

has lived before, or which will appear after it. How different is the story of man; he is born into the world the most helpless of living beings, and changes so slowly that, if deserted early by his parents, he surely dies; if, even after two or three years of care, he be abandoned entirely to himself, as to a few individuals has happened who yet had survived for a time in woods, he grows up in some respects inferior to the nobler brutes. Then history recounts of remote times, that over large portions of the earth men lived in condition little superior to that of brutes, as they may still be seen in Australia and elsewhere. Their condition is described as that of houseless savages, ill able to defend themselves against the wild beasts which shared the woods with them, and the inclemency of the weather, and the consequences of want and fatigue, and as being to one another often more dangerous than any wild beasts, unceasingly at war among themselves, and destroying one another with every species of even cannibal cruelty; and many countries formerly in such miserable state, have gradually become, through increase of human knowledge, fertile regions, with their noble cities, inhabited by myriads of civilized men.

5. Schools, colleges, universities and books are among the means which, in the progress of human improvement, have been contrived for thus cultivating the minds of individuals and of nations; and in regard to all of these there have been a progress of improvement as marked as in other things which have proceeded from the working of man's intellect. The decision, however, as to the subjects chosen, the order of study, and other particulars, had to be based on a due consideration of the whole field of human knowledge with its natural divisions, and the bearings of these on human welfare; and the views taken, until lately, were far from being complete. A simple arrangement, addressed to common apprehension, is here sketched

THE ORIGIN, PROGRESS, AND SCIENTIFIC ARRANGEMENT OF HUMAN KNOWLEDGE.

6. The human race is permanent; but the individuals composing it are in a course of constant change and renewal, at the rate of about a thirtieth part annually. The children, however, in receiving the bodily constitution of their parents, do not receive therewith the smallest portion of the knowledge which the parents possessed, but have to gather for themselves after birth through the five organs of the senses, which have been called, therefore, "the five gates of knowledge" and internal consciousness, the whole material of their own future store. Thus, when a child gets an orange for the first time, he receives impressions—first through the skin of the touching hand, of its size, form, weight, etc.; through the eye, of its color; through the palate, of its taste; through the nostrils, of its smell; and through the ear he may hear the sound or name which men have connected with it. The impression being retained in the memory as a group, constitute his knowledge of the orange. In the same manner the knowledge of other objects is obtained.

7. If, as a burning lamp is constantly supplied with oil to keep it alight, human beings, after birth, be duly supplied with the four prime essentials to life, they may live healthily for about seventy years, passing through the stages of youth, maturity and decay to death. These essentials are pure air, warmth, aliment, and rest, after work. If deprived of the first, the individual dies in a few minutes, as by drowning or other suffocation; if the second, he dies in a few hours, as when over-

whelmed in a snow storm; if of the third, he dies in a few days, or weeks, or months, according to the circumstances. The first indication of the child having animal sensibility is its struggle and crying when it wants a necessary, as food or warmth. It has then the feeling which it afterwards learns to call *pain*; when the want is supplied it becomes tranquil, and it has the feeling which it learns to call *pleasure*. In after-life, to obtain pleasure and to avoid pain, near or remote, become the great motive to voluntary activity. Among the objects around the child, it soon begins to distinguish those which most nearly concern it, by causing pleasure or pain; and thus the mother or nurse, the fire, the candle, become early acquaintances.

8. As the growing individual afterwards has the attention directed to the apparent infinity of objects in the universe around, the mind soon makes the grand discovery that there are resemblances among them—in other words, that the apparent infinity is only a repetition of a certain number of kinds. There are soon distinguished, for instance, what in the English language are called dog, horse, sheep, etc., among the things living and moving, called *animals*; the rose, myrtle, oak, etc., among things growing from the earth, called *vegetables*; and such as lime, flint, gold, etc., among things taken out of the earth, called *minerals*; and the mind, becoming aware that by studying a specimen or exemplar of each kind, its limited power of memory may acquire a tolerably correct knowledge of the whole enabling persons to obtain more easily what is useful to them, and to avoid what is hurtful; the desire for that knowledge, called *curiosity*, would arise with the first exercise of reason. Accordingly the pursuit of it has been unremitting, and the labor of ages has at least nearly completed an arrangement of the constituent materials of the universe under the three great classes of

Animals,  
Vegetables,  
Minerals (including all other things not having life).

commonly called the three kingdoms of nature, and of which the minute description has been called *Natural History*. And museums of Natural History have been formed which contain a specimen of almost every object belonging to the classes; so that now, a student, within the limits of a moderate space or garden, may be said to be able to have under view the whole of the material universe.

9. It might be thought that if a man knew all the *things* or existences in the world he had nothing more to learn. But it is not so, for the things of today do not remain the same for tomorrow. A seed is growing to be a plant, a boy to be a man, mountains are being wasted by the action of the weather, lakes are being filled up by the solids which the feeding streams carry into them, the tides and rivers and clouds are always moving. The universe, therefore, is a scene of constant motion or change. With respect to the *changes*, however, as with respect to the *things* themselves, the second grand discovery would soon be made, that there were resemblances in the multitude; and self-interest operating in the second case as in the first, having prompted to careful classification, we are enabled in the present day, as the result of countless observations and experiments made through a series of ages, to say that all the motions or changes, or phenomena (word synonymous here) of the universe, are merely repetitions of mixture of a few simple manners or kinds of motion or change, which are as constant and regular in every case as when bringing the return of day and night and of the