

**ASTRONOMY.**

The following is the introduction to a lecture delivered by Mr. Todd, C.M.G., F.R.S., &c. to the Boys' Institute at the Y.M.C.A. Rooms recently. Some who heard the lecture expressed a desire that it should be published, but the demand upon our space has hitherto prevented compliance with the request. The lecture will, however, lose none of its interest by the unavoidable delay that has occurred:— I have been asked by your committee to give you boys a short lecture this evening. For some time I was in doubt whether I would select as the subject of my lecture the electric telegraph or astronomy, and only a day or two since decided on the latter—partly, however, with the idea that it should be an open-air lecture at the Observatory, where we should have the glorious canopy of heaven above us, with its innumerable glittering stars, whose arrangement and motion I could better explain there than in this confined room, and where I should be able to show you our telescopes and explain their several uses, and perhaps give you peeps of other worlds. But it was represented to me that, as there were so many of you, it would take too long and perhaps prove unsatisfactory, especially if the night should be cloudy. I still hope, however, to be able to carry out this idea, but to do it successfully I must have you up in detachments. You must therefore regard what I shall say to-night as introductory to some future evening at the Observatory, when I shall be better able to give you a clearer idea of the midnight sky and the vastness of God's universe, in which you live and move and have your being, the inhabitants of a world which is after all but a small atom compared with those by which you are surrounded. I shall have to say something to you to-night of the mighty sun which gives you light and warmth, whose action in past ages of the earth has stored up coal for your cheerful firesides, and which supplies the motive power for your steamers and railways, and which in a word renders this earth of ours so beautiful and so glorious. I shall have to tell you of the planets which, like our earth, revolve in such stately order around that sun, and of the moon, whose ever-changing aspects, and pale sun-derived beams enliven our nights, and if time permits I must say something of those small twinkling stars, which are in reality vast suns, many of them much larger than our sun, yet so distant as to appear even through the largest telescope, mere specks of light.

Twinkle, twinkle, little star,  
How I wonder what you are,  
Up above the world so high,  
Like a diamond in the sky.

Now, as I am not addressing a body of sage philosophers who are prepared to question everything and who live in an atmosphere of doubt, but a lot of young friends whose hearts are warm, sanguine, and romantic, let me draw a picture. Let us imagine our first parents, who, we are told, were placed in the Garden of Eden, perfectly innocent, perfectly happy, with fully matured intellects, knowing

Garden of Eden, perfectly innocent, perfectly happy, with fully matured intellects, knowing as yet nothing of the world in which they find themselves, nothing of the laws of nature, nothing of worlds beyond, yet eager to know, and possessing mental capacities for obtaining and storing up knowledge. Side by side they discuss and admire the beauties around them—the giant trees of the forest, the sweet-smelling and many-coloured flowers, the gloriously bright and warm sun overhead. While so employed the day goes on, and the sun sinks low in the western horizon, and finally, to their intense consternation becomes, as it appears to them, buried in the ground and lost to view. They have no knowledge, as you and I have, that it will ever appear again. It has gone, and gradually the daylight fades and the air mysteriously darkens; as it does so, however, first one and then another small speck of light is seen—the first we may suppose to be Venus—bright and beautiful, as you have seen her for several weeks past adorning our evening sky. Then the whole canopy of heaven would become studded with these shining points. What are they, would be their first question? Are they fragments of the bright sun so recently overhead? Has it in its fall been dashed to pieces, and are these things we now see all that remains? They keep eager watch during the long silent hours of the night. They see star after star following the footsteps of the sun and sink in the west, while new stars appear in the east, and then they see another marvellous object rise, like the stars, from the north in the east. It is not round like the sun, it is only half round, and is not nearly so bright, but sheds a pale light over the ground, and renders surrounding objects, which have hitherto been buried in gloom, visible. And while they are wondering what all these things mean the sky in the east becomes gradually diffused with light, lighter and lighter unto the perfect day, and the sun they lost the previous evening heralded with bright beams and many tinted silvery clouds, again gladdens their weary eyes, as he rises like a ball of fire in the east. The same order prevails day after day, with some variations which they soon learn to note. Their confidence is restored and firmly established, and to them as to us "the heavens declared the glory of God, and the firmament showed His handiwork." Is it surprising then that astronomy should be the oldest of the sciences, and that it should have become with our improved means of observation the most perfect? The lecturer then described in an easy, conversational way the positions of Venus, Jupiter, and Mars, the moon, and some of the principal stars now visible, and proceeded to describe the Solar system, the constitution of the sun, the corona and flames seen at eclipses, solar spots and their significance, comets and the stellar universe, to which the boys listened most attentively.