

may be greater than that demanded by the second.

A work of immense labour it is to unravel the network of complex thought which surrounds us to-day, and determine the origin of the separate threads. Such a labour is comparable to that of the biologist, who, through a succession of different but allied species of animals, traces the origin and modifications of a bone or muscle. But so much exists upon this subject already, that I have ventured to give the material points of our mental progress, which may possibly assist us in our conceptions of the successive stages through which the mind of man has already passed. At the outset we cannot too strongly insist upon the comparative value of such terms as "civilization." Our general tendency is to give a fixed value to such words, measuring them by our own standard, and to this unconscious action, which has a wide application, and from which nothing but culture will free us, deeper thinkers have given the name anthropomorphic. In this instance, since our civilization is constantly changing, we can only consider ourselves as standing on a plane of comparative excellence, while a comparison of our own with the civilization of the Chinese, Hindoos and Japanese, shows us that in some few points, it may be, we have a lesson to learn; while in others, as in the character of criminal punishments, these nationalities occupy ground that we have abandoned centuries ago. The motor of civilization must always consist in an improvement of the machinery for the exchange of thought. This follows from our conception that our intelligence results from our sense-impressions on the brain, and that we understand by education the process of acquiring these brain-pictures. Clearly, the acquirement of articulate speech marked the first advance in

human communities in mental evolution. It does not appear that we know how articulate speech came to us, although we may hope that in the disintegration of vocal sounds by some such invention as the phonograph, a reasonable theory of its successive steps may be brought out. The first marked advance upon the formation of language lay in the discovery of the characters of writing which we call phonetic, the steps to which were marked by the use of different grades of object signs. Through the invention of writing, a man's experience in this world was not lost when Death struck him dumb. For the earliest writings we have retained a special reverence which lasts until to-day, and has not been dissipated by extended familiarity with the process. The next step lay in the invention of printing—always following the same line of advance which mental development had marked out from the first, the growth of the mind toward receiving more and more perfect brain-pictures of external things, and the effort to assist this growth through the dissemination of ideas. Before the invention of printing, an important part of the process of education was limited to the few, because these alone possessed the art of writing, and the means to secure collections of manuscript of different kinds. Hence the difference between ancient and modern civilization lies chiefly in this, that in the former the masses could be improved from outside of themselves by the orator. The printing press, at a later time, enabled the people to take the orator home with them, and review at any time his messages. In ancient times writing required to be read, and the stated re-reading came to be a custom in public before the action graced the hearth at home. So we may consider the advance of mental intelligence to be marked by these three great