SOME NEW BOOKS.

Darwin on Expression.

Mr. DARWIN'S new book, *The Expression of Emotions in Man and Animals* (D. Appleton & Co.), treats of a subject of universal interest concerning which comparatively few persons know even the little that is as yet understood. Although strictly scientific in tone and manner, the work will probably prove the most popular which its distinguished author has written, as it is undoubtedly the most entertaining to the unscientific reader.

With physiognomy, or the recognition of character through the study of the permanent forms of the features, it has nothing to do. By expression is meant action of all kinds which regularly accompanies any state of the mind. We have been unable, however, to find any express definition of the term in the volume, though it is used oftenest as applicable to acts which are ordinarily regarded and spoken of as involuntary.

Among English writers Sir Charles Bell, the eminent physiologist, is Mr. Darwin's most prominent predecessor in the same field. His work on Expression was published in 1806, and is one of great merit; but as he believed man to have been originally created in his present physical form, and hence regarded many of our facial muscles as special provided solely for expressive purposes, the views which it maintains do not in all respects accord with those of the modern apostles of evolution. "The simple fact," says Mr. Darwin, "that the anthropoid apes possess the same facial muscles as we do renders it very improbable that these muscles in our case serve exclusively for expression; for no one, I presume, would be inclined to admit that monkeys have been endowed with special muscles solely for exhibiting their hideous grimaces. Distinct uses, independently of expression, can indeed be assigned with much probability for almost all the facial muscles." The last sentence seems conclusive on this particular point; but as to the monkeys, it is by no means so certain that their hideous grimaces may not seem charming smiles to one another. On the other hand, Sir Charles Bell goes so far as to assert that in the lower animals all expressions may be referred to acts of volition or necessary instincts, and that their faces seem chiefly capable of expressing rage and fear. "But," responds Mr. Darwin, "man himself cannot express love and humility by external signs, so plainly as does a dog, when with drooping ears, hanging lips, flexuous body, and wagging tail he meets his beloved master. Nor can these movements in the dog be explained by acts of volition or necessary instincts, any more than the beaming eyes and smiling cheeks of a man when he meets an old friend."

Not without reason, then, the hypothesis that man and all the other animals are independent creations, is denounced as no less pernicious in its application to expression than with regard to every other branch of natural history. The belief that man once existed in an inferior condition resembling that of the lower animals, affords the most sasisfactory explanation of such expressions as the bristling of the hair accompanying extreme terror, and the uncovering of the teeth as a manifestation of furious rage. So also the production of laughter in man, and certain species of monkeys by the action of the same muscles, is more easily explicable if the possibility of descent from a common progenitor be acknowledged.

In order to learn, without recourse to previously existing authorities, how far particular movements of the features and gestures are really expressive of certain states of the mind, Mr. Darwin adopted six methods, as follows: (1) the observation of infants, who exhibit many emotions with extraordinary force, in expressions derived from the purest and simplest source; (2) the observation of insane persons, who are so continually liable to vent their passions in the most uncontrollable manner; (3) the exhibition of large photographs, portraying the face of an old man in different expressions, to a number of friends, who were asked to state by what emotion the old man was represented as being agitated; (4) the study of works by the great masters of painting and sculpture; (5) inquiry of residents in foreign lands as to whether the same expressions and gestures prevail with all the races of mankind, especially those who have associated but little with Europeans; (6) personal observation of the expression of the several passions in the commoner animals. But little aid was obtained from the examination of the pictures and statues, the more forcible expressions being so universally subordinated to the chief object in a work of art—its beauty. But the fifth method yielded important results. Convinced that "whenever the same movements of the features or body express the same emotions in several distinct races of man, we may infer, with much probability, that such expressions are true ones—that is, are innate or instructive," the author, in 1867, circulated printed queries among naturalists, missionaries, and men of science in the several quarters of the globe, relating to the races among whom they dwelt. The following are specimens of the quessions:

...treme fear expressed in the same general manner as with Europeans?

Is laughter ever carried to such an extreme as to bring tears into the eyes?

When a man is indignant or defiant, does he frown, hold his body and head erect, square his shoulders, and clench his fists?

When a man sneers or snarls at another, is the corner of the upper lip over the canine or eye tooth raised on the side facing the man whom he addresses?

Does shame excite a blush when the color of the skin allows it to be visible? and, especially, how low down the body does the blush extend?

Answers were received from Australia, New Zealand, India, Ceylon, Africa, and North America, all tending to show a remarkable uniformity throughout the world in the expression of mental emotions

The principles which the author believes account for most of the expressions and gestures involuntarily used by man and the lower animals, under the influence of the various feelings to which they are subject, are three in number, and are thus defined:

The first of these principles is that movements which are serviceable in gratifying some desire, or in relieving some sensation, if often repeated, become so habitual that they are performed, whether or not of any service, whenever the same desire or sensation is felt, even in a very weak degree.

Our second principle is that of antithesis. The habit of voluntarily performing opposite movements under opposite influences has become firmly established in us by the practice of our whole lives. Hence if certain actions have been regularly performed, in accordance with our first principle, under a certain frame of mind, there will be a strong and involuntary tendency to the performance of directly opposite actions, whether or not these are of any use, under the excitement of an opposite frame of mind.

Our third principle is the direct action of the excited nervous system on the body, independently of the will, and independently, in large part, of habit.

The first principle, called the principle of serviceable associated habits, is illustrated by the tendency of every one to protect himself when falling to the ground by extending his arms, which is done even when falling on a soft bed. So, a man winks when a blow is directed toward his face. To show how powerless is the action of the reason to prevent certain movements of this character the author relates an incident within his own experience: "I put my face close to the thick glass plate in front of a puff adder in the zoological gardens, with the firm determination of not starting back if the snake struck at me; but, as soon as the blow was struck, my resolution went for nothing, and I jumped a yard or two backwards with astonishing rapidity. My will and reason were powerless against the imagination of a danger which had never been experienced."

An illustration of the second principle, that of antithesis, is the conduct of a dog upon discovery that a supposed stranger whom he is about to attack is in fact his own master. The movements expressive of affection which the dog at once manifests in place of his former fierce demeanor are not of the least direct service to him, and are explicable only as being precisely opposite in character to those naturally assumed by a dog about to assault an enemy. The trembling of the muscles is perhaps the most familiar example under Mr. Darwin's third principle, or that of the direct action of the nervous system.

The greater portion of the volume is devoted

to tracing the various applications of these principles to man and numerous animals, particularly the dog, the cat, and certain monkeys. The excellence of the photographic plates is especially noteworthy. In conclusion, we quote an anecdote told in connection with the subject of reflex action:

The conscious wish to perform a reflex action sometimes stops or interrupts its performance, though the proper sensory nerves may be stimulated. For instance, many years ago I laid a small wager with a dozen young men that they would not sneeze if they took snuff, although they all declared that they invariably did so. Accordingly they all took a pinch, but from wishing much to succeed, not one sneezed, though their eyes watered; and all without exception had to pay me my wager. Sir H. Holland remarks that attention paid to the act of swallowing interferes with the proper movements; from which it probably follows, at least in part, that some persons find it so difficult to swallow a pill.