

CHAPTER II

HOW DID WE COME ABOARD?

WHEN the good ship *Earth*, on which we are all embarked, was first pitched into space, spinning like a curve-ball, she carried no passengers. Then there was only ship—passengers were created out of the materials of the decks, and walked those decks of which they were but now portions.

The ship was a great, cloudy, misty mass of gases, which contained all the atoms that now make up the planet. There was no place for plant or animal. The gases drew together and in doing so grew hot, just as the air grows hot when pressed in the cylinder of an engine—so hot that even yet the inside of our great air-ship is hot enough to melt rocks and make of them lava. Until this cooled there was no opportunity for passengers on the ship—for plant or animal.

Finally the cooling made the rocks and met-

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als solid—but the waters were still steam. There was no ocean—only clouds of steam whirling in fearful storms about the globe, with its crust of rock and its core of fire. Then as the heat moderated, water was formed, and at last there were land and water. But the ship was still without passengers—there were no plants nor animals.

Then the greatest event in the history of the vessel on which we sail, took place. Somewhere in the warm waters about the poles, or in the bubbling swamps between the volcanic mountains—somehow, somewhere, sometime—the elements came together in such a manner that out of the atoms of the ship's substance, a molecule of protoplasm was formed.

The greatest word the human tongue can form is God, and the next is protoplasm. Perhaps when we know all, we shall see that protoplasm and God are the same—the one the whole, the other the part from which we can finally arrive at a theory of the whole, if not a conception of it. The mind of man has many deities—but if, under God, there is aught be-

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fore which he should bow himself, that something is protoplasm. For in the appearance of protoplasm, on the deck of the good ship *Earth*, appeared the thing out of which came all that green rash which breaks out and clothes her surface with vegetation, and the moving things that eat the vegetation and one another, and finally, man himself—who fondly believes himself the passenger for whose sole accommodation the ship is launched.

What is protoplasm? It is a strange insignificant slime, and looks like the white of an egg—but it is the mightiest thing on earth. It is a combination of carbon—like that in the diamond or soot—of nitrogen—that unstable thing of which nitroglycerin and other explosives are largely made up—of hydrogen—that gas which bursts with such flame and thunder when the balloon or the gas works blow up—and of oxygen—that element which eats up iron and rushes into the arms of carbon so fiercely as to cause flame when the coal burns in the grate. So protoplasm, like man, has in

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it every factor of revolution, explosion, heat, light, cataclysm, destruction, development and progress. But it is only a slime or jelly. These four elements—and others in smaller quantities—are combined in so wonderful and complex a way in protoplasm, that the wisest chemist does not know the secret of the combination. When nobody knows, we say “God knows!” We know the composition of the molecule of water—it is made up of two atoms of hydrogen and one of oxygen—and even the schoolboy calls it “ H_2O ”. But God only knows the way in which the molecule of protoplasm is built. The nearest guess at the formula of albumen, or the white of an egg is “ $C^{720} H^{1134} N^{218} S^5 O^{248}$ ”. This is too complex for the mind to visualize into a realizable thing; and protoplasm must be more complex—perhaps a thousand times more complex.

But we know that when this molecule is formed in the laboratory of God it has wonderful qualities—quite different in kind from any other substance. It has sensibility and irritability. In other words, it feels! It has cer-

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tain movements of its own. It has the power of forming itself into cells, and each cell of protoplasm has the power of taking other substances from its surroundings, and building up new and wonderful forms, all endowed with those new powers of motion, feeling, and regular and successive adjustments to surroundings. In other words, the protoplasm molecule has life.

When out of the substance of the deck of the good ship *Earth*—sailing under sealed orders without crew or passenger, through the depths of space—the carbon, oxygen, hydrogen and nitrogen of the vessel itself came together in that wonderful molecule called protoplasm, life was born. And with life, evolution began. And through evolution, came the ameba, the protozoon, the shell-fish, the fish, the reptile, the bird, the mammal, and finally, man. Creation reached the man-stage, and the first great cycle was complete. The ship had its passengers evolved from the ship herself. Thus we came aboard.

If you could take a test tube and make that

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marvelous molecule, it would have life, just as if God made it in the deeps of the primordial ocean. But you can not do it. Perhaps man may sometime perform the marvel—but he has not as yet. God had to take the nebula, spread out mistily over billions of cubic miles of space, condense it to a sun, compress the sun to a molten world, and shake this cosmic prescription for eons, as a chemist shakes a vial, before He got the compound to take form in that wonderful substance called protoplasm—and then it took millions of years for the life in it to rise to man.

When man can do this he can create protoplasm and artificially make life. We, made of this substance and by it, are so far above our primordial slime that we are here in these glimpses of world problems actually facing the question as to whether the doom of man is eventual misery and extinction, or happiness and glory.

Sublime and wonderful march of life! from the globule of jelly, to the being who questions the force which brought him into existence!