

WHAT IS THE UNIVERSE.

It has been a favorite opinion of philosophers that the universe is infinite. This is because of the impossibility of the mind's imagining a limit to the universe. The logical understanding ever demands something beyond any supposed limit. But our reason tells us that there must be a limit. This is made plain by a simple statement. We can easily suppose one of the stars making up the universe to cease to exist. In that case the universe is less than it was, i. e. is less than infinite. But it is absurd to suppose that one star should make the difference between finiteness and infinity. This merely brings out the fact that any number of units can never make real infinity, altho for mathematical calculations we use the expression infinite number.

The universe is made up of stars which are suns many or all of them surrounded by planets, with ether filling all the space between. These stars are estimated to be about one hundred millions in number, and are arranged in a double ring, forming a hollow flattened sphere. The sun that lights our earth, altho about eight lacs of miles in diameter, is one of the smaller stars, and is situated in the northern part of the double ring. Light moves nearly two lacs of miles a second, but takes about three years to come from the nearest stars and several thousand years to come from the outer part of the ring on the side nearest us, while it takes more than twenty thousand years for it to come across from the farther side of the ring. There are no stars for a long distance from both poles of the universe, and then they are rather sparse except on both sides of the equator forming the double ring, being sparse again just on the equator. These stars are all in swift motion, around each other in groups, and the groups around the center of the universe.

At this center is without doubt the place where God especially reveals himself. Nature shows polarity in every thing, whether in the tiny spinning spheres called atoms, or in suns, or in the universe itself. There is polarity in the spiritual world also, and the good and bad are at opposite poles. The Bible confirms the connection which we might suppose to exist, and teaches that God's glory streams forth as light and blessing towards the north pole of the universe, but as fire and wrath toward the south.

That many or most of the stars have inhabited planets around them we have good reasons for believing. The size, rate of motion and distance of planets which have never been seen have been measured. This is one of the marvels of science, and yet very simple. A star of many years' distance is found to vary in its light at certain regular periods. This is perfectly explained by a partial eclipse by a dark body moving around the star. The times being given and the amount of diminution of light, the laws of gravity supply the other details. Similarly a double star so far away that the most powerful telescope cannot distinguish the components, is shown by the spectroscope to be composed of two stars revolving around each other, because the lines of light become double at regular periods. These times being known, the relative distance, motions, etc. of the two are known. Mars and Venus are seen to be so like the earth, that beings much like men could live on them. If these planets, then others belonging to other stars may be inhabited.

The Bible teaches us that this little earth on which we dwell is the theatre for the universe: That here sin began, and here it will be conquered, that here God became incarnate, not only to save man, but in saving man to manifest to the universe the power of divine love and the terrible evil of sin, in such vivid colors as to serve to

keep sin out from the whole of the rest of the universe. Thus "principalities and powers in heavenly places know the wisdom of God," and all are "reconciled" to God, i. e. kept in allegiance to him, by this shedding of blood on Calvary, by which that spot becomes the most important in the universe, next to God's throne, being his "footstool."

MATTER.

For those who are not familiar with the idea it is one rather difficult to grasp, that *matter is mere force*. It has been commonly said that matter is substance endowed with force, but let us scrutinize this. Substance is that which *stands under* (sub-stans) phenomena, and is the cause of the phenomena. Phenomena (plain=appear) are the *appearances* cognizable by the senses, such as color, form, weight, warmth, density, inertia, etc. But these are each the manifestation of force. In each case force is the cause of the phenomena. Just what properties can be ascribed to the substance which is not force, we do not see. When we say it is space-filling we mean it keeps all other force out from a certain space, but it is force that keeps out force, nothing else could. It is said that matter is *passive*. This means that it is acted upon, but a thing which is acted upon can at the same time be active in another way. It is said that matter is *inert*, i. e. has inertia. But inertia is that property of a substance, by which when it is stationary force is required to move it, and when it is in motion force is necessary to stop it. We said that material atoms are composed of balanced forces. Because they are balanced about a center they are stationary, and because they are forces, only force can move them if not moving, or stop them if moving.

Again what is force? It is the activity of an agent. What is the agent? If we say force is a property of matter, then matter is the active agent, which supposition is no easier, and besides we have already shown that we can mention no property of matter that is not a manifestation of force, and consequently there is nothing in matter but force. Each atom is a bundle of forces acting about a certain center, and these forces being the cause of the phenomena are themselves the substance.

To charge us at the same time with both materialism and pantheism is self-destructive criticism. We say that the agent acting is God, but we must carefully discriminate between an agent and his activity, between the cause and its effect, between God the active agent, and force which is his activity, between the worker and his work.

As for a *dead soul* if any one cares to see these very words in the Bible let him look at the Hebrew of Num. 6:6.

DR. MARSTON. In view of the frequent statements made in the papers that the departure of Dr. Marston was due to his treatment by the Board of Directors of Jaffna College and especially by the Missionaries we had intended to state the facts of the case in some detail. But the following paragraph which we find in the *Ceylon Observer* of the 21st ult. seems to meet the need, and should be satisfactory to all who have regard for Dr. Marston. If any are still not satisfied, we are prepared to make a statement.

"We are authorized by Dr. Marston to state that his departure has in no way been influenced or caused by residents in the Jaffna peninsula and that with all the missionaries especially he has

maintained friendly relations, parting with mutual expressions of respect and goodwill. One of the chief purposes of Dr. Marston's coming to Ceylon was, to take up the work of the late Dr. G. Sen in training young natives as medical practitioners. But a very short time in the North showed him how unnecessary this was in view of the existence of the Ceylon Medical College and its fully attended classes." *Cey Obs., March 21: 19.*

TEMPERANCE.

From the speech of Dr. Benjamin Ward Richardson, F. R. S., who is said to be "the greatest living authority on the question of alcohol," we extract the following:—

I propose in a few words as possible to give you the result of my twenty years' observation of this question. I never make a secret of this, that I am a total absterain from the most selfish of all motives—that it is for my own good. I do not think the moral side of the question would have led me into total abstinence. My mind has always been turned to the scientific question, and the moral side never came before me in the way it ought to have done. I was twentyfive years ago simply an inquirer on certain questions relating to the action of different substances upon living bodies. I was, in fact, an inquirer on commission. It was my business to inquire into the action of these chemical substances. I tried the effects of alcohol on the lower animals and men, and endeavoured to ascertain what effect it had upon the temperature of the body, the muscular motion, and the nervous system, and finally what were its ultimate or worst effects when it was carried to an extreme degree. In the course of that inquiry I took the ordinary quantities of a moderate drinker, and began to see results which I did not expect. The most startling had reference to the effects of this substance on the warmth of animals. I had been brought up with the notion that alcohol produced permanent warmth in the body. When I came to the direct cause of experiment, bringing the thermometer into use, and trying the effect on various classes of animals, I saw that all along I had been mistaken and all that part of the world with me that had said alcohol warmed the body. I found, without the least shadow of a doubt, the action of alcohol upon all animal bodies I could reach for testing, after a brief period of mere flush of heat, was cold and reduction of temperature.

I went on further and began to specially look at the effects on muscular power. We had been taught as medical students that alcohol gave power, so men took strong drink in order that they might the better pass through great physical efforts. There have been exceptions to that, particularly in the case of athletes. My observation was that muscular power was reduced.

And then I came to the latter and most important part of what was the effect ultimately on animal bodies. I took the lower animals, animals that had a life of eight or nine years, and in which you could rapidly trace the changes. I found that nothing in the world so soon produced degeneration of the vital organs of the body as alcohol. Then I began to ask if this can be so produced, and if there is no strength or warmth from this agent, why should I subject myself to it? I saw with a certainty, that, taking a healthy animal I could produce specific disease in that animal by alcohol. Might I not be trying that same experiment on myself? Having come to that conclusion I became a total absterain. When I had tested the effects of abstinence I found I was none the worse, and in many respects, later on, I was better. I am certain of this, from personal experience and experimental research, that I have been in every sense of the word, better and healthier, more capable for work, and in every sense a stronger man. Then I tell all you who are not absterainers, that you in like manner will experience the same physical benefit. Men who do not take alcoholic drinks are always warmer, and in that respect really stronger than those who take alcohol. In the heat of the weather you will find that you are cooler, which is no paradox. There will be no quick fever heat produced, and your temperature and pulse will all through be more even and equal, and your body cooler than will be the bodies of those who are fluctuating between heat and cold under the influence of this peculiar and exciting agent. Again, you will find that in all the work you have to do which calls for strength you will be quite equal, and in the majority of cases far superior, to most of your rivals who trust to strong drink; and most certainly in every thing you have to do which calls for precision of action, you will discover that you have a degree of precision coming from abstinence, from taking simply water as your drink, which is altogether unknown until a man has experienced the advantage of the change from the alcoholic to the total abstinence side.