

Mr Darwin's new work on "The Expression of the Emotions in Man and the Animals" was published on Monday. There are three principles which Mr Darwin thinks expressions and gestures involuntarily used by man and the lower animals under the influence of various emotions and sensations. The first is the principle of serviceable associated habits. Certain actions are of direct or indirect service under certain states of mind to relieve or gratify sensations or desires, and whenever the same state of mind is induced, however feebly, there is a tendency, through the force of habit and association, for these same movements to be performed though they may not be of the least use. The second is the principle of antithesis. By this he means that if certain states of mind lead to certain habitual actions, when a directly opposite state of mind is induced there is a strong and involuntary tendency to the performance of movements of an opposite direction, even though they be of no use. The last is the principle of actions due to the constitution of the nervous system, independently from the first of the will, and independently to a certain extent of habit. When the sensorium is strongly excited nerve force is generated in excess, or it may be interrupted, and effects are thus produced which are recognized as expressive. Mr Darwin reviews the expression of the various emotions of man with that comprehensiveness of grasp and careful comparison of the results of observation which characterise all his works. Thus, for example, he describes the effect of one of the emotions, fear:—"The erection of the hair.—Some of the signs of fear deserve a little further consideration. Poets continually speak of the hair standing on end. Brutus says to the ghost of Cæsar, 'Thou mak'st my blood run cold and mine hair to stand.' And Cardinal Beaufort, after the murder of Gloucester, exclaims, 'Comb down his hair, look, look it stands upright?' As I did not feel sure whether writers of fiction might not have applied to man what they have often observed in animals, I begged for information from Dr Crichton Brown with respect to the same. He states in answer that he has repeatedly seen their hair erected under the influence of emotion and extreme terror. For instance, it is sometimes necessary to inject morphia under the skin of an insane woman, who dreads the operation extremely, though it causes very little pain; for she believes that poison is being introduced into her system; that her bones would be softened and her flesh turned into dust. She becomes deadly pale, her limbs are stiffened by a sort of titanic spasm, and her hair is partially erected on the front of the head. Dr Brown further remarks that the bristling of the hair which is so common in the insane is not always associated with terror. It is perhaps most frequently seen in chronic maniacs, who rave incoherently and have destructive pulses; but it is during their paroxysms of violence that the bristling is most observable. The fact of the hair becoming erect under the influence both of rage and fear agrees perfectly with what we have seen in the lower animals." Thus again of blushing, he says most persons while blushing involuntarily have their mental powers confused. This is recognized in such common expressions as "She was covered with confusion." Persons in this condition lose their presence of mind and utter singularly inappropriate remarks. They are often much-distressed, stammer, and make awkward movements or strange grimaces. In certain cases involuntary twitchings of some of the facial muscles may be observed. I have been informed by a young lady who blushes excessively that at such times she does not know even what she is saying. When it was suggested to her that this might be due to her distress from her consciousness that her blushing was noticed, she answered that this could not be the case, as she had sometimes felt "quite as stupid at blushing at a thought in her own room." In his general summary of the results of his examples and arguments, Mr Darwin says:—"Few points are more interesting in the present subject than the extraordinary complex chain of events which lead to certain expressive movements. Take, for example, the oblique eyebrows of a man suffering from grief or animosity. When infants scream loudly from hunger or pain, the circulation is affected, and the eyes tend to become gorged with blood; consequently, the muscles surrounding the eye are strongly contracted as a protection. This action, in the course of many generations, has become firmly fixed and inherited, but when with advancing years and culture the habit of screaming is partially repressed, the muscles around the eye still tend to contract whenever even slight distress is felt. The facial muscles draw up the inner ends of the eyebrows and wrinkle the forehead in a peculiar manner, which we instantly recognize as the expression of grief and anxiety. That the chief expressive actions exhibited by man and the lower animals are now innate or inherited, that is, has not been learned by the individual, is admitted by every one. No little has learning or imitation to do with them, that they are from the earliest days and throughout life beyond our control; for instance, the relaxation of the arteries of the skin in blushing, and the increased action of the heart in anger. Nevertheless, all these included in our first principle were at first voluntarily performed for a definite object—namely, to escape some danger, to relieve some distress, or to gratify some desire. For instance, there can hardly be a doubt that the animals which fight with their teeth have acquired the habit of drawing back their ears closely to their heads when feeling savage from their progress having voluntarily acted in this manner to protect their ears from being torn by their antagonists. It is perhaps worth consideration whether movement at first used by only one or a few individuals to express a certain state of mind may not sometimes have spread to others, and ultimately have become universal through imitation, conscious or unconscious. There exists a strong tendency to imitation. This is ever exhibited in the most extraordinary manner in certain brain diseases, and has been called the 'echo sign.' Persons thus affected imitate without understanding every absurd gesture which is made and every word which is uttered near them, even in a foreign language. How the barking of the dog, which serves to express various emotions and desires, and which has been acquired since the animal was domesticated, was first learnt we do not know, but may we not suspect that imitation has had something to do with its acquisition, owing to dogs having long lived in strict association with so unquestioning an animal as man? Of all expressions blushing seems to be the most strictly human, yet it is common to all, or nearly all, races of man, whether or not any change of colour is visible in their skin. The relaxation of the small arteries of the surface, on which blushing depends, seems to have primarily resulted from earnest attention directed to the appearance of our own persons, and afterwards to have been extended by the power of association to self-attention directed to moral conduct. It can hardly be doubted that many animals are capable of appreciating beautiful colours and even forms, as is shown by the pains which the individuals of one sex take in displaying their beauty before those of the opposite sex; but it does not seem possible that any animal, until its mental powers had been developed to an equal or nearly equal degree with those of man, would have closely considered and been sensitive about its own personal appearance. Therefore we may conclude that blushing originated at a late period in the long line of our descent." The aim of all this elaborate investigation into the emotions of man and animals is to strengthen the idea of their descent from a common parent, if our remote mollusc ancestor deserves the name. Mr Darwin naturally, therefore, concludes the volume by stating that the "study of the theory of expression confirms to a certain limited extent the conclusion that man is derived from some lower animal form, and supports the belief of the specific or sub-specific unity of the several races."