

## **The face as an index to disease / by Judson S. Bury.**

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# THE FACE AS AN INDEX TO DISEASE.

BY

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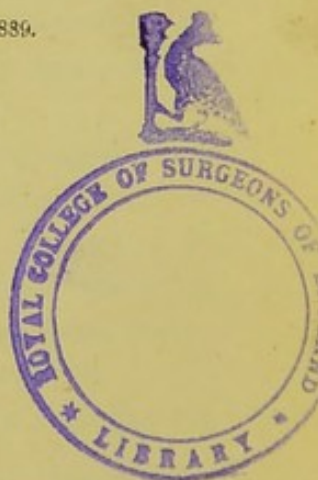
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## THE FACE AS AN INDEX TO DISEASE.\*

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IN the early days of medical science the doctrine of physiognomy was considered of great importance ; now-a-days, perhaps, there is a tendency to underrate its value, or, at least, to trust too much to other methods of investigation. Thus, while we always apply the stethoscope to the chest, and often examine the patient with the ophthalmoscope and laryngoscope, or take a sphygmogram of the pulse, we sometimes forget to calmly inspect and critically discuss the features, attitude, and gait of our patients. How seldom, for example, in clinical records do we find accurate statements with regard to the colour or expression of the face, or even a satisfactory description of any peculiarities of walking ; yet in the account of the physical condition of the lungs we may read details of almost every intercostal space. No doubt the difficulties of description largely account for this omission, for most of us, when we look at a patient, receive an impression, which, unconsciously, has a decided influence on our diagnosis and prognosis, or which sometimes even enables us to name the disease at once, though we could not state the different steps by which our opinion was arrived at. Just in the same way we often instinctively judge of the character of a stranger by the first glance at his face, without being able to give reasons for our estimation. Frequently, indeed, we receive an impression from his features which influences our conduct towards him, while we are quite unaware that any bias has entered into our judgment.

My object, then, in bringing before you one important portion of the subject of physiognomy, namely, the study of the face in disease, is to plead for a more careful examination and analysis of its features, not only that we may thereby increase our powers of discrimination between slight variations, but that we may be in a position, having also subjected the patient to a thorough physical examination, to form the best possible judgment of the total bearings of the case.

My observations on the subject are, I fear, of a very common-place nature, but they may possibly serve to illustrate the interest and importance of this field of enquiry, and will, I trust, be successful in drawing forth your criticism. I propose, then, to give a few examples, taken from general medicine, of changes in the size, shape, and colour of the face, and to conclude with a few remarks on its expression.

*Size and Shape.*—Increase in size may be due either to enlargement

\* Read at a meeting of the Lancashire and Cheshire Branch, held at Blackburn, November 6th.



of the bony framework or to thickening of the soft tissues. The former cause is predominant in acromegaly, a disease just now attracting a good deal of attention. In this affection the extremities are greatly hypertrophied, the face is elongated vertically, and certain parts, especially the nose and lower jaw, become enormously increased in size. Of enlargements due to infiltration or thickening of the soft parts, Bright's disease and myxœdema are familiar examples. In the latter disease, peculiar glistening œdematous pear-shaped swellings are often seen below the eyes (see Fig. 1.). Other localised swellings are also of diagnostic importance, such as the slight puffiness under the eyes in whooping-cough, the thickened congested lips in heart disease, or the swollen lower lip of emphysema.

Diminution in volume is a marked feature of malignant disease of the abdomen and of advanced phthisis in the former case the sunken



FIG. 1.

face has an earthy or yellowish tinge, while the face of advanced phthisis is distinguished by hectic flush and by working of the *alæ nasi*. In moderate degrees of phthisis the face is often pale, but the wasting has, I believe, a characteristic distribution, and the disease may be especially recognised by a shallow depression on each side of the face, running along the upper margin of the lower jaw.

A somewhat sudden apparent diminution in size is often observed in tubercular meningitis, even shortly after the commencement of the illness, —the mother may remark “how small the child’s face has gone.” The appearance is, however, rather the result of change in form and expression, owing to relaxation of the facial muscles. The same remark applies to the peculiar pinched face of intus-susception with its half-closed, drowsy-looking eyes. The shape of the face in rickets, in cretinism, and in hereditary syphilis is so typical that these diseases may be recognised at a glance.



Of differences in size between the two sides of the face, the affection known as "unilateral atrophy" is the most remarkable; in this disease the skin, connective tissue, and fat are thinned and wasted, while the muscles are spared; the bones too, if the atrophy begins in early life, may be arrested in their development, and then the two halves of the face look as if they belonged to different individuals, one side having the fulness of youth, the other the wrinkles of old age. Slighter degrees of another variety of hemiatrophy are also of importance to observe in connection with defects in the opposite hemisphere, and it is interesting to note that the atrophy has often a crossed distribution, thus—if some of the convolutions on the left side of the brain are wasted or wanting, the left parietal bone may feel flatter than the right, and the left side of the forehead shore off more than the right side, but below the eyes the arrested growth will affect the right cheek and the right limbs. Of this

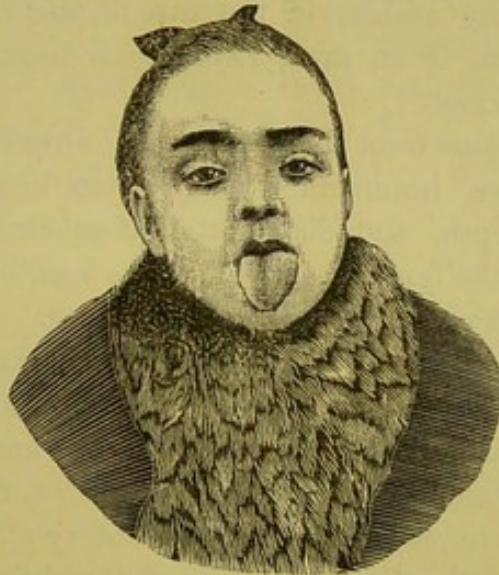


FIG. 2.

condition I have seen several examples, and in one case (see Fig. 2) the right half of the tongue has suffered more than the right limbs. Slighter degrees of this asymmetry are by no means uncommon; indeed, it is, perhaps, rare to see perfect equality between the two sides of the face, and it may be that there is a corresponding asymmetry between the cerebral motor areas.

Alterations in the size of the pupils and palpebral fissures are often of great aid in diagnosis. For example, narrowing of the palpebral fissure on one side with contraction of the corresponding pupil points to a lesion of sympathetic nerve fibres in some part of their course from the medullary centres through the cervical portion of the spinal cord, along the rami communicantes of the eighth cervical and first dorsal nerves, and upwards in the cervical sympathetic till they reach the muscles of the eye. Now this symptom, namely, sinking in of the eye-



ball, with approximation of the eyelids and a small pupil, is most frequently observed in locomotor ataxy, in aneurism of the thoracic aorta or other mediastinal tumour, and in injury or disease of the cervical portion of the spinal cord, and a diagnosis between these conditions may often be instantly made by a general inspection of the body; for in the case of aneurism we should probably at once notice some pulsation of the upper part of the chest wall; and in affections of the cervical cord, muscular atrophy in the upper limbs, and the position of the hands and the spastic attitude of the feet would attract our attention; while in locomotor ataxy there would be an absence of all these signs, but the pupils would not react to light, while in the two other affections this reflex would probably be retained. Or, having observed the eye changes, the diagnosis might in many cases be made by an appeal to the knee-jerks, which, absent in locomotor ataxy, would be increased in cervical disease, and probably normal in the case of aneurism or mediastinal tumour. This, then, is an example of rapid diagnosis, based on the physiognomy of disease.

*Colour.*—Deviations from the natural rosy somewhat diffused tint of the healthy face are innumerable, and often baffle description, yet changes in kind, depth, and distribution of colour in association with other conditions of the features furnish to the keen observer a picture of the greatest diagnostic and prognostic importance. Pallor is not always a sign of anæmia, while red weather-stained cheeks may distract our attention from bloodless lips and palpebral conjunctiva. In the pallid face of large white kidney the lips usually show some degree of redness, and even if distinct œdema of the face be absent the disease may be distinguished from simple anæmia by the watery glistening appearance of the conjunctiva. Further, the colour of the simple anæmia of young women is generally different from that of pernicious anæmia, the whiteness of the former is commonly more marked, and if not a pure white the blended tint is often greenish, while in pernicious anæmia a yellowish tinge is characteristic, which at the first glance appears to affect also the conjunctiva, and, indeed, has sometimes led a careless observer to mistake the case for one of jaundice; but a careful examination shows that this in many cases is due to the shining through of the subconjunctival fat. The face of pernicious anæmia closely resembles in colour that of malignant disease of the abdomen, and particularly of cancer at the cardiac end of the stomach; but in the latter case the eyes are much sunk, the orbital ridges stand out, and there are lines of pain and depression around the mouth.

The pallor of aortic regurgitation, especially noticeable on the forehead, is distinguished from other pallors by its association with extensive visible arterial pulsation; this is also seen in the neck in anæmia and in



other conditions, but in aortic regurgitation not only is the whole length of the external carotid seen to pulsate, but also the temporal and often the facial artery.

Of increase in redness mitral stenosis is a common example. The colour in girls is often a bright red; in adults the face may be pallid, and have a tired and worn expression, in these respects resembling the face of phthisis; but small varicose venules, absent in the latter, are usually present in mitral stenosis. When there is regurgitation through the mitral orifice the red is mixed with blue, and other causes of dilatation of the right side of the heart, such as emphysema or capillary bronchitis, are also characterised by purplish cheeks. The bluish element reaches its maximum in congenital pulmonary stenosis, where the conjunctiva are of a light claret colour, the lips blackish-blue, and the nose and cheeks of a deep purplish hue.

With an accurate knowledge of all the other features of these purplish faces, I believe it would be possible to discriminate between the diseases on which they depend; thus, alike as are the faces of capillary bronchitis and mitral regurgitation, the ground tint of the former is often paler than that of the latter, and, further, while the patient with severe mitral regurgitation is always propped up in bed, the patient suffering from capillary bronchitis may often be seen lying flat on the back.

I have observed in several cases of aortic regurgitation, that when the left ventricle fails and allows of regurgitation through the mitral orifice, with its progressively fatal backward effects, the congestion of the face never reaches that of primary mitral regurgitation. In contrast to this, it is of great importance to observe the extreme pallor which sometimes comes on in cases of old valvular heart disease, and which usually signifies, I believe, the supervention of large ulcerating vegetations.\*

Numerous other instances of colour changes might be mentioned, such as the dusky redness of the forehead and ears in meningitis, the varying tints in simple and malignant jaundice, or the variations to be observed in the different stages of pericarditis; but I must pass on to facial changes produced by muscular action, the chief element in expression.

*Expression.*—The activity of the many delicate facial muscles may be increased or diminished; there may be a sudden twitch or clonic spasm affecting certain muscles, or the contraction may be slower and more prolonged, and then, if often repeated, and affecting the same muscle or group of muscles, permanent folds and wrinkles will be left, stamping the face with a particular aspect, just as an oft-repeated emotion, such as laughter or grief, eventually leads to a lasting expression of either sorrow or mirth. Difficult as it is to explain why different facial muscles are brought into play in different diseases or emotions, the resulting lines seen

\* I owe this observation to a suggestion once made to me by my friend Dr. Thomas Barlow.



on the face at rest give us the feeling that a certain state of mind is before us, or furnish us with information as to the condition of the nervous system, or of the organs over which it presides. I need only remind you of the look of self-satisfaction in commencing paralysis of the insane, of the malignant look in mania, of the hopelessness in faces where there is melancholia and a disposition to suicide, of the suspicious look of the alcoholic, and of the mischievous face sometimes seen in a child who is subject to fits. In insanity and in hysteria every possible passion or emotion may be imitated, so well illustrated in the photographs kindly lent by Mr. Ley, but I am only concerned now to make a brief reference to changes in expression produced by other than mental diseases. And first, with regard to the importance of *movements*. The working of the *alæ nasi* so typical of pneumonia is a sign, as Sir Wm. Jenner used to put it, "of difficulty of entrance of air into the tissue of the lung." Twitching of some of the lower facial muscles in chronic Bright's disease is often a forerunner of general uræmic convulsions, and in acute rheumatism may suggest the onset of pericarditis; thus in the out-patient room the other day a young man came with swollen wrists and fingers; his face was pallid and expressed great distress, and we observed choreic-like flickerings of the upper lip muscles. It was obvious that he had acute rheumatism, and the twitching seen in the face suggested pericarditis; and when he was stripped, loud double pericardial friction was undoubtedly present.

In unilateral convulsions dependant on a lesion in the motor portion of the cerebral cortex, how important it is to observe the initial spasm, for this is our chief guide to the position of the lesion, and enables the surgeon to fix on a site for operation. Sometimes this "signal" spasm begins in the face, as in a case reported by Berkeley, where persistent clonic spasms, chiefly of the zygomatic muscles, were found to be due to a small focus of superficial softening in the ascending frontal convolution opposite the inferior frontal sulcus. Also in a remarkable case which occurred in the practice of Dr. Thomson,\* of Oldham, a marked deviation of the head and eyes to the right was almost completely cured by the removal of a spiculum of bone which had projected into the cortex of the brain in the neighbourhood of the angular gyrus. A short time since I saw a young child under the care of my colleague, Dr. Maccall, at the Clinical Hospital, whose head was drawn back, and the upper eyelids strongly retracted, and there were very peculiar pouting movements of the lips (see Fig. 3); the case was diagnosed as one of purulent meningitis, and at the post-mortem examination, in addition to basal meningitis, the ventricles were found to be distended with pus, and it is possible that

\* *Brain*, Vol. VI., 1883, p. 99.



the irritating effects of this outward pressure were predominant on the centres for the upper eyelids and the lips, namely, the lowest portion of the ascending frontal convolution, and the inferior parietal lobule.

In hysterical hemiplegia the face escapes paralysis, but is sometimes dragged to one side by a peculiar spasm of its muscles, which also affects the tongue, and curls its point round to the contracted side of the face. A knowledge of this facies enabled Charcot to recognise a representation of it in a piece of carving on a church in Venice.

Let us now consider some of the more fixed expressions produced by disease; the fixation of the features may be only of short duration, as when the result of a sudden attack of pain, or permanent lines or furrows may form owing to the constant overaction of certain muscles.

The expression of pain is a complex one; it is the result not only of

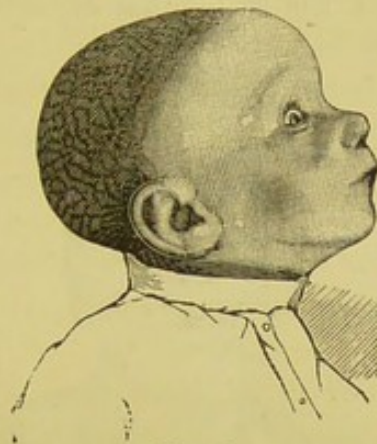


FIG. 3.

pain *per se*, but of the effect on the particular tissue injured, and it may be that to give a full explanation of the various associations of muscles we should have to consider the hereditary transmission, whether from man or monkey, of certain muscular actions which were formerly used for different, but allied purposes. Thus I have frequently noticed that *gastric pain* is represented by a curved furrow which starts just above the wing of the nose, and makes a sharp curve outwards and downwards, towards, but at some distance from, the angle of the mouth; when well developed it uncovers the canine tooth, and closely resembles the sneering or scornful expression. As Darwin remarks, a dog when pretending to fight, often drags up the lip on one side only, and he considers that the expression in man reveals his animal descent, our semi-human progenitors uncovering their canine teeth when preparing to fight and tear their enemies. Whether the somewhat similar expression in gastric disturbance has any such remote etiology—the pains of hunger leading our progenitors to uncover their canines before springing on their prey—is difficult to say, and one can only regret the unsolvable nature of the problem.



These gastric lines are seen in typhoid fever, and at a late period of a severe case may be extremely marked, producing a typical sardonic grin. When sudden pain is produced, as by pressure over the cæcum in a case of typhlitis, the retraction of the upper lip is accompanied by a descent of the diaphragm and fixation of the muscles of the abdominal wall—the movement is evidently one of protection.

In *thoracic pain*, as, for example, the sudden stabbing pain of pleurisy, a quick, shallow inspiration is taken by means of the intercostal muscles, the diaphragmatic movement being in abeyance, and the chest is temporarily fixed; the muscles of the face, too, participate in the upward movement; the mouth is slightly opened, the nostrils are dilated, and the eyebrows often raised. This opening out of all the features is also characteristic of the more chronic forms of thoracic distress; whereas, in the various affections of the abdominal organs there is a tendency to



FIG. 4.

contraction of the features, the lips are often compressed, the angles of the mouth drawn down, and the face may express irritability, discontent, or profound depression, forming a marked contrast to the bright cheeks and sparkling, hopeful-looking eyes sometimes seen in advanced disease of the lungs.

An expression of marked *anxiety* is typically seen during a paroxysm of asthma, and is characteristic of the faces of many cases of cardiac dyspnœa. The agony of *terror* is strikingly exhibited by sufferers from œdema of the glottis, or during an attack of angina pectoris. It is also, curiously enough, imitated, the subjective feeling of fear being absent, in cases of exophthalmic goitre, and in those rare cases of ocular nuclear paralysis where the superior recti are solely or mainly affected. Thus, in a patient of Dr. Morgan's (see Fig. 4), when she attempted to look



upwards, the upper eyelids were retracted, but the eyeballs remained with their axes fixed in a downward direction, and this position, together with the wrinkled forehead, widened nostrils and half-open mouth, produced an expression which reminded one very much of the picture of terror in Charles Bell's book on the anatomy of expression.

A look of *astonishment* may also be permanently stamped on the countenance as a result of disease and quite apart from any corresponding emotion experienced by the patient. Thus in some cases of paralysis agitans, as in a woman now under observation, the eyebrows are raised, and the forehead is marked by deep, transverse wrinkles, and the mouth remains open; the dull look of the eyes and the meaningless aspect of the lower part of the face render the imitation an imperfect one; yet you will see in the picture by Richet\* that the resemblance is sometimes striking. Also in that form of torticollis in which the head is jerked backwards, the forehead is transversely wrinkled, and the eyebrows are raised because of the physiological association between the frontales and the muscles that retract the head. The same expression is also temporarily imitated by a stupidly drunken person, who tries to overcome the drooping of his eyelids by raising his eyebrows and contracting his forehead, as is well represented in one of Hogarth's drawings.

*Absence of expression* is illustrated by facial paralysis where the dropped lower eyelid is the first thing to catch the doctor's eye as the patient enters his consulting room, and, as Dr. Ross has pointed out to me, the line of the lower eyelid is rendered still more conspicuous by a layer of glistening fluid which lies along its slightly everted edge. In many forms of peripheral neuritis, too, particularly in that produced by carbonic oxide poisoning, as in a patient at present under the care of Dr. Ross, the facial muscles are relaxed and the surface is smooth as if it had been ironed. In scleroderma affecting the face, the wrinkles become obliterated, and many other instances of loss of expression might be mentioned.

The examples I have given you, imperfect though the selection be, perhaps sufficiently illustrate the information to be derived from a study of physiognomy, and indicate that to be able to make a quick and accurate diagnosis by inspection requires not only a wide experience and an eye trained to observe the minutest details, but a most accurate knowledge of physiological and pathological processes. It is perhaps scarcely necessary to insist on the danger of trusting to diagnosis by the physiognomy alone, for however clever a man may be, he would be foolish and unscientific if he neglected to make a most careful examination of every organ and function of the body. In many cases, indeed,

\* *Nouvelle Iconographie de la Salpêtrière*, 1888, p. 216.



the face offers no positive indications, thus it is one of the commonest experiences in children's practice to find physical signs of pleuritic effusion when the face presents no marked departure from health ; but such unchanged faces have also their value, suggesting, as they do, unimpaired vital forces. The prognostic importance of the face struck me forcibly some years ago in thinking over a case at the Royal Infirmary. It was that of a man who presented all the physical signs of extensive effusion into the left pleural cavity, and if his face had been concealed, nothing else would have suggested itself, but the man looked extremely ill, the expression was an anxious and exhausted one, and he died rather suddenly after ejecting from the mouth a large quantity of blood, and the autopsy revealed not only pleuritic effusion, but an aneurism of the descending thoracic aorta, which had ruptured shortly before death. Cover the faces of two persons suffering from disease in the abdomen ; in both we find tenderness and resistance on pressing over the right rectus muscle. Uncover the faces, and we see that one patient has merely some functional or temporary affection, while the sunk, depressed features and earthy complexion of the other tell us that we have to deal with malignant disease in the neighbourhood of the pylorus, and that the prognosis solely consists in estimating the duration of life.

It is only then by employing every means of investigation that we attain safety in diagnosis and prognosis, and in bringing the subject of physiognomy before you, I do not wish to exaggerate its importance, but only to suggest that every impression we receive from looking at a patient should be carefully analysed and considered, for it is not a rare experience to hear of the death of some one in whom the physical signs were never of very serious moment, and afterwards one says, "Ah ! I remember how ill he looked." If this impression, unconsciously received at the time of examination, had been recognised and its meaning sifted, it would have led to more repeated examinations ; possibly we should have been able to place the patient under more favourable conditions, or, at any rate, could have impressed the friends with the probably dangerous nature of the malady.

It is a trite observation that the face is the mirror of the soul ; it is perhaps still more hackneyed, but not unnecessary, to constantly remind ourselves that the results of minute and careful examination, not only of the physiognomy, but of every part of the organism, are the safest guides to successful treatment.



