Darwin, C. (1899): **The Expression of the Emotions in Man and Animal**

INTRODUCTION.

MANY works have been written on Expression, but a greater number on Physiognomy,— that is, on the recognition of character through the study of the permanent form of the features. With this latter subject I am not here concerned.

All the authors who have written on Expression, with the exception of Mr. Spencer— the great expounder of the principle of Evolution— appear to have been firmly convinced that species, man of course included, came into existence in their present condition.

If Sir C. Bell had been questioned about the expression of affection in the dog, he would no doubt have answered that this animal had been created with special instincts, adapting him for association with man, and that all further enquiry on the subject was superfluous.

No doubt as long as man and all other animals are viewed as independent creations, an effectual stop is put to our natural desire to investigate as far as possible the causes of Expression. By this doctrine, anything and everything can be equally well explained; and it has proved as pernicious with respect to Expression as to every other branch of natural history.

With mankind some expressions, such as the bristling of the hair under the influence of extreme terror, or the uncovering of the teeth under that of furious rage, can hardly be understood, except on the belief that man once existed in a much lower and animal- like condition.

In order to acquire as good a foundation as possible, and to ascertain, independently of common opinion, how far particular movements of the features and gestures are really expressive of certain states of the mind, I have found the following means the most serviceable. In the first place, to observe infants; for they exhibit many emotions, as Sir C. Bell remarks, "with extraordinary force;" whereas, in after life, some of our expressions "cease to have the pure and simple source from which they spring in infancy."[18]

In the second place, it occurred to me that the insane ought to be studied, as they are liable to the strongest passions, and give uncontrolled vent to them.

Thirdly Dr. Duchenne galvanized, as we have already seen, certain muscles in the face of an old man, whose skin was little sensitive, and thus produced various expressions which were photographed on a large scale. It fortunately occurred to me to show several of the best plates, without a word of explanation, to above twenty educated persons of various ages and both sexes, asking them, in each case, by what emotion or feeling the old man was supposed to be

agitated; and I recorded their answers in the words which they used. Several of the expressions were instantly recognised by almost everyone, though described in not exactly the same terms; and these may, I think, be relied on as truthful, and will hereafter be specified.

Fifthly, it seemed to me highly important to ascertain whether the same expressions and gestures prevail, as has often been asserted without much evidence, with all the races of mankind, especially with those who have associated but little with Europeans. 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 instinctive.

Conventional expressions or gestures, acquired by the individual during early life, would probably have differed in the different races, in the same manner as do their languages.

Observations on natives who have had little communication with Europeans would be of course the most valuable, though those made on any natives would be of much interest to me.

It follows, from the information thus acquired, that the same state of mind is expressed throughout the world with remarkable uniformity; and this fact is in itself interesting as evidence of the close similarity in bodily structure and mental disposition of all the races, of mankind.

Sixthly, and lastly, I have attended as closely as I could, to the expression of the several passions in some of the commoner animals; and this I believe to be of paramount importance, not of course for deciding how far in man certain expressions are characteristic of certain states of mind, but as affording the safest basis for generalisation on the causes, or origin, of the various movements of Expression. In observing animals, we are not so likely to be biassed by our imagination; and we may feel safe that their expressions are not conventional.

Finally, with respect to my own observations, I may state that they were commenced in the year 1838; and from that time to the present day, I have occasionally attended to the subject. At the above date, I was already inclined to believe in the principle of evolution, or of the derivation of species from other and lower forms. Consequently, when I read Sir C. Bell's great work, his view, that man had been created with certain muscles specially adapted for the expression of his feelings, struck me as unsatisfactory.

It seemed probable that the habit of expressing our feelings by certain movements, though now rendered innate, had been in some manner gradually acquired. But to discover how such habits had been acquired was perplexing in

no small degree. The whole subject had to be viewed under a new aspect, and each expression demanded a rational explanation.

CHAPTER I.— GENERAL PRINCIPLES OF EXPRESSION.

I need hardly premise that movements or changes in any part of the body,— as the wagging of a dog's tail, the drawing back of a horse's ears, the shrugging of a man's shoulders, or the dilatation of the capillary vessels of the skin,— may all equally well serve for expression.

The three Principles are as follows.

I. The principle of serviceable associated Habits.— 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.

II. The principle of Antithesis.— 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 a directly opposite nature, though these are of no use; and such movements are in some cases highly expressive.

III. 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, 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, as it appears, be interrupted. Effects are thus produced which we recognize as expressive. This third principle may, for the sake of brevity, be called that of the direct action of the nervous system.

To those who admit the gradual evolution of species, a most striking instance of the perfection with which the most difficult consensual movements can be transmitted, is afforded by the humming- bird Sphinx- moth (Macroglossa); for this moth, shortly after its emergence from the cocoon, as shown by the bloom on its unruffled scales, may be seen poised stationary in the air, with its long hair- like proboscis uncurled and inserted into the minute orifices of flowers; and

no one, I believe, has ever seen this moth learning to perform its difficult task, which requires such unerring aim.

The power of Association is admitted by everyone. Mr. Bain remarks, that "actions, sensations and states of feeling, occurring together or in close succession, tend to grow together, or cohere, in such a way that when any one of them is afterwards presented to the mind, the others are apt to be brought up in idea."[

From the continued use of the eyes, these organs are especially liable to be acted on through association under various states of the mind, although there is manifestly nothing to be seen. A man, as Gratiolet remarks, who vehemently rejects a proposition, will almost certainly shut his eyes or turn away his face; but if he accepts the proposition, he will nod his head in affirmation and open his eyes widely. The man acts in this latter case as if he clearly saw the thing, and in the former case as if he did not or would not see it.

There are other actions which are commonly performed under certain circumstances, independently of habit, and which seem to be due to imitation or some sort of sympathy. Thus persons cutting anything with a pair of scissors may be seen to move their jaws simultaneously with the blades of the scissors. Children learning to write often twist about their tongues as their fingers move, in a ridiculous fashion.

Reflex actions— Reflex actions, in the strict sense of the term, are due to the excitement of a peripheral nerve, which transmits its influence to certain nerve-cells, and these in their turn excite certain muscles or glands into action; and all this may take place without any sensation or consciousness on our part, though often thus accompanied.

These latter movements, however, can be prevented, if the danger does not appear to the imagination imminent; but our reason telling us that there is no danger does not suffice. I may mention a trifling fact, illustrating this point, and which at the time amused me. I put my face close to the thick glassplate 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.

From the foregoing remarks it seems probable that some actions, which were at first performed consciously, have become through habit and association converted into reflex actions, and are now so firmly fixed and inherited, that they are performed, even when not of the least use,[114] as often as the same causes arise, which originally excited them in us through the volition. In such cases the sensory nerve- cells excite the motor cells, without first

communicating with those cells on which our consciousness and volition depend.

starting was originally acquired by the habit of jumping away as quickly as possible from danger, whenever any of our senses gave us warning. Starting, as we have seen, is accompanied by the blinking of the eyelids so as to protect the eyes, the most tender and sensitive organs of the body; and it is, I believe, always accompanied by a sudden and forcible inspiration, which is the natural preparation for any violent effort. But when a man or horse starts, his heart beats wildly against his ribs, and here it may be truly said we have an organ which has never been under the control of the will, partaking in the general reflex movements of the body.

It further deserves notice that reflex actions are in all probability liable to slight variations, as are all corporeal structures and instincts; and any variations which were beneficial and of sufficient importance, would tend to be preserved and inherited. Thus reflex actions, when once gained for one purpose, might afterwards be modified independently of the will or habit, so as to serve for some distinct purpose.

Such cases would be parallel with those which, as we have every reason to believe, have occurred with many instincts; for although some instincts have been developed simply through long- continued and inherited habit, other highly complex ones have been developed through the preservation of variations of pre- existing instincts— that is, through natural selection.

CHAPTER II. — GENERAL PRINCIPLES OF EXPRESSION—continued.

WE will now consider our second Principle, that of Antithesis. Certain states of the mind lead, as we have seen in the last chapter, to certain habitual movements which were primarily, or may still be, of service; and we shall find that when a directly opposite state of mind is induced, there is a strong and involuntary tendency to the performance of movements of a directly opposite nature, though these have never been of any service.

intercommunication between the members of the same community,— and with other species, between the opposite sexes, as well as between the young and the old,— is of the highest importance to them. This is generally effected by means of the voice, but it is certain that gestures and expressions are to a certain extent mutually intelligible. Man not only uses inarticulate cries, gestures, and expressions, but has invented articulate language; if, indeed, the word INVENTED can be applied to a process, completed by innumerable steps, half-consciously made.

Any one who has watched monkeys will not doubt that they perfectly understand each other's gestures and expression, and to a large extent, as

Rengger asserts,[201] those of man.

Even still less can I believe that my dog voluntarily put on his dejected attitude and "hot-house face," which formed so complete a contrast to his previous cheerful attitude and whole bearing. It cannot be supposed that he knew that I should understand his expression, and that he could thus soften my heart and make me give up visiting the hot-house.

CHAPTER III. — GENERAL PRINCIPLES OF EXPRESSION—concluded.

WE now come to our third Principle, namely, that certain actions which we recognize as expressive of certain states of the mind, are the direct result of the constitution of the nervous system, and have been from the first independent of the will, and, to a large extent, of habit.

Under a transport of Joy or of vivid Pleasure, there is a strong tendency to various purposeless movements, and to the utterance of various sounds. We see this in our young children, in their loud laughter, clapping of hands, and jumping for joy; in the bounding and barking of a dog when going out to walk with his master; and in the frisking of a horse when turned out into an open field.

CHAPTER IV. — MEANS OF EXPRESSION IN ANIMALS.

The character of the human voice, under the influence of various emotions, has been discussed by Mr. Herbert Spencer[402] in his interesting essay on Music. He clearly shows that the voice alters much under different conditions, in loudness and in quality, that is, in resonance and timbre, in pitch and intervals.

CHAPTER X. — HATRED AND ANGER.

The power of communication between the members of the same tribe by means of language has been of paramount importance in the development of man; and the force of language is much aided by the expressive movements of the face and body.

That there exists in man a strong tendency to imitation, independently of the conscious will, is certain.

In the course of the foregoing remarks and throughout this volume, I have often felt much difficulty about the proper application of the terms, will, consciousness, and intention. Actions, which were at first voluntary, soon became habitual, and at last hereditary, and may then be performed even in opposition to the will. Although they often reveal the state of the mind, this result was not at first either intended or expected.

Although most of our expressive actions are innate or instinctive, as is admitted by everyone, it is a different question whether we have any instinctive power of recognizing them.

As most of the movements of expression must have been gradually acquired, afterwards becoming instinctive, there seems to be some degree of a priori probability that their recognition would likewise have become instinctive.

We readily perceive sympathy in others by their expression; our sufferings are thus mitigated and our pleasures increased; and mutual good feeling is thus strengthened.

The movements of expression give vividness and energy to our spoken words. They reveal the thoughts and intentions of others more truly than do words, which may be falsified.

He who gives way to violent gestures will increase his rage; he who does not control the signs of fear will experience fear in a greater degree; and he who remains passive when overwhelmed with grief loses his best chance of recovering elasticity of mind. These results follow partly from the intimate relation which exists between almost all the emotions and their outward manifestations; and partly from the direct influence of exertion on the heart, and consequently on the brain. Even the simulation of an emotion tends to arouse it in our minds.

We have also seen that expression in itself, or the language of the emotions, as it has sometimes been called, is certainly of importance for the welfare of mankind.