

## MR. DARWIN ON ANIMAL EXPRESSION.

**M**R. DARWIN seldom deals with a subject on which he has not collected sufficient evidence to make out, if not his whole case, at least so much of it as to give quite a new aspect to the subject he discusses. It is so with his book on "The Expression of the Emotions in Man and Animals,"\* in which he establishes with a clearness that it is hardly possible to exceed, that some of the most remarkable animal expressions are bound up with the outward aspect of actions originally likely to be serviceable to the doers in relation to the objects which mostly call forth those expressions,—as, for instance, the animal expression called showing the teeth, which was in origin a preparation for biting; or the setting-up of a cat's back, which is a terror-inspiring movement, alarming to her enemies, chiefly, we suspect, because of the sudden and extreme transformation it causes in her, and in a secondary degree through the exaggeration of her apparent size which it produces. But Mr. Darwin also maintains that many of the most expressive, affectionate, and conciliatory attitudes of animals are due to the principle of "antithesis," by which he means the relaxation of all muscles strained in expressing hostility, or (sometimes) the tension of muscles relaxed when expressing hostility; and on this head he does not seem to us to reason half so conclusively; his object being of course to dispose of expressions not directly resulting from serviceable acts, as indirect results of serviceable acts. Thus the dog which, when expressing hostility, walks upright and very stiffly, his head slightly raised, his tail erect and quite rigid, the hairs bristling, the ears pricked forward, and the eyes fixed, expresses friendliness by lowering and wagging his tail, sinking his body downwards, and moving it with the flexibility of a serpent, laying his hair smooth, depressing his ears and drawing them backwards, and elongating the eyelids, so that the eyes no longer seem fixed and staring. The cat, on the other hand, which, tiger-like, lashes the extended tail in anger, erects it quite stiffly when she is pleased and caressing her master, so that in this case certain muscles relaxed in anger are contracted in good-humour. And Mr. Darwin thinks it is the "principle of antithesis" which, working in the animal in some unconscious way, thus relaxes all the muscles previously rigid, or contracts those previously relaxed.

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\* John Murray.

He holds, apparently, that the animal's feeling of strong contrast between hostility and friendliness, as regards the emotion to be expressed, leads unconsciously to the choice of the bodily and muscular movements most opposite to those rendered necessary by preparations for war, as modes of expressing intentions of amity and peace. Now, we cannot quite follow Mr. Darwin's meaning on this head. He tells us (p. 65):—"As the performance of ordinary movements of an opposite kind, under opposite impulses of the will, has become habitual in us and in the lower animals, so when actions of one kind have become firmly associated with any sensation or emotion, it appears natural that actions of a directly opposite kind, though of no use, should be unconsciously performed, through habit and association under the influence of a directly opposite sensation or emotion,"—that is, we suppose, because a cat has been accustomed to put out her claws for battle, and to draw them in when the occasion of battle is over, so it is natural that the tail, lashed from side to side when she is angry, should be accommodated with as different a posture as possible when she is affectionate, and hence its erection. "The tendency to perform opposite movements under opposite sensations or emotions would, if we may judge by analogy, become hereditary through long practice." There is surely a certain deficiency of clearness here as to the *origin* of the practice, which could only become hereditary through its former usefulness. Mr. Darwin will not admit that it is due to a conscious desire of contrast, and has not made it clear how contrasted movements are originally unconsciously produced. We can see that a motion would not be *chosen* to express one feeling which is closely associated with an opposite feeling, but we cannot see how any really antithetical condition of the nerves and muscles could in general be unconsciously produced. If we understand Mr. Darwin aright, he means that animals and men have become so accustomed under the guidance of actions purely voluntary to select opposite motions as a means of expressing opposite intentions,—as, for instance, amongst human beings, beckoning to get a man to approach, and motioning him off to tell him to go away,—that the same principle of opposition would mix itself up unconsciously with their mode of expressing opposite states of feeling, and a dog would relax the muscles of his tail when discovering a friend in an enemy, while a cat would stiffen and erect hers on the same discovery. But is not this explanation putting the cart before the horse? Surely the motions expressive of emotions are long anterior in animal life to the motions expressive of anything like intentions? A dog and a cat do not beckon or motion away. These modes of expression are much more artificial signs of conscious purpose than the greater number of those proper to the lower animals. Surely the first occasion for expressing opposite feelings would, as a rule, be anterior to the occasions for expressing opposite purposes. An animal might learn very early that the movements associated with the want to race about, were very different from those associated with the want to rest, in both of which cases there is a real action involved that determines the particular mode of expressing the want. But would this be sufficient to teach the animal even unconsciously the principle of "antithesis,"—namely, that if it wanted to express friendliness, in which no such real action essential to the end in view is involved, the natural state of the body would be one of "antithesis" to the state of hostility. We must remember that as a matter of fact the feeling of friendliness is likely to be anterior to that of hostility. Every animal is attached to its mother before it knows what a danger and an enemy is. Is it likely, then, that the mode of expressing attachment should be a function, as the mathematicians say, of the mode of expressing hostility? Mr. Darwin illustrates very happily his principle of "antithesis" of expression by the following amusing instance. He had a large dog, who was, as most dogs are, very fond of a walk. If he thought he was going a walk, he trotted on "with high steps, head very much raised, moderately erected ears, and tail carried aloft, but not stiffly." Not far from the house a path branched off to the hot-house, which Mr. Darwin often visited without going farther. If at this point Mr. Darwin turned to the hot-house, the dog felt uncertain whether the walk would not end in the hot-house, and was greatly disappointed; "and the instantaneous and complete change of expression which came over him as soon as my body swerved in the least towards the path (and I sometimes tried this as an experiment) was laughable. His look of dejection was known to every member of the family, and was called his *hot-house face*. This consisted in the head drooping much, the whole body sinking a little and remaining motionless, the ears and tail falling suddenly down; but the tail was by no means wagged

with the falling of the ears and of his great chops, the eyes became much changed in appearance, and I found that they looked less bright." Now, this is a very skilful illustration of Mr. Darwin's theory, because it is a case of disappointment, and it is hardly necessary to show that the expression of disappointment must be a sudden and violent change from that of hope. But for that very reason it is hardly a fair case for Mr. Darwin's purpose. He is labouring to show that almost all positive expressions are either closely associated with some serviceable act, or else antithetical to those which are thus closely associated with a serviceable act. And for this purpose he has had to choose hostile actions as the roots of expression (since they are independently serviceable in the way of self-defence), and to derive signs of friendliness from these by way of contrast, because they are only serviceable so far as they are expressive, and not serviceable in themselves. That being his object, it is hardly pertinent to the issue to show that disappointment is expressed by a sudden discontinuance of all the signs of liveliness and hope. Of course it is, disappointment being a purely *relative* emotion. But friendliness and love are not in this sense purely relative emotions. It is quite conceivable that animals should express them which had never in their lives expressed hostility. There are plenty of creatures which never do fight at all, and which yet have a dozen ways of expressing love. As far as we can see, Mr. Darwin would admit only one considerable original source of such expression, those mainly associated with the serviceable actions by which the young derive warmth and food from their mother; and almost all the rest he would explain as antithetical to hostile demonstrations.

This seems to us the weakest part of Mr. Darwin's book. That a great many of the most expressive of animal movements are husks or shadows, as it were, of serviceable actions closely associated with the same emotions, he proves to demonstration. But even so it is not a little questionable whether all these are expressive *because* the actions were originally serviceable, or whether the actions were serviceable because the movements were expressive. Take the sudden change of form and the exaggeration of the apparent size of the cat in face of an enemy. Is it likely that this action can have been so serviceable as a means of defence as to have developed the habit before the habit was understood by the cat's enemies as a sign of attack? Can the growling and spitting of the cat and dog have been serviceable apart from what they expressed? Was it not the expressiveness that made them serviceable, rather than the serviceableness that made them expressive? And so as to the signs of love, we are quite unable to believe that Mr. Darwin has proved his case, that the expression of the affections in animals is so often a mere result of reaction from the mode of expressing enmity. There is not, as far as we can see, any proof at all offered that a dog's prostrations before his master are expressions derived from a sort of animal instinct of antithesis. Because preparations for war are very excellent modes of expressing some feelings, it does not follow that there are no modes of expression which have never had any end beyond expression, and which are nevertheless original, and not derived by any 'principle of antithesis' from other expressions. The 'hot-house face' of Mr. Darwin's dog seems to us to have somewhat misled him in relation to the theory of expression. But manifold as are the modes of expressing attachment, humility, and other such feelings in different animals, we do not see that they are either explained or explainable by "the principle of antithesis." That human movements are much more explainable in this way is obvious, because with us the *conscious sense* of contrast is at work, as in the motions by which we beckon and reject. No doubt Mr. Darwin has given us some very interesting explanations of the gestures of assent and dissent, of resolve and of impotence. But he has said hardly anything in this book on the wonderful interpretation of animal signs by other animals. Is the voice of authority, for instance, interpreted by animals solely through association with the stick or other means of punishment? Is the baby's alarm at a frown and pleasure at a smile a result of hereditary instinct? On all these points we should like to have Mr. Darwin's explanations. On the whole, we cannot help thinking that the one weak point in his book is his attempt to explain so many acts expressive of the higher animal feelings by the principle of 'antithesis.' To his third principle of expression and his very striking theory of blushing we must return on another occasion.

#### THE FASCINATION OF MONEY.

PERHAPS the most noteworthy fact about the list of millionaires we published last week was the interest it excited. People who rarely read anything spelled over that long, closely-