

It has already been noticed that the effect of fear may be of two kinds, — either exciting or paralyzing. The process by which this paralyzing is effected is inhibition. The spinal cord ministers to the reflex acts of the organism; the brain, to the voluntary and automatic. A stimulation of the higher centre may arrest the function of the lower. This probably is to some extent the normal condition, for the reflexes of a frog are more intense if the brain is removed. The will can delay or inhibit reflexes. We can keep back a cough or a cold. Over other reflexes the will has less control. Few can refrain from winking when a body is moved towards the eyes (Pliny records that gladiators were tested in this way). This psychic reflex is characterized by the fact that its intensity depends little on the intensity of the stimulus (as pain, for instance, does), but almost exclusively on the individuality of the subject. The person with a timid temperament is more readily and intensely frightened. Women, children, nervous persons, are disposed to fear. So, too, animals whose only defence is a rapid flight (hares, rats) are naturally timid, while aggressive beasts of prey are brave. Even the momentary condition, whether before or after dinner, will vary the intensity of fear. There are two psychic agencies which, *par excellence*, increase fear: they are imagination and attention. The man of vivid imagination who walks along a dark road will have many more frights than his prosaic companion. The fixation of the attention which expectation causes increases the fear. The ghost expected just at midnight is more terrible than an unexpected visitor. The emotion of fear depends, thus, on individual organization, and is not under the control of the will. What the will can do is to restrain the expression of the emotion. Courage is power of inhibition. The soldier cannot help being frightened, but he can help running away. The martyr is a hero, because he can inhibit that strongest of instincts, self-preservation.

To return to the teleological point of view, it may be asked to what extent the natural reflexes are useful. What are the best ways of escaping danger? One way is evidently by fleeing. To this corresponds the exciting effects of fear, which furnish the best conditions for speed and activity. Another way is to avoid observation by restraining movement. This is accomplished by the paralyzing effect of fear. The action is seen in its highest development in the death-feigning instincts of certain insects. The explanation of trembling is rather difficult: it certainly seems to be a hurtful action. M. Richet suggests that it is the result of an attempt to arrest motion, but of an attempt not entirely successful. The cry of

fear is perhaps an attempt to startle, and thus give a chance for escape.

Lastly, what are the excitants of fear? One group centres about the fear of death, of pain, and of disfavor. The first is the strongest; the second is active in small affairs; the last is of a more distinctively psychic nature. It is shown in stage-fright, where it may be accompanied by all the physical characteristics above described. Here, too, belong the peculiar sensations of vertigo to which some persons are subject to a pathological extent. It is impossible for them to cross a plank that bridges over a height. Even the bravest are subject to this feeling. That it is mental in its nature is shown, for example, by the fact, that, if a railing be set on the plank, even if too slight to be of any use in case of accident, the feeling may largely subside. It acts as a moral support. Another class of fears is inspired by the unfamiliar, by darkness, and by solitude. What is unfamiliar may be noxious. Caution is a useful trait. The savage and the child typically show this dread of something strange. The fear of ghosts also comes in this category. Darkness doubles fear: it makes things unfamiliar by preventing the use of that sense by which chiefly we recognize objects. Nobody feels perfectly at home in a strange dark room. Animals are more subject to fear at night. Man is naturally a social animal. Solitude is abnormal: it makes protection impossible. This feeling may become pathological: it has received the name of 'agoraphobia,' or the dread of open places.

A word on the power of habit over fear. M. Richet relates how he had occasion to pass frequently through a forest at night. He entered it boldly; but after a few steps the feeling came on, and he felt highly relieved when he saw the clear sky again. Each night he was able to keep up his bold step for a longer and longer distance, until finally the fear was almost overcome. Habit is the only method of removing fear. Workmen in powder-mills know they are in constant danger, but have no fear. To educate a child to be brave, the habit of not fearing darkness and solitude, and so on, must be gradually taught. J. J.

#### GEOLOGY OF LONG ISLAND.

THE current volume of Annals of the New York academy of sciences contains an article on the 'Geology of Long Island,' by F. J. H. Merrill, giving much definite and historical information. Mather first described it in the State natural history survey, 1842; Upham studied its moraines, in connection with those of Cape Cod, in 1879; Lewis has at various times examined its fossil-

bearing sands and its curious topography, one element of the latter being the continuation of certain of its water-courses southward under the sea for a little distance from shore; and Russell has confirmed the suggestion that the streams cut their right banks more than the left, as if in obedience to von Baer's law. Merrill briefly refers to the archæan rocks at the western end of the island, and devotes more space to sections of the probably cretaceous and tertiary clays and sands of the northern shore, and to the drift. He emphasizes the thinness of the till at many points along the range of hills or 'backbone' of the island, and ascribes a good part of their height to the upheaval of the bedded deposits, which largely compose them, by the thrust of the ice. Thus marine fossils may be lifted to greater elevation above the sea than can be ascribed to continental emergence. All along the north shore of the island, the bedded gravels, sands, and clays are found upheaved, and thrown into a series of distinct folds at right angles to the line of glacial advance. On Gardiner's Island the folds are remarkably prominent in the form of numerous parallel ridges, trending east-north-east. This recalls Johnstrup's explanation of the distortion of cretaceous beds on the Danish islands of Møen and Rügen by the thrust of Scandinavian ice, and the observations of Credner and others on the distorted subglacial beds of northern Germany. The bays on the northern side of Long Island are thought to be excavations made by lobes of ice projecting for a time beyond the general line of glacial front. The highest hills of the 'backbone' are in line with these bays, as if gaining in height by the excess of pressure there; and channels, also in line with the bays, break through the hills, as if they had been kept open by the discharge of water from the ice.

#### ELY'S LABOR MOVEMENT IN AMERICA.

THAT curiously heterogeneous mass of circumstances and events which is included under the general designation 'labor movement' has given rise to a large literature, much of it polemic, some historical and critical, some constructive. It has engaged the attention and study of many scholars, and perhaps of all the more progressive students and teachers of economics and political science. Among the latter, none has been more painstaking in his research, nor more frequent in his writings, than Prof. Richard T. Ely of Johns Hopkins university. During the past few years, numerous articles and several books have issued from his pen; and the book before us is partly the outgrowth of

*The labor movement in America.* By RICHARD T. ELY. New York, Crowell, 1886. 12°.

its predecessors, and partly the forerunner, as the author tells us in his preface, of a larger work, to be entitled 'History of labor in the new world.'

It immediately occurs to us to ask, What does Professor Ely mean exactly by the labor movement, what is his attitude toward it, and what does he tell us about it? Fortunately, the style and tone of the book, as well as its definite statements of opinion, permit us to answer all these questions clearly. Stripped of its accessories, the labor movement, in its broadest terms, is 'the effort of men to live the life of men' (p. 3). This sententious aphorism might mean a great many things, inasmuch as it affords great latitude of interpretation. But Professor Ely sharpens it to a point, and interprets it as having an economic significance truly, but, beyond and including that, an ethical import. "It is for self and others. It is the realization of the ethical aim expressed in that command which contains the secret of all true progress, 'Thou shalt love thy neighbor as thyself.' . . . It is an attempt to bring to pass the idea of human development which has animated sages, prophets, and poets of all ages, — the idea that a time must come when warfare of all kinds shall cease; and when a peaceful organization of society shall find a place within its framework for the best growth of each personality, and shall abolish all servitude, in which one 'but subserves another's gain'" (pp. 3, 4).

In contemplating this ideal state, a veritable heaven, Professor Ely grows very enthusiastic, and well he may. On studying the details of the movement which he says has this laudable end in view, however, we are forced to pause, and inquire whether the tendency is really what Professor Ely thinks it is. We are tempted to believe that he has committed the not uncommon scientific error of reading his theory into the facts, instead of deducing it from them. He tells us that the socialist and anarchist organizations have cast off Christianity, and indeed religion generally, yet he preaches Christian ethics as the remedy for the wrongs of which they complain. While not over-clear on this point, yet he seems to uphold the extremists in their contention that all the evils of the present state of society are due to private property and the lack of proper co-operation in production and distribution. But Aristotle, somewhat unfashionable nowadays perhaps, saw deeper than that, and said plainly that the evils ascribed to the institution of private property really flowed from the wickedness of human nature (*Politics*, Jowett's translation, p. 35). And just here we would ask all these labor agitators, sincere and insincere, and their allies among professed economists, to consider whether their suggested remedies