"Principles of Expression"
From:

24th April 1893.

I hereby certify that I have been engaged in general medical and surgical practice during the last eight years.

Maurice Parkinson
Implements
26th April 93.

I hereby certify that the accompanying thesis was composed by myself alone.

[Signature]
M. Palermo
and be full and look much by spirit and
of little value. Of the look, the lacerated profession
of wit, with other grander, in ease, it a received
result of the lack of satisfactorily for enquiring
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in professional and kindred advocate of else a full
continue after the mind of kindred or conception,
the friends, we are told that the usual laws and
whether the disease is all that is the disease of the
in the medical faculties regulation in the guidance
do not a little guessing. Besides the ordinary patient and especially in Rural Districts is filled with a consuming desire that something should be done and that speedily to secure an immediate recovery. To him the more cautious and tentative method only means vacillation and sniffs of "letting a man drown for fear of muddling his ruffles." A medical man must be prompt in his cure, and the cure of such anature as to produce a sensible and if possible a visible effect on the sufferer's person; and so it comes to pass that the country practitioner is more than ever apt to be under uncertain as to the extent to which the symptoms of his case are modified by his own treatment.

In preparing his thesis he has either to make use of observations made within a very narrow sphere, or make research for opinions of others in a very limited literature; but he can at least always try to view his subject from one of the less usual standpoints; or (even though he have no new matter to offer) at least try to express it in his own way. In the following pages I have collected what seem to be the most essential facts with regard to "Physical Expression."
The different writers whom I have consulted differ widely in their views as to the scope of the term "Expression." To some the word means little more than the significant sum total of the play of the facial features. Sir Charles Bell in his "Anatomy and Philosophy of Expression" approaches the subject from the artistic side, and remarks that "a face may be beautiful in sleep and at a distance without expression, may be highly beautiful while on the other hand expression may give a charm to a face the most ordinary." His inquiry he therefore divides into a study of the "permanent form of head and face and the motion of the features or expression.

One writer points out that Physical Expression in its widest sense can be best defined as "the outward significance of an inherent property or function."

But even here the limitations are not so very sharply defined as would seem at first sight to be the case. For example the after-effects of deranged function or other physical errors—which constitute disease may more remotely change expression. There are many physical conditions quite independent at least of
of inherent function which very sensibly modify our impressions of character and mind, as derived from face and attitude. Such impressions perhaps influence the trained medical man's mind less than that of the layman in judging of character, for the physician can analyze these physical conditions and refer them to their proper causes. For example a young lady (who suffered as a child from a slight spinal affection) now after goes about with her head a little to one side, and earns with many the character of being crouched or affected. The peculiar form of the forehead often left after rickets, the diminished size in early specific disease, and the various forms of the head which result from the exigencies of labor all modify the opinion of the individuality as left on the observer. And this is so apart from the mere effect produced upon our minds by, for example, bulged forehead or tip tilted nose for the whole mechanism of facial expression is by these osseous peculiarities changed and the corrugator supercilii, pyriformis nasi and occipito-frontalis muscles are brought into
play to greater or less advantage, and with more or less ease and in the composure typically regular.

Naturally at this point reference is made in a word to Physical Beauty. Bell tells us that all the great authorities consent in the prevalent opinion that beauty of expression consists in the capacity of expression and the harmony of the features concurring to that expression; and if this be so then such a harmony is the standard adopted by the sculptors of the antique. Albert Durer defined Beauty as "the reverse of deformity."

The safest principle in seeking in the essence of beauty seems to be that we should seek for such features as express most of all the higher and more intellectual qualities which characterize man. Markedly, thus we would expect in a beautiful face perfect evolution and refinement of the parts concerned in speech. On the other hand varieties in the shape of the jaws and in the angle of insertion of the teeth will be significant in proportion as they suggest more or less the characters of the lower animals.
In ages the study of expression was, like all other science, overlaid with such a tissue of imagination and superstition as to be utterly valueless. Here and there we find glimpses of true feeling after nature when great minds applied themselves to thought of it. Socrates we are told desired those who desired to follow Philosophy by study of their countenances, and approved of applying this test of fitness before the selection of any course of study or of a profession. Plato too compared the physiognomy of men and animals. Throughout the early ages tradition and superstition held this whole field, till in the seventeenth century Dalla Porta of Naples approached the subject from a more scientific standpoint, so far as science went in those days.

In 1772 Lavater of Zurich advanced farther in the way of breaking through tradition, but he largely confused the exact science of Physiognomy with Anatomy of the features, and he never attained to any great general principles.
The great anatomist Camper compared the various races of men and the lower animals, and even seemed distinctly to apprehend the principle of evolution.

At the beginning of this century, Sir Charles Bell's work, which I have already alluded to, appeared. It mainly approached the subject from the point of view of an artist.

But it was only when Darwin appeared in our own day that the facts have been brought to the test of true scientific methods. Perhaps if Darwin had any fault it was that he generalized too much. But some later writers, like the older ones, however, have fallen more or less into the old snare and have made the mistake of supposing that hair-splitting definitions and innumerable classifications bring us any nearer central truth. They speak of "direct expression," "empirical" expression and so on, and thus only blind themselves to their own ignorance.

The truth is that the old distinction
between permanent form of head and face in expression to expression cannot be drawn so sharply as some writers imagine. Physiognomy implies the resultant of the processes of expression on many former occasions. We may if we please study a face with Montegazza from Aesthetic, Ethnological, & Intellectual stand—point; but we must also realize the essential unity and close interweaving of all bodily processes. Years ago Bain in his "Intellectual and Moral Science" pointed out that "the instinctive play of the expression of feelings is the chief evidence of the union of mind and body." He refers to the concurrence of face and respiratory muscles and voice in such an expression, remarking that the muscles of the body generally may be stimulated more or less under any strong feeling, and that probably every organ and viscus is associated more or less with such feelings.
In the infant the form of the body and especially of the head and face combine characteristics of the parents and their race, modified by the various agencies to which the infant has been subjected during and previous to birth. Such is the bearing also of disease and malformation of the mother's body and especially of her parturient passages. The various head findings of the gynaecologists have an effect on the permanent expression in many cases, partly perhaps by changing the shape of the skull itself, these changes persisting, partly also by modifying in some cases the development of the contained cerebral masses or its individual parts. The full and chubby face of the child is so because the soft tissues lack the support of full developed bones (especially the jawbones) and the small neck. Full development of the protuberances of bone can only follow exercise of the muscles which are attached to them. The expressive facial surface awaits plastic the mental processes.
of its owner. After birth, perfect evolution of the facial muscles goes on in the line of their connection with the higher and finer organic systems. The mouth group is thus earlier evolved than the frontal. "So far as we know, no muscle has been developed as a medium of expression alone." (Darwin: Expression, p. 355).

The real secret of the lack of expressive power in the infant lies in the fineness of the cerebral hemispheres. The more important reflex mechanisms seem to exist from birth. The first act of respiration in infancy often is a sneeze, which is a complex coordinate reflex act. Darwin tells us that one infant under fourteen days old did not wink on a start, at 11½ days there was no wink when an empty object was shaken before its face, but there was a real wink when the shaking was combined with a rattling sound. Darwin explains this as due to an inherited instinct of danger; may it not rather have been due to a double stimulus?
to the brain? At any rate such instances evidence early development of unawakened reflex channels.

Much of the education which a child has to undergo consists in bringing coordinate mechanisms already existing into new combinations. As its basis is an aggregation of cells with relations subservient to a function, some new pathways are being, up where the conducting fibers join the cells. Since most of the movements which are performed when we are awake, and that unconsciously or even when our psychical activities are centred on some other object, are really coordinated reflexes, and most of these must first have been learned.

Darwin, on the authority of Sir Henry Holland, states that all such movements as are performed by adults reflexly, such as clearing the throat and blowing the nose have in the child to be quite carefully learned.

During the development of all such
complex coordinate acts there are constant fruitless or imperfect efforts to attain the end in the hands involved, as for example the spontaneous movements of the tongue which precede articulation. There must be a power of constraining or modifying or inhibiting force at work to prevent the escape of nervous energy along the older and simpler and less evolved routes of conductors. For instance Darwin brings forward the putting out and twisting of the tongue in a child learning to write, as due to some sympathy or imitation. But surely it may have another and less obscure meaning. May it not imply that the word forming or word finding centre rebels so to speak at finding its nervous products sent not to a new and round about mechanism (nerves and muscles of arm and hand) and would from adhere to its older medium speech. Before birth in the foetal movements we may have exercise of the principal muscles. We cannot of course, say to what extent.
the facial muscles of expression contract before birth. The restrictions of physical position and slight stimuli to nerve centres (due to irregular or partly obstructed blood flow) can perhaps scarcely account for these movements entirely.

From birth upwards there is development from the language of signs more or less like that of the higher animals to more and more serviceable methods of communication. As the adult and more artificial expression is evolved, the more infantile methods become obsolete.

Experience implies development of character and forms of body from isolation of new coordinated mechanisms by the influence of contact with external objects and forces.

Education teaches the perception and the comprehension of expression by more subtle and aesthetic methods, and in consequence the use of coarser ones is wanted less. Probably we do not appreciate expression by instinct (Darwin). Its comprehension must come with experience and must be acquired. The chief expressions are the same all-
the world over and have the deepest roots. Imitation as one influence in modifying expression may be looked upon as an other form of experience — a bearing upon an individual of a particular environment.

Expression varies in certain particulars with Age, Sex, Temperament, Character, Education and Race. I have already referred to the evolution of the face from childhood to the period of adult life. As old age approaches physical expression is modified by the processes of decay, the nutrition of skin and subcutaneous tissue fails, lines suffer from lessened functional activity, muscles lose tone and waste, and even while intellect remains clear (or in some respects at times may improve), the peripheral communications fail or call forth but feeble responses. The lack of vital life and of power of absorbing new ideas from the environment all tell.

In the female sex the character of Physical Expression is modified by the physical and mental tendencies of women. The body being smaller and more finely
made, the highest centres as a rule less evolved, inhibitory powers being imperfect—expression is mainly strong on the emotional side and there is greater expressivity of expressive features.

Physical temperament largely determines the choice of expressive methods and the rapidity of the movements involved. The personal character the nature of the expression in which the individual is most richly endowed.

Education modifies expression as already stated, evolves the finer methods, and trains the appreciation of expressive indications in others. By increasing the sense of self-importance it may induce the use of expressive methods more or less contrary to me and want. We instinctively make what we think our best points prominent and conceal defects. The woman for example who prides herself upon her eyes will use them far more in expressing her ideas than me and want would lead me to expect.

Race has its effect first in modifying
the original form or cast of features (defined by terms Prognathism, orthognathism, retrognathism &c.); and secondly racial habits and forms of thought become important—bearing upon the expression. Effects kindred to these last follow in the various professions and trades. The effects produced upon brain and muscle too, by various forms of food and drugs are important also, according as they increase or raise the activity of certain nerves and muscles.

De Rulius (see Montegoglio) points out that the more essentially characteristic part of the face is the portion from the middle of the forehead to the middle of the eye covering the orbital space. He describes this as the "essential distinctive character" of the face.

The following are the few incontestable facts as to the bearing of individual facial features upon expression: The forehead when large and wide characterizes the higher races. The nose (especially if accompanied by large supraciliary ridges) denotes lower ranks of intelligence.
The eye viewed as an element in the expression signifies most when large and not too prominent (though apparent size varies much with that of the aperture of the lid). Brightness of the eye depends on influence of the eye muscles and secretion from surfaces. The anatomical relations of the two eyes (near or far apart) have an bearing on physical appearance. The direction of the eye also is of great import. It is pointed out that upturning of the eye is often associate with loss of nerve control over the more voluntary muscles moving the ball.

True colour of the eye is of little importance as our ideas of it are completely biased by tradition and sentiment. Lanata attributes much meaning to the relation of the eyelids.

The face is most beautiful when clear cut and real — well evolved.

The nose is most expressive when, considered from the point of view of evolution, it bears evidence of the greatest advance above the brute creation. Elaborate tables of the
Morphological elements have been drawn up by Topinard.

The mouth has been described as the "expressive centre of feeling and sense". We look upon a mouth as highly evolved when thin, lips, slight, curved, sharp-cut. Much of little value has been written by Laveran and others on Analysis of the mouth, angle of lips with face and with each other. The teeth have little to do with expression, apart from their mere color and regularity, and the degree to which they and the gums are shown depends on the size of the upper jaws and length of lip. We especially admire an oval rounded chins and dislike a receding one as indicating deficient positive characters.

Often though not always the color of hair and eyes of a race are associate. Blurred hair tends to disappear in times of luxuriance of growth and antralite. Hair are involved with the quiescent of nutritive and vigour of the nervous system.
If we judge by the experience of Psychologists the man who will best understand and appreciate and learn from "expression" will be the one who has not too artistic an eye (for that might lead him to observe casual non-essentials), especially not too susceptible to colour, and one with a considerable power of appreciating the mathematical and the regular.

In judging of a face we must remember that beauty largely depends on anatomical considerations, intellectuality depends on features indicating first good natural development and secondly activity of centres (involving the higher mental processes) showing itself on the surface.

Classification of expressions such as these given by Mantegazza can be of little value; they have so many points of contact and overlap to such an extent.

In analyzing the expression of the emotions Darwin studied and compared infants, insane persons, animals, photographs and pictures of other works of art. He also sent to various parts of the world sixteen test queries, and analyzed the answers.
In reducing an expression to its component factors we must (1) localize it (2) find if it be tropic or motor (and if motor find its anatomical elements) (3) find if it is primary or reflex (4) and whether it involves inhibition of spontaneous movements usually present. (5) If tropic see if it be a mode of expression "direct or by coincident development"... Eliminate also from the expression proper the effect of gravity and other simple physical causes which may mask the effects of mental processes. In studying of the face for example, each area and each lateral half separately. Such expressions as only manifest themselves on one side are often the evidences of the higher functions. Asymmetry both in animals and plants is frequently a manifestation of high evolution.

The extent of the sphere of an expression may have to be weighed — the more destitute of organic units (of course) the involved elements are, the more expressive are the movements which follow when these elements
act in concert. Observe also progressive movements of the factors constituting an expression, enquire whether the process be one of progressive diffusion or of involution and concentration. Lastly, we must weed out of our conception all impressions due to externals such as character of clothing worn by the individual and so on.

Simple expression is very rare. Continual modifications are cropping up (e.g., observe relations of respiration to expression, and the manner in which the muscles round the eye violently contract on forcible expiration). The individual's will too, may vastly modify his expression. Such false expressions can only be detected by observing their ill proportions, intermittency, lack of harmony and of vaso-motor and other accompaniments. These too can be suddenly and easily diverted... In fact, we have to apply with all due caution the usual tests for malingering.
In studying the expression of the emotions, the classical work of Charles Darwin must be the
grammar of the subject. In most parts of the work he has given us there all the most essential
points. He does not describe the permanent
form of the features, as expression of character
but confines himself to the emotions. (No sharp
definition holds absolutely here; Herbert Spencer
for example makes a distinction between
emotion and sensation — the latter being
generated, he says, in our corporeal frame-
work; he classifies both as feeling.)

Darwin sets forth three great principles on
being at the root of the movements of
Expression. 1) The principle of “serviceable
associate habits”, which implies that
certain complex expressions being useful
in certain conditions tend to reproduce
themselves on occurrence of the same
conditions even if of no avail. Also
if these be partially suppressed, the
least controlled muscles tend to persist
in action.

2) The principle of “Antithesis” — one
particular state of mind induces one particular act, and when the nervous system is in an appropriate state, directly contrary movements tend to follow. It is well to remember that antithesis may partly involve the will.

3. Principle that experience acts may follow from the nervous system's constitution independent from the force of the will and so far of habit, for example the sweating and change of colour on pain, fear and grief. When the brain is strongly excited nerve force is forced in excess and transmitted, independently of will and habit, in the line of connections of nerve cells where anatomical relations make such transmission easy. Scratching the head in a difficulty may be an example of this. Darwin also cites trembling of the muscles in excitement in the adult.

Perhaps not an overspill of nerve force as Darwin points out effect of an increased muscular excitement—blood temperature rising with brain action.

Herbert Spencer tells us that at any moment the existing quantity of liberated nerve force which produces feeling must expend itself in one direction. An unutilized overflow of nerve force takes habitual routes.
and when hindered there then the next habitual line of communication.

It is very difficult to find a perfectly neutral face. One writer suggests that we should seek for the nearest approach to it amongst the more stoic passagers in a public conveyance. But sleep, the normal condition of unconsciousness, is evidenced by lessened susceptibility to external influences and lessened resistance to the action of gravity upon the body. Voluntary movements are in abeyance and the involuntary are modified. The relations of certain muscles are modified. The orbicularis palpebrarum, for example, gets full play. The typical attitude of repose is one in which the arms and legs are drawn up, the elbows nest upon the knees, and the head slightly flexed upon the palms of the hands. The essential in this position is to secure the maximum relaxation of muscles. Thus the character of this expression are mainly negative. Acting implies the very reverse in all the points mentioned. At the beginning of violent exertion respiration is so far interfered
with. We hold our breath at such a time so as to give a solid support to our muscles. In fatigue the expression indications are lessened force of movements, and these reduced to the smallest number possible. Gravity gets free play, and it is largely involved in the positions assumed in fatigue. Exhaustion—a major form of fatigue—implies that the expressions mentioned above are much exaggerated. Speech too is languid, the facial muscles are more involved, respirations drag wearily, and are accompanied with weary sighs and yawning. Such sighs may be contrasted with those of long continued attention, in which we so to speak forget to breathe and make up by deep respirations. (See Gratiot.)

The physical side of the emotion of surprise finds itself in an erect bearing, the flush of physical energy often being accompanied with laughter.

In irritability the reflexes are exaggerated and stimuli often produce results which are directly the reverse of what they would have been in health. Should such conditions persist-
We instinctively associate a problem and thought but really a problem implies thought meeting obstacles or difficulty.
they bring us within the sphere of Pathology. The prolonged irritable results in trophic changes. Determination seems to cause a nervous impulse which braces every expressive muscle to be ready at call. The closed mouth and set lips are due to the desire that nothing should interfere with some delicate co-ordinate movement in progress, not even breathing. Perhaps also by the closed mouth air is retained in the chest and the circulation is impeded.

Thought implies (when pure and simple) a contraction of certain of the facial muscles and a relaxation of others. The more important of the former are connected with the eye. When thought becomes profound a negative stupid expression follows. Contraction of the trunk may be mute another evidence of concentrated attention. There are also often certain sympathetic rhythmic movements, especially connected with the limbs. During the progress of the intellectual process there may be stroking of the face in regular passing of the hand through the hair. At times the forehead is percussed with the closed fist to "awaken brain action by a peripheral stimulus." But when the mental product is
complete and comes to be given forth to the world by speech or even by writing, the movements of limbs and trunk tend more to mark the progress and subdivisions and accentuations of the argument.

From the side of expression, there is a progressive merging of the signs of attention into those of surprise, astonishment, and latter on of actual alarm and fear. We desire quickly to see and hear all the elements of the circumstance which has taken our attention, we open our eyes widely and quickly, raising the eyebrows to help the action. The open gaping mouth allures of quieter breathing & so less impeded hearing. Later on there is often protrusion of the lips and a long whistle. This last seems to me to be an accidental accompaniment. The breath has been held deeply, and we desire to let it escape gradually. The natural outlet with mouth open in such circumstances will be through the mouth—the lips being contracted just as in whistling.

The hands are usually raised towards the object which has excited the emotion. Darwin also alludes to the placing of the hand upon
the head in these circumstances. Perhaps such an attitude is more common in alarm mingled with surprise. It may imply an instinctive desire to ward off impending injury to the head. The expressions just described are the direct antitheses of those of indifference, on the other side of which again we have the more positive evidences of resignation and then of covering submission.

In grief the inner angles of the eyebrows rise and the corners of the mouth fall. The movements of the eyebrows are due to contraction of the Orbicularis, Corrugator Supercilii, Pyramidalis Nasii, and central portions of the Occipito-frontalis. The resulting furrows are as below:—

[Diagram of furrows in eyebrows]

Darwin explains the obliquity of the eyebrows in grief as depending on the fact that the Pyramidalis Nasii muscle is less under control of the will than the other muscles round the eye, so that when a struggle between opposing
fibres takes place it yields first. Similarly he thinks the depressor anguli oris is less under voluntary control than the other muscles in the neighbourhood of the mouth, so that (when the attitude of grief is assumed or just before bursting into tears) it acts strongly as it has been wont to do when the individual was a child. In childhood this particular muscle has a value in the way of maintaining the square shape of the mouth in screaming. Without its aid the muscles of the upper lip which afford support to those of the orbit would pull upon the aperture too strongly.

It should be mentioned that in grief in its earlier stages the colour of the skin changes from blueness of the circulation, the eyelids drop, the head hangs in the extended chest—gravity tells on the lower jaw and cheeks so that the face “pales & lengthens.”

At the other extreme of the manifestation of grief, for example when an infant screams with moderately severe pain, it firmly closes its eyes and frozen, opens its mouth so that it assumes the above mentioned square form, inspired pharmacologically and cerebrally.
expression of anger or even of rage together with misery is produced. When the
mouth is firmly set close, and the brows lowered, the expression becomes one of determination or even when strongly marked of obstinacy and sullenness. Often this is accompanied with a set attitude of the body, the arms crossed upon the breast even in contorted peoples.

When the lips are protruded in a tubular form, the brows at the same time being a "snout" is produced. Darwin tells us that this is a common expression also among savages. Monkeys also screw.

Montaigne groups the expressions of hatred in three categories, elementary movements of shrinking or repugnance, potential or actual threats, and different vasomotor and sympathetic phenomena.

The very varied symptoms of rage include red or purple face, full veins, even pillars and ir-regular hearts act open, nostrils quivering, the teeth clenched. The arms may be raised to strike. Young children "roll on their backs or bellies scream, kick, scratch or bite." At times the muscles tremble and the hair bristle and the
eyes glare from beneath the lowering brows.

Deceit and defiance have largely the same
symptoms, but it may be that the canine tooth on
one side is exposed—the face as a whole being
turned upwards and half averted. Montegnazzio
thinks the exposed canine signifies triumph—
meet an adversary. Certainly an antecedent—
smile signifies the prospect of such a triumph.

As feelings of disgust are largely awakened
by articles of food which are distasteful, naturally
the main symptoms of this feeling arise in the
neighbourhood of the mouth. When disgust is
excessive, movements are often made like those
of early vomiting—a proof (according to Darwin)
that our early ancestors had the power of voluntarily
rejecting the food.

In some cases of extreme disgust, the upper lip
may be used as a valve to close the nostril even
though we are in no way conscious of any con-
nection between the person with whom we
are dealing and dirt.

Montegnazzio says: "children, savages, and the
pariahs of our society put out their tongue and
cling its whole length as a sign of contempt and
aversion."
Jealousy, envy, and deceit are to be regarded as mixed emotions. They may be detected at very early ages. Darwin discovered, in a child of one or two years, a little fault, by noticing the unnaturally bright eye and odd affected manner.

Intense joy may be evidenced by dancing, hand-clapping, and laughter. Montagu gives all the connections between pleasurable emotions and their external evidence, modified according to their different shades.

Laughter may be a more safe value for superficial energy of feeling, and in such a case it may alternate with weeping. Laughter largely involves the seventh pair of nerves, and when awakened by some thing ludicrous is no longer properly speaking a reflex act.

Laughter largely involves the larger zygomatic muscles and more distantly those of the eye and the upper lip. Wrinkles appear under the eyes, especially in the young; at the corners of the eyes and on the bridge of the nose in the older. The nazo labial line forms early. The mental "habit" has much to do with the character of our individual laughter.
as has been already mentioned personal pride modifies expression. Those who are conscious of possessing beautiful teeth laugh thus to allow them to advantage, others, for example, to laugh as to hide (as far as may be) their wrinkles. The sparkling eye in laughter is partly due to increased moisture, partly to increased tension of the ball. There is rapid vibration of the lower jaw the respiratory muscles and clitoris. In high spirits and cheerfulness the angles of the mouth tend to retract, even if there be no smile. In young children a laugh is mainly an evidence of simple glee, the laugh of derision is unknown to them.

Love and tender feelings mainly are evidenced by movements expressive of the desire to touch the person beloved. Darwin gives as examples: 0) this the instinctive tendency to kiss or rub noses with or blow upon the skin of the beloved. Another writer alludes to the unconscious imitation of the loved one, eventually producing at times an actual resemblance. Montagnana describes a child who licked the objects of affection like a dog.
Sympathy is a distinct emotion, and frequently implies the production of impulses stimulating the lacrimal glands. Sympathy with self and self-consciousness increase with education, and largely refer to the opinions of others. No animal blush, nor do idiots or very young children. On the other hand, the blind do blush, only another evidence that the vasomotor change is a result of intelligent enmity, conscious or unconscious upon the part in question. Dr. Henry Holland quoted by Darwin showed that attention directed to any part produces true physical changes in it, whether the part be a gland or muscle voluntary or involuntary or indeed any other tissue.

So most of the above described forms of emotional expression are superadded nonessential gestures which materially aid them. They and every graceful motion of the body are peculiarly subject to the laws of racial inheritance. If nothing else, they may give rhythm and smoothness to finer mechanisms like the massive movements of the flywheel to the more essential working of the steam-engine.
The description of expressions in the previous pages refers to the healthy organism. In any departure from the arbitrarily fixed standard which we call health the expressions are modified. The consciousness of illness is itself enough to alter an individual’s expression and the anatomical and physiological factors directly or indirectly involved in the morbid state decide the characteristic evidence of the condition.

The features of a sensation modified by disease vary much with the locality whence the primary impulse came. The locality and degree of a pain for example cause wide differences in its external evidence. The writers on expression of the emotions give too generalized a description of evidences of painful sensations. In treatment of disease accurate information as to the seat of painful sensations is most essential. Yet our knowledge as to the physiology of this most important clinical symptom is still most uncertain. For example Landor’s tells us “that the centre for the sensation of pain has not yet been defined, probably it is very
diffuse. Munkk is inclined to associate such sensations with areas corresponding to the motor areas on the cerebral surface, only another evidence of the uncertainty which exists in such matters.

The term 'Physical Expression' of a diseased state only includes the visible attitudes and the movements which result from the disease and its influences upon the individual sufferer's mind. It has nothing to do with signs and symptoms as such. The more nearly the nervous system is involved the more likely are expressive signs to follow. 'As a rule when intellect is concerned expression is stronger—ideas are rushed and tend to become actualities, active impulses being set up apart from ordinary motives of the will.' The vital factors of organic life may be very closely involved in a morbid state, hence, without expressional evidences. Perhaps in our ordinary method of caretaking we are apt to exhaust our powers of attention to external expression of diseased states, by too long inquiry as to
family history and the like. Perhaps too
the medical student has not, or does not
take sufficient opportunities of studying
the form and expression of the healthy
living and moving body.
The faculty instinctively forms opinions of
the health or of the beauty of individuals,
and mainly from observing whether or
not the person to whom attention is directed
exhibits prompt reaction of muscles, more
or less good oxygenation of blood and
subcutaneous nutrition.
The faces of the diseased temperaments,
and of the various cachexias may be
taken as corresponding to the healthy
physiognomonic types.
The strong man of active life is usually
the least sensitive, and his diseases
thus show a great contrast in this
particular to those of women and
children especially.
In children we have special difficulties
in judging from the expressive indications
on account of the excitability and mobility
of the nervous system at all times.
and especially during illness. The organ which exhibits the most prominent symptoms is frequently not the one which is the primarily diseased source. The mobility of the nervous system becomes very intense in acute illness in the child. In chronic affections on the other hand in children there is frequently sub-normal sensibility - a fruitful source of mistakes. The sleepy content of the healthy child is lost in illness, and according to the seat of the disease the facial lines described by Fabricius will become conspicuous (there are the oral-symphatic associated with the nervous system, the nasal related to abdominal affections and the labial connected with respiratory disorder). As a whole this nervous mobility and sensitiveness of children makes the postures and language of the signs of disease very significant in their case.

In its external evidences simple malnutrition is shown by lowered trophic
and dilution and by lessened motility capability. In some instances it causes irritability which may amount to chronic vomiting. The expression of a diseased state usually is very far-reaching and comprehensive when it depends on a fault in the fundamental chemistry of the body, for example such as results in the introduction into the blood of morbid material. The symptoms of peculiar self-consciousness and irritability in the case of a child suffering from the absorption of decomposed products from a loaded intestine are most characteristically varied. It is also so frequently when a central vital organ is involved, though far from invariably. Expression in disease may also be due to nature's attempt to perform her ordinary duties as modified by the disability in which the disease consists. The modification may actually be in the way of an undue mastery gained by the healthy parts which remain, or for example in the case of a
paralytic talipes where the patient has to walk on the heel or the side of the foot.

In obtaining an impression from our patient's face, we are probably first struck by the same features as would impress an untrained individual—nervous muscular mobility, blood oxygenation and subcutaneous nutrition. Probably next we notice color changes and then well known pathognomonic manifestations of disease, if any be present. We then instinctively apply what we have been told of our patient's symptoms already to get at the true locality of the disease. Of course if the expressive signs of a disease be very marked and characteristic they may long hold upon us before anything else whatever. And this will be more frequently so when the observer's mind is curiously anxious to discover disease if has a strong natural faculty for analysis, or has had a wide professional training.

In the table on the following page
I have tried to group the expressive signs which attract one's attention in the case of me in two disordered states taken at random, and looked at from this point of view. The more local affections may be richer in expressive evidences, if on any account the attention of the sufferer be strongly attracted to the part involved. Obviously the import of such signs is very unequal. In one case they may include almost every indication of value which the disease affords, in another external expression may be inappreciable. In any case every symptom has to be brought to the test and corrected by physical and chemical methods.

In treating disease knowing the power of analysis of the expression of mental emotion is of our importance which our confidence in modern methods of precision is very apt to make us forget. Each patient is a center of emotions being apart from the pathological processes which are going on in his body, and
<table>
<thead>
<tr>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal expression, properly in the individual, modified by his own emotions as to his illness.</td>
<td>and especially modified by reflex nervous impressions from the seat of disease — especially in example here.</td>
<td>modified also by changes in the blood condition if the affection be otherwise than purely local.</td>
<td>Changes in local bodily form and colour.</td>
</tr>
<tr>
<td>?</td>
<td>expression of pain often evidenced by movements as described in column 6.</td>
<td>feverish flush or hectic wasted look</td>
<td>swelling and redness.</td>
</tr>
<tr>
<td>?</td>
<td>accompanied by expression of pain.</td>
<td>feverish flush or look of one in &quot;shock.&quot;</td>
<td>abdominal swelling or boarded look. The muscles on grand</td>
</tr>
<tr>
<td>?</td>
<td>occasionally commence twitchings or spasms.</td>
<td>includes contents of columns I &amp; IV, skin, and with retraction.</td>
<td></td>
</tr>
<tr>
<td>?</td>
<td>expression of wasting + fatigue from continued effort or strain, modified by pain.</td>
<td>see column I.</td>
<td>flat hip from wasted muscle.</td>
</tr>
<tr>
<td>?</td>
<td>usually startled or disturbed re appearance of symptoms.</td>
<td>stupid look</td>
<td>—</td>
</tr>
<tr>
<td>?</td>
<td>pale and anxious</td>
<td>immovability of nostrils and other signs of asphyxia.</td>
<td>Salts in cyanosis. —</td>
</tr>
<tr>
<td>Symptomatology</td>
<td>Diagnosis</td>
<td>Treatment</td>
<td></td>
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<td>----------------</td>
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<tr>
<td>Hypertension</td>
<td>Asthma</td>
<td>Medication</td>
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<tr>
<td>Congenital Heart Disease</td>
<td>Allergic Reactions</td>
<td>Medication</td>
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</tr>
<tr>
<td>Rickets</td>
<td>Arthritis</td>
<td>Physical Therapy</td>
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<td></td>
<td>Rheumatoid Arthritis</td>
<td>Medication</td>
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<td></td>
<td>Osteoarthritis</td>
<td>Medication</td>
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<td></td>
<td>Carpal Tunnel Syndrome</td>
<td>Surgical</td>
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<td>Physical Therapy</td>
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<td>Medication</td>
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<tr>
<td></td>
<td></td>
<td>Lifestyle Changes</td>
<td></td>
</tr>
</tbody>
</table>

Note: The table above represents a summary of symptomatology, diagnosis, and treatment for various conditions. Each condition is associated with specific symptoms, which can be managed through various treatments, including medication, physical therapy, and lifestyle changes.
his feelings and state of mind as to his illness have an import in modifying the success of our therapeutic methods which we often overlook. Everyone knows the mental tendencies which follow in the train of special diseases—the hopeful phthisical patient, the persevering sufferer from cataract, determined to make the best of his eyes, the grand dame general paralytic, or again the amaurotic who has given up trying to see, the despairing sufferer from specific disease, the dyspeptic whose condition is kept up by worries from without or decomposition products from within. In most of these cases expression should at least be a guide to an element in the treatment. In those who frequently seek advice for very indefinite symptoms, the expression of flabby laziness may for example be the only indication towards curative measures.

Again there are persons who seek medical help with confident expectation of benefit, and there are others who in spite of
all professions to the contrary are thorough sceptics, and any study of expression will enable us to deal with each as is most suitable. At present medical inquiry all goes in the direction of evolution of methods of precision. We search into all the requisites of bodily action and structure, but until such investigations lead us up to the discovery of the means to lay our fingers upon absolute final causes of disease such methods must be often doomed to failure. The specialist is the product of methods of precision and in uncomplicated simple cases and in accessible regions his results are excellent. But the final cause of many diseases and systemic lies far back in the history of the individual and our treatment must lie in general or collateral issues. Except in children's affections and in surgery, in most of the cases we have to deal with the environment of habit and history which surrounds the diseased condition is at least as important as the disease. Perhaps the old general practitioners at his
remoteness of the patient from childhood & country life.
The principal grievance that I have against the doctors is that they neglect the real problem, which is to seize the unity of the individual who claims their care. Their methods of investigation are too rudimentary.
A doctor who does not read you to the bottom is ignorant of essentials. Is me the ideal doctor would be a man imbued with profound knowledge of life and of the soul, intuitively divining any suffering or any disorder of whatever kind, and restoring peace by his mere presence. Such a doctor is possible but the greater number of them lack the higher and inner life, they have nothing of the transcendent labyneters of nature; they seem to me superficial, prosaic, destitute of intuition and sympathy. The model doctor should be: a genius, a saint, and a man of God.}

[signature]