

*Mathematics* gives us the power to understand the motions and forms of the inorganic world, the cosmos and the crystal, and it gives us the certain results of known data without taking refuge in guess-work and rule of thumb.

*Chemistry* shows the nature and material of the world around us; operations and reactions which are constantly taking place about us and within us, and we are ourselves as surely the results of time and chemical reaction as the plant or precipitate. Very close to Nature which is more our Creator than our servant.

*Physics* which places us in touch with the forces of nature, so that we may understand these forces and by using our mathematics apply them. So that by an understanding of them we can *deflect* them to serve our purposes. Never think we can "*overcome*" nature. That is a foolish word, fit only for the man who disputes on abstract things without realizing his own position in a mighty world, which is nature governed.

*Geology* which tells us an older story than the clay tablets of the Babylonians or the remotest legends of our literature. A story more instructive and more pleasing than the history of man with his cruel and foolish contentions over matters which no one knows much about. The earth is always beneath our feet, and we cannot travel and be blind to the earth's history. We may study these natural sciences all our lives, and if we get a beginning in our scientific training, I venture to say we *must* study them, if a man is a thinker and moves about at all, for they are ever

before him, and unobtrusively offer themselves whenever his mind is free to consider them. These are the natural sciences and they reach their application in the daily life of engineers, chemists, and geologists, any one of whom, can, by a little thought lift his mind from his own particular wheel and understand some of the workings of the universe. Apart from its general usefulness and foundation on fact, scientific training seems to have this virtue, it *enlightens* the mind. Where every process is sought to be understood, and proven there can be few dark cells or atrophied centres, for the light of scientific enquiry is so clear and searching, that dishonesty cannot abide it, nor can fallacies become grey and reverend. There is so much advantage taken of ignorance and credulity in the world, that it is refreshing to find an occupation where these are not needed to make a living. One does not underrate the value of general scholarships as an ornament which becomes a man more and more as he reaches eminence, but as premised at the beginning of this address the vital question is an honest and instructive livelihood, and our conditions call for the application of knowledge to convert the wilderness—into a fit place of habitation for our friends the poets and philosophers. In trained men there are two extremes, one is the extremely scholarly and theoretical, the other is the extremely practical. Both lose a large part of their natural heritage, the wisdom of the world, which is a greater thing than the scholarships of any age or the material advancement of any age. At one extreme is the man of books with a world—little as he sees of it,