

The Origin of the World

By R. McMillan.

THE JELLY FISH.

CHAPTER XIV.

How did anything originate? Of necessity! How did eyes originate? There is a question for you! The eyes of insects are very different from the eyes of men. The eyes of flies, of beetles, and of spiders are simply amazing in their wonderful complexity; but the human eye is, like everything else about us, a miracle. Mind you, a human eye is a very poor instrument, and its power is very limited. It is apt to get out of order, and a very little renders it quite useless. People have a lot of trouble with their eyes; but science has come in to help us. We have eye-glasses now, and spectacles, microscopes, and telescopes; and we can now help the poor human eye to see things that used to be invisible to it. But how do you think eyes originated, at the very first?

I do not think that anybody really knows. All the same, I have watched the development of eyes for many years, and I will tell you how I think they originated.

Did you ever see a jelly-fish? You live so far far away from the sea that I fear you may never have seen one.

Some of them look just like glass, clear as crystal, while others are quite highly coloured. But there is an immense variety of them, and at times, when the wind blows landwards, they are driven on to the beach in thousands. A farmer once thought they would make good manure, so he carted a great heap from the beach to his farm; but next day they had all melted away. Men and animals are composed largely of water—say from seventy to ninety per cent.—but jelly-fish are nearly all water. I do not know how to count percentages in a case like this, but a jelly-fish is about four hundredths of water to one of solid matter. There is very little of anything in them except water, and yet they live and move, and have eyes and ears, and locomotive powers, and are able to sting, and digest, and reproduce their kind. It is so wonderful to think about that it grows awesome, and I doubt whether I can explain to you all I know and think about a jelly-fish.

You will see long filaments hanging from the bell, like whips. In those whips are the stings, and around the margin of the bell are the eyes and ears of the animal. The eyes are simply spots of colour; they are primitive eyes, I think. The animal is all eyes, to some extent, for a shadow falling on it would affect the whole glassy body; but the pigment spots are more sensitive to light than the rest of the body, and so they are rudimentary eyes.

Look into the eyes of your neighbours—into your grandfather's eyes, for instance—and you will see that his eyes are colour-masses. If you think it out, you will perceive that they are simply a development of the pigment spots on the primitive jelly-fish! The human eye has developed, through millions of years, from such a lowly beginning as that. I discovered early that the pigment spots of molluscs were their rudimentary eyes, and that there are no eyes without colour. That is curious, is it not? The ears of animals are much the same, for they are parts of the animal which have grown sensitive to sound, as the eyes have grown sensitive to light. Other parts grew sensitive to smell, and so the organs of sight and hearing and smell have developed from the very simplest beginnings, and great books have been written about each of them.

What you have got to keep clearly in your mind is this: The world began as a fire-mist, and everything has been developed through untold ages of life and struggle, from the lowest cell of protoplasmic jelly up to man himself, the crowning glory of development. Nothing began as it is today. Nothing was complete from the beginning; everything has developed from the simplest form. The

eyes, the ears, the nose, have all grown through necessity in the struggle for existence. Life was dear to the lowliest, because, if an animal did not love life, and was not prepared to struggle for it, there was no hope for its success in a world where every living thing lived on every other living thing. Life lived on life, and love of life grew into a passion, because it was only through a love of life that life was possible. But how slowly that love must have developed during the untold ages of development, and how unconscious we are of its existence even yet! We cling to life with a fierce tenacity, which we are mostly unable to explain; but it arose in the ages of strife, long before living things had become conscious, and it exists today as one of the roots of life itself.

The form of the jelly-fish is suited to its wandering, sea-borne, wind-driven existence, and it has probably endured for ages, because it was admirably fitted for the life it lived. We cannot speak with certainty about its age, for the simple reason that the jelly-fish, being almost entirely composed of water, has left no fossil remains; but I am under the impression that it is one of the earliest forms of marine life—that is, of the free swimmers. One of the jelly-fishes begins life, fixed on a stalk as a jelly-bell, but it breaks off the stalk and swims away as a little swimming medusa. The free swimmer then develops eggs, or seeds, which grow a little while, and then fix themselves on the rocks again, as their grandparents did. This "alternation of generation," as it is called, is a very curious fact in life, and accounts for a lot of things; but I had better not stop to discuss it now, because I want to tell you a curious thing about the jelly-fish.

I called your attention to the long tendrils which hang from the edge of the bell of the jelly-fish. If you saw them in water, you would think they were made of pure glass; they are so bright and transparent. Yet they are armed with deadly stings. These are the weapons of the jelly-fish, both for offence and defence, and they are also a means of securing food. You may think that eyes are wonderful, and the ears marvellous; but these threads that hang from the edge of the jelly-bell are more wonderful to me. The tendrils are made of water, but they are armed with deadly springs of the most cunning description; and I think the ends of the springs are poisoned, but I am not quite certain about that. The springs are so small that they are quite invisible to our poor human eyes, but, now that we have a microscope to aid us, we can see them. There must be millions of tiny stings on the long, glassy filaments of the jelly-fish.

Scientific people call these poison-arrows (if they are poisonous) "thread cells." In each cell there is coiled a tiny armed thread. When anything swimming in the sea touches the filament, it breaks the thin film of skin, and the arrow flies out and impales the swimmer. It is the most marvellous, wondrous spring that I ever saw, and yet it is made out of water, and quite invisible to the naked eye.

This is the cunningest little arrow imaginable; and if ever you go to the seaside you can experiment with it. You may not be able to get a jelly-fish, but you can try it with an anemone, on the rocks at low tide. If you find an anemone with its tentacles outspread, put the palm of your hand on to it, and you will find that it seems to cling to your skin. It will not hurt you, but it will give you a curious feeling of something uncanny. The cause of the clinging is that thousands of little stings have attacked your skin, but your epidermis is so thick that they cannot pierce it.

Those microscopic stings of anemones and jelly-fish were never intended to deal with human skins, or with great big enemies, for they were developed millions and millions of years before men existed on the earth. They were probably developed before there were any big swimmers in the water. They were so admirably adapted to capture the tiny prey with which the sea swarms that the jelly-fish

have flourished all through the ages, and abound in the sea today as they must have done in the earliest ages of the world. And yet the jelly-fishes are almost pure water! Think of the miracle of the tiny springs, made of sea-water! Think of the jelly-fishes floating about in the sea, driven by the wind and the tide, with not enough locomotive power to avoid the beaches or the rocks, and yet swimming through all ages! They have eyes and ears and nerves, and they are beautifully fitted for killing their prey; and they live on life, and they die, and pass away as we do, and leave their children to carry on the struggle as they have done.

You ask about the origin of the world. The development of the gaseous mass was wonderful enough, but it is not nearly so marvellous to me as the development of the jelly-fish. All origins are miraculous to me, and the forms of living things are beyond all human comprehension.

Next Lesson: THE STRUGGLE FOR EXISTENCE

LEAVING "HOME"

A more gloomy view of the actual world situation than that now given by Signor de Michelis, the Italian Commissioner for Emigration, would be hard to find. What adds to the blackness of the picture is the fact that its painter had every reason to give it as cheerful a tone as possible. He is the official of a country which has more inhabitants than it can support, which must find an outlet in emigration for hundreds of thousands of its citizens. Here is his report, country by country:

Albania—Because of the unstable political situation and the grave economic crisis, emigrants are not advised to go to this country.

Austria—The present conditions, made more serious by the recent depreciation of the crone, make Italian emigration here impossible.

Belgium—Though the population has been diminished by the war, it is sufficient for the labor needs of the country.

Bulgaria—Because the labor supply has been increased by the refugees from Thrace, Dobruja and Russia, there is no place for foreign workers.

Czecho-Slovakia—the fall of the mark, which makes it impossible for local industries to compete with Germany, and other factors have here created an economic crisis much the same as that in Poland.

Denmark—Severe economic and industrial crisis throughout the country and much unemployment.

Estonia—Power of absorbing Italian emigration—nil.

Finland—Can be considered for the present, at least, as a field absolutely closed to our emigration.

France—Superfluity of workmen except in the districts of Dijon and Nancy.

Germany—Less unemployment than in other European countries, but emigration not advised because of the low and changing value of the mark and the regulations handicapping foreigners.

Great Britain—No reason for nourishing hope at present, as unemployed number 1,700,000.

Greece—Critical economic situations, especially because of the conditions in Macedonia and the continuance of the war.

Hungary—More than ever a country of emigration, as unemployed are numerous.

Jugoslavia—Bad economic conditions, overabundant labor supply, low wages and low value of currency combine to make it unadvisable for our emigrants.

Lithuania, Luxemburg, Monaco, Netherlands, Norway, Poland, Portugal and Rumania—All suffering seriously from unemployment. No hope, even in the near future, for Italian emigration.

Russia—Until its industrial activity has been resumed, we must limit ourselves to developing any agricultural concession we obtain. Workmen should not go there unless they are strongly backed by capital.

Spain—Industry stagnant, business paralyzed, unemployment general.

Sweden—Possible only for a few artisans skilled in crafts little known here.

Switzerland—About 100,000 now unemployed.

Turkey in Europe—Cost of living extremely high and more workers than work.

Argentina—As in, nearly all South American countries, a very grave economic crisis, which is becoming more and more alarming, makes the usual emigration to this nation impossible at present.

Bolivia—Mining industries almost paralyzed because of lack of demand. Offers, however, a magnificent field for colonization by well organized companies with strong backing.

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