of the flame of either of those gases mentioned, upon an instrument constructed of a number of tubes of different calibres and lengths, scientifically arranged, called the "Musical Glasses."

Hydrogen is classed among the non-respirable gases, though Sir H. Davy has shewn that if the lungs be not previously exhausted by a forced expiration, it may be breathed for a few seconds without much seeming inconvenience, but is attended with a singular phenomenon, an account of which is given by Ure.—"Mannoix was one day amusing himself with Paul—at Geneva, in breathing pure Hydrogen gas. He inspired it with ease, and did not perceive that it had any sensible effect upon him; either in entering his lungs or passing out; but after he had taken it in a very large dose, he was desirous of speaking, and was astonishingly surprised at the sound of his voice, which was become soft, shrill, and even squeaking, so as to alarm him. Paul made the same experiment on himself and the same effect was produced.

Pictou, 8th January, 1839.

#### A SPECIMEN OF WELSH LITERATURE.

The Welch poetical triads are part of a species of literature with which the reader may not be acquainted, as the Welch is not taught in this country, either as a living or dead language. The following specimen contains many valuable observations expressed with singular brevity:

The three foundations of genius are—the gift of God, human exertion, and the events of life.

The three first questions of genius—an eye to see nature, a heart to feel it, and a resolution that dares to follow it.

The three things indispensable to genius—understanding, meditation, and perseverance.

The three things that ennoble genius—vigour, discretion, and knowledge.

The three tokens of genius—extraordinary understanding, extraordinary conduct, and extraordinary exertions.

The three things that improve genius—proper exertion, frequent exertion, and successful exertion.

The three things that support genius—prosperity, social qualifications, and applause.

The three qualifications of poetry—endowment of genius, judgment from experience, and felicity of thought.

The three pillars of learning—seeing much, offering much, and writing much.

The *Moniteur Parisien* records the death of a woman named Marie Pion, which happened in the environs of Saint Beal, in the Haute Garonne, at the patriarchal age of 158 years, retaining, as they say, her mental faculties to the last, although her corpse weighed only 42 lbs. her flesh being gone, and her skin and muscles adhering to her bones like parchment! They add that, at the age of 63, she sold a cottage and some trifling pieces of land for an annuity of 132*fr.*, which the purchasers have consequently had to pay for no less a period than 92 years!

#### THE PEARL.

HALIFAX, FRIDAY EVENING, JANUARY 25, 1839.

SCIENTIFIC INSTITUTIONS.—We have much pleasure in calling the attention of our readers to an interesting notice of an able lecture read before the Pictou Society by Mr. J. D. B. Fraser, and which will be found on another column. The importance of literary and scientific institutions in the Provinces, we are glad to perceive, is beginning to be understood and felt. Such an institution has been formed at Truro and is now in progress. A Mechanics' Institute has just been commenced at Charlotte Town, P. E. I. The following notice of the first meeting we copy from the Colonial Herald of Jan. 5th.—"On Wednesday evening last an introductory lecture, illustrative of the object and advantages of this Institution was delivered by Chas. Young, Esq., in the late News Room, at Mrs. Millar's. It was delivered in an animated manner, and was listened to with marked attention by a crowded audience. His Excellency Sir Charles and Lady Mary Fitz Roy, the Hon. the Chief Justice, with many other ladies and gentlemen, honoured the meeting with their presence. His Excellency, through the Chairman (George Dalrymple, Esq.), expressed his decided approbation of the Institution, and his best wishes for its success. The interest excited on the occasion was manifested by the accession to the list of members—about 40 persons, after the conclusion of the lecture, having come forward and subscribed their names."

A Meeting of Members, for the choice of Patron and Vice Patrons, and for the election of office-bearers, afterwards took place, when on motion of Charles Young, Esq., seconded by H. Palmer, Esq., it was unanimously

Resolved, That His Excellency Sir Charles A. Fitz Roy be respectfully requested to become the Patron, and the Hon. the Chief Justice, and the Hon. George Wright the Vice Patrons of this Institute.

The following gentlemen were then elected office-bearers for the ensuing year.

George Dalrymple, Esq., *President*;

Edward Palmer and } *Vice Presidents.*  
Chas. Young, Esqrs. }

John Longworth, Esq., *Secretary & Treasurer.*

*Committee*—Mr. Isaac Smith, Rev. Jas. Waddell, Francis Longworth, jun., Esq., Mr. M. Doherty, William Mackintosh, Esq., Messrs. T. Pethick, W. Cullen, C. C. Davison, W. Duchemin."

CANADA.—Bishop Macdonnell has lately published an address to the Irish Catholics of Upper Canada.—The anniversary of the destruction of the piratical steam boat *Caroline* was celebrated by a numerous and respectable party at the City Hotel, Toronto, on the 29th. ultimo. We think respectable persons might be better engaged than in keeping up animosities among persons who ought to live as brethren.—The loyal inhabitants of Toronto have commenced a subscription, for the purpose of purchasing a sword for Colonel Prince, of Sandwich, in testimony of their approbation of his brave and resolute conduct. There may be *bravery* in ordering prisoners to be shot, but we are too dull to perceive it. To us it looks more like cowardice.—The printer and editor of *Le Fantasque*, a satirical paper published in Quebec, have been committed to prison.—The Canadians in the United States are in the habit of sending abusive anonymous letters to individuals in Quebec, enclosing newspapers etc. subjecting them to a very heavy postage. To what a silly extent hatred will carry a person.—On the morning of Jan. 4th. four of the state prisoners were killed by the agents of the Sheriff of Kingston.—One of them had to be supported on the platform, being very sick and weak. Ten persons have now been killed at Kingston. We mentioned in our last of a trooper having been waylaid and ill-treated by the Canadians; later accounts show that the trooper was the aggressor, having entered a Canadian house and held a pistol to the breast of one of the inmates to enforce compliance with a demand for liquor. He was upon this, disarmed, but having procured the aid of some of his comrades, he returned, and one of them wantonly shot a Canadian in the shoulder. The trooper was intoxicated at the time, and he, together with his comrade, who wounded the Canadian, have been dismissed the service. If a Canadian had wounded a trooper, what would have been done to him in the present exasperated state of the public mind?—Two divisions of the 11th Regt. have arrived at Quebec from New Brunswick.—A document of the court martial at Montreal in regard to the eleven prisoners taken at Napierville, we give below. Such wholesale slaughter as it sanctions we can no more reconcile with the precepts of the New Testament than we can the human sacrifices which are made on the altars of some of the pagan gods.

"The Court finds that the prisoners Guillaume Levesque, Pierre Theophile Decoigne, Achille Morin, Joseph Jacques Hebert, Hubert Drossin Leblanc, David Drossin Leblanc, Francois Trepanier, fils, Pierre Hector Morin, Joseph Pare, are individually and collectively guilty, and it does therefore sentence them to be hanged by the neck till they be dead, at such time and place as His Excellency the Commander of the Forces and Administrator of the Government may appoint. But the Court recommends the prison-