NEW PUBLICATIONS.

The Expression of the Emotions.

THE EXPRESSION OF THE EMOTIONS IN MAN AND ANIMALS. By CHARLES DARWIN, M. A., F. R. S. With photographic and other illustrations. D. APPLETON & CO.: New-York. 1873.

How does man recognize in his fellow-man the presence of an inner spirit, and more or less dimly follow its workings and trace it through its various moods? By what outward signs, other than those connected with voice and speech, does he know that his enemy is wrath with him, or that his friend is overflowing with love and kindness? How does he dumbly express his terror and his pain, his hatred and contempt, his guilt, his pride, his helplessness, his shame? How does he behave when he is utterly cast down in heaviness, and how does he act when the world smiles upon him, and the flame of hope burns bright and clear within his bosom? How, in short, does man externally make manifest the ebb and flow, the rising and the falling, of those ever-changing tides of feeling which regulate his actions and control his course? This is the chief problem to which Mr. Darwin devotes himself in his last work, in which he incorporates his own observations with those of Sir Charles Bell, Duchenne, Gratiolet, and a score of less distinguished writers. His work, however, is more comprehensive in its scope, and more ambitious in its aim than that of any of his predecessors in the same field. Not only does he investigate most fully and minutely the methods by which man is accustomed to express his various emotions, but he examines in an almost exhaustive fashion the numerous expressive movements of animals, which have been more or less completely neglected by previous observers. Prone to generalization, even when the facts will hardly warrant this process, he endeavors to prove that there are three leading principles which may be deduced from the study of the expression of the emotions, and by which the chief expressive movements have been determined. Lastly, he endeavors, excusably, though many will think unhappily, to connect his theory of expression with his theory of the descent of man, and to show that man's origin from a lower animal form follows from the agreement which most will admit to subsist, within certain limits, between the human emotions and those of the brutes.

We may turn first to Mr. Darwin's admirable account of the manner in which man expresses his emotions and passions. This is a record of facts, and admits of being studied apart from all troublesome theoretical considerations. We can marvel at Mr. Darwin's wonderful power of minute observation, and of condensing the observations of others; we can revel in the charm of a style which is terse without being technical, and withal so pellucid and so clear that we forget to credit the subject with the complexity which it really possesses; and we may for a while allow ourselves to be carried along peacefully by the current of an argument, which holds its steady course, unchecked by rock or precipice, from the first page of the book to the last. We can do all this, and yet we can ultimately wake to the conviction that the imposing edifice of theory which Mr. Darwin has raised upon his laboriously-accumulated facts is unworthy of its noble foundation, is destitute of the elements of permanence, and is sure to fall before the first well-planned and well-executed assault.

Man has been defined by Pliny as a weeping animal, and there is, therefore, a certain appropriateness in commencing the consideration of the special expressions of man, as Mr. Darwin does, with an account of the manner in which bodily or mental suffering is manifested. Pliny's definition would lead us to believe that weeping was an entirely instinctive act, and such, we apprehend, is the general impression on the subject. Nevertheless, it would appear that it is only of screaming that this is true, and that a certain amount of practice is requisite before genuine weeping can be accomplished. Very young children—that is, children under three months old—according to Mr. Darwin, do not weep, in the proper sense of the term; they only scream, and their cries are not accompanied with any secretion of tears. It would thus seem that the tear-glands require a certain amount of practice before they can be readily excited to action; though we really fail to see how such a readily intelligible fact should justify the conclusion that the habit of weeping "must have been acquired since the period when man branched off from the common progenitor of the *genus homo* and the non-weeping anthropomorphous apes"—the said branching off and the said common progenitor being alike purely hypothetical. The screaming of infants consists of a series of prolonged expirations, with short and rapid, almost spasmodic, inspirations. At a somewhat more advanced stage sobbing is acquired, and finally the art of weeping is learned. The chief phenomena which characterise crying or screaming are the contraction of the muscles which surround the eyes, with the consequent more or less complete pursing up of the eyes, or partial closure of the eyelids, the appearance of short transverse wrinkles at the base of the nose, and of vertical frown-wrinkles between the eyebrows, a slight elevation of the upper lip, and the production of a strongly-marked fold, which runs from the lateral angles of the nostrils to the corners of the mouth, or below this point. Lastly, the mouth, especially in children, is kept widely open, for the purpose of giving exit to a full volume of sound, and by the action of opposing sets of muscles its outline becomes oblong, or even nearly square. Thus Mrs. Gaskell says of a child which was crying while being fed, that "it made its mouth like a square and let the porridge run out at all four corners." If it is genuine weeping with which we have to do, the above phenomena are accompanied by a copious effusion of tears; while in adults the mouth is not commonly kept open for the purpose of screaming, but usually has its corners simply pulled down and depressed. Of all these diagnostic characters of weeping none is so important as the comparatively inconspicuous one that the muscles around the eyes are contracted more or less firmly. This, as long ago shown by Sir Charles Bell, arises from the fact that when we empty the lungs of air, the flow of blood in the veins of the head and neck is checked; these vessels become engorged and distended, and the contraction of the muscles which surround the eye is a natural provision by which the delicate textures of the internal eye are protected against the pressure of the obstructed current of blood. Hence, a similar contraction of the muscles is found to be instinctively produced whenever any act is performed demanding a long expiration, such as coughing, laughing, shouting, or even blowing the nose.

There can also be little doubt but that Mr. Darwin is correct in his belief that the flow of tears is primarily caused by the contraction of the muscles surrounding the eyes, by the pressure which is thus directly exercised upon the lachrymal glands. Hence we find no difficulty in understanding how it is that many actions besides weeping are accompanied by a more or less copious flow of tears, as sneezing, yawning, or continued laughter, in all of which the chest is emptied of air, and the muscles round the eye are firmly contracted. Upon the whole, Mr. Darwin concludes that weeping is a habit, which has become almost an instinct by repeated inheritance through many generations, and he gives the following as the probable chain of events of which, in his opinion, weeping is the result: "Children, when wanting food or suffering in any way, cry out loudly, like the young of most animals, partly as a call to their parents for aid, and partly from any great exertion serving as a relief. Prolonged screaming inevitably leads to the gorging of the blood-vessels of the eye; and this will have led, at first consciously and at last habitually, to the contraction of the muscles round the eyes in order to protect them. At the same time the spasmodic pressure on the surface of the eye, and the distension of the vessels within the eye, without necessarily entailing any conscious sensation, will have effected, through reflex action, the lachrymal glands." We cannot stop to analyse this piece of reasoning, but its weak point clearly lies in the astounding and utterly incredible assumption that an infant of a few hours, days, or weeks old, would be aware that the distension of the blood-vessels of the eye was injurious to this organ, and would "consciously" contract the muscles of the eye in order to counteract the pressure thus produced. Old-fashioned and almost obsolete as the doctrine of "design" may appear to some minds, we must admit that it appears to us to offer an explanation of the facts which, whether true or not, has at any rate the advantage over Mr. Darwin's theory in being within the compass of rational belief.

Weeping is common to all men alike as an expression of suffering or grief; and this leads us to notice what a wonderful community there is among all races of men in the expressions of the fundamental emotions. Affirmation and negation, disgust and contempt, reverence and even affection, may be differently manifested by different tribes or peoples; but hatred and love, joy and sorrow, fear and shame, are almost universally manifested by identical signs in the most widely remote portions of the globe. Hence it is that communication is not wholly impossible between infants and grown-up people, or between the natives of different countries. Every one admits, indeed, that the chief expressive actions of man are not of the nature of things which he has to learn, but that they are instinctive, and are "naturally" performed. This single fact, rightly apprehended, would go far to support the belief in the unity of the human race, and in the fundamental identity in mental constitution of all the races of man. While all men, however, employ weeping as a sign of pain or grief, or rather as its natural mode of expression, all do not weep under the same provocation or under similar circumstances. Most civilized men, and many savages, soon cease to express bodily pain by weeping, it being thought a sign of weakness or of an unmanly character to do so. Many savages, however, weep copiously upon what we should think the most trifling cause, like the New-Zealand chief, who, as Sir John Lubbuck tells us, "cried like a child because the sailors spoilt his favorite cloak by powdering it with flour." Savages, in fact, in this, as in many other respects, are merely children, not "of a larger growth," except in the simple particular of their bodily stature. The same may be said of the insane, and even to a less extent of the inebriated, who lack the power of restraining their emotions, and who often give way to weeping on the slightest occasions, or from no cause at all. That weeping is not an exclusive prerogative of man would seem to be tolerably certain, though the evidence on this point is conflicting. Some monkeys, however, when kept in confinement, have undoubtedly been seen to cry till the tears ran down their faces; and Sir Emerson Tennent positively asserts that he has seen the wild Indian elephant weep plentifully on being captured and bound.

Grief, not rising to the height of weeping, mental anxiety, and dejection are shown by a generally lowered condition of the vital powers, and by inactivity or passivity of the vital functions. "The circulation becomes languid, the face pale, the muscles flaccid, the eye-lids droop, the head hangs on the contracted chest, the lips, cheeks, and lower jaw, all sink downward from their own weight." Hence, it is with perfect truth that we say that the face "lengthens" or "falls" on the receipt of evil tidings. "The eyes become dull and lack expression, and are often slightly suffused with tears. The eye-brows are not rarely rendered oblique, which is due to their inner ends being raised. This produces peculiarly-formed wrinkles on the forehead, which are very different from those of a simple frown; though in some cases a frown alone may be present. The corners of the mouth are drawn downward, which is so universally recognized as a sign of being out of spirits that it is almost proverbial. The breathing becomes slow and feeble, and is often interrupted by deep sighs." Every one will recognize the truth of the above graphic description, and it scarcely needs for its elucidation the admirable heliotypes with which it is illustrated. The most peculiar feature in the aspect of one stricken with grief or depressed with anxiety is the singular obliquity of the eyebrows, caused by the elevation of their inner ends. This appears to be common to all races of mankind, and is caused by the contraction of what may appropriately be called the "grief muscles." Mr. Darwin's explanation of this curious expression is too complex to be introduced here, but he admits that for several years no expression seemed so "utterly perplexing" to him, while the explanation which he has ultimately been led to adopt appears to us to be singularly unsatisfactory and untrustworthy.

Laughter is primarily the expression of mere joy and happiness, and this is more especially true of smiling. It is too certain, however, that the springs of laughter are in later life very commonly perverted, and that there is often an unworthy element in the laughter of even the best of grown-up people. How is it otherwise that we find it so difficult to avoid laughing at the occurrence of any not very serious accident to a perfect stranger, or it may be to our bosom friend? An unfortunate fellow-creature slips on a piece of orange-peel in the street, or tumbles on a slide, and immediately all the faces in the vicinity are on the broad grin. This is human nature, but there is something in it which might make angels weep. Though, no doubt, primarily and mainly an expression of joy, it is very difficult to lay down any definite rules and laws which laughter and smiling obey. Children always laugh or smile when pleased, and there is a large class of idiots who are "persistently joyous and benign, and who are constantly laughing or smiling." Great joys, however, rarely or never excite laughter, whereas a ludicrous idea rarely fails to elicit some expression of the kind. Perhaps in no case do we see laughter so readily and ceaselessly evoked as when a person is simply in a very happy frame of mind from having heard some piece of good news. Under these circumstances, the merest trifle will provoke laughter, apparently as an outlet for the superfluous energy which joy so prodigally confers on its happy possessor. The phenomena which constitute laughter are thus described by Mr. Darwin: "The sound of laughter is produced by a deep inspiration, followed by short, interrupted, spasmodic contractions of the chest, and especially of the diaphragm. Hence we hear of 'laughter holding both his sides.' From the shaking of the body, the head nods to and fro. The lower jaw often quivers up and down, as is likewise the case with some species of baboons when they are much pleased. The mouth is opened more or less widely, with the corners drawn much backward, as well as a little upward, and the upper lip is somewhat raised." By the drawing backward and upward of the corners of the mouth, and by the raising of the upper lip, a series of very characteristic wrinkles is formed under the eyes. The nose appears to be shortened, and becomes finely wrinkled transversely; the upper front teeth are usually exposed; and a well-marked fold is usually formed, running from the wing of each nostril to the corner of the mouth. The eyes brighten and sparkle, and if the laughter is extreme, they become suffused, or the tears may be secreted in such quantity as to roll down the face—this latter phenomenon seeming to accompany prolonged and violent laughter in all races of men. No abrupt line of demarcation can be drawn between smiling and laughter; and it is even impossible to decide which, if either, preceded the other. That is to say, we do not know whether a smile is the first stage in the development of a laugh, or whether smiling may not be a civilized and highly-developed form of laughing. Be this as it may, Mr. Darwin concludes that laughing is a habit which is not acquired by each individual until he has had a certain amount of practice, in this respect resembling what is the case with weeping.

The exigencies of space will not allow us to discuss at any length the remaining emotions and the manner in which they are expressed. It will not, however, be out of place if we draw the attention of our readers to some of the points on which Mr. Darwin lays especial stress, as bearing on his peculiar views as to the descent of man from some lower animal form. In so doing, it need only be premised that the necessities of his theory compel him to believe that every human emotion can be shown to be only a developed form of the emotions manifested by the brutes, and that he is obliged in every case to find some explanation which will not conflict with this view of their origin—an obligation which often leads him very much further than the facts appear to support him. Thus, the "tender" feelings, which are "compounded of affection, joy, and especially of sympathy," might seem to many to be characteristically human, and not to be shared by any of the lower animals. But animals are undoubtedly capable of grief or sorrow, and this is how Mr. Darwin explains the matter. After admitting that it is very singular that emotions of this nature should so readily lead to the shedding of tears, he proceeds as follows: "Many a father and son have wept on meeting after a long separation, especially if the meeting has been unexpected. No doubt extreme joy by itself tends to act on the lachrymal glands; but on such occasions as the foregoing vague thoughts of the grief which *would have been felt had the father and son never met* will probably have passed through their minds; and grief naturally leads to the secretion of tears." So that the father and son cry, not because they are glad to meet, but because they are overcome with grief at the thought of the anguish they would have suffered if they had not met. Again, "the vivid recollection of our former home or of long-past happy days, readily causes the eyes to be suffused with tears; but here, again, the thought naturally occurs that these days will never return." Those who recall the notorious neglect of their offspring exhibited by all animals, after the former have attained maturity, and the impossibility of proving that any animal ever did, or could, feel grief at the recollection of long past happy days, and who, nevertheless, are willing to accept this lament of lame explantions deserve—to be descended from a commom progenitor with the apes.

Frowning, which, after all, is a singularly human expression, though not absolutely confined to man, is explained upon the most orthodox Darwinian principles. It is an act which by no means necessarily indicates ill-temper, anger, or grief; but it most commonly accompanies perplexed thought, deep reflection, or the unexpected occurrence of some obstacle or difficulty, and we are accustomed to associate frowning in many instances with the possession of intellectual energy. The origin of this highly expressive act Mr. Darwin thinks to be twofold. On the one hand, children always frown when they scream, and screaming is the earliest act of life, and the first in which any expression is displayed. In this case, the frowning is only part of the general contraction of the muscles which surround the eyes, the supposed origin of which has been already adverted to. It need only be said, therefore, that Mr. Darwin believes that "as the habit of contracting the brows has been followed by infants during innumerable generations, at the commencement of every crying or screaming fit, it has become firmly associated with the sense of something distressing or disagreeable." On the other hand, the primeval races of men must have been constantly scanning distant objects "for the sake of obtaining prey and avoiding danger," but these races probably did not wear hats, and we know that looking at a far-away object in broad daylight generally induces frowning, for the purpose of restricting the entrance of light into the eye. We may thus believe, if we should please to do so, that frowning has been rendered habitual, or has at any rate been much strengthened by the operation of this secondary cause.

Pouting, or the protrusion of the lips to a greater or less extent, appears to be an almost universal expression of sulkiness over the entire world, especially among the younger members of the community. Here, again, Mr. Darwin believes that we have an instance of "the retention, chiefly during youth, of a primordial habit," or of an occasional reversion to it. Our "poor relations," that is the orang-outan and chimpanzee, are known, when young, to protrude their lips when angry or sulky, but also when they "are surprised, a little frightened, or even slightly pleased." (The italics are ours.) "If, then, our semi-human progenitors protruded their lips when sulky, or a little angered, in the same manner as do the existing anthropoid apes, it is not an anomalous though a curious fact that our children should exhibit, when similarly affected, a trace of the same expression." We fully admit the "curiosity" of this fact, but we are inclined to believe that the believers in man's spiritual pre-eminence would have small difficulty in accounting for it in a manner at least as credible as the above.

In violent anger and rage, a very common expression consists in the retraction of the lips and the exposure of the grinning or clenched teeth. "The appearance is as if the teeth were uncovered, ready for seizing or tearing an enemy, though there may be no intention of acting in this manner." The insane manifest this feature with remarkable force, which is the more singular, since even mental aberration rarely induces a man to use his teeth in fighting. The bestial character of this expression is too obvious to be overlooked; and Dr. Henry Maudsley, notoriously one of the most "advanced" and most completely materialistic of modern metaphysicians, suggests that this is probably "a faint echo from a far-distant past, testifying to a kinship which man has almost outgrown." It need hardly be said that this suggestion meets with a cordial welcome from our author.

In sneering and defiance, by far the most characteristic feature is the drawing back of the upper lip in such a manner that the eye-tooth on one side of the face alone is exhibited, "the face itself being generally a little upturned and half averted from the person causing offense." This action is essentially similar to snarling, and the muscles which thus uncover the eye-tooth are termed by Sir Charles Bell the "snarling muscles." Here, again, Mr. Darwin finds what he thinks to be a clear proof of our relationship with the lower animals. "The expression here considered," he says, "whether that of a playful sneer or ferocious snarl, is one of the most curious which occurs in man. It reveals his animal descent; for no one, even if rolling on the ground in a deadly grapple with an enemy, and attempting to bite him, would try to use his canine teeth more than his other teeth. We may readily believe from our affinity to the anthropomorphous apes that our male semi-human progenitors possessed great canine teeth, and men are now occasionally born having them of unusually large size, with interspaces in the opposite jaw for their reception. We may further suspect, notwithstanding that we have no support from analogy, that our semi-human progenitors uncovered their canine teeth when prepared for battle, as we still do when feeling ferocious, or when merely sneering at or defying some one, without any intention of making a real attack with our teeth." Seeing that the living monkeys are stated never to exhibit the action in question, and seeing that our "semi-human progenitors" are pure creations of Mr. Darwin's fancy, it appears to us that the evidence is far from sufficient to warrant a cautious philosopher in the definite assertion that this action reveals man's "animal descent."

The last of the human emotions which we may notice is fear, the signs of which are too familiar to need recapitulation. We may, however, with advantage, reproduce the conclusions to which Mr. Darwin has been led by his study of this emotion:

> Some of the signs of fear may be accounted for through the principles of habit, association, and inheritance, such as the wide opening of the mouth and eyes, with upraised eyebrows so as to see as quickly as possible all around us and to hear distinctly whatever sound may reach our ears. For we have thus habitually prepared ourselves to discover and encounter any danger. Some of the other signs of fear may likewise be accounted for, at least in part, through these same principles. Men, during numberless generations, have endeavored to escape from their enemies or danger by headlong flight or by violently struggling with them, and such great exertions will have caused the heart to beat rapidly, the breathing to be hurried, the chest to heave, and the nostrils to be dilated. As these exertions have often been prolonged to the last extremity, the final result will have been utter prostration, pallor, perspiration, trembling of all the muscles, or their complete relaxation. And now, whenever the emotion of fear is strongly felt, though it may not lead to any exertion, the same results tend to reappear, through the force of inheritance and association. Nevertheless, it is probable that many or most of the above symptoms of terror, such as the beating of the heart, the trembling of the muscles, cold perspiration, &c., are in large part directly due to the disturbed or interrupted transmission of nerve force from the cerebro-spinal system to various parts of the body, owing to the mind being so powerfully affected. We may confidently look to this cause, independently of habit and association, in such cases as the modified secretions of the intestinal canal and the failure of certain glands to act. With respect to the involuntary bristling of the hair, we have good reason to believe that in the case of animals this action, however it may have originated, serves, together with certain voluntary movements, to make them appear terrible to their enemies; and as the same involuntary and voluntary actions are performed by animals nearly related to man, we are led to believe that man has retained through inheritance a relic of them, now become useless. It is certainly a remarkable fact, that the minute unstriped muscles, by which the hairs thinly scattered over man's almost naked body are erected, should have been preserved to the present day; that they should still contract under the same emotions, namely terror and rage, which cause the hairs to stand on end in the lower members of the order to which man belongs.

Comment upon the above is needless. To those who believe in the descent of man from a common progenitor with the apes, it will doubtless appear a very convincing piece of argumentation. To those who, like ourselves, entirely repudiate this ancestry, it will appear to be nothing more than an attempt to bolster up one unproved hypothesis by another equally unproved and unprovable. We would only notice here an extraordinary assumption which seems to underlie all Mr. Darwin's utterances upon this subject—the assumption, namely, that those who decline to believe in the direct descent of man from a lower animal form, are thereby shut up to the belief that man is not an animal at all. Nothing could be more groundless than such an assumption, and it would not be difficult to point to the germs of a philosophy which shall homologate all the facts upon which Mr. Darwin has founded his theories, and which shall, nevertheless, maintain intact the spiritual nature and spiritual origin of man. In spite of his vast research, there are some books which Mr. Darwin has either not taken the trouble to study properly, or which he finds it most convenient to ignore.

We cannot enter here into the interesting chapters which Mr. Darwin gives us on the emotions in various of the lower animals, and their means of expression. Suffice it to say, that no reasonable being, after reading the said chapters, will feel disposed to deny to animals the possession of many and keen emotions, with a varied power of expressing the same. Monkeys, in particular, have their own way of expressing pleasure, joy, affection, pain, anger, disappointment, and terror; and every one who has ever kept a dog will find no difficulty in conceding to that incomparably superior animal (from all but a merely anatomical point of view) the possession of similar emotions. After all, why should we wish to deny to the higher brutes the endowment of certain emotions and of an immaterial animating principle? Such an admission in no way conflicts with the doctrines of the highest Christian philosophy, and cuts from under the feet of the "advanced" Darwinians the ground for some of their strongest arguments. For here again we meet in the reasonings of the Darwinian school with another extraordinary assumption—the assumption, namely, that those who deny the ape-origin of man, are thereby compelled to deny that animals have any emotional or intellectual powers at all capable of being compared with our own. On the contrary, it is quite possible to believe that man is essentially distinct from all the brutes, and yet to believe that animals possess a distinct immaterial principle. The late John Goodsir, whose name is reverenced by scientific workers in all parts of the globe, is a striking instance of the compatibility of these two conceptions. We may, then, safely concede—and the facts will fully warrant the concession—that animals are endowed with an immaterial principle. No ground, however, is afforded by this concession, for the further admission that the immaterial principle of animals is the same in kind as that of man, or that the latter is merely a development of the former. It may, also, be admitted that Sir Charles Bell was in error in the assertion that "the faces of animals seem chiefly capable of expressing rage or fear," and that all their expressions "may be referred, more or less plainly, to their acts of volition or necessary instincts." But such an admission in no way carries with it the acceptance of the alternative theory proposed by Mr. Darwin.

Granting that Mr. Mattheson is correct in his assertion that criticism is merely a revelation of the critic, describing himself and defining his stand-point, we may pass on now to a very brief consideration of the principles which Mr. Darwin has educed from his study of the facts of expression. Three leading principles are laid down as accunting for most of the expressions and gestures involuntarily used by man and by some of the lower animals under the influence of various emotions and sensations. Mr. Darwin admits that there are a good many expressions which he does not venture to explain upon any of these principles; but he thinks that so many expressions are explained by them "in a fairly satisfactory manner," that we may ultimately hope to interpret everything by the same canons. The first of these principles may be termed the "principle of servicable associated habits," and may be stated as follows: "Certain complex actions are of direct or indirect service under certain states of the mind, in order to relieve or gratify certain sensations, desires, &c., and whenever the same state of mind is induced, however feebly, there is a tendency through the force of habit and association for the same movements to be performed, though they may not then be of the least use. Some actions ordinarily associated through habit with certain states of the mind may be partially repressed through the will; and in such cases the muscles which are least under the separate control of the will are the most liable still to act, causing movements which we recognize as expressive. In certain other cases, the checking of one habitual movement requires other slight movements, and these are likewise expressive." Mr. Darwin gives numerous instances of the operation of this principle, and there need be little hesitation in admitting that it must have acted as a *vera causa*, within certain limits. How wide these limits are must be a matter for further investigation, but most people will be disposed to think that they have very unduly been extended by Mr. Darwin. Perhaps the best illustration that we could possibly have of the action of this law is to be found in the singular habit which many dogs possess of turning round and round and scratching the ground with their fore-paws, when they wish to go to sleep upon the floor or any other hard surface. Mr. Darwin's explanation of this apparently senseless and purposeless habit is very ingenious. The original wild progenitors of the dog must very often have trampled down the grass, and scraped out a hollow so as to make for themselves a bed, when they lived on open, grassy plains or in the woods. But, we know that habits are very commonly transmitted by inheritance in a very tenacious manner, and we may believe that our domestic dogs have derived their foolish trick of turning round and round before going to sleep, by the inheritance from their wild parents of this originally useful habit. It is quite probable that, in the same way, many of the expressive movements now employed by man, may be remnants of habits practiced by ancient races, when the conditions of human life were very different from what they are now, and were such as to render these habits of service. It is hardly necessary to say, however, that Mr. Darwin is not content with this legitimate application of his principle, but seeks to trace back many of the expressive movements of man to habits practiced by hypothetical, semi-bestial, semi-human beings, which he believes to have been the progeniters of the human race. Thus, one of the commonest, and most instinctive actions is the start which is produced by a sudden noise, or by anthing unexpectedly coming in contact with the body. So natural, and, indeed, so necessary, is this action, that it seems rather far-fatched to have recourse to the supposition that starting is a remnant of a habit possessed by imaginary ancestors of ours, who always, like timid animals, jumped away as quickly as possible the moment they were cognizant of any danger. Besides, as Mr. Darwin himself points out, when a man starts at anything, his heart beats wildly against his ribs—an action which could never have been acquired as a habit in any proper sense of the term, since we have no power of either increasing or diminishing the pulsations of the heart by any exercise of the will.

The second principle of expression may be called the "principle of antithesis," and may be stated as follows: "Certain states of the mind lead to certain habitual actions, which are of service, as under our first principle. Now, when a directly opposite state of mind is induced, there is a strong and involuntary tendency to the performance of movements of directly opposite nature, though these are of no use; and such movements are in some cases highly expressive." The best example of the action, or alleged action of the operation of this principle among animals is to be found in the demeanor of a dog, according as he is in a hostile or a friendly state of mind. When feeling hostile, the dog walks upright and stiff with erect and rigid tail, the hair of the back bristling, the ears pricked up, and the eyes fixed. These actions are believed by Mr. Darwin to have been produced by the principle of serviceable associated habits, and to be inherited traces of the attitude which the original wild parents of the dog took up on seeing an enemy. On the other hand, when feeling friendly and affectionate, the dog crouches, instead of walking upright; his tail, instead of being held stiffly erect, is wagged from side to side; his hair is smooth, his ears depressed, and his eyes are no longer round and staring. These actions are believed to have been adopted instinctively by the dog, merely as being the opposite of those which express hostility. The best instance of the supposed operation of this principle among men is to be found in the expressive movement of shrugging the shoulders. When a man feels that he cannot or will not do something, or that he will resist something if done by another, he shrugs his shoulders, at the same time often bending in the elbows, showing the palms of the hands with extended fingers, or raising his eyebrows and opening his mouth. These actions, according to Mr. Darwin, are performed upon the principle of antithesis, because they are the opposite of the actions of an indignant man, who resents, and will not submit to, an injury. Such a man holds his head erect, squares his shoulders, and expands his chest; he may clench his fists; he depresses the eye-brows, or frowns; and he closes his mouth firmly. How far the "principle of antithesis" is a valid one must, since it is at present incapable of either proof or disproof, remain in the meanwhile a matter of personal opinion. For our own part, we should be inclined to suppose that its operation, if it has any real existence at all, must be extremely limited, and must be confined exclusively to beings possessing "discourse of reason." Thus, a soldier, when he throws down his musket before a superior force, acts in a manner opposed to that of the man who presents his piece at the head of his enemy; but then both acts are clearly acts of reason. In the same way, and equally by the exercise of reason, a dumb man would express submission by acts directly opposed to those which are generally employed to signify resistance or hostility.

Mr. Darwin's third principle may be called the "principle of the direct action of the nervous system," and may be stated as follows: When the brain is strongly excited, "nerve force is generated in excess, and is transmitted in certain definite directions, depending on the connection of the nerve-cells, and partly on habit; or the supply of nerve force may be temporarily interrupted. In either case, effects may be produced which we recognized as expressive." As an example of the supposed action of this principle among animals, may be taken the frisking of a horse or dog under the influence of joy. In this case it is believed that joy quickens the circulation, that this stimulates the brain, and that the increased nerve force thus generated gives rise to active but purposeless muscular movements. In man, in the same way, it is believed that the trembling of the muscles which accompanies great fear, joy, or anger, is the result of the interruption of the steady flow of nerve-force to the muscles, caused by the strong excitement of the nervous system. The great objection to the application of this principle is that we are dealing with quantities of the nature of which we know nothing, and are using terms which at bottom only serve to conceal our own profound ignorance. We don't know what nerve-force *is*; we know nothing, or next to nothing, as to the manner in which it is generated; and we know absolutely less than nothing as to how a mental operation can influence the supply of nerve-force, either by way of increasing or diminishing it, or even by altering its course and transmission. It therefore explains little or nothing to talk of "overflows of nerve-force" and the like, as being concerned in the production of expressive movements.

Mr. Darwin's work appears to us to fall short of its intended mark by really explaining very little, while it seems to explain a great deal. At the bottom of, and deeper than all forms of expression, generally so called, lies the undefinable something by which we recognize the moral quality of those with whom we may be brought in contact, however brief and slight this contact may be. We meet no one upon whom we do not in our inmost souls pass some judgment, founded upon data, which, in most cases, we should find it impossible to define, and yet, in very many cases, true and correct. What is it that looks out of the eyes of a man and plainly declares his benevolence, his sensuality, or his cruelty? How do children, and even dogs, instinctively take a fancy to certain individuals, and as instinctively dislike and avoid others? The answer to this question lies in a region into which Mr. Darwin has not yet carried his adventurous feet. To answer this we must know something of the mysterious bond which unites the spirit with its earthly tenement. We must know how the soul is able to control and regulate the processes of the body, and how, in turn, the flesh reacts upon its immaterial tenant. We know nothing of this, and the science of expression is, in our opinion, still a matter of the future.

Some of Mr. Darwin's more enthusiastic supporters have expressed the opinion that this is the most important and weighty of his works, with the single exception of the *Origin of Species*. In this view we find ourselves quite unable to coincide. So far as its theoretical deductions are concerned, we believe that it adds little to the sum of human knowledge, and we do not think that it will permanently increase its author's scientific reputation. Regarded, however, merely as an accumulation of facts relating to the subject upon which it treats, it possesses a high value both to the psychologist and to the student of biology; though even from this point of view it is questionable if it is so much in advance of Sir Charles Bell's monograph, as might reasonably have been expected. It is, lastly, chiefly to the general reading public that Mr. Darwin's work will commend itself. It is written with all his usual clearness and perspicuity, and it has the advantage of being illustrated by a number of photographs, some of them very good, taken from life, and reproduced by the heliotype process.

A Fatal Quarrel Between Brothers About a Fifty-Cent Bill.

From the New-Orleans Picayune, Feb. 12.

A difficulty occurred about 4 o'clock yesterday afternoon, at No. 256 Rampart-street, between two brothers, named Joseph and Theobald Warth, during which the former cut and seriously wounded the latter in the abdomen with a saddler's knife. A colored man came into the store to pay a small sum due, and made a purchase of a whip-stock. He gave a fifty-cent bill to be changed, part of which was due to account of each of the brothers. In the division of the change a quarrel ensued, when Joseph Warth moved toward his brother Theobald with arm upraised and a stick in his hand, as if to make an assault. At this, Theobald Warth, who was at the work-bench with a saddler's knife in his hand, put the hand with the knife forward to shove his infuriated brother away, when the wound in the abdomen was inflicted. Dr. Folwell attended the wounded man, and pronounced his wound a serious and probably a fatal one; thinks he cannot live through the night.

Gaffney, the Executed Buffalo Murderer.

From the Buffalo Commercial Advertiser, Feb. 15.

When the body of John Gaffney was cut down yesterday it was delivered over to Undertaker Crowley, by him placed in the casket, and then taken in a hearse to the home of the deceased's wife on the Terrace. It was followed by an immense crowd of those whom morbid curiosity had brought around the jail. The body was laid out in a white shroud, and the beard shaved from the face. The features then presented a life-like and natural appearance. There was no contortion of the face, the eyes were closed, the lips parted and the teeth tightly set. During the afternoon the body was viewed by numerous friends of the deceased, and a crowd gathered around the entrance outside. A policeman was stationed at the door to preserve order. This morning the crowd continued, and the officer was on guard as before. Among those who witnessed the execution yesterday, were Sheriff Harrington, of Chautauqua County, and Deputy Sheriff Campbell, of Brooklyn.