

The Origin of the World

By R. McMillan.

CHAPTER XIII.

THE WORLD'S ROCKS.

One day not long since I was talking to a very clever doctor about the origin of the world, and he said: "It is all speculation, and brings you back to the old question, 'Which came first, the hen or the egg?'"

I was amazed at such a man reverting to the old question, because it meant that he had never discussed, in any serious way, the question of the beginning of life on the globe. The hen and the egg, as illustrations of the methods of reproduction, are comparatively modern; but the amoeba and its divisions are as far as we are concerned, the primitive manner of reproduction. There were millions, maybe hundreds of millions, maybe thousands of millions of years between the primitive habit of the amoeba and the complex fashion of the hen and the egg; but the two fashions were but the expression of the one idea, and that—reproduction.

Life began as a chemical process. You see that! It does not need to be proved. It is self-evident. You have the fiery gaseous mass of the world cooling down by degrees, and the combination of the gases to form water and air and salt; then you have a crust over the mass, and then you have quiet, warm seas, and further combinations, and living jelly masses, and after that more complex jellies, and finally shells and more highly organized forms, until at last, after long ages of strife and stress, after millions of years maybe, you reach the primitive, three-lobed crustacean, the trilobite.

When I began to study geology I had heard of the trilobite, but it was as something I had come across in a dream. When I found a trilobite myself, a little thing nearly the size of a hazel-nut, I was almost delirious with joy. It was to me the most wonderful thing in the world, and I carried it in a little cardboard box, wrapped up in cotton wool. When I showed it to people, I expected them to be enthusiastic about it, and gasp with surprise, "Oh!" But they did not. They had never so much as heard of a trilobite, and they were quite ignorant of what it meant; so they smiled or sneered at my enthusiasm according to their temperaments. I was disappointed, and do you know why? Because I was ignorant of the ignorance of my neighbours; and I was also ignorant of my own ignorance. I had not then learned what poor little creatures of circumstance human beings are, and I was apt to be impatient. But I am older now, and I trust wiser and more tolerant, as well as more conscious of my own shortcomings.

You see I have called it "A Cambrian Trilobite." But I have not told you what "Cambrian" means, and I must do so now, although geology in one chapter seems a great undertaking.

I have told you that a crust formed over the gaseous mass of the earth, and that crust was made from gas, solidified gas, combined gases. There are about eighty "elements" that go to make up the earth, and the sun, and the stars; but the principal ones are very few. Oxygen, hydrogen, nitrogen, and carbon are the chief of them all, and they enter most largely into the materials that form the crust of the earth. Sandstone rocks are formed mostly of silica, claystone rocks of alumina, volcanic rocks of complex combinations, and limestone rocks mostly from organic substances, which once lived either as oyster-shells and sea-lilies or globigerina ooze. The first crusts where life began were washed away and re-formed, and blown to pieces over and over again, for ages and ages; but at last, with the cooling earth, there remained wholly, the basis of our primitive system, and we have the stone books of geology, where we can read the history of life and the world.

The first rocks, the deepest, the oldest, are called the Archean, or Pre-Cambrian, the primitive, the oldest of all. We do not know how deep they are, or how old; but when the first of them were deposited there was probably life. In the later ones, there must have been some sort of life, but all certain trace of it has disappeared. Then came the Cambrian, where the trilobite is found—a sort of primitive crab or simple shell-fish. By that time life of a lowly sort must have been very abundant. It had been growing up or "evolving" through the long pre-Cambrian period. We have vast areas of Cambrian rocks containing the remains of sponges, hydrozoa, actinozoa, annelida, brachiopoda, crustacea, and other kinds of animal, showing that life was then well on its way.

Fish began to appear in the Silurian times—fish with armour so hard that it has been preserved in the rocks. Life must have swarmed then, but geology is so very young—it only began as a science last century—that we have not learned more than a small fraction of what there is to learn. But we know enough about the Cambrian rocks and the Silurian rocks to be sure that life was then very abundant, and was at first of a very low order. Life began in warm set-water; and when you weep very much and taste how salt your tears are, you can remember that life began in salt water.

If you look at your own blood under the microscope, you will see white corpuscles moving in it. You will recognize in these corpuscles the amoebae of our first acquaintance, and you will realize that we are of that dim, mysterious, awful past, part of the lowly life that began in the steaming seas of the primitive rocks. What a wonderful thought. How science is giving us new ideas and new conceptions and new outlooks! It is good to learn what life is, and whence life came, and whither life doth go, for in that knowledge comes the power to order life aright.

After the Silurian rocks, in order of deposition, came the Devonian rocks—the "Old Red Sandstone," as Hugh Miller knew it—with its great lakes and strange fishes, its clubmosses, and horse-tail plants. You can learn about them all if you take to geology. I am writing now about the things I have seen and known and handled and studied myself. The stone books are open to all readers, and in each generation there are more and more readers, while the lessons the stone books teach are growing ever clearer and more simple.

After the Devonian came the Carboniferous group of rocks, with weird animals like the labyrinthodont, vast coal beds and curious lizards, and a steamy atmosphere. The fossils of the Carboniferous rocks include the first air-breathing animals. Then came formation after formation, re-formation after re-formation, and the stone books were laid out for men to read, for men who as yet were not. The air was clearing, and lungs were developing, and ever higher types of life were appearing; and at last came a poor, low, bestial type of man, who has since developed to what he is today.

The study of the stone books is called geology, and the thickness of the stone books is almost twenty-five miles, or, say, 1/160th part of the distance from the earth's surface to its centre. If all the strata were laid on top of each other, like the layers of an onion, it would be an interesting book; but sometimes you are walking on the Archean rocks themselves, and sometimes you are walking on quite a modern deposit. Everywhere you find traces of vast deposits and a consistent development, and you come at last to read the story of the origin of the world as easily and as plainly as if a printer had set it all up in big, bold type for you to read. The runes of the rocks are such as to "wake men's hearts to dreams of things sublime."

Next Lesson: THE JELLY FISH.

INDIA.

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omic classes now being developed among the natives themselves wish to carry on the same game as the English.

The merchant and manufacturing elements, along with the Ryots and proletarians of the big cities are very dissatisfied at the present time of writing. This dissatisfaction arises not from a religious but from an economic cause. The merchant class having been educated in the West and having absorbed the western ideas of civilization have ideas strongly in line with their bourgeois brothers the world over. Like all business men they realize that in order to get rich you must exploit labor, and the sight of all the millions of their fellow countrymen and the rich natural resources of the country have awakened their cupidity. Wishing to gain political control of India the native merchant is chiefly responsible for much of the agitation now going on there. The working population living under the most abject conditions are easy victims of those that wish to exploit them in the place of "perfidious Albion." But they are up against a pretty shrewd government and their job is anything but an easy one. With so many divisions of different kinds existing among the people, England is able to play one religious group off against another, and at all times the majority of the large landholders or Rajahs lean pretty strongly towards England. May be they realize that the fate of the large landholders in France during the revolution may be theirs also, should a similar revolution take place there.

One thing is certain that for a revolution to be pulled off successfully in India, the Ryots would have to be bribed in some manner in order to bind them to the new ruling element and so offset any possibility of a proletarian revolution from immediately following. This would mean the parcelling out of the land and the creation of a small farm-holding class such as at present exists in France. But revolution seems remote, for England is still able to dominate by force of arms.

There can be not the slightest doubt but that England will grant India a constitutional form of government so dear to the bourgeois heart, but she will do this only when she has prepared the ground for such an undertaking. Such a form of freedom does not necessarily weaken the British Empire as some radicals assume.

Rather it is more likely to strengthen the ties that bind. A constitution along the same lines as Canada will only serve the purpose of turning what are now a disgruntled group of exploiters in India into a staunch, loyal, supporting bunch of flag-wavers, after the type of Collins and Griffiths, and like these two Irish "revolutionists," they will be only too pleased to use British troops to help crush any groups that give vent to their feelings of dissatisfaction.

The proletarians are too few and the machinery of production too ill developed to bring about the revolution that we as workers wish to see. Speculation as to the effect it would have on the British Empire must be treated purely as speculation. Our work still lies before us. We have got to develop revolutionists at home where capital has well prepared the way. If we do this and do it well, there will be no need to worry and dwell in the land of speculation. Given a proletarian victory at home, India's freedom is assured, not the freedom wished for by many of their most enlightened members but the freedom of the down-trodden Ryot and proletarian.

He who would free others, must first free himself. Let us on with the task.

J. C.