
These pamphlets have reference to questions of the deepest interest, whether con sidered from the scientific or practical standpoint. The latter of these being more within our province than the former is the one we shall now deal with, and so do limiting our selves to the practical question of efficiency of the Vaccination Acts, and the Contagious Diseases Acts as systems for preventing the spread of fearful diseases of both sexes.

In these days of scepticism, as all are aware, we ought not to be surprised at the large number of persons who deny that any practical benefit results from the adoption of these systems, though they are in the interest of the community and the health of the people, and that they are beneficial to their religious and moral condition. These are, however, arguments which we shall consider in another place. There is, however, a more urgent question, the question of personal liberty, the question of personal rights, the question of personal freedom, the question of personal independence.


This book is a physiological work of the highest order, the result of the most careful observation and the most profound study. The author has been enabled to express himself with great accuracy, and to present his work in a form which is so clear and so illuminating that it is easy to understand the significance of the facts he has presented.

Although the book is a physiological work, it is not possible to review it in a few pages. The author has been able to present his work in a form which is so clear and so illuminating that it is easy to understand the significance of the facts he has presented.

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Many signs, moreover, which plainly stand in the nature of each other, have on both sides a significant origin. This seems to hold good with the signs used by the deaf and dumb for light and darkness, for strength and weakness. This would take me too far afield to detail an effort to show that the opposite gestures of affirmation and negation—namely, vertically nodding and lowering the head, both probably had a natural beginning. The waving of the hand from right to left, which is the sign for 'yes,' has been invented in imitation of shaking the head; but whether the opposite movement of waving the hand from left to right on the face, which is used in affirmation through antithesis or in some quite distinct manner is difficult.

The third principle referred to—namely, certain actions which we recognise as expressive of certain states of the mind—they are, says Mr. Darwin, the direct result of the constitution of the nervous system, and have in all probability had a development from the first independent of the will, and, to a large extent, of habit. When the sensorium is excited, we are conscious of that the trembling of the muscles, which is common to man and to many, or most, of the lower animals. Trembling is carried on as a rule of no service, often of much disadvantage, and cannot be checked when it is acquired through the will, and then rendered habitual in association with any emotion. I am not aware that young children do not tremble, but go into convulsions, under the circumstances which we may describe as of an excited nature. Trembling is excited in different individuals in very different degrees and by the most diverse causes; by cold to the surface before fever—disease, although the temperature of the body is then above the normal standard; in blood-poisoning, delirium tremens, and other diseases; by general failure of power in old age; by exhaustion after excessive fatigue; locally from severe injuries, such as burns; and, finally, by the passage of a catheter. Of all emotions, fear most resembles the most apt to induce trembling; but so do occasionally great anger and joy. I remember once seeing a boy of twelve years old, the only child of my acquaintance, darting his hand, and his hands trembling to such a degree of delight that he could not for some minutes speak. This is the story that I have heard of exactly the same case with an Australian savage to whom a gun had been lent. First, from the vague emotions thus caused, each small joint is excited, and the whole body is agitated by the flutings of some persons. There seems to be very little in common in the above physical causes and emotions to account for the fact that so much attention is paid to Mr. and Sir J. Paget, to whom I am indebted for several of the above statements, informs me that these are also observed in the hand. As trembling is sometimes caused by rage, joy before exhaustion can have set in, and as it sometimes accompanies great joy, it would appear that any strong excitement of the nervous system interrupts the steady flow of the current of nerve forces to the muscles.

The manner in which the secretions of the alimentary canal and of certain glands—as the digestive and sweat glands—are affected by strong emotions is excellently illustrated by the direct action of the secretion on these organs, independently of the will or of any conceivable antithesis. There are greatest differences in different persons in the parts which are thus affected, and in the degree of the effect so affected.

The heart, which goes on uninterrupted beating night and day in so wonderful a manner, is excited by external stimuli. The great physiologist, C. W. Bernard, has shown how the least excitement of the autonomic nerve re-acts on the heart, even when a nerve is touched to slightly that pain can possibly be felt by the animal under experiment. Hence when the mind is strongly excited it may expect that it would instantly affect in a direct manner the heart; and this is universally acknowledged and felt by the one who sees or hears. Bernard also repeatedly insists, and this deserves especial notice, that when the heart is affected it re-acts on the brain; and the state of the brain again re-acts through the autonomic nerves on the heart; so that under any excitement there will be much mutual action and re-action involving the two most important organs of the body.

The vasomotor system, which regulates the temperature of the small arteries, is directly acted on by the brain, and shows when a blush is occasioned by a blush from shame; but in this latter case the checked transmission of nerve-force to the brain is very well known. The brain can, therefore, be explained in a curious manner through habit. We shall also be able to throw some light on the many very little understood voluntary emotions of the hair under the emotions of terror and rage. The secretion of tears depends, no doubt, on the connection of certain nerve-cells; but here again we have to do with the inhibition by which the flow of nerve-force through the requisite channels has become habitual under certain circumstances.

A brief consideration of the outward signs of some of the stronger sensations and emotions will be of the utmost importance. Although vague, in how complex a manner this principle underlies the consideration of the direct action of the excited nervous system on the body is combined with the emotional part, it is best to consider it first.

When animals suffer from an agony of pain they are sometimes seized with fright, and contortions, and those which habitually use their voices utter piercing cries or groans. According to Mr. Darwin, the body is brought into strong action. With the mouth wide open, the mouth is closely compressed, or more commonly the lips are retracted, with the teeth clenched or ground together. There is said to be "gnashing of teeth" in hell; and I have plainly heard the grinning of the molar teeth of a horse which was suffering almost from inflammation of the bowels. The female hippopotamus in the Zoological Gardens, when producing her young, suffered greatly; she incessantly worked her jaws, rolled on her sides, opening and closing her jaws, and clattering her teeth together. With man the same emotions are reflected in the face, the eyebrows being thus raised, or the brows are heavily contracted. Perspiration bathes the body, and drops trickle down the face. The muscles of the eyes and respiration are much affected. Hence the nostrils are generally dilated and often quiver; or the breath may be held until the blood stagnates; or the face may be severely flushed. Evidently prolonged signs all change; utter prostration follows, with fainting or convulsions.

A sensitive nerve is liable to be irritated and transmits some influence to the nervous system, through the spinal cord and nerves; and this transmits its influence, first to the corresponding nerve-cell on the spinal cord, then up and down the cord on the side of the spinal cord in the spinal nerves, and downwards along the cerebral-spinal column to other nerve-cells, to a greater or less extent, according to the strength of the excitant; so that, ultimately, the whole nervous system may be affected. This indirect or reflex action of nerve-force may not be accompanied by consciousness. Why the irritation of a nerve-cell should set up nerve-forces unknown to us is not known; but that this is the case seems to be a general conclusion arrived at by all the greatest physiologists. C. W. Müller, Virchow, Bernard, etc. As Mr. Herbert Spencer, in the "Fortnightly Review," October 15, 1868, has been received as an "unquestionable truth that at any moment the existing quantity of liberated nerve-force is, for the time being, more or less, whether we can produce any conclusive proofs that a nervous system is capable of being expanded in intense sensations, and, if these do not suffice, will next overlap into the less habitual ones. Consequently the facial and respiratory muscles, which are the most used, will be apt to be first brought into action, and to show the most noticeable symptoms, next those of the lower, and finally those of the whole body.

These views Mr. Darwin proceeds to elucidate by a way of comparing the different descriptions of emotion, and of convulsions, by suggesting the probability of what we have quoted having reference to the causes in expression in animals—the special manner of expression in man, and of expression in the human face, with concluding remarks and a summary, from which we extract the following.

The movements of expression in the face and body, whatever their origin may have been, are in themselves of much importance. But they are also of much more importance in the expression of the communication between the mother and her infant; she smiles approval, and thus encourages her child on the right path, or frowns disapproval. We readily carry back such movements in others by their expression; our sufferings are thus mitigated and our pleasures increased, and we can turn what is less pleasant into more pleasant. The movements of expression give vividness and energy to our spoken words. They reveal the whole anatomy of our soul; we know whether a man is truly what he says, or whether he is dissimulating. Whatever amount of truth the so-called science of physiognomy may be supposed to contain, it is but a small and trivial part of the whole. Depend, as Haller long ago remarked, on different persons bringing into frequent use different facial muscles, according to their disposition, may be taught, or may be perhaps thus increased, and the lines or furrows on the face, due to their habitual contraction, being thus rendered deeper and more conspicuous. The free expression by outward signs of an emotion intensifies it. On the other hand, the repression, as far as this is possible, of all outward signs saves our emotions. He who gives way to violent gestures will increase his rage; he who does not is sometimes safe from fear in a greater degree; and he who remains passive when overwhelmed with grief loses less, or perhaps less, than those who weep. These results flow partly from the intimate relation which exists between almost all the emotions and their outward manifestations, and partly from the habit in which we may be brought to keep on the heart, and consequently on the brain. Even the simulation of an emotion tends to confirm it. The man who makes a study of even from his wonderful knowledge of the human mind ought to be an excellent judge, says:

"It is not monstrous that this player here, Braggart soldier, should have his twitchings observed by those who have made his name a byword. If he could force his soul to so order his countenance, and make his very countenance his own comforter and tormentor, and his harped strings, and his sinister voice, and his whole inquisitive suit, With forms to his consent? And all for his consent!"—

Honend, act ii., sc. 2.
"We have seen that the study of the theory of the causes of the curieuse phenomena, and the present extent that man is derived from some lower animal form." To this statement of Mr. Darwin's we demur; for, as far as we can discover, all that is commonly held is based on the lower animals as regards expression (except in some very slight degrees in apes) that book animals, reptiles, insects, birds, and greuses and utter sounds to express their emotions; but each uses signs, gestures, and sounds, and may be possible. Mr. Darwin further remarks: This supports the belief in the comparatively distinct, in so far as the kind of mind was derived from several excellent observers, and that it deserves still further attention, especially from any able physiologist.


This is the concluding part of this very valuable work, and we find it quite equal in its high-class character, succinct, yet explicit, and the subject thoroughly dealt with by Professor Everett, a complete compendium of science, so explanatory and well illustrated that any person of ordinary educational capacity by studying its pages may make himself acquainted with all the material points of the various branches of natural philosophy. This is a very good book; but we consider we are fully justified in saying it.


Carr's detergators bid fair, as it appears, to replace the old millstones used in the manufacture of flour, and revolutionise one of our most important industries. It will be an important of all. Hence the statements in this pamphlet are worthy of most serious attention, and therefore we have much pleasure in introducing our readers to the work of Mr. Carr, him tell his own tale.

"By this new system," he says, "material of various qualities is mixed with a suitable quantity of water, without grinding, compression, or friction 'shattered by powder by the action of heat." The system described is derived from the result of many experiments, of numerous, continuous acting, unarranged states, slightly rotating in alternately reverse directions, and the prejudice against the said persuasion being derived from the refusal to see and believe in the co-operating powers of the sun, and its heat, and in its flight from cold into warm, with everything but that of whirling hot air ascending and dissipating it by collision in mid-airs. But the greatest factors of the system operated on as the sole abstinence to the machine, in contradistinction to the system hitherto invariably pursued, of reducing all materials between two surfaces in constant movement, supporting them and acting as an absorbed substance to which other while operating on the said intervening materials. All mills in the world of every description and formation have been reduced to a single exception, based on one or the other of the above two distinct systems. For instance, the old millstones, in reducing hard materials, or for such as require reducing to an absolutely impalpable powder, without any friction, the old millstones were adopted for the wholesale reduction of an immense variety of other articles to a fine granular powder, and, therefore, being universally admitted to be incomparably the best."

"It has been found pre-eminent-more distinctly and so operating on any hard or pasty materials of the kind described, as ores, minerals, clays, and marasons, for which it was originally intended, yet though as an invention has been hitherto developed, its machines could be constructed to roughly pulverise very readily the millstones themselves, or any of the numerous articles, and such as are passive grinders to those enumerated in my previous patents and circulars, yet all of these machines, though not actually made, are, of course, in the estimation of Mr. America, were hitherto utterly unsuited to and totally incapable of reducing to fine flour a material as wheat. Happily, however, the novel and singular combination of mode, action, and system of defeating matter, which I have discovered and inaugurated by placing my invention before the public at large, are of so unusually valuable and expansive a nature as to have recently enabled the extension of the system to divers other materials, and to adapt and apply them, without any pernicious complications, to the purposes of flour-mill, a matter of inestimable more importance and value than those which had been aboriginal, patented, and used. One also of a peculiarly special and essential character, or a difference to those hitherto operated on, in the nature, and required treatment of a compound essential such as flour-mill, in which the original has to be finely powdered and the other (the bran) so little as possible, more especially so when the said article is considered in connection with the material which is to be used in this unique mill. For, as stated above, it is entirely destitute in itself of anything to serve as the substitute of the small quantity of grain in every other kind of mill, and is therefore wholly dependent, as above said, for this indispensable property by itself can operate at all, on the grain and its bran of material. In the mill itself that pulverises the said material for the time being constituting it as it were a portion of the material, and an active agent in effecting its own disintegration. It appeared therefore to all familiar with the mode of operation of this machine directly contrary to its principles, as long since correctly defined and published far and wide by myself and others, and equally adverse also to the innumerable assertions and daily working for many years of hundreds of the original disintegrators, for it to be impossible. For a small portion of that which is specific gravity, smallness of its particles, and the tough and firm natures of its outer covering. This is the brake or lever, which, at present sufficient resistance to the brake; to enable them to reduce it into flour while it was supported and flying freely through the air. If, however, but let it be ever so highly devised at all, it was considered irrational in the extreme to imagine that flour so produced could be brought out in a resembling brown flour, owing to the fins pulverising of the bran, which it was erroneously supposed to be inevitable. My proposed attempt therefore, being a system of milling on the basis of my disintegrator was satirised as a hallucination in the scientific and technical circles of America, and I was engratin before the whole of America, and I was engrossed by all who heard of my intentions here...

"In fact it was one of those prospective projects the entire success of which in practice can by no possibility be proved or demonstrated, or even dreamed of, being an accomplishment of such a tangible evidence or precedents but such as appear absurd, the public instinctively regard all experiments on new and novel combinations of inventions on long established usages, as chimerical illusions, while they are necessarily associated with the intellect and results from our mind is arranged and controlled all results, having no actual existence as real inventions until they have assumed a form or texture, the test of practical operation their entire success, as the only right by proved to be an accomplished fact and an established reality, superior to all preceding contrivances. But in the present case, such substance benefit to the community at large. Now, happily in this case all these requisites have been length most skillfully accomplished, in which practice has more than realised the dubious hopes of theory, and for ever removed obstacles hitherto thought insurmountable. The grand result of which has been no less a matter than the metamorphosis of my granulating ore, mineral, clay, and work by the M.A. of Balliol, our mill of such marvellous efficiency as greatly to surpass in quality, and by full thirty-fold in quality. The value of wholesale materials, as observed, is simultaneously introduces an entire new process of flour-making of unparalleled efficacy.


We welcome with pleasure this new edition of a thoroughly practical work, which is worthy of our hearty commendation.


We are pleased to find that Dr. M'LAJ's very commendable work, revised and improved, has, not only, reached a third edition, and that the Doctor has been induced to revise and improve it; but that it must, we are quite sure, need any revision for improvement, as the professional object of the work being to proffer facts and data for the use of students and not to present the public with an expository treatise, the work as it originally stood was, we firmly stated, a good fulfilment of that task. The new edition of this work is the more welcome to us just now because, from its being designed to support the orthodox view of the question, it enables us to have before us at the same time the pro and the con, since the Doctor has been induced to revise and improve it; but that it must, we are quite sure, need any revision for improvement, as the professional object of the work being to proffer facts and data for the use of students and not to present the public with an expository treatise, the work as it originally stood was, we firmly stated, a good fulfilment of that task.

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