

Family Circle.

One Little Early Lesson!

A youth, who was the son of highly respectable parents, was imprisoned for six months for robbery. Having been carefully educated, he was asked who had induced him to the first wrong step. He replied,—"My mother! When very young, she would give me my medicine as sweetmeats, which in time I began to suspect, but my inquiry was put off by equivocation or denial. When old enough to take medicine like a man, I was told of the deception of earlier days. Having my mother's example in remembrance, I did not hesitate to deceive, when I deemed it necessary to accomplish my wishes—equivocation and lying are the necessary accompaniments of deceit—my conscience became seared; the downward path was easy; and to my own mother's false love I owe my present degraded position!" What fearful consequences, from lack of proper early training!

While on the subject of taking medicine, we would offer a few remarks. Though it is imperative on the parents to see that a medical man's orders are attended to, and all necessary medicine taken at the proper time, it is important to make little home-doses as agreeable as possible for dear little children; at the same time telling them it is medicine, that it is intended to do them good, and the means God has sent to heal the little body.

We knew one little girl who was in the habit of taking her dose of rhubarb and magnesia without "making a face." One day, when little Prissy was ill, her papa mentioned this circumstance to her aunt, who was on a visit. "I should like to see her take it," said the aunt, "for I have a sad fuss at home over medicine." The father was mixing the dose, and together they went to Prissy's crib with it. The little child jumped up as usual to take it; but, alas! no sooner was it in her mouth than it was out again over papa and aunt! "Well, I declare," said Mrs. S., "my children do as well as that!" "How can it be?" said the father in astonishment; "we will go and ask mamma." The problem was soon solved. Papa had mixed the dose instead of mamma, and he had forgotten to put in a bit of sugar! The poor child always had some in it before.

Many children will take this dose if made a little sweet, who would cry over it without—only a very little sugar will do, not enough to do harm. One more instance. A little girl who was ill refused to take her medicine. She was told by both parents that it was of great moment, and *must* be taken, adding, "It must be put down your throat with a spoon, if you do not take it willingly." She still refused, and the father held her while the mother poured it gently down as she was reclining; but from that time she has never refused her medicine, and when a little brother was old enough to understand, she was heard to say, as the dose was presented, "Come, brother, better take it now, like a good boy, than have it put down by ma!"

We have sometimes trembled to behold a dear little child dangerously ill, refusing anything and everything presented to do it good, from having been unaccustomed to obey in this point from infancy; and often we have heard medical men blamed for lack of skill, when the parents were the guilty party, for not attending to his orders—and, in more than one instance, death has been the consequence!—*Mother's Friend.*

Dr. Chalmers's Letter to Anne.

DR. CHALMERS was, as you doubtless know, one of the greatest and best men of the age. Though he was greatly honoured, yet he was a very humble man; for he was a true follower of Christ. He loved to do good to all men. He was a great friend to the poor. He was a great friend to children.

When he was away from home, he used to write to his children in a most interesting and instructive style. Here is an extract from a letter which he wrote to his little Anne. You may read it as though it

were addressed to you. The advice it contains is as important to you as it was to Anne.

"I am your earthly father; God is your heavenly Father, and He is always thinking of you, and loves you, and wants you to be fit for seeing Him in that happy and glorious place where Christ sitteth at His right hand. Papa has written you this letter, to let you know how much he wishes you to be good and obedient to your parents, and sorry for your faults, and desirous of becoming better, being kind and respectful to all who are older than yourself. And so likewise has your heavenly Father written you a letter, a very large letter, that has been printed and made into a book, the name of which you very well know. And what I want you to do with that book is to read it, and do what it bids you, and to mind what it tells you, and to pray that God will enable you more and more to understand and love it; for be assured, my dear Anne, that it is only by taking our lesson from God, and doing the will of God, that we can either please Him in time, or be happy with Him in eternity."

Now let me ask the young reader how he has treated his heavenly Father's letter. If your earthly father were away from home, and were to write you a letter expressing his affection for you, and directing you to do certain things, you would think it a great insult to your father to suffer it to lie unopened. Have you not suffered your heavenly Father's letter to lie unopened? Have you not neglected the Bible? Have you not omitted to do many things which it forbids? Have you not treated your heavenly Father very unkindly, very disrespectfully? Will you continue to do so?

General Miscellany.

The Elements.

The ancient idea of the elements was, that there were but four,—fire, air, earth, and water. But in truth none of these are elements: three are compounds,—that is, each consists of two or more substances; and the fourth (fire) is only a condition of substances undergoing rapid chemical union.

What, then, is an element? It may be described as a simple substance, which cannot be analysed, or, in common language, sub-divided into two or more different substances. As an example, we may select the element gold. All experiments upon this substance lead to the conclusion that it cannot be sub-divided into anything else than the simple element—gold. Let water be experimented upon, and very different is the result,—the fluid disappears, and two gases arise; thus informing us of the fact that water is a compound, while gold is a simple substance. Such, then, is the difference between an element and a compound. To use precise terms, we should say, that an element is a substance, separate and distinct from all other substances, and incapable of being resolved into any other constituents. Yet this is to be remembered that an element is proved to be so only negatively; that is to say, that as yet it has not been discovered to be anything else. It may, or may not, remain for future chemists, by an improved apparatus and means of analysis, to make a reduction in the number of the substances now deemed elements.

In the labours which modern chemists have prosecuted to separate all substances within their reach to these ultimate constituents, until it was impossible to separate them any farther, it has been discovered that a number of bodies—once deemed elementary have no real claim to that distinction. Such bodies have been found in fact to be composed of two or more elements. The number of chemical elements at present recognised as such by Dr. Fownes, is sixty-two. But several of these are doubtful; and as science proceeds, it will probably remove many from the list.

It has been common to arrange the true elements under the heads of gases, fluids, and solids; or they may be described as metallic, non-metallic, and gaseous. But while these distinctions are made, it is to be remembered that the same body under

some circumstances may be solid, and under others fluid. Water, or mercury, for instance, when frozen is solid, and at the common temperature is fluid. Forty-seven bodies are well-marked metallic substances, about which little doubt now remains. There are but four gases: these are oxygen, hydrogen, nitrogen, and chlorine. The remaining eleven are the non-metallic elements, or elements of an intermediate character.

These elements are very unequally distributed in nature. With all the variety which obtains among the material substances and organizations which God has placed around us, all are reducible to a comparatively small number of elements, or, in other words, ultimate constituents. So far as the crust of the globe is accessible to experiment and analysis, chemistry makes out that the earth *en masse* is composed but of seven elements. These are silicon, calcium, aluminum, magnesium, potassium, and sodium, united with oxygen. If we turn to the animal and vegetable kingdoms, these are, after all, chiefly composed of carbon, nitrogen, hydrogen, and oxygen. Or if we take the ocean, constituting, as it does, three-fourths of the area of our planet, we find that its principal components may be expressed in two words,—oxygen and hydrogen.

Such are the few materials out of which the Creator has formed not only the gorgeous globe on which we dwell, but also all that is material of ourselves, and the inhabitants of the sea and the air. So marked, indeed, is the feature adverted to in the economy of the creation, that some of the profoundest philosophers have thought that ultimately it may be found that there is but one element, of which all the others are modified forms.

The element almost universally diffused is oxygen. It is the largest constituent, by weight, of the ocean, forming eight-ninths of pure water. It forms a fifth part, by bulk, of the atmosphere, and it enters into a large number of combinations with solid bodies. It is capable of entering into chemical union with by far the greatest number of the other simple substances; or, to speak more scientifically, it is possessed of the most extensive range of chemical affinities. When it combines with another body, the chemical name of that process of union is "oxidation;" and, when it is completed, the resulting substance is an "oxide."

Hydrogen is also an important element. It forms about one-ninth of the weight of water, which is, in fact, an oxide of hydrogen; it also enters largely into the composition of animal and vegetable structures. Nitrogen forms one of the chief constituents of the atmosphere. It is remarkable for not readily uniting with the majority of the other elements. But when, under proper management, it is made to combine with oxygen, the resulting substances are possessed of the most intense energies. United with hydrogen, it forms the important substance, ammonia, upon which the life of vegetation, and indirectly of man himself, and of the lower animals, appears to be dependent.

The only other element now to be particularly mentioned as important is carbon. It exists in minute proportions in union with oxygen in the atmosphere, as a gas; and in the solid form it composes, together with the elements of water and nitrogen, the chief part of the woods and vegetable clothing of the present, and of the coal-formations belonging to a former period of the earth's history.

In the mineral world, there are a greater number of elementary substances to be found. The most important of these are silicon, calcium, magnesium, potassium, sodium, aluminum, iron, phosphorus, and sulphur.

The results of the remarkable simplicity which obtains in all the arrangements of nature are very striking. How surprising to find that a gas, (carbonic-acid,) diffused in fractional quantities even in the purest air, in one of its principal constituents, (carbon,) is one and the same with the solid material of the forest-tree! How wonderful to learn that the millions of tons of wood that have grown upon the earth were actually in a great measure derived from this

gas dissolved in water, carried up by the roots, and metamorphosed in the leaves!

The variety of result may be illustrated in another manner. The acrid, dangerous, and highly corrosive liquid, known as aquafortis, or impure nitric acid,—in its pure condition one of the most powerful re-agents of the laboratory,—is composed of nitrogen and oxygen. These are also the constituents of the blandest summer's breeze! Whence, then, this change? The answer is, the relative proportions or quantities of the two elements are not the same; and in the case of nitric acid the elements are in chemical union, while in the air they are only in a state of mixture. Another alteration, again, in our atmosphere, would produce laughing-gas. Here, then, are three products of the most entirely opposite and unlike characters, namely, nitric acid, atmospheric air, and laughing-gas, composed of precisely the same elements. Why, then, do they differ so strikingly from one another? Because air is only a mixture of the two elements, while laughing-gas and nitric acid are both true chemical compounds of the same, and the latter has five times the quantity of oxygen possessed by the laughing-gas. But these are familiar examples. A more surprising vein of thought is opened up, when it is stated, that chemistry makes us acquainted with substances which are absolutely identical in the number and relative proportions of the elements of which they are formed, and yet are as totally unlike one another in properties, such as colour, odour, and taste, as though they had been composed of other and different substances.—*Youth's Instructor.*

The Last of the Jacobites.

Janet Munro, or M'Kenzie, departed this life at Alness, in Ross-shire, on the 18th of April. Janet, at the period of her decease, was the oldest woman in Scotland, if not in Great Britain, for she was at least 110 years of age, and there is reason to believe that she was even more. She had a child's recollection of the great national event of the battle of Culloden, and from many of her nearest relations, the Munros and M'Kenzies, having been "out" in that romantic and daring enterprise, she could detail a whole catalogue of curious incidents connected with these eventful times, which, from her retired mode of life and comparatively remote residence, never found their way into print. In Janet Munro there has passed away the last inhabitant of Scotland who was alive when Charles Edward held state in Holyrood, or skulked as a hunted deer amongst the Western Isles. She was a staunch Jacobite till her dying day, and was, we have no doubt, the last individual in the British dominion who conscientiously believed that her Majesty held the crown by an unlawful tenure. It is strange to think of what has passed during the five score years and ten which have elapsed since this venerable chrone was christened. She was in the prime of life when the United States of America were English colonies; she was become elderly before Napoleon gained his first battle, and she had lapsed into old age before steamers or locomotives on railways were heard of. Janet belonged to the respectable class of small farmers; she was a woman of unblemished character, and was a widow for the period of 43 years. She retained till her last moments the exercise of her mental faculties, and previous to her last illness could read the smallest print with the unaided eye.—*Glasgow Herald.*

Anecdote of a Game Cock.

On the memorable 21st of June, (Lord Howe's victory) Capt. Berkeley, the uncle of the present Hon. Grantley Berkeley, commanded the Marlborough, and broke through the French line, between L'Impetuous and Le Mucius, each of superior force, and engaged them both. On going into action, the Captain ordered all the live stock to be thrown overboard; but, at the humble request of his crew, permitted them to retain an old game cock, which they (the crew) had fought several times, and always with success. Though the coop was thrown into the sea, the cock was allowed to range the deck at liberty. In the action, the Marlborough was so severely handled by her