

The Propensity toward the Marvellous.

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ALL incitation to inquiry is born of the novel, the uncommon, and the imperfectly understood. Ordinary events, to which we are accustomed, take place almost unnoticed; novel events alone catch the eye and solicit the attention. It happens thus that the propensity toward the marvellous, which is a universal attribute of mankind, is of immense import also for the development of science. It is the striking forms and colors of plants and animals, the startling chemical and physical phenomena, that arrest our notice in youth. Afterwards the craving for enlightenment is gradually aroused, as we compare these unworked events with the events of familiar and daily occurrence.

The beginnings of all physical science were intimately associated with magic. Hero of Alexandria makes use of his knowledge of the expansion of air by heat to perform conjuring tricks; Porta describes his beautiful optical discoveries in a work entitled "Natural Magic"; Athanasius Kircher turns his physical knowledge to account in the construction of a magic lantern; and in the "Mathematical Recreations" of the day, and in such works as Enslin's "Thaumaturgus," the sole purpose for which the more phenomenal facts of physics were employed was that of dazzling the uninitiated. With the fascination intrinsically exerted by phenomenal events was naturally associated in the case of the person first discovering them the temptation to acquire greater prestige by keeping them secret, to produce extraordinary effects by their assistance, to derive profit from their practice, to gain increased power, or at least the semblance of the same. Some slight successful venture of this kind may then have kindled the imagination and awakened hopes of attaining some altogether extraordinary goal, resulting in the deception not only of others but perhaps also of the person himself. In this manner, for example, from the observation of some astonishing and inexplicable transformation of matter, may have originated alchemy, with its desire to transmute metals into gold, to discover a panacea, etc. The felicitous solution of some innocent geometrical problem is the probable foundation of the geomancy of the "Arabian Nights," which divines futurity by means of numbers, as it was probably also of astrology, etc. That *Malefici* and *Mathematici* were once mentioned in the same breath by a Roman law, is also intelligible on this theory (Hankel, "*Ger. der Math.*," p. 301). Even in the dark days of medieval demonology and witchcraft, natural inquiry was not extinguished; on the contrary, it appears to have been invested then with a distinct charm of mystery and wondrousness, and to have become imbued with new life.

The mere happening of an extraordinary event is in itself not marvellous; the marvel is to be sought, not in the event, but in the person observing the event. A phenomenon appears marvellous when one's entire mode of thought is disturbed by it and forced out of its customary and familiar channels. The astonished spectator does not believe for a moment that no connection exists between the new event and other phenomena; but, not being able to discern a connection, and being invariably accustomed to such, he is led, in the nature of the case, to adopt extraordinary conjectures, which are usually fallacious. The character of these conjectures may be infinitely varied, but inasmuch as the physical organization of mankind,

conformably to the universal conditions of life, is everywhere pretty much the same, and since young individuals and races, whose psychological organization is of the simplest type, are most frequently thrown into situations productive of surprise, almost the same psychological phenomena are repeated the world over.

Auguste Comte ("*Phil. pos.*" Paris, 1852) first touched upon the phenomena here referred to, and Tylor ("*Prim. Cult.*") subsequently made a very thorough study of them, utilizing the vast material which the ethnology of the savage races afforded. The most phenomenal constant occurrences in the natural environment of the savage, are those of which he himself or his fellow-creatures are the authors. He is conscious of will power and muscular force in his own person, and is tempted thus to interpret every unusual phenomenon as the creation of the will of some creature like himself. His limited capacity to distinguish sharply his thoughts, moods, and even his dreams, from his perceptions, leads him to regard the images of absent or deceased companions appearing in his dreams, or even those of lost or ruined objects, as real phantom entities, as *souls*. Out of the worship of the dead which here took its being has sprung the worship of demons, of national deities, etc. The conception of sacrifice, which is utterly unintelligible in modern religion, finds its explanation here as the logical evolutionary outgrowth of the funeral sacrifice. Savages are wont to bury with the dead the objects which their phantoms have most desired in their dreams, that the shades of the one may take pleasure in the shades of the other. This disposition to consider all things as like ourselves, as animated and ensouled, is in the same manner transferred to useful or injurious objects generally and leads to *fetichism*. There is a strain of fetichism even in the theories of physics. So long as we consider heat, electricity, and magnetism as mysterious and impalpable entities residing in bodies and imparting to them their known wonderful properties, we still stand on the level of fetichism. True, we invest these entities with a more stable character and do not attribute to them the capricious behavior which we deem possible in the case of living beings; but the point of view indicated is not entirely discarded until exact investigation by means of metrical concepts has taken the place of the fetichistic views.

The failure to distinguish sharply between one's thoughts and feelings and the perceptions of sense, which is noticeable even in scientific theories to-day, plays a predominant rôle in the philosophy of youthful individuals and nations. Things that appear alike in the least respect are taken to be kindred in character and to be closely allied also in physical efficacy. Plants that exhibit the slightest similarity with any part of the human body are held to be remedies for corresponding local disorders. The heart of the lion is supposed to augment courage, the phallus of the ass to be a cure for impotence, etc. Ample corroboration of these facts is afforded by the old Egyptian medical papyri, the prescriptions of which are found in Pliny and even as late as Paulinus. Things that are desirable but difficult to obtain are sought after by the most fantastic possible combinations of ingredients, as is amply demonstrated by the recipes of the alchemists. One need but recall one's childhood to appreciate from personal experience this manner of thinking.

The intellectual department of the savage is similar throughout to that of the child. The one strikes the fetich that has deluded him, the other strikes the table that has hurt him;