knowledge has "puffed up," to consider for a little not the vast extent of human knowledge, but the inconceivably vaster of human ignorance.

"The unsolved mysteries of science" are so many and of such a character as to lead even the wisest to exclaim, 'Behold we know not anything." Sir Isaac Newton's modest estimate of his own achievements may still be adopted with ever growing emphasis by the most illustrious of his successors; and while now, as aforetime, "Knowledge may be proud that it has learned so much, Wisdom is and always will be humble that it kno[illegible]o more."

The Marquis put the case in this way:—

A study of the addresses of my learned predecessors in this office shows me that the main duty which it falls to a president to perform in his introductory address, is to remind you of the salient points in the annals of science since last the association visited the town in which he is speaking. Most of them have been able to lay before you in all its interesting detail the history of the particular science of which each one of them was the eminent representative. If I were to make any such attempt I should only be telling you with very inadequate knowledge a story which is from time time told you, as well as it can be told, by men who are competent to deal with it. It will be more suitable to my capacity if I devote the few observations I have to make to a survey not of our science but of our ignorance. We live in a small bright oasis of knowledge surrounded on all sides by a vast unexplored region of impenetrable mystery. From age to age the strenuous labor of successive generations wins a small strip from the desert and pushes forward the boundary of knowledge. Of such triumphs we are justly proud. It is a less attractive task—but yet it has its fascination as well as its uses—to turn our eyes to the undiscovered country which still remains to be won, to some of the stupendous problems of natural study which still defy our investigation. Instead, therefore, of recounting to you what has been done, or trying to forecast the discoveries of the future, I would rather draw your attention to the condition in which we stand towards three or four of the most important physical questions which it has been the effort of the last century to solve.

This he proceeds to do with all frankness and, as professedly a mere layman in science, with all modesty. What, for instance, do we know of the nature and origin of the sixty-five elements? We may delude ourselves with words and try to be satisfied with make-believes, but after all, the wisest and the most ignorant stand on the same level in the presence of such a question and such a mystery.

A third of them form the substance of this planet. Another third are useful, but somewhat rare. The remaining third are curiosities scattered haphazard, but very scantily, over the globe, with no other apparent function but to provide occupation for the collector and the chemist. Some of them are so alike each other that only a chemist can tell them apart; others differ immeasurably from each other in every conceivable particular. In cohesion, in weight, in conductivity in melting point, in chemical proclivities they vary in every degree. They seem to have as much relation to each other as the pebbles on the sea beach, or the contents of an ancient lumber room. Whether you believe that creation was the work of design or of inconscient law, it is equally difficult to imagine how this random collection of dissimilar materials came together. Many have been the attempts to solve this enigma; but up till now they have left it more impenetrable than before.

We are told that the earth was thrown off from the sun in the course of its coolings and revolutions. How, then, comes it to pass that the elements which make up the great bulk of the earth are not found even in the minutest quantities in that from which we are assured it orginally came? We don't know. Nobody does. The fact is there, or is said to be, but the *how* or the *why* of it is as much a mystery as it was when the question was first asked, or when man first looked wise in order to conceal his ignorance.

The upshot is, as the Marquis has it, that all these successive triumphs of research, Dalton's, Kirchhoff's, Mendeleeff's, greatly as they have added to our store of knowledge, have gone but little way to solve the problem which the elementary atoms have for centuries presented to mankind. What the atom of each element is, whether it is a movement, or a thing, or a vortex, or a point having inertia, whether there is any limit to its divisibility, and, if so, how the limit is imposed, whether the long list of elements is final, or whether any of them have any common origin, all these questions remain surrounded by a darkness as profound as ever. The dream which lured the alchemists to their tedious labors, and which may be said to have called chemistry into being, has assuredly not been realized, but it has not yet been refuted. The boundary of our knowledge in this direction remains where it was many centuries ago.

What about ether? What about the problem of life? What about natural selection? Always the same weary and humiliating reply, "We don't know." The time required to develop a jelly-fish into, say, a man, must in any case be so prodigiously long, that the mathematician and the biologist cannot agree, for their data are mutually destructive. The jelly-fish would have gone off in steam, if it had existed so long ago as the exigencies of the biologists require, the earth's heat in those remote days being clearly too strong to give said jelly-fish a chance. And what is behind all these chemical and other changes if the idea of an intelligent planner is ruled out as unscientific? Professor Weisman, Darwin's distinguished disciple, is quoted as saying:

We accept natural selection, not because we are able to demonstrate the process in detail, not even because we can with more or less ease imagine it, but simply because we must—because it is the only possible explanation that we can conceive. We must assume natural selection to be the principle of the explanation of the metamorphoses, because all other apparent principles of explanation fail us, and it is inconceivable that there could yet be another capable of explaining the adaptation of organisms without assuming the help of a principle of design.

Exactly! Anything rather than admit the possibility of design and a designer, even though this may involve the belief in what is unknown, unproved, improbable, nay, to all appearance, impossible.

Lord Salisbury puts this with such point and clearness that we feel we shall be excused in giving the following somewhat lengthened extract:—

There is the difficulty. We cannot demonstrate the process of natural selection in detail; we cannot even, with more or less ease, imagine it. It is purely hypothesis at work. No man, so far as we know, has ever seen it at work. An accidental variation may have been perpetuated by inheritance, and in the struggle for existence the bearer of it may have replaced, by virtue of the survival of the fittest, his less improved competitors; but, as far as we know, no man or succession of men have ever observed the whole process in any single case, and certainly no man has recorded the observation. Variation by artificial selection, of course, we know very well; but the intervention of the cattle breeder and the pigeon fancier is the essence of artificial selection. It is effected by their action in crossing, by their skill in bringing the right mates together to produce the progeniture they want. But in natural selection who is to supply the breeder's place? Unless the crossing is properly arranged, the new breed will never come into being. What is to secure that the two individuals of opposite sexes in the primeval forest, who have been both accidentally blessed with the same advantagous variation, shall meet, and transmit by inheritance that variation to their successors? Unless this step is made good, the modification will never get a start, and yet there is nothing to insure that step, except pure chance. The law of chance takes the place of the cattle breeder and the pigeon fancier. The biologists do well to ask for an immeasurable expanse of time, if the occasional meetings of advantageously varied couples from age to age are to provide the pedigree of modifications which unite us to our ancestor the jelly-fish. Of course, the struggle for existence, and the survival of the fittest, would in the long run secure the predominance of the stronger breed over the weaker. But it would be of no use in setting the improved breed going. There would not be time. No possible variation which is known to our experience in the short time that elapses in a single life between the moment of maturity and the age of reproduction, would enable the varied individual to clear the field of all competitors, either by slaughtering or starving them out. But unless the struggle for existence took this summary and internecine character, there would be nothing but mere chance to secure that the advantageously varied bridegroom at one end of the wood should meet the bride, who by a happy contingency had been advantageously varied in the same direction at the same time at the other end of the wood. It would be a mere chance if they ever knew of each other's existence—a still more unlikely chance that they should resist on both sides all temptations to a less advantageous alliance. But unless they did so, the new breed would never even begin, let alone the question of its perpetuation after it had begun. I think Prof. Weismann is justified in saying that we cannot, either with more or less ease, imagine the process of natural selection.

Time was, and that not so long ago, when the belief in creative design was supreme. Even those who least believed in it paid it formal homage that they might not shock the public conscience by appearing to deny. But now, great philosophers, or those who would fain pose as such, rather than seem to acknowledge such a heresy, take refuge, like Professor Weisman, in a theory which requires a faith in the impossible compared with which that in mediæval miracles was veritably a "walking by sight," for it verily "removes mountains." Hear the conclusion of the whole matter, as given by Lord Kelvin, twenty years ago, and quoted by Lord Salisbury as voicing his own views:

I have always felt that the hypothesis of natural selection does not contain the true theory of evolution, if evolution there has been in biology. . . . I feel profoundly convinced that the argument of design has been greatly too much lost sight of in recent zoological speculations. Overpoweringly strong proofs of intelligent and benevolent design lie around us, and if ever perplexities, whether metaphysical or scientific, turn us away from them for a time, they come back upon us with irresistible force, showing to us through nature the influence of a free will, and teaching us that all living things depend on one everlasting Creator and Ruler.

CHILDREN'S DAY.

SEPTEMBER 30TH, 1894.

THE annual "Children's Day" appointed by the General Assembly is approaching and the Sabbath School Committee have prepared a special service for the occasion on the subject of the Foreign Missions of our church. Sample copies are being mailed as rapidly as possible to every minister and S. S. superintendent. The service is simple and scriptural, bright and instructive. It can be taken up by any school without previous rehearsal. All the hymns are familiar, being taken exclusively from the "Children's Hymnal." By the kindness of the Foreign Mission Committee a copy of their report to the last General Assembly will be enclosed in each parcel for the information of speakers, also an interesting leaflet for scholars, "Why should I contribute to Foriegn Missions," that ought to be pasted in their Bibles. As many of these will be sent as of services ordered. Orders may be sent to the printer, Mr. C. Blackett Robinson, 5 Jordan St., Toronto, Ont., or to the convener, Rev. T. F. Fotheringham, 107 Hazen St., St. John, N.B. These responsive services are furnished absolutely free to all so that no school can plead poverty as a reason for not enjoying the use of them. Those that are able are expected to send a contribution in return, for which they get credit as a voluntary donation: but those that cannot, or, for any reason do not support the work of the committee, are none the less welcome to have them, since the object mainly is to interest our schools in Foreign Missions and unite the whole church in a service of prayer on behalf of our Sabbath Schools. It is earnestly recommended that the congregation be invited to join with the school in the special service, or that it be held at one of the ordinary diets of worship. We ask and expect a rich spiritual blessing as the result of our Children's Day meetings.

KNOX COLLEGE.

IT may be of interest in connection with the Jubilee services of Knox College, to recall some points in its history that will be alike worthy of note by those interested in Theological education, and to the many ministers in our church who are proud to call Knox their Alma Mater.

Knox College was the result of the Disruption in the Church of Scotland, which took place in Scotland in 1843, and in Canada in 1844. At that time the attendance upon Theological classes was numerically small, and while the majority cast in their lot with the separating body, the attendance upon the classes in Knox was only fourteen the first year. Since that time, with all the changes, the attendance has gradually increased, until last year ninety-two were in attendance on the classes in Theology alone, while over fifty were in preparation for entrance upon the classes in Theology. We may naturally expect from the proximity of Knox to the University, where a considerable proportion of the students are Presbyterians, that the attendance upon the classes in Knox will increase from year to year, and that the cry which is now prevalent about the want of men to man our mission stations will be largely met.

Knox College has been favored with not a few men of great practical ability in the professorial staff, and it is fitting that the attention of the church should be called at this point of time to the necessity for an increase in the staff of the college, in order that the increasing requirements of the present day in theological teaching may be fully met.

It is the intention at the time of the Jubilee meeting, to secure the presence of leading representatives from other colleges, and to show the brotherly feeling that exists in Knox towards other institutions of a kindred nature, but it is a proper thing, at the same time, to draw the attention of our people to the necessity for maintaining Knox College in a high state of efficiency—in such a state of efficiency, indeed, as will make it educationally a fit representative, of the Presbyterian Church. We, as Presbyterians cannot afford to take a second place in theological and literary standing for our ministers, and at a time like this it is proper than an appeal should be made to the church so that its governing body may be able to secure for the College an adequate teaching staff.

Among other things in view, in the Jubilee Fund which the friends are seeking to raise, the chief idea is this very worthy object of worthily supporting the position which Presbyterians claim in regard to education, and we hope that the friends of Knox will unitedly second the efforts of those who are seeking this desirable end. While many of the Presbyterian body might contribute their hundreds, there are very many who might give from $5.00 to $20.00 each, without missing it, and a large number of such contributions would effectually relieve the College from its present burden of debt.

It is the intention at the time of the Jubilee to present a complete historical statement, and we will refrain, at present, from touching further upon the history of the Institution. We may in another issue, refer to some of the distinguished men who have imparted instruction in old Knox.

Meantime, wishing the College every success, we would say to the graduates, Knox expects every man to do his duty.