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Contributors

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A SYSTEM

OF

PRACTICAL AND SCIENTIFIC

PHYSIOGNOMY;

OR,

HOW TO READ FACES.

BEING

A MANUAL OF INSTRUCTION IN THE KNOWLEDGE OF THE HUMAN PHYSIOGNOMY AND ORGANISM, EMBRACING THE DISCOVERIES OF LOCATED SIGNS OF CHARACTER IN THE BODY AND FACE, AS SHOWN BY THE FIVE NATURAL DIVISIONS OF THE COUNTENANCE.

BY

MARY OLMSTED STANTON,

AUTHOR OF "A PRACTICAL AND SCIENTIFIC TREATISE ON PHYSIOGNOMY," "A CHART FOR THE DELINEATIONS OF MENTAL AND PHYSIOLOGICAL CHARACTERISTICS," ETC.

VOL. II.

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PART II.

PRACTICAL PHYSIOGNOMY.

(CONTINUED.)

CHAPTER II.

(CONTINUED.)

The Practical Division of the Face.

We are now about to take up the consideration of the practical or mechanical group of faculties. These depend mainly upon the peculiarities of osseous and muscular development, assisted by their connection with the motory and central nerves. It must be borne in mind that the facial signs of the faculties found clustering about the eyes, those of Form, Size, Observation, Locality, and Weight are not fully developed until childhood is passed, as the bones and muscles of the entire body, as well as of those about the eyes, have not at this period assumed their normal size, form, and strength. Moreover, some of these signs are produced by development of muscular tissue, others by deposition of osseous material; hence we must connect them with the gradual and progressive development of those systems as well as with the exercise of these traits. In view of these facts, it is absurd to claim that the evolution of these faculties and powers is due to *brain development alone*. It is true that the brain enlarges *pari passu* with the general growth of the body up to a certain age or stage, but the projection caused by bone and muscular tissue in the lower part of the skull near the eyes is not due to this circumstance. It is not caused by brain matter, as I have shown elsewhere, but to the growth of *other tissues*. Deposition of brain-substance could not take place here at this point, for the frontal sinus and the muscles of the *corrugator supercilii*, the superciliary ridge, the *os frontis* and ethmoid bone *prevent* any *such accumulation* of the *brain-matter here*. The development of this portion of the head arises from the *natural* and *general development* and perfection of the *muscular* and *osseous systems*, and these are the systems most used in mechanical and scientific pursuits as well as in aiding all artistic efforts. This evidence is conclusive. Moreover, we have the following evidence from one of the early and most original writers on *phrenology* to emphasize what is here stated. It is taken from a work on Phreno-Phrenology, p. 78, published in 1851 by J. Stanley Grimes, who observes:—

> The bones of the skull and of the face *change* by a *regular law of development* in all healthy persons alike, and nearly in the same degree in all. The *bones* of the *forehead* in childhood and in mature age are very different;

the *frontal sinus* becomes developed; the *superciliary ridge, the zygoma and the mastoid and corrugator muscles all develop and enlarge so as to entirely change the appearance of the head* and induce *unskillful observers to suppose that the growth of the brain* has produced all this difference in the external appearance. The brain itself undergoes changes by the regular and natural development of its parts, some parts being more developed at certain ages. Whether the cranial organs are exercised or not the head will tend to assume the form which was possessed by the ancestors at the same age.

The evidence here given by this observer is a corroboration of my observations of a life-time and is most appropriate at this juncture, just as we are about to examine minutely the facial signs of those faculties which have been erroneously named "mental organs," and said to be caused by the development of "brain-substance" at these points. The signs of character in the lower part of the face about the mouth, chin, cheeks, and nose are self-revealing and cannot be called "organs of the brain," but, as we arrive at an examination of the signs about the forehead and eyes, "unskillful observers," as Mr. Grimes says, "might believe these signs due to the development of brain-matter."

With these preliminary remarks and an invitation to closely inspect the parts now coming under investigation, I proceed to the description and analysis of the facial signs of the practical and mechanical faculties in man and animal.

FORM.

Definition.—The capacity for remembering forms and shapes; ability for spelling, drawing, modeling and (in combination with Weight) for carving and sculpture, anatomy, portraiture, and physiognomy; it assists science, especially in geometry, mineralogy, architecture, mechanism, dress-fitting, and pattern-making. Form is always large in naturalists, navigators, astronomers, actors, and poets. A square-built man will remember and reproduce square and angular shapes best, while the round-built person will deal best with the circle and curve.

An *excess* of Form might result in useless mechanism, but, as the field for configuration is simply illimitable, a large degree of this most useful trait generally results in activity of a useful sort.

Deficiency in Form incapacitates one for many mechanical and artistic pursuits. It causes poor spelling and creates defective judgment as to the form or outline of everything in existence. No one greatly deficient in Form should attempt the study of surgery, the making of machinery, dresses, or art-works.

Facial and Bodily Signs.—Width of the *bony structure* between the eyes is the facial evidence of good judgment in con-

figuration and memory of the form or shape of things observed, and of ability to reproduce form in art, science, or mechanism.

DESCRIPTION OF FORM.—The anatomical base of the faculty of Form is found in the bony framework of the body. This is so patent that one needs only to observe the differences of structure in one who exhibits a large degree of Form and one who is greatly deficient in this trait. The bony system, like all other systems, undoubtedly has its *representative* in the brain, but to say that the *width* which is caused by the peculiarities of the osseous formation is an "organ" caused by a deposition of brain-matter at this place is a most palpable absurdity. Width between the eyes is the result of a *wide construction of the bones at this point.* Breadth between the eyes is not only indicative of the mental power of memorizing and reproducing form and shape, but it is indicative, first and primarily, of the power of certain physical functions. Where there is breadth between the eyes the whole median line of the brain is wider than where the bony framework is contracted at this point. Not only is the brain wider through its middle portion, but the nose is wider and the lungs exhibit more of a *sidewise growth;* the heart has more room within the ribs; the *pelvis is broader;* the legs set farther apart, and the whole outline of the individual is on a *broader* scale than where the eyes are set close to the nose and where the orbits are near together.

The logical person can, from this description, readily infer what important results would flow from a wide conformation of the human body through its middle portion. The visceral organs would be relatively stronger through having more room for *sidewise expansion*, and, as in the carnivora (notably in the lion), a strong visceral structure creates vigor of mind as well as of body, so a broad human head on a broad body denotes visceral vigor, primarily, and, secondarily, *breadth of intellect.* The nose and nostrils of the lion are broader than the nose of any other beast, and men whose noses are broad between the eyes, as well as high, possess strong will and great breadth of mentality as compared to those whose noses are narrow between the eyes. I have known many brilliant writers and speakers who were narrow between the eyes, but were incapable of *breadth* and *profundity* on any subject; they were poor spellers, too, although highly educated.

As all things in existence possess form or shape of some sort, the one most gifted in this direction is, therefore, more capable of becoming universally intelligent. It is impossible for the human mind to conceive of anything without form or shape. Even those who claim that they see divine or celestial beings and scenes

always describe them in terms of earthly formation. It is impossible for the human mind to imagine anything that is not earthly in its appearance; especially is this true when they come to deal with "divine" forms. Sir Charles Bell, on this point, writes thus:—

> The idea of representing divinity is palpably absurd. We know nothing of form but from the contemplation of man.*

The chapter on the "Basic Principles of Form" traces Form to its origin,—at least, as far as the human mind can reach out for illustration. Form, whether exhibited by the cube, plane surface, or circle, is based on the sciences of geometry, mathematics, and architecture,—the ruling principles of universal form.



FIG. 91.—MISS HARRIET HOSMER. (EMINENT SCULPTOR.)

Born in America. Conspicuous facial sign, Form, shown by width between the eyes. The law of the straight line, curve, and square governs this face. The signs for Conscientiousness, Firmness, Patriotism, Love of Home, Benevolence, Approbativeness, Love of Young, Amativeness, Modesty, Friendship, Alimentiveness, Mirthfulness, and Sanativeness are all exceedingly well defined. Self-esteem is only average. The artistic signs in the nose of Sublimity, Analysis, Ideality, Constructiveness, Acquisitiveness, Veneration, Executiveness, and Self-will are prominent. Form and Size are conspicuous, while Observation, Locality, Weight, Order, Calculation, Memory, Language, Intuition, and Artistic Reason are very apparent. Credenciveness and Prescience are small, and the practical or observing powers are in the ascendency. A face of power, dignity, and sympathy.

Form is the basis of all trades and professions, for upon its principles the mechanic, artist, engineer, surveyor, astronomer, draughtsman, botanist, anatomist, actor, musician, optician, jurist, and statesman depend for the illustration and expression of their work and ideas. *Thought has form*, and is first shaped in the mind of man ere it is put upon paper. The idea of the actor in regard to his impersonation of a character results in gestures and in attitudes of the body, and the gestures of the actor, elocutionist, and orator must describe *curves* in order to be graceful and expressive. The musician depends upon the form of the sound-waves which are carried through the air to his ear. The waves of sound are curved or wave-like as they pass through the air, while the external ears of those who hear best are *rounded* and the inner ear, or *cochlea*, is *spiral* in form. The sounds proceeding from wind or stringed instruments are curved, and *all force of every sort whatever has form* or produces a certain

* Anatomy of Expression, Sir Charles Bell, p. 22.

form while *in action.* The undulations of light and heat, as well as of sound, describe forms. The earth is spherical in its form as well as the primitive cell of animal and vegetable tissues. We can mention nothing which exists that is shapeless. This being the case it is readily seen that a good form in man is most essential, for we can best express in our works the principles which are the strongest within us; hence, well-formed, symmetrical people are best adapted to the use of this faculty in external work. Round-bodied persons use and express a different class of form from that used by square-built people. Now, square-built people love set, square, precise, and orderly forms and shapes, while round people love and create objects which are curved, wavy, or circular in their conformation. Again, round-built, muscular people make more graceful gestures than square-boned people. The former dance, skate, gesticulate, pose, and walk with more ease than the latter, hence they make better artists, acrobats, actors, and orators than the latter class; while the square-built person is better adapted to trades and professions requiring order, precision, and the use of angles, right lines, cubes, planes, solids, and mechanical principles, and a knowledge of the relations of shape and extension. Round persons who are broad between the eyes are well adapted to setting up and running machinery, judging of diameters, weights, and magnitudes, and are able to balance well, climb dizzy heights, and retain their equipoise; while square-built persons are better judges of horizontals, angles, obliquities, and perpendiculars of objects, edifices, and machinery, and are better able to build machinery than they are to manipulate it after it is built. Those who possess Form large and Size small will be able to reproduce the shape or outline of an object, but will not so readily delineate the size. On the other hand, one with Size large and Form small may be able to describe the size well but not the form. These two faculties are closely related, and Size will be next described.

The art of spelling depends upon the development of Form, so also does phonography. They are both mechanical gifts, depending upon the degree of the development of Form for their illustration. Writing is an art; hence, round-built people exhibit the most beautiful handwriting, abounding in graceful curves, while tall, square-built persons show an angular, long-looped handwriting. Many highly-educated persons cannot acquire a fine and graceful handwriting through lack of the requisite amount and quality of muscle, for writing, like gesture and oratory, requires flexibility of muscle, and in square-built persons the bones are supreme, hence they cannot bend and curve easily.

The difference in the "musical touch" upon the piano or other instrument of these two classes of persons is in harmony with the differences observed in their formation. Muscular persons produce a *round, full, rich tone*, while the more angular, bony persons give out a clear, ringing, resonant, decided tone. In manipulating a sewing-machine the operator with soft, muscular fingers will produce the best work, but the angular or square-built worker will best cut and fit the work, yet will not run the machine as easily nor produce as artistic work as the former.

All great artists are very wide between the eyes and all possess Size as well developed as Form. These two faculties are necessarily related, and, although some persons possess a large degree of one and a small amount of the other, yet eminent artists, mechanics, naturalists, anatomists, etc., possess both large. They are uncommonly large in the faces of Baron Cuvier, naturalist; Humboldt, scientist; Sir Astley Cooper, Dr. Jenner, Dr. Harvey, physicians; Linnæus, botanist; Watt, Fulton, and George Stephenson, mechanical inventors; Sir Isaac Newton, discoverer; Hogarth, Titian, Guido Reni, Raphael, Fra Bartolommeo, Carracci, Murillo, Paul Veronese, and Domenichino, artists. Michael Angelo said:—

> An artist should have his measuring tools not in the hands, but in the eye.

All great composers are broad between the eyes. Music is primarily a science. The *art* of music is the superstructure which rests upon a scientific base. Mathematics and Form are the mechanical bases of music, for sound, like all forces, has shape, and nearly all the great composers possess a large bony framework with a well-developed brain, together with an excellent muscular system, while Beethoven, the "father of music," exhibits a square-built appearance. Wagner has a very bony face, as well as Liszt, Verdi, Weber, and Haydn.

Singers and players, as a rule, are more muscular and round in form than composers. They require flexibility mainly. Less intellect and less bone are required for the production of sound merely. Intellect and stability are not the predominating characteristics of singers and instrumentalists. Many of them exhibit childish and capricious characteristics. Yet some good singers have an average intellect, but the *great* ones, as a rule, display musical intelligence mainly.

Physiognomists must possess large Size and Form in order to judge of and retain the *shapes of persons, faces, and features*; hence, we see both these faculties large in the physiognomy of Locke, Aristotle, Cicero, Porta, Averroës, Lavater, Redfield, and

Walker, and all the great minds that have observed and written upon this subject. It is an essential constituent of the mind of the detective, shopkeeper, policeman, railroad conductor, and teacher. Form has been extensively used in kindergartens, in object-lessons, in the past few years. It is destined to produce the most important results, developing in children a taste and talent for fashioning articles upon true geometrical principles. In these schools young children learn how to reproduce the form of the cube, square, sphere, circle, pyramid, and other geometric forms, and thus lay the foundation for all the trades and arts in early childhood. All young children should be taught to draw upon their slates and afterward cut out in paper the outline of every garment and the separate parts of every garment that they wear. Both boys and girls should be trained in this method at home and at school. Boys, in addition, should be taught to draw and cut out the individual parts of a house, a ship, and all sorts of machinery, and draw pieces of all things used in the mechanic arts, in order that they may be equipped for active work in a trade or profession as soon as they are old enough to commence the more advanced branches of mechanism.

The basic principles of Form, as given in this work, will assist the artist, mechanic, and inventor, and give physiognomists an infallible chart and compass to depend upon. These principles should be taught in schools in connection with physiognomy, as well as in relation to all object-lessons.

Animals possess in a most remarkable degree the faculty and memory of configuration. As low down in the animal tribes as the toad there are evidences of the presence of Form and Size, shown by its examining and testing the size of crevices in walls in relation to the dimensions of its own body; in other words, it takes measurements—makes calculations—of size and shape. Bees, as all bee-keepers know, can tell their attendant from a stranger. Smuggling dogs distinguish custom-house officers. Certain London railway dogs recognize their own special friends among the porters or other officers at the different stations, making, it is asserted, no mistakes. Other dogs frequently distinguish from other men the murderer, burglar, or thief, the butcher-dog or dog-stealer, the poor beggar or tramp, their masters' inferior and well-conditioned visitors, policemen and foremen, with their callings and their objects.*

Here it will be perceived that animals are guided not only by the shape and appearance of their friends and masters, but have an uncommon knowledge of human nature in a degree not possessed by man. Some animals, like some men, possess large Form and small Size, or the reverse. The parrot shows a decided power of recognizing persons, pigeons, and localities, but not *vice versâ*

* Mind in the Lower Animals, J. Lauder Lindsay, M.D., vol. i, p. 249.

(Darwin); while every one has seen the feats of "learned dogs and pigs," which are very expert in selecting alphabetical blocks by their shape and also perform many simple arithmetical problems, —of course, guided by the sense of Form as well as of Calculation. Animals suffer from perversion of this trait just as do human beings, and show it in just the same manner, viz., by suspicion of things but half perceived in the twilight or darkness of the night. Persons possessed of large Form, whose nervous systems have become impaired, are often great sufferers from morbid fancies, imagining scenes of suffering or violence, in which they and their friends are actors. With large Credenciveness they believe in supernatural appearances, and with a talent for poetizing they can produce in verse forms, figures, and landscapes with surprising fidelity. Form in a large degree is an especial attribute of the poet, and the works of all talented poets teem with descriptions of figures, both supernatural and real. The physiognomies of Byron, Tennyson, Longfellow, Swinburne, Goethe, Schiller, Whittier, Burns, Mrs. Hemans, Shelley, Dryden, and Shakespeare are uncommonly broad between the eyes, and Size also is large, showing that they had the power of *visualizing* the characters and scenes which they have portrayed in verse.

Chess-players invariably exhibit large Form and Size. Paul Morphy, Zukertort, Steinmitz, and Blackburn possess a phenomenal degree of Form.

> Blackburn and Zukertort can play blindfold as many as sixteen or twenty games at a time, and win 20 per cent. of them at least.

The fact is that they can *picture* in the mind the positions of the chess-board and remember the positions of the pieces as they are played. It is related by the biographer of William Blake, poet and painter, that he could paint for hours the figure of a sitter long after he had gone. He said "he could see the person just as plainly as before leaving." Such power for mental photography is rare, indeed.

The sense of visualizing Form is not confined to those in civilized life, but is often exhibited by barbarous tribes. The Bushmen are excellent draughtsmen, and, according to recent travelers, are very expert in free-hand drawing, and draw the outline of a giraffe or buffalo with such unerring precision as to need no correction. Mr. Galton says:—

> The Esquimaux are natural geographers, and draw charts of their coasts which accord with those done by the most skilled draughtsmen of the admiralty.

From this description of the faculty of Form it is shown that

it is adapted to the knowledge of everything in existence, and that it is required alike by animals, barbarians, and civilized men.

The location of its facial sign adjoining the eye is a conspicuous example of the relation of faculty with function, for forms must be *seen* to be comprehended, and the eye is the centre of the signs of several practical faculties. The sign for Size adjoins Form and Locality, while the sign for Observation bounds them above. All these traits *work together*, and are naturally connected in their practical operations. The group of signs about the eye is an eminently noteworthy one, and serves to emphasize the wonderful methods Nature takes to make her meanings known to man. *The grouping of the signs in the face* is, next to physiognomy, the most wonderful *fact* in existence, as it is the most perfectly demonstrable.

SIZE.

"A dark
Illimitable ocean without bound,
Without dimension, where length, breadth, and height
And time and place are lost; where eldest night
And chaos, ancestors of Nature, hold
Eternal anarchy amidst the noise
Of endless wars, and by Confusion stand;
For hot, cold, moist, and dry, four champions fierce,
Strive here for mastery, and to battle bring
Their embryon atoms."—MILTON'S "Paradise Lost."

Definition.—Capacity for judging, by the eye, of size, height, depth, breadth, length, extent, volume, bulk, bigness, magnitude, distances, proportions, perpendiculars, plane-surfaces, angles, levels, etc.

An *excess* of this faculty could scarcely work injury to one, unless its activity interfered with business or pursuits in which its function was not required.

Its *deficiency* causes one to be inaccurate in the estimation of proportion, perspective, outlines, and of the *sizes* of the globe, sphere, prism, octagon, triangle, octahedron, hexagon, cylinder, cube, and other geometric figures, while perhaps able to draw and remember their forms.

Facial and Bodily Signs.—The facial sign of the capacity for remembering, judging, and reproducing the size of objects is found in the width or development of the ethmoid bone,—the bone which connects the nose with the forehead. When large, it gives width between the inner terminus of the eyebrows and forms a V-shape on the upper part of the nose, just below and at its junction with the forehead. The faces of all good artists, mechanics, draughtsmen, sculptors, architects, and dress-fitters exhibit this formation.

DESCRIPTION OF SIZE.—The anatomical base of the mental faculty of Size is found in the *width* of the ethmoid bone. It can not be caused by brain development at this point for the reason that the bones and sinuses in this vicinity *fill up the space* which phrenology allots to the "organ" of Size. The following description of this portion of the face discloses the origin of the *width* at this junction:—



FIG. 92.—ROSALIE BONHEUR. (CELEBRATED PAINTER OF NATURE AND OF ANIMALS.)

Born in France, 1822. Conspicuous facial sign, Size, shown by width of the ethmoid bone. The law of the straight line and curve governs this face. The quality of this subject is very fine; the color-sense of the highest order. The lower part of the face is oval, the lips curved, the hair wavy, Form and Size pre-eminent; all are signs of the artistic nature. Conscience and Firmness are normal. Love of Home, Patriotism, Benevolence, Love of Young, Approbativeness, Friendship, and Alimentiveness are evident; Amativeness only about average; Modesty and Self-esteem well defined. The nose is high, long, almost straight, and shows the signs for Human Nature, Mental Imitation, Analysis, Hope, Ideality, Constructiveness, Acquisitiveness, Veneration, Executiveness, and Self-will large. Language is noticeable, while Form, Size, Order, Locality, Calculation, Observation, Weight, Memory of Events, and artistic judgment and Reason are well defined. Great perseverance and industry added to great talents have produced a grand artist in this subject. Her great merit has met with due recognition. Of her it has been said: "She is not beholden to the Louvre Gallery nor to Poussin; she does but look at the clear and open face of Nature."

On account of the frontal sinuses and of the diploe the external surface of the skull does not by any means exactly represent the internal, but is more smooth and even, and never accurately presents eminences and depressions inversely corresponding to those within. To some extent, however, and only to some, does the external surface of the bones indicate the projections on the surface of the brain. When a certain portion of the latter or a certain group of convolutions are very prominent, the skull in that region will be prominent, and *vice versâ;* but we very seldom find *distinct external elevations* corresponding to individual convolutions. The bones, as well as the sinuses at this portion of the face, are numerous, and any person who will take the trouble to dissect a human skull and brain can soon convince himself that the brain-substance does not cause the *width* at this part, and which is termed an "organ" of the mind by phrenologists. The ethmoid bone contributes to form the base of the cranium, the nose, and the orbits. It has little or no cellular tissue in its composition, except in the christi galli and in the turbinated plates. It is joined to two bones of the cranium, the frontal and sphenoid, and to eleven bones of the face.*

Besides the sinuses and bones situated within this small space the *bulbs* of the *olfactory nerves* here find lodgment, as well as the ophthalmic division of the fifth pair of nerves. The bony ridge, denominated the superciliary ridge, or bones of the eyebrow, so

* Practical Anatomy, Robert Harrison, pp. 393, 584.

completely hides the brain that it is impossible to make any estimate of its size or shape here. So true is this that all physiologists and anatomists have remarked it, and Dr. Dalton, writing upon the peculiarity of the brain-substance, observes:—

A very extensive portion of the cerebral surface remains concealed in such a manner that it cannot possibly be subjected to examination, viz., the *entire* base of the brain with the *under* surface of the *anterior* and *middle* lobes, the upper surface of the cerebellum, and the inferior surface of the posterior lobe of the cerebrum which covers it, that portion of the cerebellum situated above the medulla oblongata, and the two opposite convoluted surfaces in the fissure of Sylvius where the interior and middle lobes of the cerebrum lie in contact with each other. The whole extent, also, of the cerebral surfaces which are opposed to each other in the great longitudinal fissure throughout its entire length is equally protected by their position and *concealed from external examination*. The *whole* of the *convoluted* surface of the brain must, however, be regarded as of *equal importance* in the *distribution of the mental qualities;* and yet it is evident that not more than one-*third* or one-*quarter* of this surface is so placed that it can be *examined* by external manipulation. It must, furthermore, be recollected that the gray matter of the cerebrum and cerebellum is everywhere convoluted, and that *the convolutions penetrate to various depths* in the substance of the brain. Even if we were able to feel, therefore, the external surface of the brain itself, it would not be the *entire convolutions*, but only their superficial edges, that we should be really able to examine. And yet the amount of gray matter contained in a given space depends quite as much upon the *depth* to which the convolutions penetrate as upon the prominence of their edges. While phrenology, therefore, is partially founded upon acknowledged *physiological facts*, there are yet insurmountable difficulties in the way of its practical application.*



FIG. 93.—LUDOVICO ANTONIO DAVID. (HISTORICAL AND PORTRAIT PAINTER.)

Born in Italy, 1648. Conspicuous facial sign, Size, shown by width of the ethmoid bone just above the sign for Form. The law of the straight line and curve governs this face. Here we behold all of the salient points of the artist,—curves in every feature, and even in the hair the same curvilinear principle is observed. The chin is round and dimpled, the lower jaw curved, the mouth exhibiting a "cupid's bow" in the outline of the upper lip. The domestic and social traits are all well defined, among which Amativeness, Love of Young, Love of Home, Patriotism, Friendship, Mirthfulness, Approbativeness, and Benevolence are very prominent. Color and Sanativeness are conspicuous. In the nose the signs for Mental Imitation, Ideality, Sublimity, Constructiveness, Acquisitiveness, Veneration, Executiveness, and Self-will are very pronounced. Form, Size, Observation, and Calculation are excellent. Memory of Events and Intuition are large, while Reason (of the artistic sort) is well developed.

In the preceding paragraphs I have offered the evidence derived from the writings of two of the best-known anatomists, as to

* Dalton's Treatise on Human Physiology, p. 429.

the impossibility of judging of the shape and size of the brain-matter by an external examination. More particularly is this impossibility emphasized when we endeavor to find the existence of a mental or cerebral "organ" of Size at the sides of the *ethmoid bone.* The evidence of our senses in dissection, as well as by outward observation, shows that there is nothing but bones and sinuses (little hollow openings which assist the resonance of the voice) at this place. I am quite earnest in my endeavor to prove to the student that this is the case, for, in order to be intelligent in the science of physiognomy, one must be able to trace phenomena to their origin, otherwise the knowledge will be merely surface-knowledge. The protuberances observed about the superciliary ridge are caused by *bony deposition* and by muscular development, as can be proven in the local signs for Weight and Locality.

Now, having given very good evidence from those who do not accept the phrenological theories of "brain organs," I next offer evidence just as conclusive from the writings of George Combe, one of the *founders* of phrenology. He remarks thus:—

> One part of the brain, however, does sometimes present a difficulty. I refer to a cavity called the frontal sinus. It lies above the nose, and is found between the *external* and *internal* surfaces of the skull. The size of this sinus varies, but recollect that it only interferes with *five organs*—Form, Size, Weight, Individuality (Observation), and Locality.
>
> Again, below the age of twelve it *does not exist*, and, as the five organs before mentioned *are generally very active before that age*, the sinus cannot interfere with our observation of them before that period. The sinus, therefore, presents no *difficulty* in the way of our *discovering the functions of these organs* if we study subjects below twelve years of age. The opponents *conceal* these facts. After this age it appears, gradually enlarges, and after twenty may present some difficulty to the observer.*

In a foot-note he observes:—

> I was the first to maintain that it was impossible for us to determine with exactness the development of *certain convolutions* by the inspection of the external surface of the cranium.

This corroborative evidence from this gentleman and from the others, equally distinguished, is offered not so much to prove phrenology wrong in some of its conclusions as to prove the basic theories of scientific physiognomy right. The reasoning of Mr. Combe is not tenable where he says that "as the frontal sinus does not exist below twelve years of age it cannot interfere with our observation of these five 'organs.'" The truth is that by the absorption of the cellular tissue and the separation of the bony plates the cavities called the frontal sinuses are formed at or about the age of puberty, and this change assists the resonance of

*Combe's Lectures on Phrenology, p. 131.

the voice as it changes from the fine, soft tones of childhood to the sonorous and deep bass of adult life; and that is all the significance to be attached to this change, except the further fact that complete ossification of the bones of the superciliary ridge and of the ridge of the nose does not take place nor cause their permanent and true form, size, and solidity until the age of puberty, and in some cases not until after that period. Hence it is that we are better able to judge of the size of the practical and mechanical faculties whose local facial signs are situated upon and about the *bones* and muscles of the superciliary ridge, *after* they have become developed by age and matured by the action of the evolutionary process described above. The localities of many of the "perceptive" faculties, as given by phrenologists, are correct. Their idea of ascribing to brain-substance what is palpably a bony or a muscular structure is erroneous. The whole course of the development of the several tissues of bone, brain, and muscle also proves this, and reveals the true origin of the faculties of Size and Form to be in the width of the median portion of the bony structure, recorded in and certified to by the width of the *os frontis* and ethmoid bones of the face.

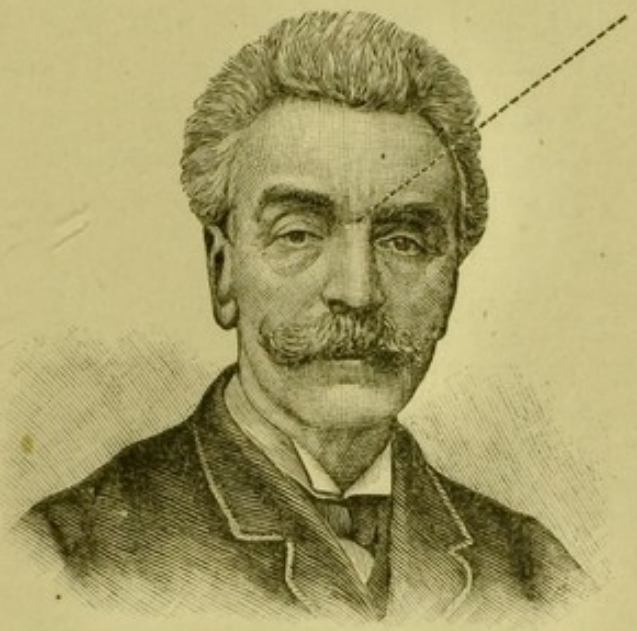


FIG. 94.—JOHN LEO GEROME. (HISTORICAL AND PORTRAIT PAINTER.)

Born in France, 1824. Conspicuous facial sign, Size, shown by great width between the eyes. The law of the straight line and curve governs this physiognomy. The lower division of the face discloses the signs for domesticity and moral power. Firmness, Conscientiousness, Benevolence, Love of Home, Patriotism, Approbativeness, Economy, and Sanativeness are all large. From the form of the eyes and general curvativeness, we know that Love of Young and Amativeness are normal at least. In the nose the signs for artistic capacity are apparent. Mental Imitation, Ideality, Sublimity, Constructiveness, Acquisitiveness, Veneration, Executiveness, and Self-will are prominent, while Form, Size, Color, Calculation, Observation, and Locality are of the highest order. Memory of Events, Language, and Intuition are well defined.

The uses and function of the faculty of Size are unlimited and beyond enumeration. In conjunction with Form its application is to every single atom of matter in space and to every object whatsoever in existence. Every thing has form, consequently has magnitude or dimensions. All mental imagery is formed through the agency of these two dominant faculties. Plans for conducting a campaign or a law case, or for carrying on a business, are aided by the faculty of shaping. Every writer upon any subject whatever relies upon these two geometrical qualities for carrying out

his plans. All architects, artists, sculptors, dress-makers, carpenters, shoe-makers, and mechanics of every sort depend upon these traits for the basis of all they construct. Their action is universal, and illimitable. In combination with Constructiveness they enter largely into the works of fiction, of poetry, and of plays. The writings of the poets abound in images of all sorts, and some of them, as, for example, Milton and Dante, portray the figures of monsters of horrid mien and gigantic size in a manner most vivid and graphic. In the physiognomies of these writers the signs for Size, Form, Constructiveness, Credenciveness, and Imagination are very large. So also we find the same development in Bunyan's face, as well as in Dickens'. Taine describes Dickens' character most admirably, and quite in accord with the principles of scientific physiognomy. He shows that the power to form or visualize his characters is one of his strongest traits, and he thus describes him. He says:—

> There is a painter in him, and an English painter. Never surely did a mind *figure* to itself with more exact detail or greater force all the parts and tints of a picture. If he is describing a home, he will draw it with geometrical clearness; he will put all his colors in relief; discover a face and thought in the shutters and the spouts! He will make a sort of human being out of the home, grimacing and forcible, which attracts our attention, and which we shall never forget.*

A scientific delineation of Dickens' physiognomy shows how accurately Taine paints Dickens' portrait *from his works*. This is a very subtle and philosophic method, and one which requires the best intellect, aided by the best intuition.

The capacity for calling up at will the size and form of any object once seen is the active memory of the twin faculties of Form and Size. The ability to bring up colors in all their vividness belongs to the memory of color; and so of every faculty. Each has a memory peculiar to itself, and this could not be unless every faculty was a force capable of sending out toward persons and objects a *palpable living power* from the human and animal mind. It meets with a response, showing that the special faculty in activity has thrown outward toward others in contiguity a positive, active, intelligent force, which, like lightning, is unseen, yet most decidedly felt, and by sensitive more keenly than by coarse-grained men and animals. The theory is that coarse people—those on a low mental grade—are more sensitive to the stronger and lower classes of passions, such as revenge, hatred, malice, force, and resistance, than they are to the higher and nobler traits of love, sympathy, patriotism, and sublimity; the lower passions or forces being more powerful in their action, while the higher

*History of English Literature, H. A. Taine, pp. 585-589.

ones send out a more subtle force, and can be better sensed and appreciated by the finer and higher order of beings.

The ideas of relative size change with age and with practice in judging of dimensions, by noting discrepancies in goods or objects handled. Size in combination with Form, Weight, and Reason give ability for geometrical studies, while Size, Form, Constructiveness, Ideality, and Mental Imitation give the talent for novel-writing, and, with Music and Time added, ability for writing poetry. Add to these large Love of Young, and capacity for writing stories and poetry for children will be developed.

Form, Size, and Weight assist the sculptor, the dentist, and the engraver. They must all have the same combination to enable them to imitate forms, and also to assist in guaging the *force of the blow* of the chisel and graver. Engravers must also have a good color-sense, else they will be deficient in judging of the proper shading of their pictures. I once employed a very superior engraver, but he lacked color, being of a very light complexion, and having light, sandy hair. It was with the greatest difficulty that I could get him to put sufficient black color into my pictures; but in Size and Form he excelled, and engraved portraits (the most difficult branch of the art) with unerring fidelity and precision.

The botanist, naturalist, chemist, physician, and explorer require the faculty of Size. It is found large in the physiognomies of Stanley, Livingstone, Fremont, Marco Polo, Captain Cook, Sir Joseph Banks, De Soto, and Hendrick Hudson, Linnæus, Descartes, Sir Astley Cooper, Dr. Pasteur, John Dalton, Liebig, Huyghens, Sir Isaac Newton, Blaise Pascal, Torricelli, Copernicus, and Paracelsus. Minds such as these men possessed had the power of visualizing the objects and combinations of forms which they dealt with, and were thus enabled to picture in the "mind's eye" the inventions and discoveries made and scenes visited and explored. In Galton's work on "Inquiries into Human Faculty," the author devotes great space to the investigation of what he terms "mental imagery," the capacity for which depends upon the faculties of Form and Size being large, although I believe he nowhere speaks of this as the origin and base of what he terms "visualizing." Physiognomy proves that where these two faculties are large, the ability to reproduce mentally shapes and outlines is much greater than where they are not so well developed. The following very just remarks by Mr. Galton are appropriate to the subject, and I quote them to show his understanding of the mental aspect of Size and Form. He observes thus:—

> There can, however, be no doubt as to the utility of the visualizing faculty when it is duly subordinated to the higher intellectual operations.

A visual image is the most perfect form of mental representation, wherever the shape, position, and relations of objects in space are concerned. It is of importance in every handicraft and profession where design is acquired. The best workmen are those who visualize the whole of what they propose to do before they take a tool in their hands. The village smith and the carpenter who are employed on odd jobs employ it no less for their work than the mechanician, the engineer, and the architect. The lady's maid who arranges a new dress requires it for the same reason as the decorator employed on a palace or the agent who lays out great estates. Strategists, artists of all denominations, physicists who contrive new experiments, and, in short, all who do not follow routine have need of it. The pleasure its use can afford is immense. I have many correspondents who say that the delight of recalling beautiful scenery and great works of art is the highest that they know; they carry *whole picture-galleries in their minds.* Our bookish and wordy education tends to repress this valuable gift of Nature. A faculty that is of importance in all technical and artistic occupations, that gives accuracy to our perceptions and justness to our generalizations, is starved out by lazy disuse, instead of being cultivated in such a way as will, on the whole, bring the best return.*

The practice in early life of fashioning objects with tools, and of drawing, undoubtedly develops the faculty of Size as well as of Form, and men who are put at books early in life, and deprived of all mechanical employments, suffer deterioration of these faculties. Then, too, the mental action of these faculties, as well as the intensity of their power, changes with advancing age and change of pursuits. In childhood, if the observing faculties are keen, and Form, Size, and Locality very decided, the outlines and location of every thing observed will be remembered, and nothing, however minute, will escape the sight of one who is gifted in the observing or practical traits; but as age advances, and brings with it a development of the reasoning powers, the observing faculties assume a partially *introspective* action, and the mind works more *interiorly*, hence sees fewer material objects, and the individual will pass by, unnoticed, things which formerly would have attracted his attention and have been photographed upon his memory in all the accuracy of their form, size, and position in relation to other near objects.

The antagonism between the power for visualizing external material objects and the capacity for abstract memory has been noted by Mr. Galton, and on this topic he says:—

My own conclusion is, that an over-ready perception of sharp mental pictures is antagonistic to the acquirement of habits of highly-generalized and abstract thought, especially when the steps of reasoning are carried on by words as symbols, and that if the faculty of seeing the pictures was ever possessed by men who *think hard* it is very apt to be lost by disuse. The highest minds are those in which it is *not lost*, but subordinated, and is ready for use on suitable occasions. I am, however, bound to say that the missing faculty seems to be replaced so serviceably by other modes of conception—chiefly, I believe, connected with the incipient motor sense, not of

* Inquiries into Human Faculties, Francis Galton, p. 113.

the eyeballs only, but of the *muscles generally*—that men who declare themselves deficient in the power of seeing mental pictures can, nevertheless, give life-like descriptions of what they have seen, and can otherwise express themselves as if they were gifted with a vivid *visual imagination*. They can also become painters of the rank of Royal Academicians. *

When I read thoughts such as the above, which come so closely to scientific analysis of character and then just miss it through lack of the knowledge of scientific physiognomy, I grieve that the writer has not that light by which to elucidate more clearly the differences existing between the two classes of persons of which he is writing. His first paragraph relates to mechanical men,—men with *square*, *bony frames*, who are practical, and seldom develop into abstract thinkers; never, certainly, to any great extent; hence, they dwell largely all their lives in the region of the practical, and visualize the forms of objects, and deal with them professionally, as in the mechanic arts; while the class alluded to in the second paragraph are *muscular*, *round* men, who *imagine* forms instead of *remembering* those once seen, and these last really do use the *muscular sense* in order to reproduce their images mentally, and can become painters of high degree; and, as they are gifted in imagination chiefly by reason of the dominance of the muscular system, so they are able by voice and brush to reproduce vocally and on canvas the forms which they, by means of a vivid imagination, see before them. This class of persons idealize forms, whereas the mechanical class *reproduce with exactness* the forms and shapes which they have really beheld. When gifted metaphysicians, like Mr. Galton, come to understand the principles of scientific physiognomy, they will be able to aid the advancement of science in a wonderful manner. Many gifted writers show by their writings that they are grand physiognomists, only wanting the knowledge of the laws and principles of physiognomy to enable them to draw the external features and peculiarities of their characters in accordance with the mental analysis which they make of them. George Eliot, Dickens, Taine, and Thackeray are all intuitive, so also was Shakespeare, and came very near to being scientific expounders of character. The faculty of Size is pre-eminent in all of them, and to it they are largely indebted for their skillful delineations of their characters, as well as for the plan of their books.

OBSERVATION.

Definition.—"The act or power of observing or taking notice; the act of seeing or of fixing the mind upon anything; capacity for close attention; adherence in practice." (Webster.)

* *Ibid.*, p. 88.

The love and capacity for examining objects which attract the attention, such as natural phenomena, machinery, pictures, books, plays, spectacles, etc. It is the faculty which creates a desire for looking at what transpires about us, and is the basis of all material knowledge. Mechanicians, travelers, artists, linguists, and scientists, etc., depend greatly upon its development for their knowledge.

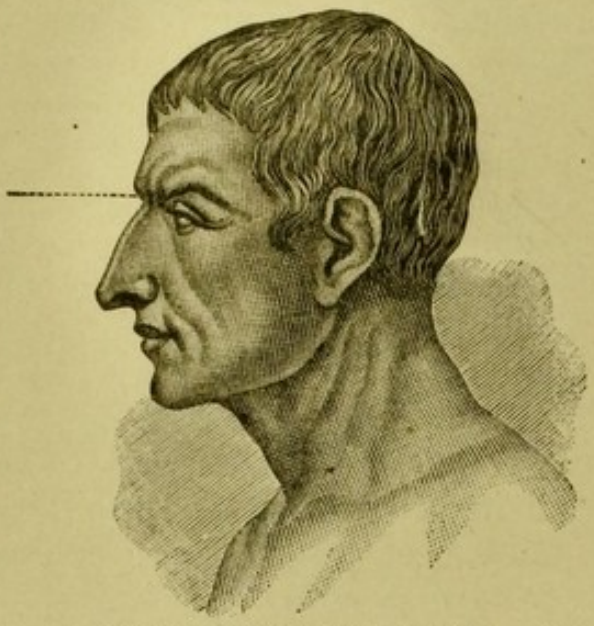


FIG. 95.—MARCUS TULLIUS CICERO. (ORATOR, STATESMAN, AND JURIST.)

Born in Arpinum, 106 B.C. Conspicuous facial sign, Observation, shown by development of the muscles of the inner terminus of the eyebrows, caused by approximating them while engaged in closely scrutinizing objects. The law of the curve governs this face. The size of the features and their proportions announce an ambitious and able mind. In the chin are seen the signs for Firmness, Patriotism, Benevolence, and Love of Home well defined. Alimentiveness and Bibativeness are less than average. In the upper lip Amativeness, Love of Young, and Mirthfulness are apparent; Self-esteem of only a moderate degree. The size of the mouth and fullness of the lips and eyes announce linguistic and oratorical ability. The nose is very high above the plane of the face, and is long, bony, and convex in its outline. At the point the signs for Ideality, Sublimity, Mental Imitation, Human Nature, Analysis, Constructiveness, Acquisitiveness, Veneration, Executiveness, and Self-will are very pronounced. The region about the eyes is remarkable in appearance. Credenciveness is small. Locality and Observation are equally and uncommonly developed. Form, Size, Calculation, Weight, Language, Order, Time, Reason, and Intuition are pre-eminent. The neck is massive and statuesque. The nose, by its size, indicates large Pneumativeness. His color was dense, and this gave force and intensity to all his faculties. The physiognomy altogether announces a mental colossus. History corroborates this facial delineation.

An *excess* of Observation can scarcely be harmful, yet if one allows Observation to *end* in *looking merely*, without reflecting or acting upon knowledge thus gained, excessive Observation would be detrimental. To remedy such want of balance, the facts already observed should be put to some useful purpose before searching for other facts or phenomena.

Its *deficiency* may be remedied by patient investigation of all sorts of objects, by prolonged scrutiny, and an endeavor to *fix* the *attention* and *thought* upon the form, size, color, quality, and proportions of objects, and to note carefully the particulars and details of objects and occurrences coming under one's observation.

Facial and Bodily Signs.—The most conspicuous facial sign of the faculty of Observation is situated in the middle of the lower part of the forehead, between the inner terminus of the eyebrows and above the root of the nose; when large, filling out the *muscles* at this part and causing the eyebrows to draw down in order to facilitate more accurate vision.

DESCRIPTION OF OBSERVATION.—The location of the facial sign for Observation is one proof of its *muscular origin*. Another

proof is had in the fact that all observation is made with the eye, which is the facial representative of the muscular system. That this faculty is represented in the brain, as well as all other parts of the muscular system, is undoubted, but the idea that brain-matter causes the protuberance seen in adults after long and protracted scrutiny of objects is not tenable. In childhood the muscles of the face at this place are not greatly developed, but, on the contrary, they are scarcely noticeable. They become perceptible only after years of close *observation* of the things observed. Children, it is true, look and gaze with curious eyes upon all that attracts their attention, but they *reflect* very little, if any, in early life upon observations thus made. And many go through life *looking*, without any very deep impression being made upon the mind by objects observed and scenes visited. The mere fact of being able to *look* at an object does not involve knowledge of the object perceived. "The eye sees what it brings the power to see," and if one has not the capacity for fixed and patient attention he fails to take in the *full* meaning and import of what he beholds. Because children look and ask a multitude of questions about what they see is no proof that they observe in the highest meaning of the term. Their minds are comparatively *empty*, and they look and question for *entertainment* mainly, and not always for the purpose of acquiring knowledge; hence, the *facial record* of Observation does not appear very large until after the habit of accurate and *thoughtful* observation has been formed.



FIG. 96.—BAYARD TAYLOR. (PRINTER, EDITOR, DIPLOMAT, TRAVELER, AND AUTHOR.)

Born in Pennsylvania, 1825. Principal facial sign, Observation, shown by development of the muscle adjoining the sign for Locality. The law of the curve and sphere governs this physiognomy. The parts of the face nearest the eyes reveal large Observation and Locality; the results of these powers have been given to the world in many able books of travel by this gifted writer. The domestic nature is fully developed. The luxuriance of the intellect assures us that it must have a rich basis upon which to build so elegant a superstructure. In the nose, which is aquiline, are all the signs of literary power. Hope, Analysis, Human Nature, Sublimity, Ideality, Acquisitiveness, and Constructiveness are conspicuous. Veneration and Executiveness are very marked, while Self-will is manifest. Credenciveness and Prescience are only average. Locality, Observation, Weight, Order, Language, Music, and Time are well defined. Memory of Events, Reason, and Intuition are uncommonly large. A great deal of mental force is apparent in the outline of the nose, and this gave power and emphasis to all his efforts. Color was exceedingly well developed, and was the basis of order and enthusiasm, and permeated his descriptions, which were glowing, vivid, and life-like.

Persons with excessive Credenciveness never develop this

sign, and the portion of the space between the inner terminus of the eyebrows and the eye is wide and comparatively flat, as seen in the Chinese and other superstitious races and in all superstitious persons. In these cases it is Credenciveness *vs.* Observation, or belief without evidence. Many of the signs of character which cluster about the eyes are mainly representative of the muscular system, and these signs are caused by protracted use of the eyes and other parts of the muscular system, as, for example, in the use of the sense of Weight, as in balancing, by sailors and acrobats; in wielding the hammer, as by blacksmiths, sculptors, mechanicians, dentists, etc. The use of the muscles in these directions, in combination with the eyes which guide these several acts, causes the muscles of the face, denominated the *pyramidalis nasi* and *corrugator supercilii*, to enlarge, and in adult life they sometimes appear like a small wen. This sign is noticed only in the faces of the most continuously observant and practical persons. It is large in the physiognomies of Arago, Buffon, Michael Angelo, Fulton, Charles Darwin, James Watt, Professor Morse, George Stephenson, Elihu Burritt, John and Joseph Le Conte, Professor Tyndall, Professor Kirchoff, Boerhaave, Joseph Black, and the Herschels. In all these persons the eyebrows will be found drawn down close to the eyeball; and in those in whom the bony system predominates additional assistance is rendered in the way of accurate vision by the projection of the bony superciliary ridge.

The base of the faculty of Observation may be safely ascribed to the muscular system, assisted by the optic nerves. The peculiarities of structure in the two diverse classes of persons, the observing and the non-observing, will confirm this statement. Credencive people are great *lookers*, but it does not follow that they observe; that is to say, they do not observe closely, keenly, and *accurately*, for the reason that they are not built upon an observing plan; their eyes are too large, too wide-open for instant and accurate sight, and they have no bony superciliary ridge to shut off the superfluous rays, and thus enable them to instantly *focus* their vision and concentrate all their visual and mental observation upon one minute or infinitesimal atom. Hence it is that the one who is able to focus his vision instantly is capable of more practical work in the mechanic arts and in many branches of science than those whose eyes are too large and not shaded by a projecting bony brow.

The uses of Observation are as many as there are things to observe. It is adapted to the recognition of the divisibility of matter, substance, and space; to the peculiarities of form and

number; to mechanics, mathematics, and geometry. In short, it is a *basic faculty* upon which many other faculties depend for assistance to carry forward their peculiar operations. Observation gives the capacity to comprehend everything in Nature as a separate and distinct entity, and is required in literature as well as in the mechanic arts. Navigators and discoverers find it most useful, as it enables them to retain an accurate memory of the forms, colors, and related positions of scenes visited and countries explored. It is useful to the linguist, and aids him in the acquirement of language, by enabling the student to comprehend the separate and individual parts of speech, as nouns, verbs, adjectives, and interjections, and shows him the relationship they bear to each other in combination. A man who possesses large Observation never loses a moment's time, for, place him where you will he employs himself with *storing* his mind with whatever surrounds him, and when needed he extracts from the photographic studio in his mind the forms, colors, relations, and positions of all the objects which he has laid away for use. This looking faculty is a fine one for a traveler to possess. A real good looker will bring back from a short excursion more accurate information than a mere *gazer* will gather while making the "grand tour."

Children should not only be encouraged to look at all that attracts their attention, but should be *trained to describe what they have seen*, thus assisting and testing the accuracy of their observations. Their questions should be answered with reason and truth, and, unless they talk for the sake of listening to their own voices, should not be suppressed, except in cases where they are making themselves conspicuous at the expense of politeness and the comfort of those present.

Historians need to be good observers of what transpires in government and the affairs of the nation, as well as lovers of truthful statement, and observation of this sort should characterize all who undertake to treat of such matters for the edification of posterity by writing records. The difference between the historical writings of Voltaire and those of John William Draper, for example, illustrates and corroborates the principles of scientific physiognomy, as exhibited by their physiognomies. Voltaire's face shows a lack of keen and accurate observation, but sparkles with wit and imagination. His historical works reflect all the beauties of his face in youth; they are brilliant and entertaining, but inaccurate; while Draper's histories and his other works are like his face—truthful, orderly, solid, accurate, and highly interesting, as any one will admit who has read his "History of the United States," "The Intellectual Development of Europe," or the "Conflict

between Science and Religion," any one of which is nearly as charming and delightful in style and more accurate in detail than any of Voltaire's historical works. Voltaire's histories of Charles XII and Peter the Great, although brilliant and entertaining, are not held up as models of truth and exactness.

In analyzing the grade or quality of Observation found in different persons, great attention must be paid to the peculiar expression of the eye. In the portraits of all the great naturalists, discoverers, scientists, mechanicians, and inventors the eyes seem to be looking *fixedly* and *intelligently at some object;* there is a *knowing* look in them which the painter and the camera have happily caught. The habit of fixed and intelligent attention which these classes of persons have practiced for years is transferred to their physiognomy, and is most noticeable in and about the eye and eyebrow, more particularly in the bright, alert, keen, intelligent expression of the eye. This is a most remarkable circumstance, and one which explains a great deal. The face is connected with all the nerves of the special senses as well as with the nerves leading to all of the important visceral structures, hence is capable of *expressing* and *expounding* all the permanent as well as temporary feelings and conditions existing or active at every period, as well as those which have existed for any considerable length of time. Now, in the physiognomies of those classes that do not depend upon accurate observation for the foundation of their pursuits no such expression is visible. If we compare the portraits and countenances of the former classes with the faces and portraits of singers, instrumentalists, poets, athletes, acrobats, elocutionists, and commercialists, generally, we shall find that the earnest, penetrating, thoughtful gaze of the former is absent in the latter. The explanation is not far to seek. The most observing classes are *obliged* by the very nature of their pursuits (which is a search after and an application of the laws of Nature) to be as nearly true to Nature in their actions and descriptions as the human senses will permit, for the senses are the avenues through which the world comes into the human mind. The more observation a man possesses, the more of the world will he *conquer and own.* A blind man is almost shut out from the world of form, and entirely so from a knowledge of color. The deaf lose entirely the harmonies of music and the power which vocal expression brings. A man whose practical and observing faculties are greatly deficient has less of this world's knowledge than he who has them in a large measure; he is consequently thrown back upon what he *hears* instead of what may be seen and known by accurate sight. This class of persons are bound to become superstitious and believers

of all sorts of fantastic dogmas, while the observant person uses his God-given senses and relies upon his power for seeing and judging for himself. The only way which we have in this material and mundane sphere of becoming cognizant of truths as they exist and appear is by the use of our senses primarily and of our reason and conscientiousness finally. It is rational to infer that the stronger and more perfect these faculties are, the more perfect will be our knowledge of truths. It becomes our duty, then, under this logic, to endeavor to build up our bodies by an application of the best principles of hygiene, for, the more perfect and normal the body, the better equipped will it be for the work of life. The mediæval method of degrading the body by filth, fasting, fear, and flagellation, in order to create a saint or seer, will not conduce to a noble manhood and womanhood, suited to the work of redeeming and civilizing the world; and as *useful* men and women are needed for this purpose, and as visionaries are incapable of aiding these efforts, we must therefore reverse the old-time methods and strive to improve the race by *design and law*.

The cultivation of the faculty of Observation is one of the best steps toward a knowledge of truth. The habit of accurate and patient observation cannot be overestimated. The celebrated Newton once remarked, "If I have made any discoveries, it was owing more to patient attention than to any other talent." The great minds of all ages bear testimony to the fact that the capacity for close and continual observation is the main factor in the lives of the great geniuses that have arisen and dazzled the world. Every town and hamlet in the country possesses a *lazy genius*, who imagines himself destined to astound the world by the greatness of his natural powers, and yet who is never heard of outside of a limited circle, for the reason that he lacks *patient observation* or industry. There are scores of "mute, inglorious Miltons" of whom the world never hears.

In the animal kingdom it is found that those that possess the best power of attention are the most teachable. The elephant, with his small, accurate, mechanical eye, can see and pick up with his proboscis a cambric needle.

> Even butterflies have been tamed and taught to come at man's call; they also possess most decided observation of colors, as do bees also, with great taste for bright ones.*

And with the talent of close observation used in way-finding by beasts and birds no man of the highest powers can compare. The "homing" faculty of the pigeon is far better developed in it than the sense of locality is in man, while the

*Mind in the Lower Animals, J. L. Lindsay, M.D., vol. i, p. 61.

observation of dogs leads them to understand not only the meaning of man's language in phrases, and their own name when called, but they are observant of and understand

Looks, facial expression, countenance-changes, the character of the eye, actions or movements, with gestures and gesticulations; natural voice-sounds and their varied tones or intonations; artificial, musical, and other sounds, such as those made upon or by the bell-gong, horn, whistle, pipe, bagpipe, lute, drum, or bugle. They understand comments and remarks when they themselves are spoken of, also proper names of persons, places, and things; signals of eye, look, action, including those which are called secret, which are preconcerted by and between and understood only by the animal and its master.*

I might fill a volume devoted to illustrations of animal observation, proving that in common with man the highest types of each class are those which possess superior powers of Observation and capacity for continued attention.

The cultivation of this faculty has been commenced on a scientific basis in the past few years by the kindergarten system of object-teaching, which not only instructs children in the knowledge of geometrical forms, but also assists the color-sense by a use of all the chromatic hues. The latter feature is most useful and should be taught to boys especially, inasmuch as they inherit less of the color-sense than females, owing, doubtless, to the fact that they make little use of color in the majority of masculine pursuits, also to that other and sad fact—the great use of tobacco by men, which vitiates the action of the glands to that degree that the colors are not eliminated from the food nor taken into the system by the lungs as readily as by those who are not the victims of this vice. This inferiority of the color-sense has become a distinctively sex-type, and is transmitted from father to son rather than from father to daughter,—so surely do our deeds follow us and live after us. We are immortal in more senses than one.

Observation has its own especial memory and recollects best the class of objects which most attract the attention. These vary in different individuals, as, for example, one in witnessing a scientific experiment will be impressed with certain parts and be able to explain them clearly, while another will be attracted by other features of the experiment and describe them best.

MEMORY OF EVENTS.

"Why should I write this down that's riveted,
Screwed to my memory?"—SHAKESPEARE.

Definition.—The capacity for remembering historical, political, social, domestic, and all passing events; adapted to the memorizing

* Mind in the Lower Animals, J. L. Lindsay, M.D., vol. i, pp. 346, 347.

of news of all sorts, such as public measures, scientific theories, experiments, and neighborhood gossip, facts, occurrences, and actions, and of events as they transpire from time to time.

An *excess* need not be guarded against. A man cannot know too much, provided his knowledge be accurate and he can apply it practically.

A *deficiency* causes one to be unready, unintelligent, and unreliable as to facts and occurrences.

Facial and Bodily Signs.—A general fullness of the upper and middle portions of the forehead is the facial record of large Memory of Events, together with a broad and vigorous muscular and visceral organization. The last are secondary and subordinate signs, but necessary as establishing a *sure foundation* for that strength and vigor which creates and sustains sound and strong mental action.

Description of Memory.—Memory of Events is a portion of the general memory and is devoted exclusively to the accumulation of that class of knowledge which is named in the above definition. Each faculty and sense has its *own special memory*, and each depends for its power upon, first, the natural or inherited quality, and, secondly, upon the normal, healthful, and vigorous condition of the body. There is no *special faculty* devoted to Memory. The ancient metaphysicians treated the Memory of Events as if it were the *entire* memory, not taking into account the sense-memories of sight, sound, taste, scent, and sensation, but always referred to "Memory" as if it were a single and complete faculty and seated and centred in the brain, where, indeed, the phrenologists finally located every *single, individual power* of the mind. It is the mission of scientific physiognomy, aided by evolution, anatomy, physiology, and cognate sciences, to unload this poor, overtaxed organ, and restore to its own rightful domain each one of the misplaced functions and faculties, and so relieve the overburdened skull of the weight of that which was never in it, except in the fancy of half-fledged scientists.

I shall now commence an analysis of the Memory devoted to the acquisition of historical knowledge,—that is to say, of events as they transpire, including in this comprehensive term all the current and passing events and occurrences of every-day life, leaving until later the discussion of the other departments of Memory, such as the memories of scent, form, size, color, words, tones, etc.

The automatic action of Memory of all the intellectual faculties shows it to be related to the muscular as well as to the nervous systems, for muscles exhibit automatism and nerves

periodic activity, after exercise of the muscles and nerves in any given direction. Individuals who have been good skaters or piano-players in youth have been able, after years of abstention from these exercises, to resume them with slight effort. This result is due to the *stored-up memory of the automatic action of the muscles* and to the periodic response of the nerves involved, for muscles once trained to a particular work retain the memory of the movements in their elements, and, when these elements are exhausted and replaced by new tissue derived from nutrition, they are replaced in *precisely* the *same form* as those which had become exhausted by the general and regular daily waste of the bodily elements. When Memory begins to fail, either by reason of old age or by disease, it fails in the inverse of its development. The intellectual faculties weaken first, inasmuch as they were the last to be evolved, and the sentiments,—domestic and social,—those depending upon the development of the visceral organs, which are first exhibited, such as, for example, Amativeness, Love of Young, Friendship, Benevolence, etc., fail last. On this point Mr. Ribot throws some light. He observes thus:—



FIG. 97.—FREDERICK HENRY ALEXANDER, BARON VON HUMBOLDT. (TRAVELER, AUTHOR, SCIENTIST.)

Born in Germany, 1769. Conspicuous facial sign, Memory of Events, shown by fullness of the upper part of the forehead. The law of the straight line, curve, and sphere governs this face. It rarely falls to the lot of the physiognomist to delineate so splendid a countenance. The mouth, chin, nose, eyes, eyebrows, and forehead are all remarkable in size, outline, and in detail. The chin and mouth express the most amiable and benevolent feeling. The chin by its width denotes Conscientiousness,—by its length, Firmness. The dimple indicates a love of the beautiful in the opposite sex and a generous nature. The signs for Love of Home and Patriotism are large, so also are the facial representatives of Benevolence, Approbativeness, Amativeness, Love of Young, Alimentiveness, Mirthfulness, Friendship, Sanativeness, Color, and Modesty. In the nose Sublimity, Ideality, Constructiveness, Acquisitiveness, Veneration, Executiveness, and Self-will are conspicuous. Observation, Language, Form, Size, and Locality are most apparent, while Memory of Events, Reason, and Intuition are of the highest grade and power. This face gives us an idea of what humanity might attain to were high-breeding of the human race attempted scientifically.

It has been noticed by the best observers that the *affectional faculties* are extinguished far more slowly than the intellectual. It may at first seem strange that states so vague as those of feeling and sentiment should be more stable than ideas and intellectual states in general. But reflection shows that the *feelings* are the deepest, the *inmost*, the most persistent features of our mental constitution, whereas the intelligence is something acquired and, as it were, *external* to us. Considered in their origin, aside from any refined and complex forms they may assume, they are the *direct* and *permanent experience* of our organism. *The viscera, muscles, bones,—every tissue of our bodies contributes its share toward their formation.*

What are we but our feelings and sentiments? To forget them is to forget ourselves. Hence amnesia of the feelings must naturally occur only at a period when *disorganization* has gone so far that the *personality* begins to break up. It has been observed that idiots often have no memory save for adjectives. The idea of quality is the most stable because it is the one *first acquired*, and because it is the basis of our most complex conceptions.*

Now, the parts of the organism involved chiefly in the reception of the knowledge of passing events are the eye and ear, with some assistance from the other sense-memories, as the sense of scent, taste, and touch, for example. In *seeing* what transpires and in *listening* to what is going on the ears and eyes are most active, and convey to their representative fibres in the brain the knowledge received, and here it is registered in a more or less permanent manner, depending, for the strength of the impression which it makes, upon the health and general vigor of the entire system, or upon the peculiar character of the natural or inherited power of this particular department of Memory. Some persons inherit a phenomenal memory, and, like other faculties, it becomes permanent and they are able to transmit it to their offspring, like the taste for music or ability to construct or to paint.



FIG. 98.—WILLIAM HICKLING PRESCOTT.
(CELEBRATED LINGUIST AND HISTORIAN.)

Born in Massachusetts, 1796. Principal facial sign, Memory of Events, shown by width and general development of the upper part of the forehead. The law of the curve and sphere governs this face. In the accompanying physiognomy we have the record of a colossal intellect. The size and form of the nose, without even a glance at the capacious forehead, reveal its power. The domestic and moral traits are all normally developed. Firmness, Conscientiousness, Alimentiveness, Patriotism, Benevolence, Love of Home, Mirthfulness, Love of Young, and Self-esteem are well defined. The point of the nose stands high above the plane of the face, showing Human Nature to be large. The signs for Sublimity, Ideality, Constructiveness, Acquisitiveness, Veneration, Executiveness, and Self-will are uncommonly large. Language, Observation, Prescience, Credenciveness, Calculation, Form, Size, Order, Time, Locality, Memory of Events, Reason, and Intuition are very conspicuous. This mind, like that of Humboldt, was an immense structure. Mr. Prescott was obliged to push his memory to its utmost by reason of his loss of sight, and, as exercise increases capacity, so his Memory of Events acquired a phenomenal power.

Where the Memory of Events is weak it can be strengthened by *toning up the physical system*, and by slowly, carefully, and thoroughly committing to memory by constant repetition or by reading attentively such selections as may be desired. This method is the best one for this purpose. It exceeds all the so-called systems of mnemonics in vogue, and as there is no royal road to

* Diseases of the Memory, T. H. Ribot (Humboldt Library), pp. 28-39.

learning, so there is no easy flower-strewn path to the building of a good memory; yet it can be done,—easier, it is true, in early life, before the mind has become engrossed with a great variety of subjects.

Individuals in speaking of Memory are perhaps more inexact and confusing than when speaking of any other faculty. One says, for example, "Oh, I have such a poor memory," and then sits down to the piano and astonishes his listeners by the display of his musical memory. Another says, "I have a very excellent memory," and shows uncommon memory for language, yet soon discloses the greatest ignorance of localities. These and similar occurrences go to prove that Memory is as varied and numerous in its manifestations as there are faculties to be affected *by its action.* One may possess large verbal memory and very little memory of color. Another may display intense love for and memory of color and not of locality. Another may exhibit large memory of size and form and scarcely any of color; all of which proves that each faculty and every system of the body has *its own peculiar memory.* Memory of Events is large in historians, editors, literates, descriptive writers, orators, statesmen, and politicians. The portraits of Victor Hugo, Dean Swift, Prescott, and Gibbon, historians; Gladstone, statesman; as well as the physiognomies of Daniel Webster, Baron von Humboldt, Julius Cæsar, the Scaligers, Mezzofanti, Richard Porson, and Elihu Burritt, the "learned blacksmith," exhibit large Memory of Events, while Porson, Burritt, Mezzofanti, and Scaliger possessed also marvelous verbal memories and became renowned as linguists.

The strongest and most primitive memory in man is the Memory of *Scent.* This is the *first sense* used, for as the child enters the world the atmosphere rushes through the nostrils and inflates the lungs; hence *scenting* air is his first act. All experience attests that the primitive functions of life, those first exercised, are the most permanent and abiding; hence it is that *drinking*, being the first gustatory act, becomes a more decided taste than eating, and is, in fact, a more necessary function than eating. Man could live a life-time upon milk or other nourishing fluids, but could not exist long upon merely solid foods without water or other liquids.

This primitive act of drinking shows why it is more difficult in adult life to break up the habit of indulging in drinks such as tea, coffee, or stimulants, than it is to dispense with certain solid foods; whereas, to leave off any particular article of solid food is comparatively easy. Abstaining from meat is not at all difficult, although it is in a sense a very great stimulant. The diet has a

most decided effect upon the Memory of Events, as well as upon verbal memory. Exhaustion through lack of food or through sickness has been known to permanently impair and sometimes to destroy this department of Memory. Sir Henry Holland relates his own experience thus:—

> I descended on the same day two very deep mines in the Hartz Mountains, remaining some hours under ground in each. While in the second mine, and exhausted both from fatigue and inanition, I felt the utter impossibility of talking longer with the German inspector who accompanied me. Every German word and phrase deserted my recollection, and it was not until I had taken food and wine and been some time at rest that I regained them again.*

Psychologists are beginning to understand the complex and varied powers of Memory and have learned that accidents and illness, as in the case of insanity, afford the richest sources for discerning the action of the several memories. Ribot recites the following case of a gentleman, who,

> Having received a blow on the head, lost all he ever knew of Greek, his memory appearing in other respects to be intact. This loss of languages acquired by study has often been noted as a result of sundry fevers. So as regards music. A child having received a blow on the head was unconscious for three days. On coming to himself he had forgotten all the music he had learned. Nothing else was lost.†

These examples should teach parents not to strike children upon the head nor "box their ears" in punishment for offenses. There are other modes of punishment more in accord with sense and humanity.

The evidence of the best writers on mind points to the fact that memory and nutrition are in direct relation. Ribot, in his work on "Diseases of the Memory," remarks that "Memory is directly dependent on nutrition." The physique of many of the most eminent English jurists illustrates this principle. Examine, for example, the portraits of Earl Eldon, Lord Thurlow, Lord Mansfield, Earl Shaftesbury, Lord de Grey, Matthew Hale, Edward Hyde, Earl of Clarendon, and they will be found to exhibit stout, well-nourished bodies, and the sign for Memory of Events co-existent. The same is true of all eminent statesmen, judges, and lawyers, as well as of editors; they must have and do possess the strongest memory for facts, incidents, occurrences, etc. The complex derivation of this branch of memory (being in its origin both nervous, visceral, and muscular) gives the individual power to remember events of which the visual organs—the eyes—take cognizance. If the region about the eye is well developed it gives

* Mental Physiology, Wm. B. Carpenter, M.D., p. 441.
† Diseases of the Memory, T. H. Ribot (Humboldt Library), p. 34.

great practical inclinations to the character, in all of which the eyes assist. In *listening* to news the *ear* and auditory nerves are concerned, and thus this department of Memory is indebted to the nervous system and cerebral connections, as well as to the muscular powers of these organs. Fatigue, hunger, and the use of narcotics and stimulants are fatal to Memory. The use of tobacco impairs the memory of color, and narcotics, such as hasheesh, opium, and bromide of potassium, injure Memory of Events as well as other departments of Memory.

The memory of nouns is the strongest part of verbal memory. Children make use of nouns first to express their ideas, such as mamma, papa, dog, cat, man, house, etc.; later they use the qualifying power of adjectives.

Memory of faces is a department of the general memory which varies greatly in different individuals, some possessing an almost phenomenal power in this direction. The late Stephen A. Douglas exhibited ability of this sort almost unprecedented. It is related of an old gentleman who was singularly deficient in this memory that, being in the company of his wife one evening, he took her to be a lady whom he had formerly been in the habit of visiting every evening, and he would repeat over and over: "Madam, I cannot remain longer; I must return to my wife and children."

The capacity for and memory of the adjective element are most pronounced in those having the muscular system predominant, while the bony man uses nouns,—hard, concrete, simple words,—which include an *entire idea* in a single word, as, for example, home, mountain, horse, etc.; the large-eyed, muscular subject deals in the descriptive and ornate,—the adjective part of language; while the soft, vegetative individual uses the softest words, and overflows with gush, sentiment, poetry, and "soft talk" generally, and all are in harmony with his own soft, fatty structure. Singers like Parepa Rosa, who was described by Ole Bull as a "mountain of fat, a mountain of delight," use the most mellifluous tones, soft and melting; while singers in whom there is relatively less fatty tissue bring forth clear, resonant, ringing tones. The harmony between the bodily structure and artistic and mental powers can be traced indefinitely and almost unlimitedly, not only in regard to color, tissue, and form, but also in relation to the quality and proportion of the individual. A symmetrical man will be a good judge of proportion, while a very unsymmetrical one is less capable in this respect. A man full of fine color in his eyes, hair, and skin has a stronger memory for colors, tints, and shades than the colorless, pallid person. It is thus shown that Memory

has a manifold aspect and pertains to every separate and distinct faculty, and, as has been shown in Part I, it inheres in every atom of the physical being, for "it is impossible," as Professor Ribot remarks, "to say where Memory, whether psychic or organic, ends."

"Memory is not wisdom, a fool can rote volumes," and a large memory merely does not of itself make a man wise; indeed, it is sometimes the compensation which Nature makes for a lack of *original thought*. The best intellects do not always possess the greatest memory. Yet, where a fine intellect co-exists with a strong memory, it forms a mind of the first magnitude. Many semi-idiotic persons have possessed phenomenal memories of various sorts. Blind Tom exhibited phenomenal music-memory, but was almost idiotic in many other departments of mind; but Mozart, who composed at four years of age and lived to manhood, showed the greatest musical memory of all great composers, and was a person of considerable intelligence in other branches of mentality. Richard Porson, a celebrated Greek scholar of England, was noted for a phenomenal language-memory, which Galton termed "stupendous." Nicholas Bidder, of England, and Zerah Colburn, of our own country, were celebrated in their youth for most uncommon numerical memory as well as for skill in calculation. Among historians possessing powerful memories, I may mention Grotius, Josephus, Macaulay, Prescott, and Gibbon. Among editors Horace Greeley stands pre-eminent for his marvelous memory of events, his mind being a perfect magazine of facts, while his reason was on a very high scale. The uncommon development of these two faculties was the compensation for absence of the practical traits, which in him were small. Cardinal Mezzofanti, considered the greatest linguist that ever lived, could express himself in fifty-six languages, and was acquainted with sixty-four others. Lord Byron described him as "a walking polyglot, a monster of languages, and a Briareus of parts of speech." Julius Cæsar Scaliger was one of the most extraordinary men of his day. He had a most comprehensive memory and a sound intellect, and endeavored to ascertain the basis of Memory. His mother possessed a remarkable memory, and transmitted it intensified to her two sons and a daughter. George Bartholdi Niebuhr, an historian of Roman history, a Dane (the son of a laborer who also became eminent by reason of his natural energy), possessed a still greater memory than his father's, which was considered phenomenal. Thomas Babington Macaulay, historian, poet, and essayist, was a man of transcendent power of memory (Galton). Here memory of events, words, and ideas is meant. Among ancient scholars, Marcus, the father of Lucius Annæus Seneca, exhibited a

prodigious verbal memory. It is said that he could repeat two thousand words in the order in which they were spoken. Madame de Staël, authoress and brilliant conversationist, had a very retentive memory and was a good reasoner. Sir William Hooker, celebrated botanist of England, possessed a remarkable memory for form, color, and words; was made director of the Royal Gardens at Kew. He was a writer on botany. His talent in this line was transmitted to his son, Dr. Joseph Dalton Hooker, who succeeded him in the directorship of the Royal Gardens. He inherited talents from his mother's family as well as from his father. Gottfried Wilhelm Leibnitz, mathematician and metaphysician, could repeat in his old age the whole of Virgil. James Watt, the inventor, had a memory of mastodon proportions, and was a clear and logical reasoner. Watt possessed not only a great memory of events, but one equally good of form and motion (the muscular sense) and of mechanical principles. Most of the persons named above possessed good constitutions, and by keeping up their powers by suitable nutriment were able to sustain great mental labors and maintain a great store of ideas upon which to draw at their pleasure. The habit of close scrutiny is a great assistance to general memory, for by *looking attentively* and *intelligently*—that is to say, thoughtfully—at any scene or object, it is photographed, so to speak, and becomes a part of the mental furnishing of the mind. Careless lookers do not memorize objects as do the thoughtful. One who practices upon a musical instrument mechanically, without fixing his attention earnestly upon it, fails to receive as much benefit from his exercise as he would were his entire attention centred upon it. The power for abstraction is an excellent thing to possess. It inheres in the muscular system, and is a great adjunct to memory of several kinds. It is said that Horace Greeley could sit down amid the din and noise of the Loyal League Club, of New York, and write off his leaders perfectly unmoved by the uproar about him. This gift of concentrativeness, like memory, can be cultivated; yet, as it is a muscular gift, the muscular system must be cultivated in order to strengthen it. The faculty of Self-will assists one very greatly in the act of abstraction.

Memory of Events is subject to many disorders, and some have lost this gift almost entirely by overtaxing it. The system of "cramming" in our public schools, and for examinations in all institutes of learning, induces a sort of mental dyspepsia, the result of which is in many cases to permanently impair the memory of events and otherwise weaken the mental processes.

The historic evolution of Memory shows us that its course of development commences with the function of digestion, viz., by the

use of the sense of scent and taste. The Memory next brought into existence is connected with other sense-organs, viz., the sense of sight, of sound, of touch, and of temperature and pressure. The muscular sense comes into use a little later, at about the third month, when the child commences grasping, and thus the muscular sense involved in the adjustment of the muscles leads to acts which soon become *purposive* and *intelligent*, involving the exercise of the faculty of Self-will. It is after these faculties have all been exhibited and the foundation of these memories laid that the higher intellectual faculties, such as speech and conscious thought, are developed by the progressive evolution of the human powers. The memory develops in precisely the order in which the faculties make their appearance, and, as the visceral structures lie at the foundation of our domestic sentiments, our loves and appetites possess the most lasting and abiding memories, and only fail when the organs from which they derive their power become disintegrated by disease or old age. The sense-organs (after these faculties) exhibit the next most permanent memories,—the memory for size, form, and color, for sound, motion, and language, remain fixed in the mind in their numerous manifestations long after the higher powers of the intellect have been lost or become enfeebled, viz., the power for abstract reason and generalization. In disease and old age the inverse order is observed in the weakening of these traits and their associate memories.

There are not only great personal differences in regard to the Memory of Events, but there are also great national differences. The ancient Greeks doubtless possessed the best verbal memories of any nation, ancient or modern. Their muscular development assisted this, and the proofs of both these circumstances is further supplemented by their great oratorical, dramatic, and artistic skill. They depended greatly upon memorizing what they heard, and thus strengthened their verbal memories by not resorting to written or printed copies of that which they wished to memorize. As sculptors they have never been excelled, and here the memory and faculty of Form, assisted by the universal symmetry which characterized them as a race, contributed to this result. The Continental Europeans, particularly the Celtic races among them, excel as linguists, for in them the muscular is one of the dominant systems, and hence verbal memory is regnant. The memory of color is also very general among them. Particularly is this true of the Italians and French, while among the Germans, who have relatively less color than the former, the color-sense and color-memory are relatively inferior. This is also true of the Britains and the Scandinavian races. They are fairer and possess less capacity and

taste in the arrangement of colors, tints, hues, and shades than the darker-hued races. The Americans, being a mixture of all races and possessing considerable delicacy of the color-sense, exhibit generally a good degree of taste in colors, as well as a good memory of tints, hues, and shades. Thus we see that the several and numerous departments of Memory can be traced in a national, racial, and personal manner, and compared and verified.

In animals may be observed as *many kinds* of memory as are exhibited in man. They prove by their actions that their love for and memories of color, form, locality, and individuals is as strong as that in the human race. They are able by the sense of touch (as among the insect tribes, such as ants, wasps, bees, etc.) to distinguish one another, and to communicate their designs and desires. Of course, these acts build up a memory related to them. The memory of the walk, voice, gesture, and faces of their own and of the human race, has been attested by mountains of evidence. Memory of numbers is well defined in some birds and other animals. In fact, it goes without saying that they have memory of all sorts, for they possess precisely the same physiological and anatomical bases as human beings, through which to create and store their experiences, which later become memories.

In the memory of faces several faculties are involved, as, for example, Form, Size, and Color; for a human face is a complex combination of many appearances; but the more expressive it is, the stronger will be the impression made upon the mind of the observer. The presence or absence of color in the human being affects very greatly not only memory of colors, but it bears directly upon the memory of all the sense-organs, as, for example, sight, hearing, taste, and scent, as is well-known in Albinos, the absence of color enfeebling all their senses. But we may go further in tracing the relation of color to the higher intelligences, and can safely assert that a condition of permanent pallor indicates enfeebled powers of Memory of Events, as well as of other departments of Mind and Memory. Color denotes activity and power, and one who can by a course of hygienic living tone up a pallid complexion to that degree that it will exhibit a fair share of natural color will improve *all* his faculties in just that degree.

The pleasures of Memory form one of the most satisfying and permanent methods of enjoyment and personal improvement. The power to recall beautiful scenes, objects of art, and fine colors, as exhibited in art and Nature, the noble expressions of living countenances and portraits, as well as the grand thoughts of the master minds of literature, all alike assist in forming a mental storehouse of incalculable value. Nature in her munificence has

furnished us with every apparatus for the purpose of recalling pleasurable sights and emotions, but in her kindness has left us destitute of any apparatus by which we can remember and reproduce pain and suffering once experienced. We may be able to recall the fact that we have suffered, but we cannot recall and live over again the agony and actual suffering caused by sickness and sorrow. This is a beautiful example of beneficence unparalleled in Nature's works. Let us, then, store our memories with beautiful sights, sounds, forms, colors, and experiences, in order to draw at will upon this reservoir. We should in early childhood memorize fine poems and sentiments in order to be able in adult life to draw them forth for instant use. Many adults are unable to readily commit to memory the beautiful poems, speeches, and sentiments which would often prove of infinite service to them, but, owing to the multiplicity of thoughts and affairs which fill their minds, they cannot memorize readily. Parents should cause their children to memorize and store up forms, colors, harmonies, melodies, and sentiments, in order to have a large accumulation of useful material for use in after life.

"Lull'd in the countless chambers of the brain,
Our thoughts are link'd by many a hidden chain
Awake but one, and lo! what myriads rise;
Each stamps its image as the other flies!"—ROGERS.

LOCALITY.

Definition.—Capacity for recollecting localities, positions, directions, places once visited, and the relative positions of objects to each other. Locality gives a desire for traveling, and is the base of the talent for navigation and geographical research, map-making, etc. It is a dominant faculty in surgeons, anatomists, scientists, naturalists, and physiognomists, and is essential to all the trades and professions.

An *excess* might cause one to become a confirmed rambler, but otherwise could not be harmful.

A *deficiency* is a serious defect in any character, as it lessens one's power for practical work, and makes one dependent on others for finding articles and localities. Characters thus deficient spend a great deal of time, not only in searching out localities, but fail to remember where they have placed articles, such as tools, garments, etc.

Facial and Bodily Signs.—The most prominent facial signs of Locality are found just above the sign for Weight and below the sign for Memory of Events. Locality is known by a *fullness* of the *muscles* at this point, is surrounded by other muscular

signs, and is in close proximity to the *eye*, its chief assistant in localizing places and things by sight, the eye being also a muscular feature. This sign is not very large until adult life, because the faculty is not developed until the individual has *used the eyes* in closely scrutinizing positions, localities, and objects; in other words, not until after the muscles of locomotion and of sight have been called into *continuous* action, and after years of *drawing forward* the muscles termed *corrugator supercilii* to assist the vision in scanning objects. The muscles forming this sign become enlarged by use, and sometimes develop a size as large as a kernel or a wen.



FIG. 99.—CAPTAIN JAMES COOK. (MARINE SURVEYOR, NAVIGATOR, AND DISCOVERER.)

Born in England, 1728. Principal facial sign, Locality. The law of the straight line, curve, and square governs this face. Conscientiousness, Firmness, Patriotism, Love of Home, Alimentiveness, Mirthfulness, Benevolence, Economy, Love of Young, Amativeness, Force, and Modesty are strongly represented in the lower part of the face. The nose is large, long, high, broad on the back the entire length, and shows the signs for Sublimity, Mental Imitation, Ideality, Human Nature, Constructiveness, Acquisitiveness, Veneration, Executiveness, and Self-will well defined. The signs about the root of the nose are worthy attention. Observation, Locality, Weight, Form, Size, Language (both in the eyes and mouth), Time, Order, and Calculation are very remarkably developed. Reason is large, while Credenciveness is not at all apparent. The look of earnest attention shows that this character relied upon Observation mainly for his knowledge of facts. His peculiar combination of the practical faculties, among which the faculty of Locality is pre-eminent, enabled him to make many great discoveries in geographical knowledge.

A long, thin, and high nose is still another facial characteristic of Locality, for the body must harmonize with the face, and where the limbs are long and active the nose will be found to harmonize in shape. Long-limbed people are much inclined to walk and visit strange localities —are natural travelers.

Long-nosed animals are better travelers than short-nosed ones, as witness the speed of the deer tribes, Arabian horse, giraffe, chamois, antelope, and greyhound, compared with the short-nosed sheep, llama, koäla, or Australian bear.

In giving local signs it must be understood that the faculty and power are *general* and *diffused* through that system to which the local facial sign indicates it as belonging, as, for example, Weight and Locality inhere in the muscular system, and show themselves in the face by muscular development, while Form and Size depend upon the osseous system, and are exhibited by bone development.

The chief *bodily signs* for Locality are long limbs and slim or medium-sized body, with about equal degrees of the muscular and osseous systems. Very large, fat people, with the vegetative system predominant, seldom exhibit much of the localizing sense.

In the animal kingdom the high-flying birds and the fleetest animals possess the best locative powers. The corresponding structure in the human family exhibits similar powers. Locality is related to *motion*, and the muscular system is the principal system involved in locomotion, and hence is the principal exponent of the sign for Locality. A person who remained stationary would develop only a limited degree of Locality; his muscular system would be correspondingly enfeebled. This illustration serves to show how motion, muscle, and the sense of localities are related or bound together.



FIG. 100.—GEORGE ALFRED TOWNSEND. (AUTHOR, JOURNALIST, LECTURER.)

Principal facial sign, Locality, shown by development of the muscle at the inner terminus of the eyebrow, just above the local sign for Weight. The law of the curve and straight line governs this physiognomy. The domestic nature is normally represented, and there is sufficient Conscientiousness and Firmness to give rectitude and stability to the character. The curving jaw shows dramatic tastes. Patriotism is well defined; so also are Benevolence, Friendship, Approbativeness, Mirthfulness, Pneumativeness, Self-esteem, Force, Cautiousness, Hope, Analysis, Mental Imitation, Sublimity, Ideality, Constructiveness, Veneration, Executiveness, and Self-will. The signs for Observation, Form, Size, Language, Memory of Events, Order, Time, Reason, and Intuition are well developed. The color-sense is strong, and gives force, color, and brilliancy to all his descriptions of persons and places.

DESCRIPTION OF LOCALITY.—The most active persons and animals are those that possess the best sense of Locality. The most inactive are those that exhibit the least of this power. We are warranted, then, in inferring that this trait bears some relation to the motory system; and when we add to this inference the fact that the *local facial signs for Locality* are disclosed by *muscular development*, as in the signs in the forehead, and also that a fine development of the muscular system is one of the necessary adjuncts toward the development of this sense, we feel justified in declaring that system to be the base of Locality. If this sense was derived from brain development, purely and solely, it would show *at birth* by a projection in that part of the forehead where, in adults, we find its signs; but all the evidence goes to prove that its

origin is *muscular*, and that the parts of the organism used mainly in its action are the muscles of the limbs and the eye. It is true that the eyes as well as the muscles of the limbs are connected with cerebral nerves, but these nerves are not the *chief agents* in the exercise of the locative sense. They assist, but are subordinate. There have been men of commanding intellect in certain directions who were greatly lacking in this practical faculty. Brain development merely will not give this sense. There must be in combination a fair or superior muscular endowment, either as regards *quantity* or *quality*, or both.

The possession of large powers of Locality gives a desire to move about, travel, and observe; hence the greatest travelers have developed this trait, and are therefore able to describe by writings, by pictures or maps, the countries visited and peoples and objects encountered. The physiognomies of Captain Cook, Marco Polo, Christopher Columbus, Hendrick Hudson, Sir Martin Frobisher, David Livingstone, Sir John Franklin, and Captains Ross and Parry exhibit large facial signs of Locality. Their portraits show them to have possessed bodies suitable for continuous motion and great activity.

The classes of birds that are migratory in their habits exhibit a greater degree of the localizing sense than those classes of birds whose habits are stationary, as, for example, the domestic fowls. The "homing" of carrier-pigeons is due to their large locative sense. The incidents noted of the ability which these birds have displayed in finding their way to their homes from long distances prove that they possess a locative sense superior to that of man.

Animals, in the wild state particularly, exhibit uncommon powers of Locality, and are able to return to their lairs, dens, and dams after long and extended journeys. Some birds annually revisit their old nests and occupy them, after having passed a portion of the year in distant lands. The migratory nature and the localizing faculty are part and parcel of one trait, hence expressed in muscular symbols. Without migrating from one place to another, one would have but little need of recollecting places, distances, and directions, but with the taste for travel comes the necessity for being able to localize and store up the memories of the places visited and the direction and distance traveled.

Not only is this faculty useful to travelers and navigators, but all trades and professions depend upon its power. It is indispensable to the naturalist, geographer, astronomer, the mechanic, surgeon, inventor, musician, chemist, shopkeeper, and housekeeper. Everything in existence occupies space and must have a location, and this faculty is adapted to the placing and memorizing the place,

position, and locality once observed. It enables one to find his way through trackless forests, crowded cities, and over boundless seas.

Locality assists Order and really partakes somewhat of its nature. If Locality does not give the love for placing things and keeping them placed, it aids one to remember *where* they are situated, and one is thus enabled to find without effort the road, city, path, or object which he has once seen.

Surgeons and anatomists require a *fine development* of Locality to enable them to picture to their "mind's eye" the exact position of the nerves, veins, arteries, and muscles in the human body. All great, natural surgeons possess a very large development of the muscular system, as witness their round heads, bodies, and limbs. Physiognomists also must have a fine localizing sense to enable them to correctly place the local signs of character, as well as to picture at will, *mentally*, the exact and minute details of faces once inspected. The face is a complex object, and presents a combination of forms, sizes, colors, lines, wrinkles, elevations, and depressions, which the skillful physiognomist must be able to seize upon and "photograph" mentally, and retain each in its own place, in order to recollect the minute details of faces once observed. The signs of this trait are very conspicuous in the physiognomies of Porta, Lavater, Cicero, Averroës, Camper, and in those of all of the best-known physiognomists. So also are the facial signs of Locality excessive in the faces of all the great astronomers. Examine the portraits of Laplace, Galileo, Lalande, De Lanbre, the Herschels, Harrison, Bradley, Leverrier, Kepler, Lockyer, Olmsted, and Miss Maria Mitchell, and Locality will in every instance be found well defined. The life-long habit which this class of observers practice, of using the eyes for *close observation*, and the habit of *drawing forward* or approximating the superciliary muscles, *develops a large amount of muscular tissue near the sign for Weight.* The muscles of locomotion (in which Locality and the sense of Weight come into activity) are greatly exercised by all classes of travelers, and by observers in the sciences and in the mechanic arts. The housekeeper should possess ability to localize objects and articles in the home, for without this power great confusion would ensue, and a constant searching for things would be necessary. The same capacity must be had by the shopkeeper, in order to facilitate the placing and finding of his goods and wares. The apothecary and chemist must have a fine localizing sense, else serious disasters might result. Many persons exhibit large Locality and small Order. The one is, in a sense, a compensation for the lack of the other, and is really the only compensation which Nature

could make for this defect. Many persons possess a large development of Locality and a small degree of Calculation or sense of numbers. Such persons can find the way to places better by a description of the locality than they can by the numbers of the street and house. Locality in combination with Constructiveness give the ability to remember the parts of machinery and to set it in motion. Engineers require large Constructiveness, Calculation, Form, Size, and Locality, and carpenters should possess large Form, Size, Locality, Calculation, Reason, Physical Imitation, Economy, and Force. Artists should possess large Color, Form, Size, Locality, Ideality, Constructiveness, and Mental and Physical Imitation. Surgeons should combine large Locality with Form, Size, Constructiveness, Force, and Reason; while the navigator and pilot must possess large Locality, Form, Size, sense of direction, together with large Observation and Calculation. In short, Locality is essential to every person, in all the walks of life.

With Observation, Locality, Human Nature, Memory of Events, and Form large, a desire to travel and to study men and things generally will be evinced; for, in order to make the most of traveling, and to derive the greatest possible amount of instruction from visiting strange countries, a scientific knowledge of the human face is *indispensable.* Lavater observes that "the traveler should possess money, health, and physiognomy." To study forms of government, inspect castles, palaces, art-galleries, and great public works undoubtedly enlarges the mind,—instructs in art and architecture; but this knowledge does not compare in importance with the knowledge derived from a correct understanding of the various races and peoples one meets in an extended tour.

The study of geography is one excellent method for developing Locality, and children should be taught *first* on a globe instead of from flat maps. Very young children can be taught to discern the points of the compass, and should be trained as early as four or five years of age to find at any hour of the day the direction of the points of the compass by the position of the sun. There is no method of education which children enjoy so much as instruction out of doors in every department of Nature. In this way they learn faster and more accurately than by book-study. *Living forms* are more attractive to them than pictured representations of countries and objects. Indeed, the main part of a child's education should be gained out of doors, whether studying from books or by observation. An intelligent mother or teacher could impart more *real knowledge* to a party of children in a single country excursion than they could gain by a week's study indoors from books alone. In starting out, let the points of the compass be firmly fixed in the

mind, and then have observations made at every important turn in the road. This will cultivate the sense of Locality. The nature, form, and uses of the several varieties of trees observed could be made useful in many ways. The outlay or topographical features of the landscape as it is divided up into hills, valleys, lakes, ponds, etc., should be pointed out and studied. In this manner children would be so trained to *thoughtful observation* as to enable them to "photograph" mentally every minute change in the features of the country observed. The wild flowers and herbs met with could be utilized, and a lesson in practical botany and medication, as well as in form and color, could be drawn from these living hieroglyphics of Nature. The forms and habits of birds, beasts, and insects met with would serve to illustrate a large department of natural history, and would, under the guidance of an intelligent parent or teacher, make a lasting impression upon a child's mind. Every little deviation and turn in the route should be noted down, and the landmarks made by certain trees or clumps of bushes, and elevations and depressions of the land made to serve as points of observation and verification of distance, direction, and locality. One day passed in this manner in the forest or fields with a class of children will afford more rational and healthful amusement than all the fine parties which modern society has evolved for the purpose, evidently, of crushing out of children all natural, wholesome, childish sentiments and pleasures.

Another excellent method of cultivating Locality is by the study of astronomy, the local part of which can be taught by observation of the heavens any clear night. If taught in childhood, it gives a life-long satisfaction and entertainment. Nearly every one is familiar with the location of the constellation of the Great Bear (Ursa Major) or the "big dipper." Taking this as a starting-point, one can locate the position of the polar star, which is found by means of the "pointers" of the big dipper, which always point toward it. Ursa Minor, the "little dipper," is the constellation in which the pole-star is situated. Cassiopeia, "the lady in the chair," is on the opposite side of the pole from the big dipper. These objects are the best known of the constellations, and with the assistance of a star-map any parent can soon locate and trace the others, and by reading up in mythology can give the children the legendary history of all the constellations. The fanciful names and their appended traditions will interest, fascinate, and amuse children, and make a permanent impression upon their mind, while a knowledge of the relative localities of the stars and constellations will assist them in after life in finding their way over oceans, wastes, and pathless wilds. The stories and legends attached to Perseus

Cygnus (the swan), Auriga (the charioteer), Capella (the goat), Taurus (the bull), Gemini (the twins), Canis Major (the great dog), and Canis Minor (the little dog), the Milky Way, Cancer (the crab), Leo (the lion), and all the other well-known stars and constellations, will unfold to children not only a knowledge of localities, but will store their minds with astronomy, mythology, ancient history, and an understanding of the religious beliefs of former ages. A few evenings every season passed in this manner would soon give a child a great store of practical matters. It is most gratifying to observe the enthusiasm with which children enter into the study of the sciences *out of doors* and upon the living subjects, as among birds, beasts, and vegetation.

The study of physiognomy is one of great interest to children. I have seen a class of little girls interested in this science who were able to make out just and accurate observations of form, feature, and color, as observed in the human face, and who could apply many of the rules and laws for distinguishing and localizing the several signs of character in the face and body.

Locality is a universal fact for the reason that everything in existence is placed, located, situated, or positioned in relation to every other object in the universe. Locality, like Number, is omnipresent, for the base of all things is Number; all things may be counted and reckoned, hence time (which has in it the element of Number) and space (or position, situation, or place) are general and universal, and govern and control, underlie and lie back of all matter, materials, and objects.

As we advance in our study of the higher faculties of mind, such as we are now investigating, we find that they assume very broad proportions, and are related to all things in Nature, as well as relate man to all other material objects, laws, and principles. Man is the embodiment of all laws, forces, principles, and *forms* known, as shown in the second chapter, Part I, but which are more minutely elaborated in the chapter on "The Basic Principles of Form."

In order to be in harmony with his surroundings, man must be able not only to recognize the ethnic characteristics inscribed on the physiognomies of all races and people, but he must be able to comprehend the hieroglyphics of the Infinite inscribed upon every atom and object in the universe. This knowledge *could only be sought through the agency of faculties partaking of the nature of the object or law investigated.* The science of physiognomy proves this, for we know that a man who possesses a strong color-sense is best able to judge of colors; that one with a musical build is best able to judge of musical tones and harmonies; and that one

endowed in the matter of Form is most capable of judging of shapes, etc. So one possessed with a fine sense of Locality and direction is best able as an astronomer, scientist, or geographer to comprehend the immensities of space, and to trace with the eye of the mind, as well as with the physical sight, the paths of worlds through time, space, and eternity. In short, man must be *en rapport* with his environment, and as time wings its onward flight, and brings about great revolutions in Nature, so we find that man also, under the irresistible law of progressive evolution, is prepared to take his place, and work in harmony and unison with the *advanced order* of the universe. And all this progress is by plan, design, and law of the *Creative Mind*, for we cannot conceive of anything but *mind* being able to control such vast and complex interests, because we perceive that nothing but *mind* is able to comprehend these grandeurs. It is true that in this physical state it is embodied in a fleshly form suited to its environment, yet the mental part of man is the part which takes cognizance of and applies all material forces to his needs. When I say the "mental part" of man I mean to include every sensation, feeling, sentiment, faculty, and thought of which he is capable; they are all mental in different degrees and in different ways, and all together make up what is termed "human character," as exhibited in our present phase of existence in time and space.

The Muscular System.

WEIGHT.

Definition.—Natural perception of the laws of resistance, gravity, momentum, direction, balance, motion, and weight; capacity for estimating weights by lifting and by sight; ability to adjust the muscular mechanism of the body to suit shifting positions, as when on shipboard, in skating, dancing, using hammers and tools, etc.

An *excess* leads to excess of motion, as in dancing, skating, athletics, and other sports, and to speculations upon gravity and futile inventions based on the principles of mechanics.

A *deficiency* tends to inertia, lack of force, and inaccuracy in many arts; also feebleness in walking, dancing, athletics, balancing, jumping, leaping, and skating. It causes, also, poor judgment of weights and of the mechanical forces which are the propelling and controlling powers in running machinery.

Facial and Bodily Signs.—The most decisive facial sign of the muscular system (next to the eye) is the local sign for the sense of Weight. I might with perfect accuracy term this the sign for the muscular system, but as all have eyes by which they can *easily*

and accurately estimate the amount of muscle as well as its quality, and as every one does not possess a large sign for the sense of Weight, and, again, as this sign is not very conspicuous until after the muscles have been *used continuously* in some mechanical or artistic pursuit, I cannot accept it as the principal facial sign for the muscular system. The sign for Weight is known by a *fullness* of the *superciliary muscle* at the *junction of this muscle* with the *ethmoid bone* or at the inner terminus of the *eyebrow*. There are other facial signs of the muscular sense of Weight subordinate to these principal ones. They are found in the rounding out of the sides of the forehead, full convex eyes, and curving lower jaw,—the "dramatic jaw." These are all signs of the dominance of the muscular system, and are representative of parts which assist the sense of Weight in its attempts at muscular adjustments, as in posing, balancing, climbing, playing instruments, skating, and in the use of mechanical tools and machinery. The shape of the limbs, hands, and feet are also indices of the sense of Weight. Arms and legs that are well rounded show a greater degree of the muscular sense of Weight than very thin, bony ones, or those which are greatly lacking in muscle. Hands that are muscular, with tapering fingers and oval nails, announce the presence of this sense. The body most favorably constructed for the active use of this faculty is one in which the bony system is *square*, with limbs long rather than short, and the muscles *round* and dominating the bones.

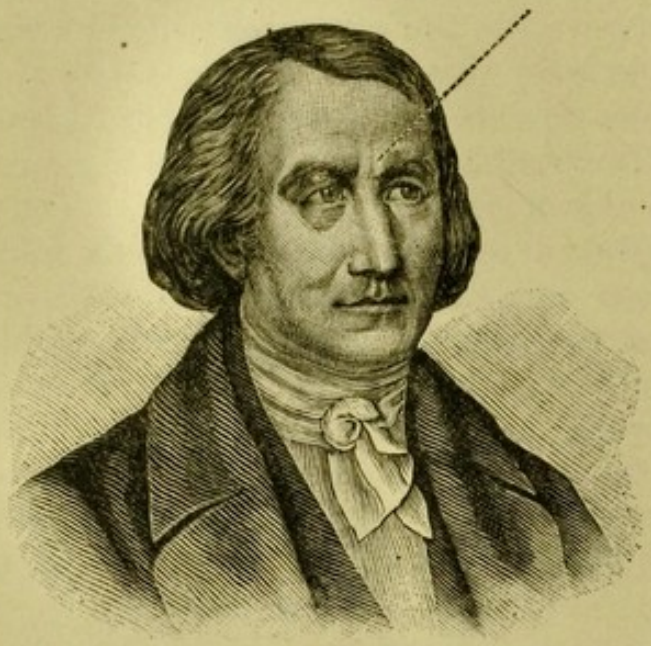


FIG. 101.—FRANCOIS JEAN DOMINIQUE ARAGO. (DISTINGUISHED MATHEMATICIAN, ASTRONOMER, AND SCIENTIST.)

Born in Spain, 1786. Conspicuous facial sign, Weight, shown by muscular development at the junction of the brow and nose. The law of the straight line, curve, and sphere governs this face. The signs for Conscience, Firmness, Patriotism, and Love of Home are large. Benevolence, Love of Young, Modesty, Mirthfulness, Approbativeness, Alimentiveness, and Friendship are conspicuous. The sign for Modesty is well defined, while Amativeness is normal. The length of the nose announces Caution; in it the signs for Human Nature, Sublimity, Analysis, Constructiveness, Acquisitiveness, Veneration, and Self-will are very pronounced; Observation, Locality, Weight, Form, Size, Color, and Calculation are marked, while Language, Memory of Events, Reason, and Intuition are pre-eminent. Credenciveness and Prescience are only slightly manifested.

DESCRIPTION OF WEIGHT.—The proofs as to which system is the base of the sense of Weight are so numerous and so easily observed that the bare mention of them will suffice to demonstrate

that the muscular system is (with slight assistance from the nervous mechanism) the main source of this sense, which promotes in a most supreme manner the hundreds of complicated movements of the muscles which are necessary in the pursuit of every trade and many professions. Suppose, for illustration, that a man could be born and exist with a mere thread-like trace of a muscular system and with a large brain of fair quality, capable of clear thinking and susceptible of education from books, his hands would be, of course, very small and feeble, his limbs useless for extended locomotion, and he would be utterly unable to be taught any art or trade, owing to want of muscular development. This fine, large brain might think out good or even grand thoughts, but he would not be able to play an instrument well, fill a tooth, make a chair, play ball, or dance, row, skate, or swim skillfully. If to this otherwise good brain and physique a fair share of muscle could be added he might perform all of these acts. The muscular mechanism in combination with the bony frame-work is the source of external motion, of the activity of the members of the body, and of the movements of the trunk.



FIG. 102.—MARCO POLO. (CELEBRATED TRAVELER AND AUTHOR.)

Born in Venice, 1250. Conspicuous facial sign, Weight. The law of the straight line and curve governs this face. The signs for many of the domestic traits are hidden, yet a very good judgment can be formed from those that are visible. Alimentiveness, Sanativeness, Friendship, and Benevolence are large. Conscientiousness and Firmness are well defined. In the nose the signs for Ideality, Sublimity, Analysis, Hope, Constructiveness, Acquisitiveness, Pneumativeness, Veneration, Executiveness, and Self-will are large. The signs for Observation, Form, Size, Order, Weight, and Locality are conspicuous; also Calculation, Memory, Reason, and Intuition. Credenciveness and Prescience are small.

One portion of the muscular system—the heart—is the centre and source of all *internal motion*. The heart is also a purely muscular organ. The heart once set in motion by vital processes creates the motive power (by its periodic contractions and rhythmic motions) by which the lungs, liver, and all other organs are kept at work. The *circulation* of the blood is the principal business of the heart. This circulation, by sending the blood to the brain, gives it power to think, and by carrying blood to all parts of the body—to the bones as well as to the muscles—it gives them the power to move and act.

The elements of motion, of density, of gravity, and of force are all inherent in the muscular system. Motion is the primary principle in the muscular tissue, and motion is the base of all the sense-organs, as is proven by the tremors of the nervous tissue while in the process of transmitting to and from the brain the intelligence of which the sight, hearing, etc., have become cognizant. Looking and moving the eye from one point to another is a mode of motion; so, also, putting the ear on stretch, as in listening, sets vibrating delicate muscular fibres as well as nerves. Talking is also produced by motions of the muscles involved in the act of speaking, and vocal sound is motion through the atmosphere. *Curving* is the essential property of muscles as well as of motion primarily, as in the spherical form of the earth and in the rotatory motion of the solar system, for any object which produces continuous motion must be circuloid in form.

Memory in many departments is unconscious registration in the muscles of the *motions* which they automatically reproduce after continued exercise, as in singing, playing instruments, dancing, etc. So the major part of memory is dependent upon the motions made by the muscles of the eye, ear, hand, body, and limbs. Memory, in fact, in all cases is made conscious to us through *motions* of the nervous or muscular fibres; and all motions carry with them the element of weight or force, and muscular beings are most susceptible to the impressions made by force, motion, movement, density, and weight, because their own muscular powers are organized upon the mechanical principles which include all of the laws of these forces. For proof, investigate the science of sound; consider its action and *form* through the atmosphere; it is wave-like or curved in its passage through the air, and the sound-waves are propagated with force through the air toward the ear, which in its *outline is curved.* The *internal* parts of the ear present a wonderful array of curved, convoluted, or circular tubes, as seen in the cochlea. Now, these muscular fibres and pipes are capable, with the assistance of the auditory nerves, of distinguishing the *pitch* or *force* of every sound which the ear receives, and the most perfectly-constructed ears are those most capable of recognizing *differences* in the *degrees of force;* while the most musically-constructed ears are most capable of judging of the *pitch*, *force*, and *quality* of musical tones, showing that the ear, like the eye, has in its construction *all the elements of organization* which sound and light possess and exhibit. Thus it is shown that the undulations of light are curvilinear, else they could not be propagated through the air. *Sound* is also *curved* in its *form*, and is thus able to move through the atmosphere at a high

rate of speed. The eye is circular. The ear is of the same shape in many parts of its structure, and both are supplied with muscular fibres which are capable of the movements resulting in resonance and elasticity, as is the *air* itself. The motions of air, sound, and light are *forces* which assume *forms* and exhibit *force* or resistance, and hence *weight*. The organs and members of those in whom the muscular is one of the dominant systems are found to be the best adapted to judge of the phenomena of light, sound, motion, weight, force, resistance, etc. An examination of the most eminent mechanicians and physicists is proof positive of this. Look, for example, at the portraits of Helmholtz, Wollaston, Humboldt, Faraday, John Dalton, Hofmann, Bernard Palissy, Roger Bacon, Joseph Black, Thomas Young, Descartes, and Newton, and there will be found in each subject all the signs of a fine development of the muscular system. It is true that each of these persons possessed an excellent brain and nerve system, yet without equally good muscular powers they would have been unable to exhibit in their works those principles of the natural phenomena which they discovered, elaborated, and wrought out.

The sense of Weight is used first in infancy with the first attempts at *grasping*. The infant's first attempt at clutching a finger is almost convulsive, and with no perception of how much force to use in holding on to it, but after repeated attempts he finds that less force is necessary, and the grasp is considerably relaxed. Later, the sense of Weight comes actively in use in balancing the body in the attempts to rise and walk, and so continues by vocal exercise, and in adjusting the eye to different focuses and the ear to tones of different degrees of power.

The pitch of the voice in talking, shouting, and singing is due to the sense of Weight,—of force or resistance of the air and muscles combined,—and is a purely muscular exercise. Here it is shown how motion (the motion of the vocal muscles) is related to the muscular system.

Persons with a good sense of balance are not so liable to sea-sickness as where this faculty is weak. One who can easily adjust his movements to the ever-shifting motions of the vessel will be able to overcome the tendency to nausea, providing his liver be active and normal.

In adult life the various trades and professions develop the nicer and finer elements of this sense, as in sculpture, architecture, engineering, dentistry, and metal-working. In playing instruments this sense is most particularly called into action, owing to the delicacy and precision of touch required in the degrees of force necessary to produce musical effects, ranging from *forte* to *pianissimo*.

The sculptor must also, with equal precision, be able to strike with just the right amount of force or weight upon his chisel in order that only certain quantities of the marble be cleft. His ability is the result of an inherited organization suited to his work, then perfected by use and cultivation. Thorwaldsen, Canova, Giacomo, Alessandro, and all sculptors of the highest merit exhibit the facial signs for Weight, as well as many of its bodily signs.

In the setting up of machinery the mechanician must have an innate perception of the mechanical powers and forces, and by education must learn the theory and philosophy of the laws of force, which, when once understood, teach him that the "centrifugal force of a revolving body increases according to the square of its velocity." He must also understand the laws of resistance, friction, gravity and gravitation, the law of the various lever powers, the *pressure* of the screw and *power* of the crank, pulley, wheel, and axle, and all their combinations. In the sciences, his senses must be so fine and practiced that he will be able to weigh the ethers and gases and comprehend the amounts of force exhibited in the expansion, liquefaction, vaporization, and incandescence of heat, for heat is "an immaterial force, resulting from *vibrations* in the molecules or atoms of matter," and vibrations produce *motions* and of course assume forms (abstract), like a gesture, or the path of a projectile through space. These are both curvilinear in their passage through the air, and curve toward the earth through the mechanical law of attraction or universal gravitation discovered by Sir Isaac Newton.

Astronomers require a natural comprehension of the laws of distance, time, force, motion, and equilibrium. Most of the eminent astronomers, such as Struve, the Herschels, Halley, Olmsted, Leverrier, Adams, Airy, Donati, Piazzi, Mitchell, and Olbers, exhibit combinations in which the muscular and brain systems are dominant. The principles of time, of mathematical computation in regard to distance, density, and the geometrical properties of form, they derive from high quality of the brain system; but the senses of weight, ponderosity, mechanical construction, and orbital motion are derived from the fine development of the muscular system. Of course, the muscular system has its representation in the brain, and a large representation it must indeed possess when we come to consider how large a share of life's works is due to muscular movements. Many astronomers are round, muscular men, others square-built, each individual exhibiting the branch of the science in accord with his own bodily form. In the faces of Herschel, Leverrier, Halley, and others, the signs for Sublimity,

Imagination, Constructiveness, Analysis, and Calculation are all conspicuous, and these are muscular signs whose associated faculties inhere in the muscular system.

The dentist must be able by the sensitiveness of his muscular mechanism to gauge the force of his instruments with great accuracy and certainty of touch in order to remove minute particles from the teeth. The blacksmith, who is really a sculptor in iron, must be trained to comprehend the laws of heat, as in the expansion and density of the material employed. He must also shape *by the eye* with unerring precision the *form* of the metal on his anvil. He, too, must in a pre-eminent manner understand the degree of power or weight he requires to bear upon his materials in order to produce the desired effect. In other departments of action a nice sense of the laws of force, motion, weight, balance, and resistance must be had in order to assist the efforts of the carpenter, mason, and builder, as in the construction of spires, bridges, roofs, etc., and in engineering. In the planning, designing, and construction of such works as the Eddystone lighthouse, the bridge over the Missouri River, the Mississippi jetties, etc., the mechanician has to call into play all these mechanical forces and many other principles as well. The portraits of James Eadds, who built the latter, and of John Smeaton, who constructed the former, disclose the signs for Weight as well as other mechanical traits. Civil engineers as well as architects use the sense of Weight in planning the structures which they build. The laying of railroads, grading canals, erecting elevators, boring artesian wells, building bridges, docks, pumps, aqueducts, churches, towers, spires, and cathedrals, building and running engines, fortifications and shops, necessitate a knowledge of the laws of force and resistance, momentum, cohesion, attraction, gravitation, equilibrium, and weight. All these laws have motion as their elementary principle, and all motion has form as its elemental base, and form and number are bases of all things in existence.

The faces of all eminent sculptors reveal Nature's graphic signs of the allied mechanical faculties. In a lower class of artists the facial sign of Weight and Balance is also present. It is seen in acrobats,—those who are skilled in leaping and balancing upon the trapeze,—as well as in slack- and tight- rope dancers, skaters, horseback riders, and velocipedists, who must be able to estimate their centre of gravity and adapt the degree of inclination to their velocity and the resistance to be overcome. All these classes require a natural as well as cultivated sense of Weight, and must be able to spontaneously adjust all their movements to the requirements of their position. Oarsmen, swimmers, ball-players, and

sailors exercise this sense until it becomes instinctively and is really a "sixth sense." The muscular sense should be classed with the so-called five senses, and be termed the "sixth sense."

The sense of weight is useful to weavers and spinners. Doubtless this sense is of great importance to the spider, which, in weaving its geometrical web, requires the aid of such a faculty. The muscular system is dominant in the spider family, hence it is that they show so much constructive and artistic ability and produce so many mechanical contrivances, as they do in the hinge-door nests and in the perfect geometrical proportions of the web woven by one species of the *Arachnida*, which use bits of gravel to steady their webs and construct their nests by different methods to suit different localities, showing that "blind instinct" is not the controlling force in this case, but that reason, geometrical foresight and insight, mechanical, practical, and scientific powers on a large scale are used, and all without a "large brain" to assist their grand architectural efforts. Their sense of calculation, too, must be very great, as witness the precision with which they proportion the distances between the warp of their webs and the accuracy of the spaces which they observe in the weaving of the woof. The weaver, like the spider, must be able to "sense" pressure and weight in the manipulations of his threads, fibres, and weights; a keen sense it must be, too, which enables one to work with such fine materials. The sense of weight, distance, time, momentum, resistance, and height is manifested in a remarkable manner by many animals. Dr. J. Lauder Lindsay cites the following instances:—

> In various ways certain animals show that they can correctly calculate or estimate space or distance, including height. The horse, for instance, in the steeple-chase or hurdle-race calculates hurriedly the height of the fence he is about to leap. The dog does the same when he is invited to jump through a loop for a bit of bread. The lion and other carnivora estimate both height and distance in their contemplated spring upon their prey. Certain fish are called shooting or archer-fish from their precision of aim in bringing down flies on the wing by *squirting* at them drops of water, the nicest calculation of the intervening space as well as of the size of their prey being involved. They *learn* by *experience* to make due allowance for the refraction of light by water, to use their natural weapon, the syringe, in the operation of squirting, and to employ water as an effective kind of shot, missile, or projectile.*

The elephant makes similar use of his trunk as a syringe or hydropult, and of water as a projectile, while it also estimates distance, in the occasional punishment of his human tormentors. Certain animals also form their own estimates of weight, resistance, impetus, or momentum, and size. The elephant must calculate

* Mind in the Lower Animals, J. Lauder Lindsay, M.D., p. 461 *et seq.*

weight or resistance in judging of the degree of strength it must put forth to move a timber-log. The ant probably makes a similar calculation; when meeting with a large, heavy, dead beetle it calls in the aid of its fellows to roll, carry, or push it to its nest. The same animal shows its knowledge of dimension, of length and breadth, of the smallest diameter of an object, in the conveyance of booty or in the dismembering of prey. Horses, mules, and camels measure or estimate the size as well as weight of their loads, so as to judge of the possibility of their passing through forest-openings, gates, or doors, or of their ability to bear them with comfort. Dogs, at least, calculate and make allowance for the rapidity and strength of currents of rivers and tides. Thomas Wood describes a miller's dog that, to save a drowning small one, ran to the side of a certain river till he got well below the drowning dog, then he sprang into the river, and so exactly had he calculated the rapidity of the river and his own speed that he intercepted the little dog and brought it safely to land.

In watching the operations of ants, I have myself seen them proceed to the opening of their nests with a bit of straw several times the length of their bodies, and, finding upon trial that they could not enter with it "head first," they did precisely what a carpenter would do with a plank under similar circumstances, viz., they backed down with it.

Mechanics of all classes use the sense of Weight constantly, and almost unconsciously and automatically at times. Metal-workers learn by experience to estimate by sight the weight of materials in use. Carpenters do the same. Plumbers, after experience, understand the force of a given-sized stream of water, and the makers of mechanical instruments and contrivances soon learn to estimate the force and momentum of the wheels and pulleys which they manufacture. Very complex principles enter into many mechanical machines, which must be comprehended exactly by those who operate them, and those who think that mechanics are common-minded and inferior in intellect underrate them greatly. The man who can construct and operate a complex machine is quite intelligent enough to take a prominent place in government, and for my part I should like to see a government managed by skillful, practical, intelligent mechanics, for I consider the mechanic classes superior in morals and practicality to all others.

We may search through the whole range of the universe, and we shall find that the laws of weight, balance, force, resistance, and momentum are universal in their effects, and are part of the mental construction of all animals in *degrees suited to their wants.*

We find in the vegetable kingdom, even, that this law obtains, and trees whose spread of branches is great have corresponding *spread* or *depth* of *root* to balance or hold them in position. The giant roots of the Sequoia, or the mighty Banyan, illustrate this principle. The same law holds our little planet true in its orbit; it affects the motions of the tides and winds; in short, it is a universal law and universal in its effects upon every object, animate or inanimate, and upon every particle and atom of matter. "All is contained in the least."

The pressure of the atmosphere upon our bodies and our power of resisting its weight are manifestations of a universal law of weight and resistance, and thus, look where we may throughout Nature's broad domain, this principle is ever at work.

LANGUAGE.

Definition.—The capacity for using language in a precise, suitable, fluent, or eloquent manner; the talent for acquiring, speaking, and writing foreign languages, dialects, words, phrases, idioms, etc.; ability to construct, translate, and learn the grammar of languages.

An *excess* makes one voluble, wordy, verbose, and causes one to chatter, prattle, gabble, babble, gossip, tattle, etc.

A *deficiency* is shown by marked reticence, by difficulty in expressing the thoughts in suitable language.

Facial and Bodily Signs.—Large, full, bright, convex eyes; fullness under the eyes; rounding out of the head above the temples; full lips, full cheeks, full throat; wide mouth and chest; large nostrils; high and broad nose; wide nostrils, and length from the point of the nose to the tip of the chin, with vertical, lateral, and perpendicular width of the concha of the external ear; rounding head, jaws, body, and limbs; small joints, and fingers inclining to taper.

Lack of linguistic ability is known by small, receding eyes, and angular, spare, bony body, with very slight muscular development, small mouth, thin lips, and hollow cheeks; small nose and nostrils, flat chest, and undeveloped ears.

Description of Language.—The eye is the feature which discloses the amount of muscle in the entire organism. It is hence the facial indication of the power for motion, and the muscles are the principal agents of the motive mechanism. Now, language is produced by the motions of the vocal cords, tongue, lips, and ear. I do not by this statement mean to imply that the ear as a whole moves, but certainly sound is a mode of motion, and the vibrations of the atmosphere which convey sound to the ear are *motions of*

the atmosphere, and describe wave-like or curved forms as they pass through the air to the ear, and are received by a curved apparatus within the skull; and there, acting upon muscles, bones, and fluids of the ear, affect the nervous mechanism of the auditory nerves and impart little tremors or vibrations to the nerve which connects the auditory nerves with the brain, "and there," as Professor Tyndall remarks, "announce themselves as sounds." Thus it is shown that language, as well as light and color, is only a mode of motion. Indeed, we may set it down as a universal law that motion is the *basis of all things in Nature*. This is proven when we come to analyze their methods of action by tracing them to their origin. Not only is it true that language is dependent upon the motions of the speaking and auditory apparatus for its power of expression, but all modes of communication known to man are by motions or movements.

The *sign-language* of the deaf-mute, the *gestures* of barbarous people when they meet and do not understand each other's language, the gestures, poses, and attitudes of the actor and orator, the movements of the hands in writing, all depend upon motions which are visible to the naked eye; but what shall I say of the countless *motions* within the body that are essential to the results which we find in spoken or written language? The rhythmic and periodic movements of the heart (a great muscular organ, related to time by its periodic movements); the microscopic movements within the corpuscles of the blood; the double and triple circulation of the blood itself as it comes through the several organs, veins, arteries, glands, and tubes; the minute dynamic forces of the nervous mechanism involved in all the motions of the subtle processes of the molecular forces in cellular construction, all tell us in a language most unmistakable that motion is the basis of all life, and that it is essentially so of the forces which produce language,—written, spoken, or symbolized.

The periodic movements of the heart produce natural pauses which are regular and rhythmic in their action. The consensus between the action of the heart and lungs and their movements in inspiration and expiration prove that the pauses in language are regulated in their action by motions of infinitesimal minuteness, as well as by those which are visible.

I have introduced this little description of the source of language in order that my readers may be quite certain that it is the muscular development of the eye which reveals the linguistic capacity of the individual,—that it is not an "organ" of the brain pushing out the eyeball, but that the faculty of language is greatest where the *muscular system* is best developed and most capable of

rapid, continuous, and automatic motions of the entire muscular apparatus. This peculiar property of the muscular system will be noted when we arrive at the discussion of Music.

The mouth is the most mobile and flexible of all the facial features. The muscles of the eye, the larynx, and vocal cords are the most flexible portions of mechanism within the body, and are susceptible of high cultivation and of automatic action; hence, the entire speaking apparatus is eminently adapted to the expression of the emotions, for, as I have shown, the motions are created and exhibited by the action of the softer tissues of the body; the *elasticity* and *resonance* of the muscular system is therefore well suited to the expression of the *feelings*, both by the use of the voice, pen, gestures, and signs. Thought can be exercised by the motions or vibrations of the cerebral structure alone, but its *expression* in any manner or form must be by *motions of the muscles*, as in speaking, writing, signaling, or acting by pantomime, etc. The certainty of the connection between the size of the muscles of the eyeball and the general development of the entire muscular system, and its relations to the motions essential to the production of tone, vocal sound, and language once established in the mind of the student, he has a firm and sure foundation upon which to continue his investigation into the several kinds and degrees of the expression of Language, as exhibited by different individuals and different races.



FIG. 103.—MADAME ANNE GERMAINE DE STAËL. (EMINENT FRENCH AUTHORESS.)

Born in Paris, 1766. Principal facial sign, Language, shown by size and form of the mouth, lips, and eyes. The law of the straight line and curve governs this face. The presence of the curve in every feature discloses the artistic capacities of this mind. She was an artist with her pen. The signs for all the domestic and social virtues are well defined. Patriotism, Benevolence, Mirthfulness, Love of Home, Love of Young, Amativeness, Approbativeness, Sanativeness, Color, Modesty, and Self-esteem are prominent. In the nose, which is straight, the signs for literary ability are apparent. Ideality, Sublimity, Analysis, Constructiveness, Mental Imitation, Veneration, and Self-will are very pronounced. Form, Size, Language, Calculation, Locality, Memory of Events, and Intuition, together with high quality, made a fine character. Napoleon feared her truthful pen and voice more than he did a foreign army. He found one French woman whom he could neither crush nor silence. Her works are numerous and characterized by brilliancy, power, and beauty.

What we term the "faculty of Language" is really a combination of several faculties. Vocality, or the ability to speak as simply as the babbling infant, is the most elementary form of human expression, but the capacity to express words intelligibly

involves the power for thought, hence of construction. Here we have the combination of Constructiveness (a purely muscular faculty) and Thought (also a purely mental faculty). If Language expresses the *emotions* of the speaker, the glands are involved, and show Love, Sympathy, Mirth, Approbation, Love of Young, Hospitality, Friendship, etc. If it express the creative power, such as Imagination, Mental Imitation, Sublimity, or Human Nature, the muscles and nervous mechanism assist. Hence, we are led to observe the combination of faculties and functions involved in the production of intelligent language, and this teaches us that mere talk does not constitute the highest form of vocal expression; we must be able to *feel deeply* or *think clearly* in order to converse well, and thus it is that the language used by an individual will be in accord with his bodily constitution, aided by education or impeded by neglect. If he have an excess of the vegetative system, he will use the selfishly-emotional parts of Language; if he exhibit a good degree of the vegetative system, combined with a fair share of the muscular system, he will express himself upon subjects of art or mechanism; if the square, bony form is in the ascendant, he will use nouns mainly, with clear, distinct, solid words; with a good quality of brain added, he will develop a taste for mechanics and science, and talk upon these subjects. Without education, man will use naturally the words and language which accord with his peculiar conformation. With education, he will improve upon this, and his range of language will be more extended, yet his personal formation will control and characterize his speech and writings, so true it is that form guides, governs, and dominates.

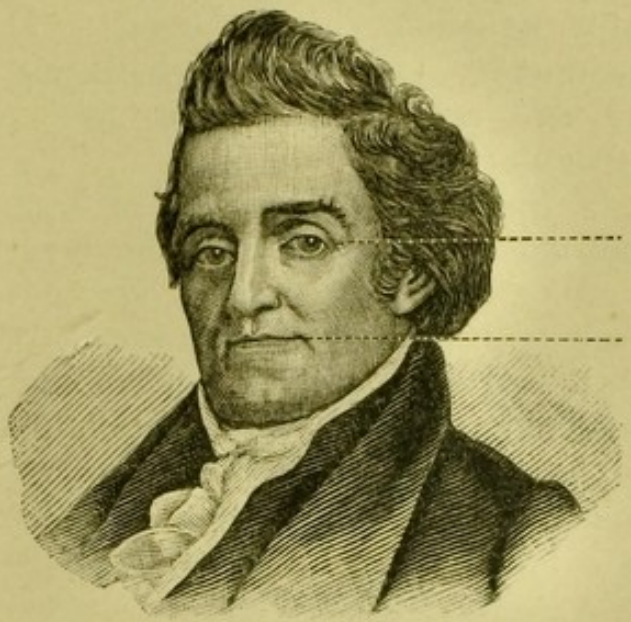


FIG. 104.—NOAH WEBSTER. (TEACHER, LAWYER, EDITOR, LEXICOGRAPHER.)

Born in Connecticut, 1758. Conspicuous facial sign, Language. The law of the straight line, curve, and square governs this face. The signs for Conscientiousness, Firmness, Economy, Patriotism, Love of Home, Sanativeness, Approbativeness, Friendship, Alimentiveness, Mirthfulness, Love of Young, Modesty, and Amativeness are exceedingly well developed and of a refined cast. The signs in the mouth and eyes for Language are uncommonly well defined. The nose is one of the first class, broad on its back the entire length. The signs for Human Nature, Analysis, Ideality, Sublimity, Constructiveness, Acquisitiveness, Veneration, Executiveness, and Self-will are very large. The eyes and the region about them are remarkable. Observation, Form, Size, Prescience, and Calculation are highly developed; while Memory of Events, Reason, and Intuition are pre-eminent. The manner in which the hair grows is noteworthy. A truly noble physiognomy.

Color has also a controlling influence upon Language, for the dark-complexioned man will make more use of color-terms in his writings and speech than the pallid or fair subject, and the several varieties and grades of color exhibited by different persons will be also revealed in their writings. The difference between the works of Tennyson and Swinburne, for example, are proofs of this proposition. Tennyson has a dark complexion; his hair and eyes are also black or brown, while Swinburne is fairer, and paints his scenes in more delicate hues. Each uses color-terms in accord with his peculiarities of color. Thus Form and Color influence Language. Construction also assists, and, as we have seen formerly, thought and feeling exert their quota of influence upon our Language.

The homogeneousness of Nature as exhibited in man's organism makes it possible for the keen physiognomist to know by the contour of a man's head, face, nose, brow, or fingers, even, which class of words he will use most. The square, bony man will use the noun part of Language,—good, simple, strong Saxon; his fingers and finger-tips and nails will be more angular and inclined to squareness than the adjective person, whose fingers will be inclined to taper, and will exhibit oval nails, while arches and ovals will be found in his features, limbs, and outlines. Charles James Fox said: "Give me an elegant Latin word and a homely Saxon word, and I will always choose the latter;" and his forehead was square. Every primary part of speech finds its representation in the five primary and elementary forms of man, and each form will be characterized by the use of the class of words which are in accord with such form. The vegetative structure, being selfish and emotional, will express itself in domestic and emotional terms; the thoracic class, in hopeful and aspiring language, full of courage, daring, resolution, and progress. The muscular class will use forcible, strong, vehement, passionate language, and if refined and educated will affect the most artistic, affectionate, sarcastic, witty, and descriptive language; while the brain and nerve class will use the class of words which are in consonance with the form of their brain. If the brain be rounding the adjective and verb element will be used, but if the brain be angular the noun or Saxon element will be used, mostly.

Now, by this method of analysis we can account for the great variety of style observed in the writing and speeches of orators and literates. The elegance and ornateness of the works of Addison harmonize with his straight, artistic nose, yet are not remarkable for their allusions to color, nor are they remarkable for ardor, for he was relatively fair. The speeches of Gambetta were fiery,

vehement, forcible, clear, and most decided, characterized by short, pithy, concrete, lucid sentences. His forehead was square and receding, giving the practical and *noun element* to his language; his color was dense; he had very black hair and eyes and red cheeks and lips; hence his impetuosity, fervor, and enthusiasm. The impassioned sentiments to which he gave utterance were caught up by his listening auditors, and thus by one of Nature's fine and subtile chromatic laws he was enabled to sway them by the force evolved from his color, and carry his audience with him wheresoever he would. Do you think a soft, round, vegetative, colorless, limp, boneless individual could have done this? The *hardness* of his bony structure gave weight and solidity to his thoughts, as well as *squareness* and *honesty*. It also imparted the practical, clear, truthful, concrete quality, while his color by its *chemical* and *calorific* properties enabled him to electrify and magnetize his hearers.

In order, dear readers, to understand the wonderful mechanism of the mind, we are obliged to comprehend something of scientific law and to base our observations upon *analysis of all the sciences*. It will not do to ascribe all of man's power to the size of his *skull* and to "cerebral organs," which demonstration now shows are made of bone and muscle; neither can we charge the brain with possessing the force and energy which the well-colored individual displays, although the color in the individual certainly makes the brain more vigorous, as it does all the tissues. It is said that Dr. Gall discovered the "organ" of Language by observing that his fellow-students whose eyes were large and full exhibited the greatest memory of words and talent for learning languages, and so jumped to the conclusion that an "organ" of the brain was pushing out the eye, while any one can see that it is the size of the *eleven muscles* of the *eyeball* which causes the eye to be large. Dr. Gall, in this judgment, was true to the law of his own formation; his brain was large and particularly full in front, and with this formation he would naturally lay great stress upon the brain and ascribe to it great powers. He was an excellent anatomist, and I wonder that he overlooked this fact; but, I suppose that in the order of destiny he was waiting for a physiognomical Columbus to come along and discover it. He has done the world a great service, but no scientist in the field of human science can discover the *whole* of human nature, any more than one astronomer can discover all that is to be known of the heavenly bodies. We each add our quota according to our light, and pass on. Recent discoveries by Dr. Ferrier and other anatomists prove that certain areas of the brain are representative of certain faculties, but the

area back of the eyeball is not the area where Language is represented in the cerebral structure. *It is the facial sign for the faculty of Language, by reason of its excessive muscular development and its connection with the muscular system.*

The faculty which most distinguishes man from the brute creation is human speech, and human language exists to-day in the world in every degree of development possible, from the guttural utterances of the babe, idiot, and undeveloped races to the most expressive, elastic, and polished speech of the most eloquent races. Comparison of the mouth, eye, and ear of the most undeveloped races with the same features in the most civilized and polished peoples, together with a comparison of their several languages, shows them to have evolved progressively in the exact ratio of their physiological formation and quality as a race. More particularly is development advanced as the muscular system has become perfected,—a fact which philologists have apparently overlooked. Let the reader procure a work on ethnology, and compare the features involved in the production and reception of tone in some of the native Australian races or the Digger Indians with those of the Caucasian races, and he will see a notable difference in the eyes, mouth, and ear, as well as in all those parts of the body which assist Language. The chest in the Australian is sunken, the throat thin, the nose flat, the eye small, and all the muscles deficient in size and quality. Their language is monosyllabic and guttural, and has no terms to express such sentiments as love, justice, mercy, and the like emotions. The oral and aural formation is little above that of the orang-outang, for their mouth, eye, ear, and nose are scarcely human. Other races, such as the Mongolian, disclose in the formation of their physiognomies the infantile condition of their language; which all goes to prove that by analyzing races, physiologically and physiognomically, we can arrive at a just estimate of their grade in the faculty of Language.

The ancient Greeks, by virtue of their superior development of the muscular system, evolved the most expressive and elastic of all languages. Their orations have never been excelled, and much of their power was due to the perfection of the language, as well as to the flexibility of the muscles of the vocal cords, larynx, mouth, tongue, and lips. This nation sought the perfection of the human form by the encouragement and exercise of those games which tended to the highest development of the muscular system. The Olympian, Nemean, and Isthmian games were national and universal throughout ancient Greece, and were maintained at the expense of the government. They were considered sacred by the people, and the victors had special honors paid to them, which in some

instances descended to their children. The ancient Greeks excelled in written and spoken language; also in gesture, attitude, and gracefulness. They had large, full eyes, rounded limbs, and all the signs of the dominance of the muscular system. The quality of the muscles had direct bearing upon the fluency of language. The shape of the mouth, lips, cheeks, chin, throat, and nose are all concerned in vocal expressions. If the mouth be large, and the lips full and red, the language will be copious and fluent; with a good brain system to produce thought; and with culture, oratorical ability will be manifested. A large mouth, without fine or good inherited quality, will gabble rather than converse, for conversation presupposes thought. A small mouth with thin lips indicates Secretiveness; so also do small eyes. A large mouth with thin lips will not exhibit as much talkativeness as one with large, full lips. Crooked mouths which are congenital, and not the result of accident, are not trustworthy, and will not exhibit as great degree of truthfulness and fidelity as straight mouths. Crooked eyes evince the same untruthful proclivities, ranging all the way from plausibility and amiability to positive falsehood, depending upon the amount of their deflection from a straight line. Many of the most refined and truthful persons in the world exhibit eyebrows which tend downward at the outer corners; in them it denotes agreeability, but where this appearance exists with coarse quality, and the muscular system is dominant, natural untruthfulness will be observed. Those who possess large, full eyes and full lips, with large mouth and good quality, are natural speakers and elocutionists, and, with a good brain-form, orators. These signs are present in the physiognomies, portraits, and busts of all the celebrated orators of ancient and modern times. Large-eyed people having the muscular as one of the dominant systems possess also other muscular traits, such as Constructiveness and Imagination. They are hence adapted to the acquisition of foreign languages, and can become excellent writers, if educated. Many uneducated persons with large Language and good quality have excelled in literature of the imaginative and dramatic sort. Of this number I may mention Susanna Centlivre and Miss Elizabeth Inchbald, English dramatic authors, who possessed only a meagre amount of the rudiments of education. Their portraits show large and full eyes, arched eyebrows, oval face, full lips, and dark hair. Bright eyes, if full and wide-open, denote linguistic ability, and belong to keen, vivacious, brilliant minds, full of sentiment, with power to express it by voice and pen.

Madame de Staël's eyes were of this class, and her writings speak for themselves. Her conversation was bright, witty, and

interesting, but as she desired to monopolize the conversation she often proved tedious. Had she lived in these days she could have put her surplus linguistic abilities to use in platform oratory, in which she would have shone. Many persons are gifted in expression whose eyes appear to be small because the brow projects so far as to prevent their size being apparent. Such persons belong to the observing classes, and can describe well what they see. Where the eyes appear small and the language is fluent, one should examine the mouth, lips, cheeks, throat, ear, and nose for corroborative signs, for all these are concerned in the expression of Language. Small-mouthed persons rarely talk on large, profound, and weighty subjects, for size of the mouth is, in a certain sense, proportioned to the capability of the intellectual powers. Such mouths chatter and twitter like birds, and use a great deal of pretty small-talk, but are never eloquent, for the small structure of such mouths prevents the copiousness and volume essential to true eloquence.

The several degrees of brightness of the eye reveal the several degrees of *force* of Language. The color also is indicative of power of expression. Eyes that are large and scintillating, which flash and gleam with emotion, are dramatic and tragic, particularly if they are black or brown. Eyes which are large and luminous are those which look into the things of eternal life; they are affectionate, spirituelle, and intuitive. This last quality is present when the eyes are large and flat, rather than convex. The subjects which engage their attention, and upon which they converse, are sentimental, religious, and metaphysical. Very small, beady, black eyes are very secretive and passionate. Thin lips, with small or medium-sized mouth, are also secretive, and are characteristic of miserly or saving habits, especially if wrinkled.

An orator must possess a wide, straight mouth, height of the roof of the mouth, full lips, full cheeks, large or medium-sized eyes, high nose its entire length, and width of nostrils. *Height* of the nose and capacious air-passages are necessary to give sonorousness and resonance to the voice. The wide mouth is necessary to assist volume, for when the orator becomes aroused, and gives vent to a terrific outburst of invective, of sarcasm, or of impassioned feeling, he must have room and scope for its expression. A small mouth would not be competent in this emergency. The lips must be full to assist articulation and give force and power to the enunciation. Full lips also show a certain development of character, without which no man can be an orator. They disclose Amativeness, or love of the opposite sex, which is the very foundation of all high manliness and womanliness, and, as shown

elsewhere in this book, is the basis of all mentally-creative states, such as artists and orators require for their efforts. Full lips also reveal other characteristics equally essential, for in the lower lip is the sign for Benevolence and in the upper lip the sign for Love of Young. All these faculties must the *man of feeling* possess. An orator might deliver the most lofty and intellectual oration, yet if he lacked the melting tenderness of emotion he would be utterly unable to arouse the feelings of his auditors, or sway them at his will. And in the portraits of all the great orators,—in those of Burke, Fox, Erskine, Curran, Sheridan, Pitt, Clay, Calhoun, Webster, and in the busts of Cicero, Demosthenes, Æschines, and others, the domestic traits are very prominent and of a refined cast.

A speaker must *feel* and *exhibit* the faculties and emotions which he wishes to arouse, and he cannot do this unless he possess them. An audience never responds to simulated feeling, neither is it as responsive to pure intellect as it is to appeals to our common nature, to our domestic ties and affections, and love of native land; and herein lay the great power exhibited by the Irish orators, Grattan and Curran. Of the last mentioned, Charles Phillips, his biographer, says:—

> He had a swarthy complexion and his eye glowed like a coal of fire. His countenance was singularly expressive, and, as he stood before a jury, he not only read their hearts with a searching glance, but he gave them back his own in all the fluctuation of his feelings, from laughter to tears. His power lay in the variety and strength of his *emotions*. His own feelings were warm and easily touched.*

> "There's a charm in delivery, a magical art,
> That thrills like a kiss from the lip to the heart;
> 'Tis the glance, the expression, the well-chosen word,
> By whose magic the depths of the spirit are stirred.
> The smile, the mute gesture, the soul-stirring pause,
> The eyes' sweet expression that melts while it awes,
> The lips soft, persuasion its musical tone;
> Oh! such were the charms of that eloquent one."

In this verse the poet has unconsciously mentioned all the salient points of true oratory, viz., the lips, eyes, facial expression, magnetism, sympathy, smiles, gesture, harmony, enthusiasm, silence.

A man who could only exhibit brilliancy of intellect in speaking would resemble a glittering iceberg,—calm, cool, great, and emotionless. In the case of Curran, his swarthy color gave force and intensity to his language. It was the same with Daniel Webster,—"Black Dan," as he was termed. Many other great orators were dark and full of color and power, but all, without exception, had a wide, straight mouth, full cheeks, a large nose

* Orators and Statesmen, D. A. Harsha, p. 238.

and nostrils, and good length from the tip of the nose to the point of the chin, together with width of the cavity of the ear in its three dimensions, horizontal, vertical, and perpendicular. All great philologists, lexicographers, and famous linguists present specifically most of these signs. The countenance of Noah Webster, the author of "Webster's Dictionary," is a fine illustration of the faculty of Language. To full eyes he adds all the other signs of large Language, viz., a wide, straight mouth, full lips, a straight nose, full cheeks and lips, curving lower jaw, and a rounding, muscular, slightly dimpled chin. His brain development was of the finest quality and his forehead was squared at the temples, thus indicating the *rectitude* and *squareness* of his mental processes. History records instances of men who have exhibited most extraordinary power in acquiring language. Of Marcus Annæus Seneca it is related that he could repeat two thousand words in the order in which he heard them. He was also gifted as an author and rhetorician. Julius Cæsar Scaliger and his son, Joseph Justus, possessed most wonderful verbal memories and were great linguists. August Wilhelm von Schlegel was master of many languages and translated the "Bhagavad-Gita," a Sanskrit classic, into Latin. Richard Porson, a most gifted linguist and Greek scholar, attributed his extraordinary power of memory to his habit of writing everything which he wished to memorize. He told a friend that he recollected nothing which he had not transcribed three times or read at least six times, adding that any one who would take the same trouble would acquire the same powers. His proficiency in arithmetic also was such that, at nine years of age, he could extract cube roots in his head. He could recite "Jack the Giant Killer" or half a book of Milton with the same facility. He was considered the greatest verbal critic of modern times.

He was able to express himself in fifty-six languages, and was acquainted with sixty-four others. He wrote nothing of importance relative to any one of them.*

His mind was more of a storehouse than a manufactory. An intellect which has the capacity to acquire many languages and write originally is indeed a first-class mind. Such were

Humboldt, Niebuhr, Ben and Samuel Johnson, authors; Euler, mathematician; Gibbon, the historian; Hugo de Grotius, statesman; Henry Hallam, historian; Claude Adrian Helvetius, universally accomplished and a materialistic philosopher; Andre Marie Ampère, mathematician, electrician, and philologist; Count de Buffon, naturalist; Olaus Celsius, botanist and Orientalist,—a great student of Eastern languages; Albert von Haller, an exceedingly precocious and rickety child, but very laborious and possessed of a remarkable memory for languages and facts. To these we

* Galton's Hereditary Genius.

may add the names of Huygens, the Herschels, Arago, Napoleon Bonaparte, whose memory was prodigious, and Lessing, a German littérateur.*

The acquisition of Language, like all other traits, can be cultivated to a great degree, and persons lacking in the expression of different parts of speech may overcome this defect by writing a list of adjectives, nouns, interjections, or whatever part of speech they most lack, and, by placing them before them while writing, may soon become familiar with a great variety of words. I am obliged to keep constantly before me a list of adjectives suited to the topic of which I am treating in order to supplement my natural deficiency of the adjective element.

The combinations of faculties which are found with large Language determine the style and direction which talented people will take in writing or speaking. Those with large Language, large Love of Young, Constructiveness, Ideality, and Mirthfulness will write well for and of children. Charles Dickens' physiognomy is an illustration of this combination; so, also, is Miss Louise Alcott's face characterized by similar traits. Those who combine high Quality and large Sublimity, Comparison, Human Nature, Observation, and Memory of Events, and good domestic traits, exhibit fine oratorical powers; those with a fine and strong brain system, together with large Observation, Memory of Events, and small Secretiveness, large Ideality, and fine reasoning powers, make good journalists; with Executiveness added, can both write for and manage a newspaper or periodical; with large Language, Ideality, Mental Imitation, Amativeness, Self-will, Analysis, Human Nature, and Secretiveness large, they can become actors; with large Form, Size, Constructiveness, Memory of Events, and Comparison, and fair degree of Language, they can easily learn to speak, read, and translate foreign languages. Many persons possess the capacity for writing and expressing themselves well by the pen, and yet lack fluency in conversation. This class of persons have relatively small eyes, but possess good verbal memory, Constructiveness, Amativeness, Reason, and either Imagination or other traits to assist these efforts. I am convinced that every primary part of speech is represented in the physiognomy as well as in the brain. I have not as yet located them, but can judge by the peculiarities of the face under observation which parts of speech will be most used.

Lavater, in his observations upon Language, shows that he understood the value of the mouth and ears as indications of eloquence, expression, and linguistic talent; but, lacking the necessary physiological knowledge, he was unable to analyze and trace the source of these faculties. Many of the most gifted orators

* Beeton's Biographical Dictionary.

have been obliged to overcome, by most patient and laborious efforts, certain defects of Nature in order to become speakers. It is said that Demosthenes was afflicted with stammering, yet by untiring perseverance and by speaking with small pebbles in his mouth he overcame this defect and was the most powerful and eloquent orator of ancient times.

Curran's voice was so bad and his articulation so hesitating that he received the name of "Stuttering Jack Curran." His manner was awkward, his gestures constrained and meaningless, and his whole appearance calculated to produce laughter. All these faults he overcame by severe and patient labor. Long after his first attempts, some one speaking to him of his eloquence, said: "It must have been born with you." "Indeed, my dear sir," replied Curran, "it was not. It was born three and twenty years and some months after me." Meaning by this that his discipline had only then enabled him to reveal his native powers of expressing oratory.*

Orators, elocutionists, actors, and lawyers require large verbal memory, and by constantly taxing it they increase its powers. The muscles of any part of the body, more particularly the muscles of the speech, become automatic, as one might say, in their movements and expressions, and phrases once learned follow each other spontaneously, just as do the notes of a musical air once learned. In this performance the automatism of both ear and vocal organs are involved, and are susceptible, as I have shown in the preceding illustrations, of being cultivated to great perfection from very defective conditions. The ability to speak foreign tongues does not involve great mentality. The faculty of singing requires very little power other than *muscular capacity*, together with a suitable physiological and anatomical construction of the throat, mouth, and ear. It is true that the singer requires an emotional nature in order to put softness and sympathy into his tones, but very little *thought* of any subject outside of musical judgment is required, and the acquisition of tone-material.

Animals possess methods of communication by audible language and expression of sounds by chirping, croaking, whistling, singing, barking, bellowing, and in numerous other ways, which are just as useful to them in their grade of evolution as is man's perfected speech to him. All the higher animals, after domestication, comprehend the meaning of many human expressions, tones, intonations, and inflections. They comprehend man's desires, and co-operate most intelligently with him in his labors. No animal has the gift of human Language. One cause of this is that they have not a suitable laryngeal, nasal, and aural formation; the roof of the mouth is too low in all the higher apes, as in some idiots, thus showing that, as evolution advances a race, the physiologi-

* Orators and Statesmen, D. A. Harsha, p. 232.

cal and anatomical structure advances with it. Animals have no *need* of human expression, for their limited pathway through life is such that a greater part of our Language would be useless to them; and yet, I think, no one has ever become greatly attached to a pet dog or horse without wishing a thousand times that it could converse with him. I must confess, I have often longed to hold converse with my horses and dogs, and have felt great sorrow at their limited powers in this direction. Their physiognomies are most expressive. Particularly is this the case with dogs, which feel all the emotions that excite us, for they express love of young, of the opposite sex, hatred, revenge, grief, sorrow, jealousy, friendliness, benevolence, mirth, trickery, acting by gestures, looks, and capers, and, as they cannot show all these emotions to us by speech, Nature has given them lithe, flexible bodies and expressive eyes and singular motions, as well as a tail with which they can show shame, fear, joy, and other feelings.

I advise my readers to make a study of ethnographical physiognomy, and compare the facial and other appearances of different races, in relation to the signs of Language shown by each. But of one thing I am sure: they will in all cases find the most talented linguists, speakers, orators, and elocutionists in those races and individuals who possess the best-developed and finest muscular systems, *fine quality* always serving as a test of superiority.

MUSIC.

Definition.—The love, genius, and capacity for producing musical tones by the voice or upon an instrument; ability to sing and play music without instruction; a sense of melody and rhythm as in speaking, conversing, and in poetical composition, related to the movements of the earth and to the pulsations of the heart and other organs; the talent for musical composition.

An *excess* of the musical sense cannot be considered detrimental, for where it amounts to genius its possessor can make a most practical use of his art and give happiness to thousands; it need not be suppressed.

A *deficiency* of the faculty of rhythm and music is a very great detriment, and efforts should be made in early life to improve this natural defect. This can be done by training the child, first, by causing it to attend to the quality and pitch of natural sounds as emitted by animals and birds, and then by training its ear and voice in vocal and musical sounds. Many apparently hopeless cases have been greatly improved by a systematic course of training. Knowledge and recognition of sounds and tones is most essential in many professions. The character is more harmonious and

symmetrical in conjunction with a good degree of musical ability. One's safety often depends upon knowledge of sounds, and a keen ear is necessary in the use of the telegraph and some surgical instruments.

Facial and Bodily Signs.—The most conspicuous facial signs of the presence of the musical faculty are found in the mouth, ear, tongue, teeth, lips, cheeks, nose, chin, and eye. The signs in the eye are secondary; the other signs are primary and belong to the apparatus which emits and receives musical and vocal tones and sounds. Musical capacity is large in those who exhibit a large mouth or one of average width; full, red lips; rounding cheeks; short, round, soft, muscular, or cartilaginous nose; a chin well developed in regard to length, height of the roof of the mouth, *relative length of the face from the tip of the nose to the point of the chin*, and *fullness* of the *forehead*, where are located the frontal sinuses. The fullness at this point shows that the cavities of the sinuses are large and hollow, and this peculiarity of formation assists resonance of tone, acting upon the principle of the drum. The ear must be rounding in form, and the concha of the auricle or shell of the ear in all good musicians exhibits vertical, lateral, and perpendicular development. Most musical ears have many flutings and convolutions, and are of all sizes, from the tiny, round, pink ear, resembling a sea-shell, to the large, round, and long ear seen upon the head of some organists and other instrumentalists. E. M. Bowman, an eminent Boston organist, possesses very large, rounding ears; he is also of a large, round build, and well illustrates the musical form. Professor Willis writes, in regard to the ear, as follows:—



FIG. 105.—ANNIE LOUISE CARY. (VOCALIST.)

Born in Maine, 1846. Principal facial sign, Music, shown by the round ear, pendent lobule, large mouth; full, red lips; full cheeks; short, thick, muscular nose; length from the tip of the nose to point of the chin; full, round throat, curved jaw, broad and high thorax, rounding head and body. The law of the curve governs this physiognomy. In this face are all the signs for first-grade vocal ability. The domestic and social faculties are decidedly developed. Patriotism, Love of Home, Benevolence, Love of Young, Approbativeness, Hospitality, Friendship, Modesty, Color, and Self-esteem are very apparent. The nose at its point shows the signs for Ideality, Analysis, Hope, Sublimity, Constructiveness, Acquisitiveness, and Self-will large; these faculties are used mainly in connection with music and language, and not in literature. The signs for Form, Size, Language, Credenciveness, Memory of Events, and Intuition are conspicuous.

The rounded, well-formed ear, that sets forward and outward instead of being flat on the head, is a good sign of musical taste, if not of talent. The voice, however, depends upon the structure of the vocal organs and the knowledge of using them.*

Lavater, too, understood the ear to be an indicator of musical and oratorical talent. He speaks of "eloquent ears, and the ears of a musician." Another observer gives as a sign of talent for *singing* "a heavy, pendent lobule" of the lower part of the ear. This sign is confirmed by reference to the ears of all the great prima donnas, bassos, and tenors, while those who are instrumentalists merely do not exhibit this formation.

The eye of all musicians, more especially of singers, is large, bright, rounded or convex, the eyebrows curved, and the general shape of the outline of the face is oval or rounded. The chin, cheeks, and the corners of the mouth of many musicians display dimples; the head is round or rounding.

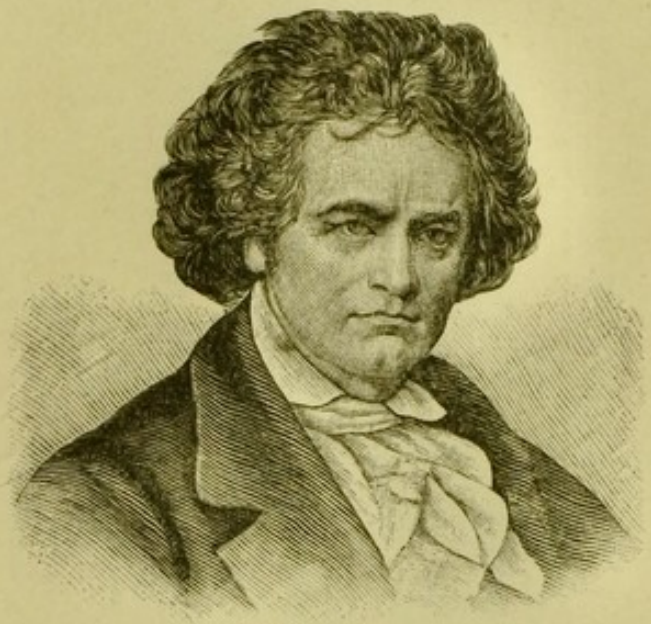


FIG. 106.—LUDWIG VAN BEETHOVEN. (MUSICAL COMPOSER.)

Born in Germany, 1770. Principal facial signs, Constructiveness and Music. The law of the straight line, curve, and square governs this physiognomy. This face shows constructive genius in every feature; even the hair in its manner of growth and position denotes inventive, original, individualized capacity. The *squareness* of the forehead indicates both rectitude and scientific powers. The compositions of this great genius reveal the presence of both these traits. The dimpled chin and curved "dramatic jaw" disclose dramatic ability. The nose is broad on the back its entire length. The signs for love of the beautiful in the opposite sex, Patriotism, Benevolence, and Conscience are large; Mirthfulness, Love of Young, and Amativeness normal. In the nose the signs for Ideality, Sublimity, Mental Imitation, Analysis, Acquisition, Constructiveness, Veneration, and Self-will are of the highest order. Language, Color, Form, Size, Observation, Prescience, Calculation, Locality, Reason, Memory of Events, and Intuition are pre-eminent. The expression denotes great capacity for prolonged attention and the power of abstraction. This unequaled musical genius represents the scientific side of Music in his wonderful compositions, and is well named,—"The father of Music."

The *bodily* signs of the presence of musical ability are shown by rounding body (caused by the dominance of the muscles); high, arched chest; full, rounding, or oval face; round throat, round arms and legs, arched feet; tapering, dimpled fingers; small and rounding joints. The musical structure is, in short, built upon a system of curves, ovals, ovoids, and roundness generally of every part.

DESCRIPTION OF MUSIC.—Motion is the basis of form, and form and motion are the bases of musical sounds. Musical sounds

* A Treatise on Human Nature, A. E. Willis, p. 624. Chicago.

are produced by the elasticity of the air and muscles, hence the muscular system is the one best adapted to produce musical effects, whether by the voice or by playing upon reed, wind, or string instruments; thus, motion, elasticity, and resonance are the basic elements of sound, yet all are resolvable into motion and mathematics as primary agents. The voice of man has also three properties, viz., force, pitch, and quality. In their ultimate analysis they are also found to be derived from motion, *i.e.*, the movements of the air, and primarily from the movements of the earth through space.



FIG. 107.—ETELKA GERSTER. (VOCALIST.)

Born in Hungary, 1857. Principal facial sign, Music. The law of the straight line and curve governs this face. The domestic nature is highly developed, as well as the artistic phase of character. The dramatic jaw, rounding chin, and size and form of the nose announce high dramatic qualities. The ear is a musical one, and by its numerous convolutions shows high development of mind. The signs for Patriotism, Conscience, Love of Home, Love of Young, Amativeness, Friendship, Modesty, Benevolence, Mirthfulness, Approbativeness, and Color are prominent. In the nose the signs for Human Nature, Ideality, Sublimity, Construction, Acquisition, Mental Imitation, Hope, Analysis, Veneration, and Self-will are pre-eminent. Language, Form, Size, Observation, Location, Calculation, Memory of Events, and Intuition are large. It is the portrait of an incomparable artist, a devoted wife and mother, a gentle, lovely woman.

The motions produced in the atmosphere by the sound of the musical tones of the voice or of a wind instrument are curved, and reach the ear (itself a curved or rounded organ both within and without), where they are taken up by the nerves and carried to the brain, and there become *conscious* sound.

Music being the universal expression of emotions, both animal and human, is based on universal law. Music is generally classed with the arts. One expression of it, as in singing, is an art purely, yet its basis lies deep down in universal scientific law. It is connected with the very foundation of the universe, and stands related to the great chain of complex laws of astronomy, through the laws of number, motion, form, resonance, elasticity, harmony, melody, time, space, and rhythm, thus giving to the poetic term "the music of the spheres" a practical and scientific meaning. Many forms of musical expression are exhibited in the insect and animal kingdoms, but are best displayed and more musical where the muscular is one of the dominant systems, for no other portion of the animal structure is adapted to or capable of expressing sound or tone, either musical or unmusical.

The elements of sound are motion, curves, resonance, elasticity, as in the air; or as found in muscle, strings, or reeds, or other material capable of tension, as in the drum-head; or by resonance, as in reeds, pipes, and the cavities of the drum, banjo, horn, whistle, etc. The lungs of men and animals, and the frontal sinuses in man, as well as the nasal cavities, are analogous to the hollow cavities of the violin, horn, drum, reeds, etc. In all of these instruments the ruling elements are elasticity and a *form* suited to the production of sonorous vibrations. Now, the forms of all musical instruments are either round or curving. The musical sounds of the voice are also curved. On this point let me quote Dr. Dalton. He remarks:—

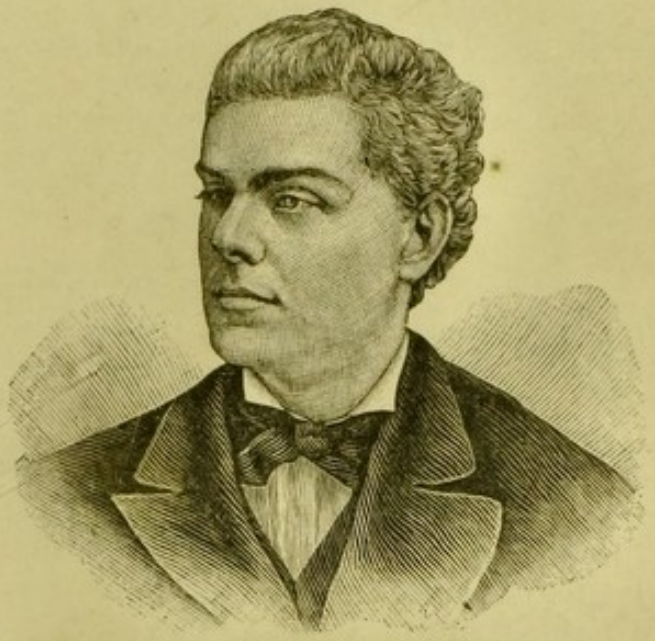


FIG. 108.—AUGUSTE EMIL WILHELMIJ.
(COMPOSER, VIOLINIST.)

Born 1845. Conspicuous facial sign, Music, shown by the supremacy of the muscular system; also by a short, round, muscular nose, rounding ear, and length from the tip of the nose to the point of the chin. In this face the signs for the domestic traits are manifest. Firmness and Conscience are normal. Love of Home, of Country, and of Young, with Benevolence, Modesty, Friendship, Alimentiveness, Pneumativeness, are highly manifested. The round chin and curving jaw announce artistic capacities. Cautiousness and Credenciveness are not conspicuous. The color-sense is well defined. In the nose the signs for Hope, Analysis, Ideality, Sublimity, Mental Imitation, Human Nature, Constructiveness, Acquisitiveness, Veneration, Executiveness, and Self-will are all well defined, the latter giving ability for musical leadership. The faculties of Observation, Locality, Form, Size, Calculation, Memory of Events, Time, Order, and Musical Reason are marked.

> The form produced in the atmosphere by the ogans of the voice in singing is a curve or a wave-like succession of impulses or tremors, which are carried forward through the atmosphere from the voice to the ear, and are there received by a rounding, external organ (the auricle or shell of the ear), thence carried through the meatus, a round channel, to the drum or tympanum, a resonant membrane stretched across the cavity of the meatus, which receives the sonorous vibrations that have been collected by the external ear and conducted inward by the external auditory meatus. Behind the *membrana tympani* is the cavity of the middle ear or the cavity of the tympanum. This cavity communicates posteriorly with the mastoid cells, and anteriorly with the pharynx by a narrow passage running downward, forward, and inward, called the *Eustachian tube.* A chain of small bones—the malleus, incus, and stapes (the mallet, anvil, and hammer, so called on account of their resemblance to these implements)—is stretched across the cavity of the tympani and forms a communication between the membrana tympani on the outside, and the membrane closing the foramen ovale in the petrous portion of the temporal bone. All the vibrations accordingly which are received by the tympanic membrane are transmitted by the chain of bones to the membrane of the foramen ovale. The *tension* of the membrane is regulated by two small muscles, the tensor tympani and stapedius muscles, which arise from the bony parts in the neighborhood

and are inserted respectively into the neck of the malleus and the head of the stapes, and which draw these bones forward and backward upon their articulations. Behind the membrane of the foramen ovale lies the *labyrinth or internal ear*. This consists of a complicated cavity, excavated in the petrous portion of the temporal bone, and comprising an *ovoid* central portion of the *vestibule*, a double *spiral* canal, the cochlea, and three *semicircular* canals, all communicating by means of the common vestibule. All parts of this cavity contain a watery fluid, termed the perilymph. The vestibule and semicircular canals also contain closed membranous sacs, suspended in the fluid of the perilymph, which reproduce exactly the form of the bony cavities themselves and communicate with each other in a similar way. The sacs are filled with another watery fluid, the *endolymph*, and the terminal filaments of the auditory nerve are distributed upon the membranous sac of the vestibule and upon the ampullæ or membranous dilations at the commencement of the three semicircular canals. The remaining portion of the auditory nerve is distributed upon the septum between the two spiral canals of the cochlea.*

The entire operation of hearing is thus shown to be carried forward and perfected by *motions* which produce a series of *curves*, *ovoids*, or round forms, caused by the action of muscle, air, nerve, and liquids, which, as Professor Tyndall has explained, carries sound by tremors or shivers. These tremors are curved or wave-like impulses and produce wavy motions. No other form could produce musical sounds, nor could musical sounds create any other forms except those which were curved, ovoid, or rounding. Now, all these motions are in harmony with the curvilinear *form* of the earth and of its motion or pathway through the heavenly spaces. The form in the air which the sound of the human voice causes when blown through a French horn is nearly circular, modified to some extent. This is *abstract form*, the same as is a gesture or the flight of birds through the air, or the form which a projectile takes. All these are forms as much as though they left an imperishable shape after them. They all, however, assume curvilinear forms through the air.

The ear is the most intricate and wonderful organ of the body and transcends in delicacy the operations of the eye. On this point Professor Tyndall remarks that

> Light, like sound, is excited by pulses or waves, and lights of different colors, like sounds of different pitch, are excited by different wave-vibrations; *but in the width of perception the ear exceedingly transcends the eye*, for, while the former ranges over eleven octaves, but little more than a single octave is possible to the latter. The quickest vibrations which strike the eye as light have only about twice the rapidity of the slowest, whereas the quickest vibrations which strike the ear as a musical sound have more than two thousand times the rapidity of the slowest.†

The keenness of hearing is shown to far exceed the keenness

* Dalton's Treatise on Human Physiology, pp. 506, 507.
† On Sound, Prof. John Tyndall, p. 75.

of sight. Scientific demonstration, with the aid of most ingenious and delicate instruments has disclosed the following facts. Professor Tyndall says:—

> The human ear is limited in its range of hearing musical sounds. If the vibrations number less than sixteen a second we are conscious of only the separate shocks; if they exceed thirty-eight thousand a second the consciousness of sound *ceases* altogether. The range of the best ear covers about eleven octaves, but an auditory range limited to six or seven octaves is not uncommon.*

The superior power of the sense of hearing to that of sight is well illustrated in pathognomy. It is well known that in many acute cases of sickness the sense of hearing becomes quickened and intensified to a painful degree, and cases are related of the sense of hearing having become so sensitive as to enable the patient to detect the step of friends upon the threshold, while the attendant was perfectly unconscious of their approach. The eye, on the contrary, in most disorders loses its power, and often becomes enfeebled for a long time after the disorder has ceased.

The eye, being less complex in its structure than the ear, is better understood by anatomists. The ear, being much more complicated in its structure, has in some respects eluded the researches of the scientists. A fine idea of its structure, as now known, is obtained from the description given by Professor Tyndall. He observes:—

> There is in the labyrinth of the ear a wonderful organ, discovered by Marchese Corti, which is to all appearances a musical instrument, with its cords so stretched as to accept vibrations of different periods, and transmit them to the nerve-filaments which traverse the organ. Within the ear of men, and without their knowledge or contrivance this lute of three thousand strings (according to Kölliker this is the number of fibres in Corti's organ) has existed for ages, accepting the music of the outer world, and rendering it fit for reception by the brain. Each musical tremor which falls upon this organ selects from its tensioned fibres the one appropriate to its own pitch and throws the fibre into unisant vibration, and thus, no matter how complicated the external air or tone may be, these microscopic strings can analyze and reveal the constituents of which it is composed.†

The physiological basis of music in the human being is found mainly in the muscular system, but it derives great assistance from the reproductive system, the principal organs of which in both male and female are muscular. All great singers, *without exception*, exhibit the sign for Amativeness in the upper lip very well defined. It is one of the signs which give redness and fullness to the lip, and thus adds beauty to it. They also exhibit large signs of Love of Young. This is a predominating trait in great singers, and all

* On Sound, Prof. John Tyndall, p. 84. † *Ibid.*, p. 325.

are known for their extreme love of children and of pets, many of whom they carry about with them on their travels. Patti has her little dogs and paroquets, and Di Murska caused great trouble to her managers by reason of the assorted menagerie of birds and beasts which she insisted upon having with her upon her operatic tours.

The voice undoubtedly originated from the sexual system, and evolution has perfected it to the degree found in the most skillful singers and orators. Darwin has treated at length this idea, and any one familiar with the lives and habits of singers and musicians will be able to trace the power of their highly-wrought *emotional natures* to the *love* and *tenderness* derived from the development of their domestic traits. The magnetic capacity which great singers exhibit in their musical performances is produced partly by the fine quality of the muscular system and partly from the fine development of the sexual system. On this point Mr. Darwin remarks:

> The capacity and love for singing, though not a sexual character in man, must not be passed over. Although the sounds emitted by animals of all kinds serve many purposes, a strong case can be made out that the vocal organs were *primarily* used and perfected in relation to the propagation of the species. Insects and some few spiders are the lowest animals which voluntarily produce any sound, and this is generally effected by the aid of beautifully constructed, stridulating organs, which are often confined to the males alone. The sounds thus produced consist, I believe in all cases, of the same note repeated rhythmically, and this is sometimes pleasing even to the ear of man. Their chief, and in some cases exclusive, use appears to be either to call or to charm the opposite sex. The amphibians are the lowest vertebrates which breathe air, and many of these animals, namely, frogs and toads, possess vocal organs which are incessantly used during the breeding season, and which are often more highly developed in the male than in the female. The male alone of the tortoise utters a note, and this only during the season of love; male alligators roar or bellow during the same season. Every one knows how largely birds use their vocal organs as a means of courtship; and some species likewise perform what may be called instrumental music. In the class of animals with which we are here more particularly concerned, the males of almost all the species use their voices during the breeding season much more than at any other time, and some are absolutely mute excepting at this season. Music affects every emotion, but does not of itself excite in us the more terrible emotions of horror, rage, etc. It awakens the gentler feelings of tenderness and love, which readily pass into devotion. We can concentrate, as Dr. Seaman observes, greater intensity of feeling in a single musical note than in pages of writing. Love is still the commonest theme of our songs.
>
> All these facts with respect to Music become to a certain extent intelligible, if we may assume that musical tones and rhythm were used by the half-human progenitors of man during the season of courtship, when animals of all kinds are excited by the strongest passions. In this case, from the deeply-laid principle of inherited association, musical tones would be likely to excite in us, in a vague, indefinite manner, emotions of a long-past age.*

*The Descent of Man, Charles Darwin, vol. ii, pp. 315–321.

A study of the evolution of man is the only method by which we can gain insight into the origin of our faculties and emotions. I think that any one who has listened to the grand songs of Patti, Neilson, Scalchi, Nevada, Galassi, Ravelli, or any other great singer, will have no difficulty in analyzing the feelings which stir them. The predominating emotion will be love or tenderness, a primitive trait arising from a primitive source; refined, it is true, by the high organization of the human family, yet breathing always the same spirit of love and magnetic attraction. By analysis, we shall find many qualities present in the singer which at first glance are unnoticed. Indeed, many fine physical qualities are requisite to make a *great* singer, more particularly as the capacity for singing requires very little mental development, but more of the finer physiological powers; hence, the signs for singing-ability are mainly observed in the mouth, lips, tongue, larynx, and ear. A singer must possess a *fine* quality of muscle, both as regards flexibility and resonance; a suitably-constructed throat, chest, and diaphragm; large waist, full chest, strong stomach; good digestive powers, shown by full lips, broad nostrils, full cheeks, and good-sized mouth; the eyes large and bright, for brightness of the eye indicates *a high quality of the muscles, as well as sensitive nerves*, and a good singer needs sufficient sensitiveness of the nervous system to enable him to hear and imitate accurately the finer gradations of tone.

The entire system must be built upon the *curved* or *arched* pattern. The eyebrows must be arched in order to give room for the wide-open, muscular eyeball; the roof of the mouth (the soft palate) must be highly arched, the cheeks rounding, the lower jaw well-rounded, and chin slightly forward to assist volume, and there must be relative length from the tip of the nose to the point of the chin, thus affording dimensions which are requisite for giving forth powerful and sonorous tones, viz., width, height, and depth to the interior of the mouth. The cavity of the auricle of the ear must also possess the same dimensions, while within the ear we find that the three semicircular canals are so placed as to describe the same geometrical positions. Dalton observes on this head:—

> It has been thought to be the office of the semicircular canals to determine the *direction* from which the sonorous impulses are propagated. This opinion was based upon the curious fact that these canals, always three in number, are placed in such positions as to correspond with the three different directions of vertical height, lateral extension, and longitudinal extension (for one of them is nearly vertical and transverse, another vertical and longitudinal, and the third horizontal in position). The sonorous impulses, therefore, coming in either of these directions, would be received by only one of the semicircular canals perpendicularly to its own plane, and

an intermediate direction, it was thought, might be appreciated by the combined effect of the impulse upon two adjacent canals.*

The round form observed in singers and musicians denotes harmoniously constructed organisms. A musician must be harmoniously proportioned in order to produce harmony in his works. A good musician never exhibits an angular, bony, scrawny, misshapen body nor disproportionate features. It is true that most singers have a very short nose, but that is characteristic of the predominance of the muscular system, the same as is a small, round head, and therefore harmonious and proportioned to *that peculiar development.* Musicians are, as a rule, graceful in their movements, owing to the flexibility of the muscles, which in all cases predominate over the bones, for *muscle must take command* of the bones, and all art is dependent upon the *flexibility of the muscular system.* It is impossible to express any emotion with a hard material like bone; only muscle is competent to produce curves, and the larynx and vocal cords must possess the power of easily curving into every gradation of form, "from the fissure to the true circle."

The great physicist, Helmholtz, has made many most interesting experiments in sound. He has shown that melodious, musical tones produce regular, curved, or wavy forms, while harsh sounds cause angular and irregular forms. So one science confirms another, and the student of physiognomy will find that each science corroborates all other sciences, if only the basis of each be sound and correct. We can sum up the system of curves as follows: Rounded men and women produce musical, melodious sounds. Angular men and women produce unmusical, angular, harsh, and irregular sounds. Impressions made by rounded instruments, such as string or wind, cause musical tones and curved forms. Sounds made by angular instruments create harsh and disagreeable tones and angular and irregular forms. Professor Helmholtz constructed an apparatus by which he could throw upon a screen the forms induced by the agitation of the air, which was produced by playing upon a variety of instruments and implements.

A finely-organized nervous system is another requisite in singing or playing, for the musician must be able to express sympathy, and the coarse-grained performer cannot do this; hence, fineness, sensitiveness, and refinement are essential factors in all really good or great singers and players. These conditions are the endowment of all the best musicians.

A capacity for sensuous enjoyment and expression is an essential component of the musician, and those who can best express this sentiment exhibit it largely in their own physical make-up.

* Dalton's Physiology, p. 510.

A large share of the vegetative system is essential to the exhibition of this quality. In combination with the muscular system it gives softness and mellowness to the tones, and, as the vegetative system is the domestic system *par excellence*, so soft, melodious tones will be given forth by such singers as Alboni and Materna. Any one who listened to the soft, melting tones which issued from the lips of Parepa Rosa, and contrasted them with the great mass of soft adipose tissue which she exhibited, will not have far to go to seek the cause of that mellifluous tone and sensuous, emotional power which this charming woman breathed into her songs. She was eminently domestic, an estimable wife, and a great-souled, sympathetic artist.

Most great musicians possess round bones as well as round muscles, and this peculiarity of structure assists gracefulness of gesture, motion, and attitude, as witnessed in the grand lyric artists. It also favors instrumentation. The roundness of the bones acting in conjunction with round muscles assists the manipulation of instruments of all sorts. This formation is shown by very small joints, hidden by muscle, and often creates dimples at the wrists, knuckles, chin, and cheeks, and also produces very full eyes and an oval face.

Where the bones are square and the muscles round, the wrist-joints are more pronounced, as well as the finger-joints more prominent, of course. This combination will manipulate an instrument differently and produce entirely different musical effects than the first-mentioned combination. Each musician sings and plays in an individualized manner, dependent upon his physiological structure, each individual performing according to his bodily build and giving forth a style of tone in consonance with the presence or absence of the many qualities essential to true musical greatness. There is a vast amount of difference in performers in regard to the amount of the faculty of touch or weight. Some performers only tinkle and others bang, while another class, with a sensitive ear, graduate their force with such nicety as to produce the finest musical effects. The ability to use force to any great extent, as in organ-playing and in wind instruments, is found best developed with those who are round and strong. All the most talented cornet-players are large, round men. Many organists are also similarly constructed, while the two most eminent violinists, Ole Bull and Paganini, were built like a violin-bow, very tall, thin, and straight, yet with the muscles in excess of the bones. Pathos and melting tenderness are found in company with an organism well developed in the vegetative as well as in the muscular system, together with a fine quality of the nervous system.

The muscles, re-inforced by the nerve-centres, or ganglia, and the action of the glands, particularly the glands related to the sexual system, are all instrumental in producing fine vocal effects, whether by oratory or by singing. The singer does not need intellectual power for his purpose, yet does require a fine nervous organization to give keenness to the auditory nerve. He also requires a high and *fine quality* of muscle, and this must be *inherent*; it cannot be evolved by gymnastics, yet every quality can be strengthened and sustained by athletic sports. The capacity for singing or playing well is thus shown to require mainly a suitable bodily organization, with but small amount of pure intellect.

It is true that the grand lyric artist must have dramatic instincts well cultivated, but this is mainly a muscular trait. The singer who interprets character does not need the same degree of the knowledge of Human Nature and Analysis that the great tragic actor requires, for acting with singing is less intellectual in its nature, and does not necessitate the high mental gifts that are involved in the presentation of "King Lear," "Othello," "Marie Antoinette," or "Phèdre," for example; but, in place of these, it is essential that the singer should be able to arouse, charm, magnetize, and electrify an audience by the innate *quality* of the voice, which proceeds from a suitable bodily organization and is not at all dependent upon brain organization, or, in other words, it is not at all an intellectual process; and this analysis of the requisites of a great singer or player gives us an insight into the *rationale* of the relatively childish capriciousness of most great singers, both male and female. It gives us the clue to their strong domestic, affectional, and amative natures, which, unrestrained, lead them to be as capricious and fickle in their love-affairs as they are in keeping their business engagements. Managers of opera companies have a rather hard task at times in their endeavors to harmonize the differences brought about by the jealousies and child-like quarrels of their companies; yet, as the muscular system is one of change, they very soon get these amiable children into another mood, and thus soothed they are as happy and joyous as larks,—these sweet song-birds whose mission it is to delight and make happy thousands less gifted. The following in regard to singers I clip from the *Weekly Argonaut* of San Francisco. It illustrates the preceding statement; also the one which ascribes to musicians a large share of Love of Young:—

Every one of the opera troupe departed this city accompanied by a new small dog and a bird. The dogs were of many breeds,—English pug, Japanese pug, and Chihuahua pug,—but every one had a paroquet. It was the manager's great pacificator. When any one got obstreperous, as singers

will, he presented him or her with one of a stock of paroquets brought secretly from Mexico. Abbey is a great manager.

A good ear for sound is of incalculable importance in many of the most practical callings. The physician requires a keen, sharp ear in order to hear with accuracy the beat of the heart; in examinations, also, for detecting diseased conditions of the lungs by the use of a stethoscope, etc. The telegraph and telephone operator, too, needs a finely-organized auditory apparatus to assist him in his work. There are many fine electrical instruments now in use which demand accuracy of hearing, and so the organ of sound is a most precious legacy, looked at from an artistic-emotional, as well as from a scientific and practical, stand-point.

There are other faculties which go to make up the perfect musical structure. Form and Size, as well as Acquisitiveness, are found well developed in all good or great musicians. Acquisitiveness is essential in many ways. Inasmuch as the muscular system in the ascendant is a playful, pleasure-loving, changeable system, those thus characterized would be as children without means to live upon, did not Nature provide, by her compensatory action, for this peculiarity of disposition, by giving these children of Art a love not only for *acquiring* praise, popularity, and fame (and this causes them to study in order to excel), but also a love for acquiring money. Many of our most illustrious song-birds are rich in this world's goods, and, if report be true, have an ardent love for accumulation. This is a wise compensation, for were they deficient in this storing-up faculty they would soon come to want. Form and Size enable them to pose and attitudinize, and also assist them in sight-reading. The muscular system gives the capacity for deciphering hieroglyphics and symbols, hence these traits are of great value to those who are obliged to use notes, signs, or symbols professionally, as do singers and telegraph operators, archæologists, etc. Our safety in many instances depends upon the perfection of the auditory organs, for sound, as well as sight, contributes to man's safety, as well as to his pleasure.

The early age at which the musical sense makes its appearance is an evidence of its infantile rank among the arts and sciences. The precocity of musical geniuses who have, at the age of infancy nearly, astonished the world with their playing is proof of the spontaneity of the performance which we ascribe to genius. Musical talent is always the outcome of generations of musically-inclined ancestors. No great genius in music has ever appeared whose ancestors were not good musicians. When this talent appears as genius, as in Mozart, who, at four years of age, played in public in a creditable manner and composed concertos at five

years of age, it is simply the *inheritance transmitted from musical ancestors, quickened by some prenatal circumstance*, which has *sensitized the nervous system*, and this together with the transmitted musical aggregation which a long line of musical ancestors has sent along down the stream of time combine to render the efforts of such prodigies spontaneous or instinctive,—of the nature and likeness of breathing or any other purely mechanical or spontaneous act.

A case in point of the tendency to transmit musical talent is nowhere better exemplified than in the celebrated Bach family of Germany, which included the celebrated Sebastian Bach. Of this family, eight generations were more or less musical, and fifty-seven were eminent in musical art. Sebastian Bach was, himself, direct ancestor of about sixty of the best-known organists and church composers of Germany. (Galton.)

Musical expression requires fewer intellectual endowments than the other arts or sciences. The reason of this has been explained in the previous pages. What musicians have to acquire is tone-material and symbol-images, and the faculty for these is inherent in the muscular system. No thought or intellectual process is called into play in order to exhibit their actions, or to acquire the material. Composers, however, require a far *higher organization of mind* than mere singers and players, for *they deal with the scientific aspect* of Music, as well as its art side; they are *creators* and must possess a *grander* individuality, for the construction of Music requires great *inventive powers*, Constructiveness, arithmetical and mathematical calculation, and other high intellectual traits, which involve the reasoning faculties. The physiognomies of Wagner, Mozart, Handel, Haydn, Beethoven, and all the great composers reveal traits of a very high order. Beethoven stands at the head of all the composers, and his physiognomy is the noblest of all, for it approaches more a rectangle than the others. Of him his biographer said:—

> His hand swept the whole range of expression with unfaltering mastery. Beethoven seems to have been so affluent in great conception, so lifted on the wings of his tireless genius, so *austere in artistic morality*, that he stands for the most part above the reproach deservedly borne by his brother-composers. Beethoven's morals, as well as his music, was of a higher character than that of many of the other great composers, and in his composition he was more *honorable*, for many of his contemporaries incorporated the music of their predecessors into their use, while Beethoven relied more upon his own unaided, spontaneous genius and imagination.*

I believe that the *squareness* of his bony system, which is well

* German Composers, p. 134. Appleton & Co., New York.

defined in his forehead and shoulders, had a great influence upon his conduct, causing it to be *square* and *honest*. Weber, one of Germany's greatest composers, bears testimony to Beethoven's square formation, in the following words:—

> The square, cyclopean figure, attired in a shabby coat with torn sleeves, everybody knows; his noble, austere face is seen in numerous prints. The square, massive head, with the forest of rough hair; the strong features, so funereal with the marks of passion and sadness; the whole expression of the countenance as of an ancient prophet.*

In the faces of all the great composers we find the signs for Constructiveness, Imagination, Analysis, Amativeness, Love of Young, Self-esteem, Self-will, Reason, Time, Calculation, Order, Veneration, Hope, Human Nature, Imitation, Sublimity, Approbativeness, and other high faculties. In order to be able to express and excite great emotions, and to arouse the higher feelings, it is necessary that the composer possess similar powers. Accordingly we find, in the physiognomies of all the most eminent musicians, poets, and orators, the signs for all of the nobler qualities of mind.

Music is a great auxiliary to civilization and refines the emotions and sentiments. Singers, by their vocal efforts, assist humanity in stimulating love, devotion, religion, patriotism, imagination, and other useful traits. Music does not cultivate the baser passions, such as hatred, revenge, terror, etc., but can be used to soothe, elevate, and refine. Music is of incalculable importance in the training of children; hence, every household and school should endeavor to provide good music for the little ones. Characters in which the musical sense is greatly lacking are in some way inharmonious, and are to that extent defective.

To sum up, we find that musicians need, first, a suitable muscular endowment; next, a fine and sensitive nervous system. Singers require a suitably-constructed throat, mouth, and chest; a strong stomach; a fine, sensitive ear shaped for receiving musical sounds, and great good health (for the voice reveals and is affected by every gradation and perturbation of pathognomonic states).

The signs for musical ability are so numerous and so conspicuously placed, that the student will have little difficulty in discovering them. Let him place the pictures of twenty or thirty of the most eminent musicians before him, and seek the signs herein given, and he will be astonished at the uniformity of the signs of Music which appear on the faces of so many diverse individuals of all nationalities.

* *Ibid.*, p. 3.

The Mathematical Division of the Face.

All the faculties and powers which relate to or assist in mathematical computation and demonstration are found in the upper or third division of the face, as exhibited in the outline cut on page 288. This attribute pervades all things, and shows the divisibility of substances, space, and time. Mankind would be like the blind groping in daylight without this power of computing, numbering, and demonstrating the numerical divisibility of all things in Nature. Statistics, surveying, navigation, weighing, measuring, and all business transactions involving calculation and accounting, come under the action of this department of the mind. Time in music, rhythm in poetry, the periodicity and revolution of the heavenly bodies, the succession of the seasons, and the quantitative particles of matter, are all subject to the laws of mathematics. So much of one element, another quantity of a different constituent, and a third proportion of some other substance, gas, acid, or ether, go to form every atom of organized life or matter of which the senses can take cognizance. There is no doubt that the pulsations of the heart and the natural accentuation of speech are subject to mathematical law. Indeed, there seems to be a law of correspondence throughout all Nature, by which the laws of all departments are correlated and act in unison with each other.

If the motions of the planets and the duration of the seasons, with all their sequences, are subjects of mathematical law and demonstration; if, in short, every atom of every kind whatever is regulated and governed by this all-pervading law of numerical certainty, why is it not reasonable to conclude that man's life, its duration and pathway or orbit through time and space, are also matters of law, coming naturally and *necessarily* under the law of mathematical certainty, and susceptible of demonstration like every other atom, or organization of atoms, in the universe? You may say that this is but a restatement of what is called "the law of destiny." I do not object to that term, if it be so understood as to include scientific law as the basis of the destination of all created matter. I do not give out this idea as based on a settled law of Nature, because I cannot substantiate it by well-demonstrated facts; but reasoning from all the analogies of Nature,—from the harmony that I observe attending all her operations, and from the co-ordination of all her forces,—I believe that mathematical law may be the basis of the duration of our allotted time here. Its universality of application is simply unlimited; yet easily demonstrated, by all who will investigate natural phenomena.

Sir John Herschel says:—

It is a character of all the higher laws of Nature to assume the form of a precise quantitative statement. The law of gravitation expresses the exact mathematical decrease of the gravitating force with the increase of the distances. Chemistry is, in a most prominent degree, a science of quantity. Astronomy likewise builds on mathematically-expressed relations: the satellite revolving around its primary describes equal areas in equal times, and the squares of these periodic times are as the cubes of the distance. In the vegetable kingdom two is the number ruling in the flowerless plants, three in the endogenous, and five in the exogenous. There is a mathematical law also governing the relative number of petals, sepals, and stamens, and the growth of leaves around the stalk. In animal life the mollusk forms a perfect geometric curve, and proportions the size of its whorls to the distance between them; and in the higher animals it is discovered, as in the number and size of the vertebræ, the number of teeth, etc., the same fact of a quantitative principle prevailing everywhere while yet in subordination to special laws of function or mode of life.

TIME.

Comprised in the Five Systems of Functions.

"The mysteries of God are revealed in Space and Time, through Form and Motion. They are concentrated in Rhythm, which is vibration or swing of matter through equal spaces and in equal times."—Delsarte.

"In all motions the central element is time, and all motions are rhythmical or have measurable forms or limits, and when these are reached they tend to repeat themselves or return to equipoise. The smallest of these forms are the waves of the forces, and the largest are the paths of the cosmical bodies."—Book of Wisdom.

Definition.—Movement, periodicity, rhythm, harmony, the time-telling and time-keeping faculty; promptitude, regularity, exactness in keeping engagements; precision in walking; automatic movements of the body and limbs in marching and beating time to music; capacity to comprehend the periodicity of the movements of the earth and heavenly bodies, as in astronomy and in the manufacture and use of scientific instruments; related to the motions of machinery, also to the physical habits of digestion, sleeping, waking, breathing, speaking, and singing; adapted to a knowledge of passing time, as in the succession of the seasons,—of years, months, days, minutes, and seconds; rhythmic time regulates the pulsations of the heart and lungs, also the movements in dancing and waltzing, and governs the pauses and sentences in oratory, as well as the cadence or measure of poetry. Time is the regulator of the flow of the sap and juices of vegetable life, and causes the recurrence of the seasons by the yearly revolution of the earth on its axis. The faculty of Time gives the ability to tell the time of day or night, instinctively, without reference to a time-piece.

An *excess* of this faculty causes one to be exact, fussy, precise and overprompt in keeping engagements and in exacting the

same of others. It tends to form the habit of constantly beating time to every rhythmic sound, as in the ticking of a clock, etc.

A *deficiency* makes one careless in regard to keeping appointments and in observing set times and seasons; causes an irregular, shambling gait; prevents precision in music and dancing; creates unskillfulness in the use of automatic instruments and the manipulation of machinery.

Facial and Bodily Signs.—The sources of Time within the human organism are so many and so diverse that I have decided to give the general signs and follow with a classification of them as they are revealed by the peculiarities of the human form and systemic mechanism.



FIG. 109.—SIR ISAAC NEWTON. (PHYSICIST, DISCOVERER.)

Born in England, 1642 (O. S.) Conspicuous facial sign, Time, shown by spherical form of head, and rectangularity of the face, and right-angled appearance of all the features. The law of the straight line, square, and sphere governs this face. The brain system is dominant, the bony system ranking second, and the vegetative powers normal. The sign for Conscientiousness is largely represented, and assisted this character in comprehending those laws and truths of Nature which he discovered. Firmness is large; Alimentiveness, average; Benevolence, well defined; Pneumativeness, Color, Love of Young, Patriotism, Love of Home, Modesty, and Friendship, conspicuous; Self-esteem, small. The nose is high, long, broad, and bony. The signs for Analysis, Mental Imitation, Sublimity, Ideality, Constructiveness, Acquisitiveness, Veneration, Executiveness, and Self-will are of the first order; while Form, Size, Language, Weight, Calculation, Locality, Observation, Memory of Events, Reason, Time, Order, and Intuition are prominent. This portrait discloses a character of the first magnitude, and is that of a moral, religious, and scientific man.

The general signs by which we may distinguish the presence of the faculty of Time are shown, first, by a predominance of the brain system, a pear-shaped or ovoid face, small chin, thin cheeks, relatively small nose, and thin lips—brain system predominant. Second, by squareness of the face and forehead, angular head, square shoulders, and squareness of the bones of the entire body—osseous system predominant. Third, by roundness of the face, head, body, limbs, and entire form—muscular system predominant. Fourth, by a fine development of the thoracic system, shown by a high, arched chest and a sharply-defined, receding forehead; high and large nose; bright eyes; lively gait—thoracic system dominant. Fifth, by supremacy of the vegetative system: this is shown by a preponderance of soft, fatty tissue all over the body; full, globular cheeks; large mouth; slow motions; dull, sleepy eye; slow pulse; feeble mental power, and childish facial expression. All of these

sorts of time are found combined in various ways and in varying degrees. When thus combined they will exhibit some of the peculiarities of each system, and thus one individual is able to make use of *several kinds* of time in his trade or profession.

DESCRIPTION OF TIME.—The phase of time exemplified by the predominance of the brain system, or ovoid form, gives ability for astronomy and for those geometric calculations upon which Time is dependent. It also includes the reasoning and logical processes essential to the comprehension of vast and complex systems of laws which are concerned in the movements of the planetary system,—the basis of time. The intellect discovers laws through the faculties of Comparison and Causality, and originates new methods and systems of computing and calculating time and motion.



FIG. 110.—MISS MARIA MITCHELL. (ASTRONOMER, DISCOVERER, MATHEMATICIAN.)

Born in Massachusetts, 1818. Facial sign, Time, shown by a general rectangularity of the face. The law of the straight line, square, and cube governs this physiognomy. In this countenance are to be found all the elements of scientific greatness; therefore all of the more reliable traits of character. Firmness and Conscientiousness are large; Economy, Patriotism, Love of Home and of Young, Benevolence, Amativeness, Self-esteem, and Modesty are singularly prominent. The wide mouth and full eyes show linguistic capacity. The long, wide, and bony nose discloses indications of scientific talent. The signs in it of Analysis, Ideality, Sublimity, Mental Imitation, Constructiveness, Acquisitiveness, Veneration, Executiveness, and Self-will are highly developed. The width of the bridge of the nose denotes logical ability. Size, Form, Weight, Locality, Calculation, Memory of Events, and Intuition are conspicuous. This lady was for twenty-five years Professor of Astronomy in Vassar College. She also made many important astronomical discoveries.

The sort of time which is originated and exhibited by the osseous or bony system is in accord with the square form, which is precise, rectangular, practical, prompt, and conscientious, hence adapted to the use of time in the manufacture and manipulation of scientific instruments which require accuracy and which execute rhythmic movements, and in the construction and use of machinery in which the mechanical principles of the laws of gravity and circuloid motion are dominant. It also gives the tendency to the practical application of time as an element in scientific instruments, in surveying, in mensuration, and other mechanical pursuits, in the use of the stethoscope and other instruments required in medical treatment. This sort of time tends to promptness in meeting engagements, causes precision in walking, making the steps exact and uniform in length. It gives the faculty of being

able to tell the time of day or night *by the sense of passing time.* The osseous system, by virtue of its angular construction, is conspicuous by its ability to use time as related to divisions, whether by the yearly or diurnal motions of the earth, or by the use of instruments or machinery which divide time into exact, set, precise periods, in contradistinction to that sort of time which is rythmic in its smoothly-revolving motion, as with a circular body. The former would deal best with machinery in which cog-wheels were used, while the latter—the muscular form—would deal best with the wheels of a watch or revolving machinery with bands and pulleys. The square-boned form, allied to a fine and large brain system, is the combination observed in most astronomers, surveyors, architects, naturalists, and inventors. Examine, for example, the physiognomies of Rudolph Virchow, Charles Darwin, C. H. M. McCormack, Schleiden, Bunsen, Sir William Herschel, Pasteur, Arago, John Draper, Edison, and Count de Lesseps. Squareness, regularity, precision, and a capacity for comprehending the *truths* of Nature, and natural law must be present in order to comprehend abstract and absolute *truth*, and this talent is best displayed by *squareness* of the entire osseous system in combination with a brain that can reason logically from cause to effect. *A certain degree of each of these sorts of time* is essential to a high development of this faculty, as more than *one phase* is required for all high calculations. The elements of roundness and squareness, for example, are needed to demonstrate geometry, elementary or analytical.



FIG. 111.—SIGNOR LUIGI ARDITI. (MUSICAL COMPOSER AND CONDUCTOR.)

Born in Piedmont, 1825. Conspicuous facial sign, Time, shown by the roundness of the face, head, eyes, and ears. The law of the curve governs this face. This entire organism is fashioned upon the curvilinear plan, and, associated with large Executiveness, affords the right build for musical leadership. The chin and lower jaws are curved in true artistic form. Love of Home and of Country are well defined; so also are Firmness, Benevolence, Approbativeness, Friendship, Alimentiveness, Hospitality, Mirthfulness, Color, Sanativeness, and Force. In the nose the signs for Human Nature, Mental Imitation, Analysis, Ideality, Constructiveness, Acquisitiveness, Veneration, and Executiveness are manifest. Form, Size, Language, Music, Memory of Events, and Intuition are quite noticeable. The Quality is fine, and the amount of Color in the organism gives force and tone to his compositions, power in leadership, and enthusiasm to whatever he engages in.

A round, muscular body and head and oval face will exhibit the sort of time which requires smooth, gliding, rhythmic motion,

as in the melody of music, the flowing cadences of poetry; in rotary, gliding movements, as in waltzing; and in the periodic revolutions of the motions exhibited in athletic sports, as in gymnastics, ball-playing, rowing, and in acrobatic exercises. Those who exhibit this form enjoy time marked by musical instruments, and as this system is usually accompanied with a good musical ear it can be turned to account in telegraphy, in the use of electrical instruments requiring a keen ear for periodic and mechanical sounds. In combination with a good brain and nerve system, ability for musical composition is exhibited; also, surgical talent and the ability to manufacture and manipulate fine and complicated machinery, such as chronometers, watches, and other instruments.

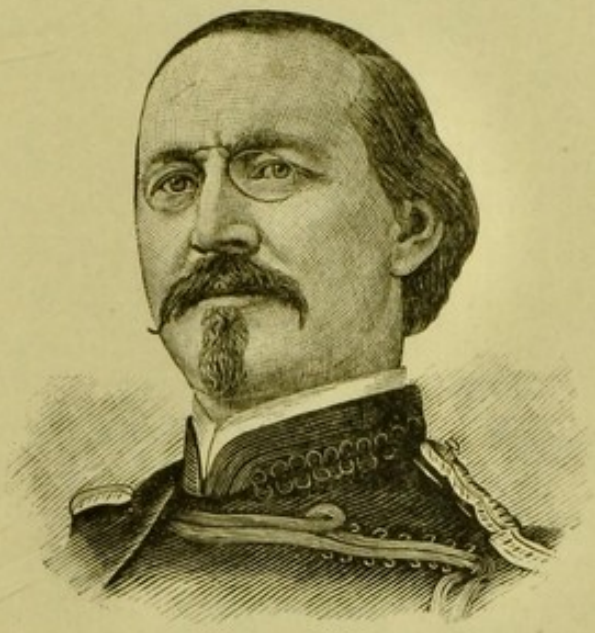


FIG. 112.—PATRICK S. GILMORE. (MUSICIAN AND MUSICAL CONDUCTOR.)

Born in Ireland. The principal facial signs are Time, Music, and Executiveness. The law of the straight line and curve governs this face. To great musical ability this subject combines large Executiveness, shown by height of the nose at the sign for Executiveness, also by its large size and width. The signs for Time are well marked,—the rounding of the head, cheeks, chin, jaws, and ears shows the presence of muscular time, while the large nostrils and arched chest show the sort of time that inheres in the thoracic system; these two kinds of Time, combined with Music in the degree which this subject illustrates, produce the ability for leadership in the direction of musical companies, as in bands orchestras, etc. The chin shows average Firmness, and Conscientiousness. Love of Home and of Country are well defined; so, also, are Self-esteem, Friendship, Benevolence, Alimentiveness, Amativeness, Mirthfulness, Color, Pneumativeness, Resistance, and Approbativeness. In the nose the signs for Ideality, Hope, Acquisitiveness, Constructiveness, Veneration, Executiveness, and Self-will are marked. Form and Size are large. Language well defined. Weight, Locality, Calculation, Memory of Events, Intuition, and musical judgment are large.

The sort of time which is inherent in the thoracic system is exhibited by the regular periodic movements of the heart, the lungs, the stomach, the diaphragm, the circulation, and the pulse. This phase of Time is related also to the periodic movements of the body, as in breathing, walking, speaking, singing, oratory, etc., and to the periodicity of that part of the process of digestion which is performed by the stomach and intestines, and which causes regular contractions of the muscles during stomach digestion, termed "peristaltic motion." The thorax co-operates with the motive apparatus, the muscles and bones; also with the emotions, and enables the orator, the singer, the musician, and actor to express their feelings in a forcible and energetic manner, and to render their songs, speeches, and music with correctness of *time* and rhythmic flow. All great or good speakers exhibit a fine development

of the thoracic system, and an arched form in the chest and nose more especially. It is this system that regulates the pauses in conversation by co-ordinating articulation with respiration.

The kind of time displayed by the vegetative system, or globose form, is infantile, and is analogous to the form of the earth before it took on its present defined shape, and began periodic revolutions and *exact motion*. It is also analogous to the fluid, watery condition of the primitive earth, and also of man in embryo, while he is living an embryotic or fluid life. As an infant he exists upon fluids, and pays no attention to any kind of time except in his physical habits, and these are not marked by any great degree of regularity; hence, the vegetative system and form exhibit less of the time-keeping faculty than the other systems, because it is less well adapted to the purpose. Time in vegetative individuals is expressed more in a purely physical manner than in any other way. The element of Time in the vegetative system is manifested by the periodicity of gestation and menstruation, also by that part of the digestive process performed by the intestines. The function of assimilation is almost always in a state of activity in this portion of the digestive tract, for the intestine is the functional and form-anologue of the primitive animal, the gastrula, and this function in all low animal forms is always in a state of activity, and the periods of absorption and digestion are not at all precise and defined, as with more highly developed animals that subsist mainly upon solids; hence, those persons whose bodies contain more fluid than solid material are unable to observe exact and periodic movements of the body and mind, for fluids are shifting and unstable, as are the vegetative men and aquatic animals. The higher muscular and osseous animals are excellent observers of time and rhythmic motion as naturalists have observed. The bladder, the kidneys, and the numerous glands are included in the vegetative department of the body. The action of all these organs is not as periodic nor as exact as are the movements of the heart, the stomach, and lungs; hence, where the vegetative system is dominant in an individual, Time in all its phases will be more feebly manifested than in the other systems. The effect of an admixture of the vegetative system with the muscular is to *soften* the tones of the voice and to modify somewhat the play of the emotions, but Time must *have the assistance* of a material which is susceptible of *regular automatic movements*, *like muscle*, and this property liquids do not possess. The globose form shown by the primitive cell in animal and vegetable tissue is characteristic of the forms of vegetative people, of the form of their head, forehead, cheeks, eyes, hands, and body, and this form is the typical form of

undevelopment, whether of the earth, the vegetable cell, or the infant or vegetative adult. Not until organisms have arrived at a certain degree of *stability* and *coherence*, by the process of evolution, are they capable of *precise*, *periodic* movements, and consequently are not capable of observing time, and this accounts for the lack of the observance of set time, of the lack of promptness and punctuality in the vegetative classes of beings. All matter such as fluids, which are not capable of moving as are solid bodies, observe molecular motion merely, and the glandular system, which is part of the vegetative system, keeps up unceasing action and movement in the exercise of its functions, an instance of motion without *precise* periodic limit or law. The main exhibition of time exhibited by vegetative people is the promptness which they show in appearing at table and in going to sleep.



FIG. 113.—MISS IDA WILLIAMS. ("THE DIAMOND FAT LADY.")

Born in Ohio, 1865. Weight, 406 pounds. This face illustrates the vegetative or feeblest phase of Time. The law of the globe or sphere governs this subject. It is plainly discernible that one endowed with such an enormous weight of adipose tissue would be wholly inadapted to keep time in marching or to be prompt and punctual in business or precise in habits. This organization shows the sort of time best adapted to repose, to physical life,—to eating, drinking, and sleeping. This subject possesses an amiable, mirthful disposition. All of the vegetative faculties and functions are well developed. Benevolence, Love of Home, of Country, and of Young are manifest. Alimentiveness and Bibativeness are very large, while the social side of her nature is equally conspicuous. The signs for Approbativeness, Friendship, and Mirthfulness are very noticeable. Color and Modesty are well marked. The sterner faculties, such as Firmness, Conscience, and Self-esteem, are not largely developed, while Cautiousness and Pneumativeness are below the average. Were her breathing powers greater she would accumulate less fat. The nose shows artistic tastes of an ordinary sort, among which Music is dominant.

In order to fully comprehend the scope and meaning of the faculty of Time, we must not only trace it to its physiological source in the human organism, but, going farther, we must examine briefly the manner in which Time manifests itself primarily, and analyze its elements. The principal element in Time is motion, — that which is caused by the movements of our solar system. The rotatory motion of the planet upon which we exist produces *rounded* forms in almost every organized thing in existence; hence the effect which the progress of time has upon the human system is to *curve* or round the body, the head, the eyes, and limbs of man and other objects. This curving or rounding is in harmony with the shape of the earth itself, which is spherical. A *rounding* form is

the only one which could move forward smoothly by the impetus of its own shape, and revolve in a *circle* and return periodically to the same position in space. Throw a ball and it describes an arc of a circle invariably. It follows a geometric law, and describes the *form of a curve* through the air. Now, in order to understand Time as an elementary faculty in man, we must comprehend the fact that the forms of man are produced by the revolution of the earth, and are caused by motion, and *reveal* their origin if we only take the trouble to analyze the source of motion.

The primitive form of all animal and vegetable tissue is cellular or ovoid; even the ultimate atom of the minerals, in a state of incandescence, is ovoid; but in its *perfection* it assumes *angles*, and this form gives *trueness*, *regularity*, and *precision* to everything which takes on the angular form; hence, the primitive form is ovoid; the more perfected is rectangular or square, like perfected mineral crystals. Lines and angles serve to mark space and distance, and are related to numbers. Time and Number, or arithmetical calculation, are closely related, and Form, Number, and Motion are synonyms in their ultimate analysis. Those persons who have a fine endowment of Time possess the capacity for arithmetical or geometrical science. The best calculators and geometricians exhibit a blending of the ovoid or brain form with the square or osseous form and the muscular or round form, thus including in their personality all the important principles of Form which are essential to the exhibition of arithmetical powers and geometric forms.

The prime factor in Time is *motion*. It is Motion which creates Time, and all that flows from it. The action of Time is universal and all-pervading in its operation. It not only regulates the movements of the earth and the entire solar system, but it controls, as I have shown, the higher faculties of man—his brain, his eye and ear, his heart, lungs, stomach, and intestines. It also regulates the periodicity of the digestive apparatus and the reproductive and the nervous systems.

Another element of Time is its rhythmic motions, as in the synchronous movements of the heart, lungs, stomach, diaphragm, circulation of the blood, and co-ordinated movements of the pulse.

Another phase of Time is exhibited by the brain and nervous system, the motions or tremors of which are of almost incredible rapidity. The most celebrated anatomists and physicists have employed their highest faculties and the most ingenious instruments in investigating the action of this complicated system, and their labors have given us a most comprehensive idea as to the functional action of the cerebral nerves and nerves of sense.

The foregoing analysis has shown us that Time is an element of all created things, hence one most essential to our welfare. It can be cultivated to a marvelous extent in all its numerous manifestations. Civilization, in affording many artificial assistants, has deprived us of many natural powers, and as man is so conveniently supplied with time-pieces he depends almost exclusively upon them for knowledge of the time of day and night, and also to regulate his habits of eating, sleeping, etc., whereas he formerly trusted to the rising and setting of the sun, and the position of the sun, moon, and stars, and to the regularity of his physical habits, for guidance. Consequently, this phase of the time-sense has deteriorated.

Time is a separate and distinct faculty from tune, for many persons are without the sense of tune, yet exhibit an excellent sense of time, while many excellent musicians and singers are obliged to practice Time most assiduously in order to acquire sufficient proficiency to sing and play correctly. I have met those who could dance in perfect time, and who possessed a fine sense of time-telling by the positions of the heavenly bodies, both night and day, who yet could not discern one tune from another, except to know that very slow tunes were generally hymns or psalms, and that quick tunes belonged to secular music. One case came under my observation of a gentleman so deficient in tune or vocal sound that it was with the greatest difficulty that he could learn to pronounce a word which was new to him, yet he showed great capacity for Time, being prompt and methodical in his habits, and could keep time in walking and dancing with others perfectly. Tune and Time both manifest themselves by motions, yet are quite distinct. Music, whether used as an art, as in singing or playing, or as a science, as in composing, is based on numerical demonstration, and we accordingly find the faculties of Calculation and Time large in musical composers, and in all really good musicians and singers.

It is not alone in music that the sense of Time is needed, but in many of the sciences and mechanic arts as well. It is of great value in the manufacture of watches and chronometers, in the comprehension of historical or domestic events in the order of their succession, and in contemporaneous history and occurrences. Time is of infinite service in the setting and running of machinery which demands exact periodicity or rhythm in its operation. The poet must possess an innate and spontaneous sense of rhythm, or his verse will be lame and halting. A fine sense of this faculty must be had by the dancer, athlete, acrobat, tumbler, turner, oarsman, ball-player, skater, and juggler, for the measured movements

of all these sports require a keen perception of the rhythmic department of Time. Business men need the sort of time which enables them to keep engagements and be punctual in all their dealings. The best housekeepers and cooks require and exhibit this sense in a high degree. A home kept without reference to specific times for meals and for other domestic duties is a poor institution.

Time is closely connected with Order, and these two principles control the universe. Characters devoid of these two elementary principles are poor indeed, and will always be at a disadvantage unless remedied. These defects can be remedied by persistent effort and the use of a time-piece. The method to be employed in improving this faculty, when defective, is to *time* one's self in every act. Use a time-piece constantly, and appoint a set time for certain acts and duties, and bring the *conscience* and memory to bear upon the fulfillment of them. Where one faculty is deficient, other faculties must be used to back them up and supplement them. In this way many defects can be so strengthened as to enable one to perform the duties appertaining to them in a very commendable manner. *Too great reliance* upon watches and clocks weakens the *natural power* of the time-observing sense; yet when one is interested in work or study, close attention weakens this power, as all the attention is concentrated upon the work in hand. In an outdoor life a reliance upon the appearance of natural phenomena takes the place of time-pieces, for the mind is on the alert and interested in the external works of Nature; hence one leading a free life, close to Nature, will cultivate this sense by natural methods, but civilization and city life require other aids.

In all good mechanics, naturalists, physicians, and scientists, Order and Time, in some of their aspects, are found to be well defined. They are essential to all these classes. Physicians must be able to tell by the measured beat of the pulse and heart whether they make "healthful music" or not, and in the rhythmic movements of the lungs his sense of Time must be so exact as to enable him to detect every little variation of movement. *Charging the mind* with the desire to awake and arise at a certain set time soon becomes a fixed habit, for the automatic action of nerve-matter is powerful, and, as I have shown that the *principle or essence* of this faculty is inherent in every department of the human body, it is thus clearly proven that each system of functions can be brought into requisition in the several uses of this faculty. The brain, for remembering times and occurrences, and for reminding us of appointed duties; the muscles, for keeping time in marching, in singing, in walking and running, in oratory,

and in the pauses of conversation, etc., and each of the other divisions of the body furnishes its own peculiar phase.

The right use of time should be studied, and all waste of the short amount of time allotted to us upon this mundane sphere should warn us to use every moment in such manner as to gain from it the greatest good. Time is the most precious of all our gifts, and parents should inculcate in their children this first most important lesson, that "lost time is never found again." Almost anything else can be replaced, but lost or misused time never.

All property is the result of two of the most precious and important things in the world, viz., Human Life and Time. How essential, then, that we should be intelligent enough to adequately prize these gifts! Property, or capital (other than land), is the stored-up increment arising from the youth, health, energy, integrity, and *time* of human beings. How necessary, then, is that "enlightened self-interest" which shall teach us how to conserve time in such manner that all shall have their fair share of its products! For to take the bulk of the time and life of the many and to give its products to the few is a most pernicious and sinful use of those elements. The revolutions of this orb upon which we live will doubtless (under the all-powerful law of progressive evolution) bring about such reforms in this direction as will remedy this terrible system of high-handed theft—of despotism, ignorance, and barbarism. These reforms may come peacefully in the regular course of evolution, or they may be precipitated upon us like a cyclone, and those who block the wheels of justice will be overtaken by a terrible retribution. It is the duty of all to examine this question, and ask, "Am I enjoying wrongfully the fruits of others' time and life?"

Eternity.—The principle of Time is adapted to eternity as well as finite beings can comprehend that idea. The mechanical construction of the solar system gives us the best idea of never-ending time. We cannot conceive of a system which exists by virtue of its rotary motion through space coming to a sudden standstill, or pausing for an instant even, for this would disturb the existing order of every atom involved in the construction of this mighty system; hence, our understanding must be limited by the most comprehensive system of which our sense takes cognizance. All the forms which meet our vision and all the analogies of Nature tend to the idea of eternity, but the time which is allotted to each one of us *here* should be so used as not only to make our pathway pleasant and happy in this term of existence, but also to assist the next phase of life in its onward march to a higher evolution. *A right and conscientious use of time here* will

prepare us for any other phase of existence, and if we put all our energies into following *the laws* in this life we need not trouble ourselves at all about the next one; we shall be ready for anything that comes.

The preceding ideas in regard to Time teach us that motion is the basis of Time, and in all our acts which are essential to life, to business, to art, science, mechanism, or government the elements of Time and Motion come into operation. As we proceed to the investigation of the higher mental faculties of man, viz., Order, Calculation, Comparison, Causality, Prescience, and Intuition we shall observe a closer and closer relation to the great chain of complex laws which originate in the motions of the planetary system, for we shall find that they are based on Calculation and result in Form. The lowest or primitive faculties and their associated functions—those of absorption, assimilation, growth, reproduction, etc.—exhibit all the processes of molecular activity, the phase of action or motion which is paramount in cell-life, germ-growth, or in infantile life, and is hence characteristic of primitive conditions. Now, molecular activities are those which were instrumental in forming the nucleus of our planet when it first began to take shape and rotate, and if we follow closely the evolution of all growths we shall find that molecular motions are primitive, and that the vibrations observed in primitive growths are typical of the vibratory rhythm of the planet upon which we live and which necessarily sends its every principle and element up along the course of evolutionary progress and development until the end and aim, the climax, the *microcosmos*,—man,—is reached and perfected. *We are one with the earth*, and every vibration of this mighty planet, with the swing and rhythm of all the great celestial orbs in space, is echoed back by the same rhythmic motion in our organism, and with the same resultant harmonies.

Prophets, seers, poets, and philosophers of ancient times foresaw, sung, wrote, and reasoned in a childlike way of all the great principles and laws which modern science is demonstrating to a certainty in a man-like way. We are surely made of the "dust of the earth," and all the elements and principles which inhere in it are inherent in us, and no principle is more marked or more powerful in its effects upon man than the elementary principle of Time.

The combinations which are observed in those whose professions are based on Time are, of course, different in degree in each case. Astronomers require a certain degree of at least three phases of Time. They should possess the sort of time which inheres in the brain system, thus giving them the ability to comprehend laws

and principles and to enable them to reason from cause to effect, together with that phase of time which attaches to the chronological order of events of successive periods, past and to come. They must also exhibit the kind of time which is evolved from the osseous system, conjoined with the muscular, the arithmetical in combination with the mechanical. Now, these three phases of the faculty of Time are found in the structures of all good astronomers, physicists, surgeons, chemists, architects, and those of similar pursuits. Examine, for example, the portraits of the Herschels (father and son), Arago, Copernicus, Tycho Brahe, Encke, Biela, Donati, Huyghens, J. C. Adams, Le Verrier, Professor Olmsted, and Maria Mitchell, all noted astronomers. In all these the brain system is dominant and the muscular and osseous nearly equal, while the thoracic is in varying degrees in each. Sublimity is immense in the physiognomy of Sir John Herschel, and this faculty gave him the capacity for comprehending the grandeur and vastness of the great systems of worlds in space. Good arithmeticians and physicists must also possess large powers of computing Time, for Time and Number or numerical calculation are synonymous. Accordingly, we observe in the faces of Professor Helmholtz, John Tyndall, Volta, Ampère, Oersted, Professor Faraday, Sir Humphrey Davy, Liebig, John Dalton, Berzelius, Gay-Lussac, Dulong, Prof. A. W. Hofmann, Sir David Brewster, Chladni, and Sir William Thompson (all physicists in various departments of physical science), diverse combinations of, at least, the three forms of Time which are evolved from the action of the brain, the muscular, and osseous systems. All good mathematicians reveal in their countenances a combination of these same systems, and are thus enabled to comprehend the laws of number. And all sciences have, as a basic principle, the element of Time, for all laws relating to every science whatsoever are expressed either in terms of Form or Number, or both.

For purposes of musical composition there must be a good degree of the brain, the muscular, the thoracic, as well as the osseous, systems to give the several kinds of time which are used in musical composition. A chemist must possess an excellent osseous frame to give justness and accuracy to his conceptions of quantity and number, while physicists who deal with the elements of air, water, ether, gases, fluids, and minerals must possess a fine sense of various sorts of Time and a good degree of the faculty of Calculation.

The faculty of Color has considerable effect upon the sense of Time, for, as I have persistently shown, Color is as universal and all-pervading an element in Nature as in Time; hence it affects

every material object. The scientist, naturalist, and mathematician who is deeply colored possesses a more decided and definite sense of Time than he who is pallid and greatly lacking in color. It is true the eyes of many good mathematicians are of a bluish gray, but this blue shade is a color which shows coolness, and coolness is favorable to numerical calculation. Yet scientists, in order to excel, must inherit the Color sense in a fair or large proportion, and the more decided the blue shade in the eye of the mathematician the greater his power as compared to the one in whose eyes the white tint predominates over the blue shade.

Animals of almost every grade exhibit various phases of the time-keeping sense, and in this department naturalists have made numerous investigations which have resulted in finding that the sense of Time is as wide-spread among the animal races as among the human races, and that the sense of Time is superior in the higher races of animals to that observed among the lower races of men. In the first place, many animals, even of low degree, exhibit the *instinctive* knowledge of the time appointed for feeding them. This results, probably, from the sensations arising in the vegetative system in the intestinal tract, and this, the lowest form of the Time sense, is common to all animals who have an appointed time for eating and drinking. It has also been observed that many species of animals and birds have a certain set time for meeting in flocks and herds, and are punctual in keeping the appointed time; also that they have ideas of Time or rhythm, number, order, and succession of events. Dr. Lindsay, from whose work I obtain the following facts, observes that he has often seen dogs in Scotland, who had been in the habit of attending church with their masters, go without them on the return of the Sabbath and remain the allotted time, seemingly as much benefited as if their masters had attended and "napped" with them. Hogg, the "Ettrick Shepherd," relates an instance of a Scotch collie who, upon hearing his master lament that there were three flocks of sheep lost, went, without being ordered, in quest of them, and in the dark, and collected the whole seven hundred; and another dog, overhearing the day when his master was expected home, never failed of going to meet him. As low down in the scale of animal mind as the ants we are told that they send messengers to call up an army, and communicate the *time* for assembling at an appointed rendezvous.

The capacity for *measuring time* is possessed by domestic animals, such, for example, as the cow, the horse, the dog, the cat, and birds. These creatures note the duration of time from one meal to the next, keep account of their master's meal-times, and have a fixed time for rising and sleeping. Many work co-operately;

that is, in companies, as a gang of human laborers under similar circumstances.

The annual and semi-annual migrations of fishes and birds reveal a fine sense of the time-keeping faculty, and in this circumstance the effect of reason is shown, at least, in the case of many of the bird species, for this periodic journey is not undertaken, as some would have us believe, under the influence of "blind instinct," but is *timed* in accordance with observations made of the weather, and their hegira to other latitudes is made in accordance with the meteorological conditions and not in a "blind instinctive" manner, else it would take place always upon the same day, hour, and minute. An animal is no more an automatic machine than is a man. We are both *limited* by our nature and environment. Man can only do certain things in a certain defined way; in this respect he is a machine the same as an animal: "To do more we must be more."

The above facts in regard to the Time sense in animals I gather from a work entitled "Mind in the Lower Animals," by J. Lauder Lindsay, to whom the whole world is indebted for a most valuable collection of *facts* in regard to the animal mind. I have not space to analyze minutely the origin of Time in the animal mind, but suffice it to say that they observe all the phases of Time exhibited by man, and also possess the same combinations of Time, and the several phases of this faculty appears in animal forms similar to those exhibited by human beings.

ORDER.

Mental Order:	Physical Order:
Derived from the Brain and Osseous Systems.	Derived from the Muscular and Thoracic Systems.

Definition of Mental Order.—Precision in arrangement of ideas and articles; method, system, regularity, conforming to law, rule, and custom; a place for everything and everything in its place.

An *excess* makes one impractical through expending unnecessary time in arranging and classifying ideas and materials, and it engenders worriment, fussiness, and useless particularity. An excessive development of Order, when perverted by nervousness, causes great suffering at the sight of the slightest disorder.

A *deficiency* of Order makes one unsystematic in the arrangement of his ideas in speaking and in writing, and creates disorder and slovenliness in dress, and in the arrangement of furniture, books, etc.; also causes great loss of time through lack of method,

system, and regularity in the details of the office, counting-house, manufactory, store, or home.

Facial and Bodily Signs.—Like all the higher faculties, Order is a trait which has its origin in universal law,—in the movements and orderly arrangement of the solar system; hence, we are obliged to seek its signs in several systems and forms of the bodily organism of man.

DESCRIPTION.—*Mental* Order is present where the brain system is *dominant* and the bones of the forehead exhibit a *square* appearance at the sides, as seen in the foreheads of Newton and Beethoven. This sort of Order is closely related to Time, and is associated with it in the mental processes of historians, scientists, geographers, physicists, astronomers, mathematicians, promoters of great business enterprises, and naturalists, all of whom require the power to arrange in the mind, in an *orderly* manner, the succession of events and laws which are related to their several pursuits. These classes of people must be able to picture mentally the *general plan*, *order*, or *system*, as well as the detail of that which engages their attention. This is what is termed "Mental Order." It is often found associated with Physical Order.



FIG. 111.—MRS. EMILY C. JUDSON.* (MISSIONARY, POETESS, WRITER.)

Born in New York. Conspicuous facial sign, Order, shown by squareness of the bones of the forehead and right-angled appearance of all the facial features. The law of the straight line and angle governs this physiognomy. The signs for the domestic faculties are large. Conscience, Firmness, Love of Home, of Country, and of Young are manifest; so also are Benevolence, Mirthfulness, Modesty, Pneumativeness, Friendship, and Approbation. Alimentiveness is not large. The mental, or brain and nervous system, is dominant. The curving jaw, full, convex eyes, and form of the nose announce literary capacity. In the nose the signs for Hope, Analysis, Ideality, Mental Imitation, Sublimity, Constructiveness, Veneration, Executiveness, and Self-will are large. Form, Size, Locality, Memory of Events, Prescience, Credenciveness, Language, Time, Order, Reason, and Intuition are all exceedingly well defined. The portrait of a modest, intellectual, courageous, sympathetic, and philanthropic woman.

Physical Order is related to the arrangement of substances, materials, machinery, furniture, books, clothing, etc., *things* more particularly, as contradistinguished from *ideas*. A square-boned form is the sign for Physical Order. Where this phase of Order is exhibited the forehead will be square, and the features set at

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right angles, and a precise and square arrangement of the bones of the body will be observed. The shoulders square, and the steps measured and uniform in movement like the pendulum of a clock. Where these two sorts of Order are associated the sense of Order is excellent.

Every part of the body, by its orderly arrangement, assists man in the comprehension and use of the element of Order in his pursuits, yet it is more decidedly expressed by the dominance of the brain form and of the bony form than by the others. The ovoid form being the analogue of the infantoid or primitive shape is the *originator* or beginner of the *ideas* of systems and plans; while the more perfected or angular, rectiform shape of the bony system is the analogue of precision,—of orderly arrangement of *substances*, as illustrated by the rectangular form of the mineral crystal, of which the bone is mainly composed.

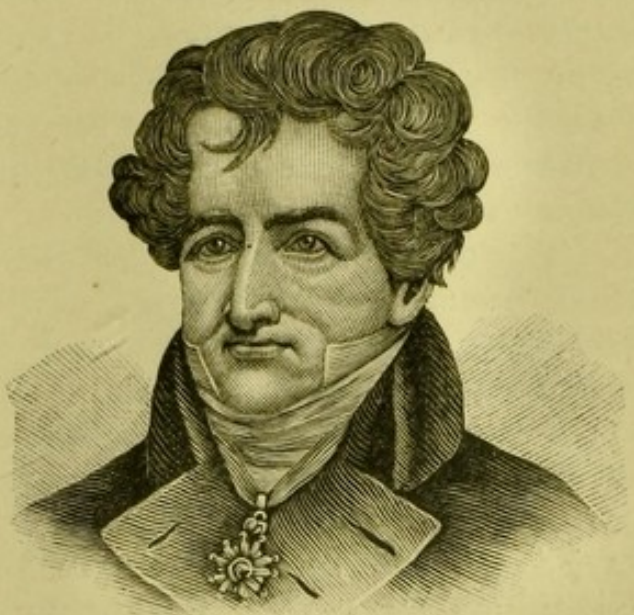


FIG. 115.—BARON CUVIER. (NATURALIST, AUTHOR, LECTURER.)

Born in Alsace, 1769. Conspicuous facial sign, Order, shown by squareness of the bones of the head, and a precise, orderly, and right-angled appearance of all the features of the face. This remarkable countenance reveals one of the most eminent historical characters. The domestic nature is highly developed. Conscientiousness, Firmness, Patriotism, Benevolence, Love of Home, Love of Young, Mirthfulness, Approbativeness, and Friendship are well defined. Self-esteem is not large; Amativeness, normal. The nose is high, long, wide, bony, and broad on the back; in it are the signs for Analysis, Mental Imitation, Sublimity, Ideality, Constructiveness, Veneration, Executiveness, and Self-will most uncommonly prominent. Form and Size are extraordinarily large. So greatly developed were these faculties that he could, by inspection of a small protuberance on a jaw or a tooth, tell to which species of animal they belonged. The superciliary spaces are wide, and give evidence of artistic talent. He was a fine draughtsman. Calculation is large; so, also, are Observation, Locality, Prescience, Order, Language, Time, Music, and Reason. The signs for Intuition and Memory of Events are wonderfully manifest. Altogether a perfect specimen of a "thoroughbred" man.

The squareness of the osseous system causes its possessor to be orderly and methodical by virtue of his formation, and this formation of the bones of the forehead has given rise to the phrenological error and assumption that this peculiarity is owing to the presence of an "organ" composed of brain-matter, bulging out at this particular spot. Now, the good observer can just as well find the indication of the presence of Physical Order by an examination of the *first joint of any finger* as by an examination of the forehead, for an orderly person will present *squareness* of the *bones of the finger* as well as squareness of the bones of the forehead. In this case we should be just as well warranted in asserting that

this peculiar formation of the finger was caused by brain-matter, as we are to assume and *assert* this of the forehead These square appearances both of brain and finger are derived from the same source, viz., from a *square formation of the bones;* and squareness of the bones gives rise to that sort of Order which is used and required in all scientific and mechanical pursuits.

Order, like Time, is derived primarily, as far as we can comprehend it, from the regular order of the solar system, and all the principles observable in that system inhere in every atom of organized matter, and come up into man's organism along with the primitive elements of which he is composed. This is how we get the faculty of Order; and thus we have the two very distinct kinds of Order which show themselves very plainly *in the form of man* as well as in the acts of man, and his *form* and *acts* will be found to *agree in every instance.*

The round-built, muscular person exhibits a different sort of Order from those previously described, while the vegetative individual possesses and exhibits less than the others. The round-formed man exhibits his Order by regular, automatic revolutions, by circular and circuitous motions. A free, round body in revolving, continues to move in circles, and never revolves over the same space, but moves in a spiral circle; hence, round-built persons are never as angular and precise in their arrangement of thoughts and things as are the higher formations. The sort of Order exhibited by the round, muscular person is adapted to art-works and to the comprehension of natural or primitive laws, and where a good brain system is conjoined with the former we find the ability to comprehend and illustrate the order of revolving bodies, as in astronomy and in mechanical principles; also the order of cycles and circles,—of recurring periods of time, weather, seasons, etc. Many of our best historians exhibit this formation and thus show the use of this combination in art, for this class of writing is an art mainly.

Where the muscular system is the dominant system, and the brain system subdominant, in an individual, he will use the sort of time required in music, in marching, in waltzing, and in those *free, revolving movements of the body which require periodic automatism*, unlike the angular movements which the square-built man exhibits.

System is Order on a large scale, as, for example, the comprehension of the orderly arrangement of the solar system or the orderly arrangement and classification of the fauna and flora by naturalists. Order leads one to be exact in the detail and minutiæ of placing things, both great and small; while system lays out the

ground or *fundamental* plan, laws, or motions, and the smaller details are elaborated and supplied by others. And this accounts for the apparent discrepancy (as it seems to some) of those persons who are skillful in planning and arranging broad schemes of work and business, or in classification, but neglect the details. This class of minds possess system without order. System requires the use of the reasoning faculties. On the other hand, many persons exhibit a high degree of Order yet lack System, and work by paying attention to trivialities and petty details, being wholly unable to originate or put in use a broad and comprehensive system of action.

Nearly all persons, except the purely vegetative, possess a certain degree of *more* than *one* sort of Order, for the *combination* of brain, bone and muscle produces one sort, while another kind is shown where the bony system is predominant, the brain system second, and the muscular system third in the degree of development. Another phase of Order is exhibited where the muscular system stands first, the brain second, and the bony system third. This combination is a good one for singers and acrobats. The first mentioned is found among astronomers and certain classes of scientists; while the second is an excellent illustration of the sort of Order observed in mechanicians.

The presence and effect of Order is apparent in all of Nature's operations: in the succession of the seasons; in the regular order of seed-time and harvest; in the time for leaf, bud, flower, and fruit; in the succession of day and night, summer and winter; in the order shown in the evolution of man,—in his embryotic life, then in his birth, infancy, youth, manhood, old age, and then probably re-birth in another sphere, and still farther evolution and progress there, for, if we observe the progressive tendencies of Nature we must become fully convinced that nothing stops or comes to a standstill. Order is not only "Heaven's first law," but it must be the law of all who desire success in anything. Even idiots have been known to exhibit a wonderful degree of Order and of its associated faculty, Music, of which "Blind Tom" was an illustration. It is related of a savage or wild man, discovered in a forest in France, that he could not bear to see a chair or other article of furniture out of place, and when he found anything in a different position from that to which he had been accustomed to see it, he immediately arose and arranged it in its wonted place.

The automatic movement of the fingers in playing musical instruments is an exemplification of the effect of Order,—muscular Order; for, after repeated exercise of the fingers in a musical

composition, the player can reproduce the same exercise mainly through the automatic action of the fingers, which follow the same order of succession as when guided by the notes. This form of Order is best observed where the muscular system is dominant. Many persons with a good bony form, and orderly in the arrangement of books, clothes, and furniture, lack the ability to play by rote unless the notes are in sight. This defect arises from a lack of that degree and quality of muscular development which gives the ability to express automatic Order.

Many persons possess Order to the degree that would justify one in designating them "painfully orderly." This is apparent in many housewives, who are so exact and fussy as to make a visit to them anything but an enjoyment, as they seem to be greatly pained at even a momentary displacement of chairs, furniture, or other articles, and pass all their time during the visit in putting in order every book, tidy, chair, and article used by their guests. Such women make home anything but happy to their family and friends. When the nervous system of this class of people becomes disordered, the result is quite painful, causing great suffering at the least disorder, and rendering its subjects almost insane. Some men, too, possess this "painful" degree of Order, and I have heard of a man in whom this faculty was so excessive as to cause him to paint the shape of his saws, hatchets, files, and other tools, upon the wall against which they were hung, for fear a stranger might use them and not replace them on their accustomed nails. This plan he adopted to insure perfect order.

The cultivation of this trait is very essential. It can be developed in youth by a quiet persistency on the part of parents, in the house and store. Children should be compelled to hang up their clothes before retiring, and fold and put away everything they use; and parents who take this task upon themselves are censurable, for such a course not only weakens the faculty of Order, but teaches children to be indifferent to their parents' welfare. Neglect in the cultivation of Order in childhood incapacitates men and women for many useful pursuits. There is no business, either mental or manual, but requires a large exercise of Order. In the school, store, factory, office, and counting-house, it is most essential, as well as in the home. The time lost by careless slatterns in looking for what is mislaid is often sufficient to do their entire work. Things that are habitually mislaid never get the proper care through being inappropriately placed. They are put in positions where they receive injury. Books, clothes, and tools left out-of-doors get wet and are injured, or are carried away by dishonest persons, and every article left out of its proper

place deteriorates in some way by such neglect; hence, Order represents time, labor, and money, while disorder consumes all of these by its destructive tendencies.

One of the most striking and wonderful evidences of the reign of law by system and order in detail is exhibited in the arrangement of the mechanism of the human body, and is illustrated in the human face. Each bone and muscle is so placed as to give the most action with the least amount of resistance or friction. Every organ is always placed in nearly the same position in everybody, and always so placed as to assist other organs in contiguity with it. In the face, the signs of character and of function present the same peculiarities. The comprehensive system or outlay of the entire man (which at the same time epitomizes the entire universe) is, in the face, made manifest. The order of arrangement in the face of the signs of faculties and functions is also proof of the theory of the progressive evolution of the animal and human mind. The localizing of all these signs discovered by me, and for the first time in the history of physiognomical research systematized and simplified, is indeed a revelation, and one adapted to the comprehension of young and old—learned and unlearned; yet without order in the placing of these signs there would be neither sense nor use in learning them. The order of development of the five systems and their signs is observed, first, in the vegetative or primitive system, and forms the basis for higher development. Next succeeding this system comes the breathing and circulatory powers, together with all the mentality which high breathing powers originate. Then follow the signs for muscle,—for art, literature, and architecture; next, the bony system begins to show its action by signs which cannot be ignored, so patent are they to all observers. The perfected brain, the latest and highest achievement of evolution, arises from this *combined physical base*, and this is sustained and nourished by the action and quality of the blood-making mechanism, for blood is the food of the brain, and without a good manufactory for this element a brain is of little account to its possessor. All these functions and their associated signs display in a remarkable manner the dominance of Order.

The vastness and grandeur of the solar system is indeed evidence of what the Creator can do on a large scale, and seems wonderful when we contemplate the magnificence and complexity of the laws involved in its operation; but to me the wonder is a thousandfold increased when I observe in the small space allotted to the human face the illustration and exposition of *all the laws, principles, properties, and qualities* which permeate and control this vast system; truly, a macrocosm within a microcosm!

Poets have appreciated this great scientific fact, and one in a poetic spirit has wrought out this idea in a single verse. Elizabeth Barrett Browning tells us that

"Since God collected and resumed in man,
The firmaments, the strata, and the lights,
Fish, fowl, and beast, and insect,—all their trains,
Of various life, caught back upon his arms,
Re-organized and constituted man,
The microcosm, the adding up of works."

The reason why I consider the faculty of Order in this place—following the faculty of Time and preceding the consideration of the faculty of Calculation or Number—is because Order is a *necessary* and *natural ally to both these faculties*, and also because it is a trait derived from the brain, osseous, thoracic, and muscular systems mainly,—all high systems. Again, one sign of Order is found in the squareness of the lateral portions of the bone of the forehead, and another by the width, height, and fine quality of the frontal brain.

There must of necessity be a reason for the location and order of arrangement of all things related to man, and the more nearly these accord with natural law and classification, the more nearly is "Heaven's first law" observed. Our faculties are so arranged that the powers to discern and discover everything pertaining to man are placed in such order as will best assist this purpose.

The discovery of scientific physiognomy was so ordered that it should come in an age which was sufficiently enlightened to comprehend and apply its truths. Had it been discovered and formulated in the "dark ages," the faggot and gibbet would undoubtedly have been the portion of the man or woman who had the temerity to publish it to the world, and the same may be said of all modern inventions and scientific discoveries.

"The man is thought a knave or fool,
Or bigot plotting crime,
Who, for the advancement of his race,
Is wiser than his time.
For him the hemlock shall distill,
For him the axe be bared;
For him the gibbet shall be built,
For him the stake prepared.
Him shall the scorn and wrath of men
Pursue with deadly aim,
And malice, envy, spite, and lies
Shall desecrate his name.
But truth shall conquer at the last,
For round and round we run;
And ever the right comes uppermost,
And ever is justice done."—MACKAY.

Thus we see that Order is a universal principle in the evolution of society and governments, as well as in the vegetable and animal kingdoms.

In former ages, physiognomy was termed the "black art," and its expounders were proscribed by law. So recent as the reign of King George II, an act for the punishment of physiognomists was worded thus: "All persons pretending to have skill in physiognomy are included among those offenders who are deemed rogues and vagabonds. As such they are liable to be publicly whipped or sent to the House of Correction until the next Sessions, or any less time, and after whipping or commitment they may be passed to their last legal settlement or birthplace; and, moreover, the Justice may sentence them to hard labor for not more than six months." The reader will conclude from the above law in regard to this science, that a systematized method brought forward under such laws as the above would have probably resulted in the punishment of its promoters. Under the ordering of an overruling power this was delayed until this era, wherein all scientific ideas are hailed with delight by the intelligent inhabitants of every civilized country and their expounders protected by law. Not only has this science made great advances, but other sciences have developed which have materially assisted the advancement of physiognomy. Among them I may mention comparative anatomy, physiology, and evolution. Until these and other sciences had been elaborated to their present degree of development, the *scientific* knowledge of the human face and its associate character could not have been brought forward on its present basis.

Thus we observe that the law *of orderly progress* governs the advance of human knowledge, and nothing has been more potent in this direction than the discovery of *laws* in every department of science.

The faculty of Order is by no means confined to the human family, although very feebly manifested in savage and undeveloped races.

It is exhibited in a much higher degree by many animals and insects. Most especially is it shown by bees, wasps, ants, and birds. In these creatures, as in man, it is associated with a sense of Time and Number, both as regards their sense of and preparation for the orderly succession of the seasons, as shown by the migration of birds and in the building of nests, dams, and dens as defenses against the coming winter; and here the faculties of Time, Number, and Order are associated with Constructiveness, just as in man, whose architectural skill requires this peculiar combination.

Dr. Lindsay tells us:—

Animals possess a great degree of method, system, and classification, as is shown by the arrangement of their numbers into classes, ranks, and castes, and by the attempts of their leaders to substitute order for confusion in great crises and in panics. The republican form of government exists in a most orderly form among ants, while bees have organized a monarchical order of government, and divide their numbers into a reigning sovereign,—the queen-bee,—soldiers, workers, guards, nurses, etc., thus showing a comprehension of law, order, method, and system.

The higher animals also observe method and order in the division of numbers into flocks and herds. They have acknowledged leaders and follow them implicitly. Order in detail is shown in the symmetrical arrangement of nests and dams, in the cells of the bee and wasp, and in the dwellings of the ant and mole, which last is a beautiful specimen of architectural symmetry and order, while the order and system observed in the nest of the "geometric spider" is as perfect in its proportion as anything constructed by man. The reader may have imbibed the notion that all these orderly acts are done under the effect of "blind instinct," a term the old school of metaphysicians were fond of applying to animals, but when it is known that all classes of insects and animals often make mistakes of judgment in construction and take their buildings apart and rebuild them in a more useful and convenient manner, it is at once proven that *judgment* and *reason* have guided them, and that, like man, their judgment is sometimes faulty, which they amend, as he does, by experience and experiment. Sufficient has here been said to show that nearly all classes and races of animals possess a large share of method, system, and order, both mental and physical, and that the *same phases* of order are displayed by animals whose structure corresponds to that of men of similar form and similar anatomical development.

Those in whom the vegetative system and form are dominant manifest a comparatively feeble comprehension of Order. They seem to keep things in a confused heap, and make very odd and incongruous mixtures of articles. Their ideas and language also lack Order, and in conversation they interject all sorts of inconsistent remarks, without regard to their applicability. I have remarked the action of many housewives in whom this system predominates, and have been quite amazed in observing them put their house to rights by storing away together, in all sorts of closets and corners, articles which an orderly housekeeper would never dream of putting together. Yet the rooms at times would appear in perfect order, especially if company was expected, but if a closet-door opened unexpectedly quite a museum would be ex-

posed to the visitor's gaze. Vegetative people in their thoughts and acts seem to "wobble" about, and are uncertain, unstable, and confused in their plans and movements. There seems no fixity of purpose, because they are composed mainly of fluid material, and, like the waters of the ocean, they are ever shifting and never definite; hence, we cannot expect to find a high phase of either Order or Time in those in whom the vegetative system is supreme. Yet, even in this class of persons, Order can be very much strengthened by commencing early with them, and *insisting* upon their having a place for everything and compelling them to regard this law.

The exercise of the faculty of Order is essential to all the higher mental powers. In combination with Calculation, Time, and Reason, it assists the astronomer and mathematician. Combined with Constructiveness, Weight, Form, and Size, it aids the operations of the mechanic and artist. With Language, Memory of Events, Observation, Constructiveness, Locality, and Time, it is the ally of the historian and editor. Associated with Music, Calculation, Time, Constructiveness, Intuition, and Ideality, it is a valuable assistant to the composer. To the naturalist, teacher, scientist, mechanic, chemist, and physicist, Order is most essential. No high pursuit can succeed with deficient Order, for the arrangement of ideas in an orderly manner, as well as the placing and classifying of substances and articles, demands a good degree of this faculty. Form, Size, and Locality, where they are well developed, assist deficient Order and compensate one measurably for such deficiency.

The preceding statements show the origin and action of this high and useful trait. The higher an organism has evolved, the more Order it exhibits; and the lower the organism in the scale of creation, the less accurate, precise, periodic, and orderly is it in its habits, methods, and movements.

The numerous signs, together with the very diverse origin of the several phases of Order, as above described, very materially enlarges the phrenological notions in regard to this faculty and its *single cranial sign.*

CALCULATION.

Aristotle lays down the general principle of the Pythagoreans in the following terms: "Number," he says, "is, according to them, the *essence* of all things, and the organization of the Universe in its various determinations is an harmonious system of numbers and their relations."*

Definition.—The science of numbers or computation; capacity for numerical calculation; ability to keep accounts and understand

* Basic Outlines of Universology, S. P. Andrews, p. 150.

numerical relations; skill in the arts of counting; addition, subtraction, multiplication, and division; memory of dates, figures, and numbers.

An *excess* of this power is rarely met with, and, when it is, we find that it is usually the compensation for some very serious deficiency in some other department of mentality. Where the mind dwells too much upon calculation, to the exclusion of everything else, the character loses a great deal of *general power*, and the other faculties become weakened through want of use, and the mind is turned into a mere calculating machine. We rarely find, however, such excessive action of this faculty. It more often needs cultivation than restraint.

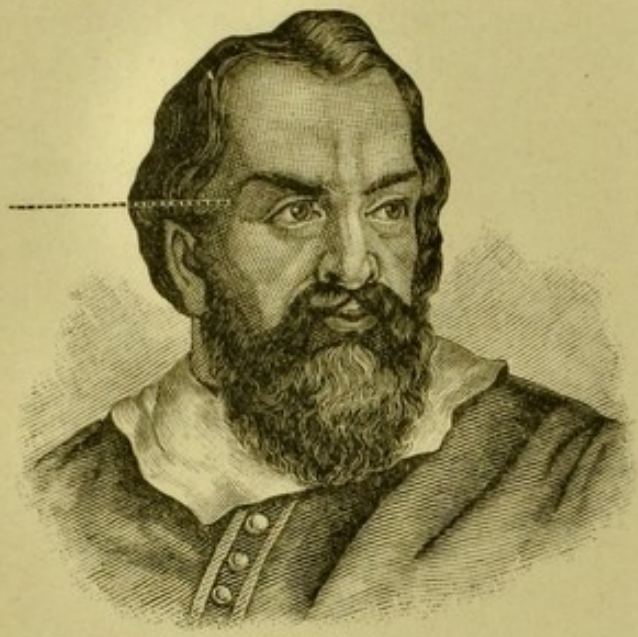


FIG. 116.—GALILEO GALILEI. (ASTRONOMER, DISCOVERER.)

Born at Pisa, 1564. Conspicuous facial sign, Calculation, shown by width between the outer terminus of the eyebrow and the outer angle of the eye. The law of the straight line, square, and cube governs this face. The Quality of this subject is very high and Color dense. The domestic and moral signs are large. Although partially hidden by the beard and moustache, the superstructure tells us this is correct. Such a nose and forehead must have a superior vegetative base from which to draw their power. Benevolence, Love of Home and Country can be seen and are large. The mouth, by its size, announces good alimentive capacity. The nose is long, large, high, broad, and bony. In it the signs for Ideality, Mental Imitation, Analysis, Sublimity, Constructiveness, Acquisitiveness, Veneration, and Self-will are large. Size, Form, Language, Observation, Locality, Weight, and Calculation are uncommonly developed. Mental Order, shown by squareness of the forehead, is most decided, while Reason and Intuition show the highest degree of development. Altogether a physiognomy of transcendent power and scientific beauty.

A *deficiency* causes one to be inaccurate in his count, reckoning, and accounts; dull and slow in arithmetic, and unable to keep the date or number of anything in the mind correctly. Calculation is easily cultivated by persistent efforts, for here Nature assists by dividing up everything in sight.

Facial and Bodily Signs. — The most pronounced facial sign of Calculation is shown by the *space* observed between the outer terminus of the eyebrow and the outer angle of the eye. This peculiarity of formation causes the eyebrow to flex upward and tend toward the upper part of the ear. This sign is found most decided in the faces of the muscular races, and of those who possess not only large arithmetical calculation, but also a shrewd, crafty, cunning, politic, tactful, and worldly disposition. The Mongolian race and face well illustrate this form and phase of numerical talent. The Celtic races also exhibit the mental aspect of this

faculty. Like Order and Time, there are several manifestations of this trait. The osseous individual reveals a phase of Calculation different from that which distinguishes the muscular man. The kind of Calculation exhibited by the former is more purely mental and assists him in mechanical pursuits, while the latter is the artistic form; that is to say, the phase of Calculation which can estimate numbers and weights by sight and by lifting.

DESCRIPTION.—Calculation is a general and universal principle; hence its signs are exhibited in the higher developments of the osseous and brain systems in a diffused and general manner, rather than by any single local, facial sign. A face distinguished by squareness of the bones, with the features at right angles and width between the eyes, reveals capacity for mental arithmetic, and of understanding the relations of *figures with form*, also capacity for comprehending geometric forms in combination with mechanical principles. Where the brain is large and of good or fine quality, combined with a good endowment of square bones, a high degree of geometric calculation is present, and talent for trigonometry and mensuration will be shown.

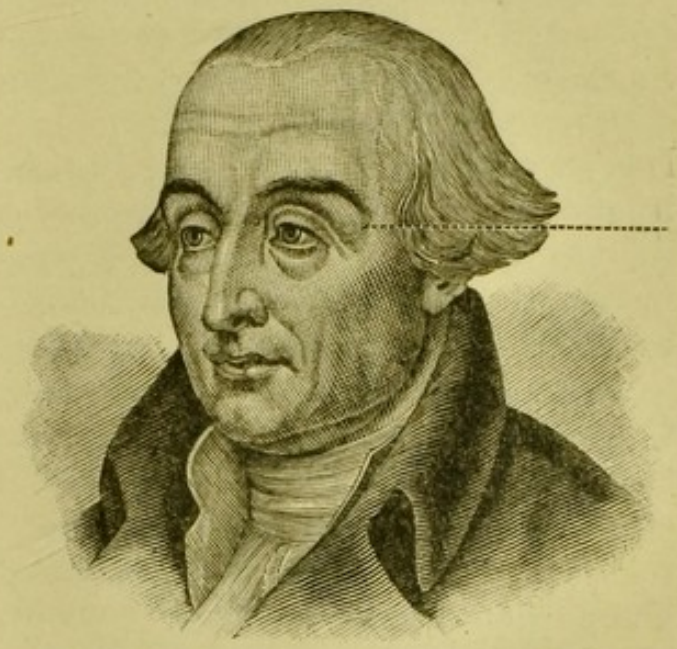


FIG. 117.—JOSEPH LOUIS DE LAGRANGE.
(MATHEMATICIAN, AUTHOR.)

Born at Turin, 1736. Conspicuous facial sign, Calculation. The law of the curve and square governs this face. The signs for Firmness, Conscience, Love of Home, of Country, and of Young are well defined; so, also, are Benevolence, Friendship, Pneumativeness, Mirthfulness, Amativeness, Approbation, Sanativeness, Modesty, and Force. Alimentiveness and Bibativeness are normal. In the nose, which is arched, long, high, broad, bony, and muscular, we find all of the signs of mental greatness. Hope, Analysis, Mental Imitation, Human Nature, Ideality, Sublimity, Construction, and Acquisitiveness are all very large; while the signs for Executiveness, Veneration, and Self-will are pre-eminent. The region about the eyes and interciliary space is noteworthy. Form, Size, Observation, Weight, and Locality are well defined. Calculation is of the highest order; while Mental Order, Reason, and Intuition are wonderfully developed. The writings of de Lagrange are not only of the highest mathematical value, but are elegantly written and presented. He well deserves the title of a "luminary of mathematical science." A noble and beautiful physiognomy.

The muscular form in excess gives the combination for pure calculation, but, when accompanied by a good degree of the brain system and fair development of bone, it manifests talent for mathematics and for calculations of the relations of circular forms and number.

The sign for numerical calculation observed in the formation of the terminus of the eyebrow being most decided where the muscular system is dominant is an excellent proof of its muscular

origin. It also explodes the phrenological error that this indication is caused by a "cranial organ" or accumulation of "brain-matter" at this place. The phrenological idea of "organs" which are said to be observable on the outside of the skull is giving way to recent discoveries of "brain areas or tracts" of the *internal* cerebral structure, wherein are located the centres of motion or of impulse, which act with and for the several bodily organs and functions. The faculty of Speech, for example, it has been demonstrated beyond a doubt, has its representative in a certain area of the brain, but it is not situated behind the eyeball, pushing the eye outward and forward, as phrenology asserts. The sign for articulate speech, it is true, is shown in the face by prominent eyes, also by the shape of the mouth, lips, and ears; but this same faculty can just as well, or nearly as well, be discerned by the finger or finger-nail of those in whom the muscular system is dominant, for the reason that Language and Calculation are both best developed in those races in whom the muscles are in *excess* of the *bones*. The Oriental races, for example, exhibit large calculative powers. They also reveal great Acquisitiveness (they are natural gamesters) and other muscular traits in harmony with numerical calculation, such as diplomatic policy, craft, cunning, and deception. All these faculties are the most conspicuous in muscular races, as well as in the muscular animals, and are shown by *signs of muscular development*, and not by "brain organs" externally on the skull.

The basis of everything is (as I have shown in the chapter on the "Basic Principles of Form") mathematical or numerical. Every separate atom, article, and entity is countable, and holds its rank as number one, two, three, etc., in a certain department of creation; hence Number is a universal element and principle, and enters into *all things*. It is thus shown to be a prime and primitive element in everything, and also takes its rank among the highest and most perfected aspects of Nature, as in the completion of schemes, plans, and numbers of finished creations; for example, in the numbers of the bones, muscles, and organs in man; the numbers of leaves of plants, which are governed by mathematical precision; by the divisions of the earth into continents, islands, etc. I could pursue this form of illustration almost indefinitely, and then have made only a beginning. The science of numbers has many departments; as, for example, it commences with the primary and simplest aspect of counting or enumerating, and this is the phase first exhibited by children and undeveloped races. The latter never get beyond this stage. The Esquimaux, it is said, can count only ten; while the Greenlanders can reckon only five besides the enumeration of their fingers and toes; yet

many dogs, birds, and even pigs, have been trained to count as high as sixty. Dr. Carpenter tells us that the young Yanco of the Amazons can count no higher than three.

The powers of enumeration shown by muscular races, such, for example, as the Mongolian, are extraordinary in degree, and universal among them. In their counting-houses they make use of the abacus, sliding-rule, and tallies, and other numerical instruments. This form of reckoning is a primitive one, and is used in many schools by the younger pupils in object-teaching. The other branches of arithmetic and mathematics require the use of memory and the reasoning processes.

The science of numbers seems to many persons a very abstruse and profound subject, but to others it is entirely simple. The cause of this is found in inherited differences. The capacity for pure calculation has been exhibited in early childhood by certain persons in a most surprising and precocious manner, but I believe the higher forms of number, such as those used in mensuration, in engineering, and in other departments of applied geometry, have never been exhibited by any very young arithmeticians, because the application of the higher principles of number requires the exercise of a high degree of *Reason*, and this faculty is never found greatly developed in childhood. George Bidder and Zerah Colburn were precocious arithmeticians, who in early childhood "lisped in numbers" and astonished the world by the exhibition of their wonderful numerical power; yet in adult life they were not celebrated for any very great superiority in any direction, except the power for calculating immense sums. The following account of Zerah Colburn, an American lad, who was brought to London in 1812, at eight years of age, I quote from "Mental Physiology," by Dr. Carpenter. Of the powers of this lad, which he terms most happily "numerical intuition," he states that, upon being examined by several eminent mathematicians, he gave the following test:—

He raised any number consisting of one figure, progressively to the *tenth power*, giving the results (by actual multiplication and not by memory) faster than they could be set down in figures by the person appointed to record them. He raised the number eight progressively to the sixteenth power; and in naming the last result, which consisted of fifteen figures, he was right in every one. Some numbers consisting of two figures he raised as high as the eighth power, though he found a difficulty in proceeding when the products became very large. On being asked the square-root of 106,929, he answered 327 before the original number could be written down. He was then required to find the cube-root of 268,336,125, and with equal facility and promptness he replied 645. He was asked how many minutes there are in forty-eight years, and before the question could be written down he replied 25,228,800, and immediately afterward he gave the correct number of seconds. On being requested to give the factors which would produce

the number 247,483, he immediately named 941 and 263, which are the only two numbers from the multiplication of which it would result.

This performance in so young a child and without any arithmetical training can only be accounted for upon the theory of *instinctive powers*, and this is the basis of all musical precocity as well as poetic prodigies. The talent and genius for pure calculation, as also the talent and genius for music, is thus shown to be an infantoid or primitive trait, for neither of these arts require the co-operation of a high degree of reason, and if we understand the analysis of these two arts, and learn which parts of the human organism contribute to their exhibition, we shall find that they are both best developed where the *muscular system* is dominant. Book-keeping requires large Calculation and Order. A good mathematician must possess large Locality and reasoning powers. A civil engineer and surveyor should add to these Form, Size, Constructiveness, and Imitation, and a fine physique. And all these faculties are essential to the chemist and physicist. The greater number of engineers are men of robust appearance, and are finely organized, physiologically and anatomically. Francis Galton bears testimony to this fact in the following terms. He observes:—

> The foremost engineers are a body of men possessed of remarkable natural qualities; they are not only able men, but are also possessed of singular powers of *physical endurance* and of boldness, combined with clear views of what can and what can not be effected.*

This statement confirms what I claim, viz., that men of large and sound reasoning powers possess strong and sound bodies. An examination of the portraits of Watt, the Stephensons, Brunel, De Lesseps (the latter in active service upon the Panama Canal at eighty is remarkable), Captain James Eadds, Violet-Le-Duc, Col. John A. Roebling, Sir Christopher Wren, and Sebastian Vauban, will justify my theories on this point. Many of these men attained an advanced age and pursued their profession most industriously to the last.

Many persons of fine abilities, both literary and artistic, are very deficient in the natural comprehension of numbers, their properties, and relations. It is said of George Combe, who was eminent as a writer, lawyer, lecturer, and phrenologist, that after seven years' study of the multiplication table it was to him a profound mystery, and when he wished to pay his bills he took his money in a purse and asked each tradesman to count out the amount due him.

* Hereditary Genius, Francis Galton, p. 333. 1871.

Among school-children there are all grades of this faculty, from the gifted genius in arithmetic down to the grade of idiot on this subject. Yet those who are entirely lacking in numbers are often extremely bright in other directions. It seems to me a lack of perception on the part of examiners and teachers to grade scholars upon their arithmetical ability alone. It would be just as sensible to grade them by an ear for music, for I think that musical ability is much more general than the calculative faculty. All these stupid and unintelligent methods will be modified and changed when teachers become conversant with scientific and practical physiognomy, for then they will be able without examinations upon the black-board to know, by *looking* in a child's face, whether he be naturally dull or gifted in this respect. A correct psychology is the first thing which a teacher should employ in commencing the education of a child. She should be able by the tone of voice, by the walk, by the attitude, the outline of the face, forehead, nose, chin, and limbs, to learn something *definite* of every scholar, and she should be also able to act upon the knowledge thus acquired.

The best time to acquire the rudiments of arithmetic and the foundation of the higher mathematics is, in early childhood, by object-lessons, even before the child is taught to read. Children can be taught by different-shaped blocks all of the principal geometrical *forms*, and a pleasant pastime can be had by them in forming the cone, cube, sphere, triangle, circle, pyramid, and rhomb out of small blocks made for the purpose; while counting can be taught by laying beans or bright-colored sticks in rows or piles. Simple addition, multiplication, subtraction, and division can be taught by the same methods, and will seem to children a pretty and interesting game. All these principles of both arithmetic and geometry ought to be understood before learning to read or before attending school. The primary colors, with their various shades and complementary colors, should also be learned in early childhood in the same manner, by colored sticks, yarn, silk, cotton, or whatever material is most convenient. It is most essential to every child's future welfare that these most important things should be learned early. They do not tax the brain at all, for this is *Nature's* method of training children, and children, if left to their own unaided efforts, always commence their knowledge of things by first observing the form, size, color, quality, and combinations of objects which attract their attention. This method is now being put into practice in the kindergarten system of education, a notable advance upon the old-time, unnatural method of teaching children to read, write, and cipher, and memorize abstract rules, long

before the brain was sufficiently matured to comprehend the meaning of the language used in the explanation. The eager, expanding mind of childhood craves knowledge, and unstinted play soon palls upon them; they become restless and excitable and long for something, they do not know what. The parents, as a rule, do not know any better than the child what ails it, and so conclude that it had better go to school; the poor little creatures are packed off to some "cramming institute," where they take in allopathic doses of learning suited to mature minds, and soon a mental dyspepsia makes its appearance, and the child and parents are again at their wits' end to know what is the matter and how to remedy it. The very youthful mind should not be trained to *think* so much as to *observe*. Youth is the season for *storing* the mind with observation of facts and phenomena,—natural, artistic, and scientific. Boys should be allowed to visit factories, foundries, and all places where mechanical work is done, and the principles of machinery explained to them. Let them become educated through the *eyes* and ears, and when older and able to *reason abstractly* they will be able to draw upon this fund of stored-up observations and thus save years of time in going over the same ground. Mechanical forces are founded upon geometrical laws, and all the primary instruction that children can learn by object-lessons is a great gain. It does not tax the mind as much as reading, spelling, and writing, because geometric forms and their combinations are taken into the mind by the aid of the eyes, and require neither reflection nor study to photograph them upon the mind.

In the same manner a child possessed of musical aptitudes may be taught to play upon a musical instrument. There is no brain labor involved in this study as there is in learning to read. The practice of the piano is a mechanical exercise; a little more exact than chopping wood, but not much more taxing to the brain; and it may be made a pleasing amusement by judiciously planning the time of day to practice, which should be the morning, and only short exercises should be allowed. These and similar pursuits will allay the restlessness of very young children and really advance their education on a sound and natural basis, therefore a healthful one, which should ever be the *dominating idea* in education.

Music is based on the science of mathematics; hence the rudimentary part of it can be easily learned by young children, especially notation, together with the symbols used to designate the notes, rests, etc. Composers who deal with the scientific aspect of music exhibit fine arithmetical powers, for the complicated methods of modern musical composition requires great calcu-

lative skill. An examination of the portraits of Beethoven, Mozart, Bach, Weber, Handel, Verdi, Gounod, and Wagner disclose large arithmetical signs. Calculation is usually large in all singers, for calculation and musical capacity are both best exhibited by muscular development.

Arithmetic is the foundation of the higher mathematics, such as mensuration, trigonometry, and geometry—"that branch of mathematics which investigates the relations, properties, and measurements of solids, surfaces, lines, and angles; the science which treats of the properties and relations of magnitudes." All these require the power of logical and abstract thought. The knowledge of all the *forms* involved in the *application* of these principles is found in every article and natural object in existence, and the eye of the child cannot rest upon anything in Art or Nature that does not present a plane, surface, or angle, a sphere, an arch, a pyramid, a rhomb, a cone, a triangle, an ellipse, a circle, or sections of some one or other of these primary geometric forms, as shown in all natural growths, whether of primitive vegetable or animal cells, or in plants, trees, flowers, mineral crystals, or in architecture and art; hence, children should be trained not only to know the *names* of all these various shapes, but should be taught from natural objects, such as plants, flowers, and minerals, somewhat of the *relations of these forms*. I am all the more explicit upon the subject of training children very early in arithmetical and geometrical principles, for the reason that they lie at the base of every trade, profession, and pursuit in the world, and are highly essential to every position in life, from that of the king to the peasant. Most especially should *girls* be trained in the higher mathematics, for the reason that these studies develop the logical powers of the mind, and females need development of this portion of the intellect in order to counterbalance the excess of the emotional nature which in the majority of cases dominates the reason, hence unfits women for the position of motherhood; for the mother of half a dozen smart, bright, lively boys and girls ought to be a *good reasoner* to enable her to answer the questions which such intellects will propound—not only for this purpose, but for her *own* advancement toward attaining a balanced character.

For illustration of the facial and bodily signs of Calculation, as expressed by the combination of the brain dominant, with the osseous system subdominant, I refer here to the physiognomies of Hippocrates, of Cos, Roger Bacon, Tycho Brahe, Paracelsus, and Galileo, the two Herschels, Sir Isaac Newton, Guyon de Morveau, Benjamin Franklin, Professor Pasteur. For examples of the sort of Calculation exhibited by a combination of the brain and bone

forms, equally developed, the muscular ranking third, I may point to the portraits of Michael Faraday, Joseph Black, Professor Helmholtz, and Professor Liebig; while the phase of Calculation disclosed by the development of the brain first, muscle second, and bone third, may be observed in the countenances of Descartes, Francis Bacon, Berzelius, Sir John Lubbock, Virchow, Schleiden, and others equally celebrated for the use they made of numerical calculation. The system which *dominates* will announce the *sort* or *phase* of numerical power present in the subject, and this may be known by reference to the conformation of the body and limbs, fingers, and toes, as well, or nearly as well, as by scanning the face. A combination in about equal proportions of *two* systems affords the capacity for expressing the two sorts which inhere in each; and where the third or fourth system is represented in an average degree of development, then all these *four* kinds of numerical ability will be present. Physicists, chemists, inventors, and geographers require several different sorts of Calculation; while astronomers need good theorizing powers, large geometrical comprehension, together with a large amount of pure calculation. Mechanics need two sorts, at least, and architects, surveyors, and engineers also require several phases of this faculty in order to combine the various principles of numbers in their several professions and pursuits.

Animals of the various forms exhibit the same phases of Calculation as are shown by men of similar forms and combinations of forms. They can make estimates of height, depth, width, space, and distance, and apply the muscular sense of weight in their journeys and in their buildings. Ants and bees, in particular, manifest great calculative powers in relation to construction, and constructiveness and numerical calculation are natural allies. The sense of weight is shown by the elephant and other animals; the sense of range and direction in the flight of birds, and also in the movements of the fox and hare in *doubling* upon their pursuers; while dogs have, as is well known, many phases of Calculation besides the numerical. This form of evidence of animal calculation I might pursue through every department of animal life, from the lowest to the highest. In introducing evidence of the presence of every faculty in animals which is exhibited by man, I do so for the purpose of *enlarging* the ideas of my readers on the subject of *mind* and its universal presence; also, to raise the character of animals in the estimation of man, as well as to cultivate the faculty of *modesty* in human beings who have been wont (through *ignorance* of the real source and nature of mind) to ascribe the exclusive possession of intellect to man, and to deny to beasts and insects

anything but "blind instinct." All the evidence running through these pages will, I am sure, prove that we have as many "instincts" as animals, and that many of the most gifted musicians, poets, and arithmeticians—those who challenge the admiration of the world—have *arisen* to the *grade* of intellectual development which acts spontaneously (or, as we say of some animals who do wonderful things, "instinctively"), without training or forethought, as in the case of Mozart, Young, Colburn, and other precocious prodigies.

CAUSALITY.

Definition.—The cause-seeking faculty; ability to reason from cause to effect; capacity for deduction; comprehension of logical principles and their applications. The faculty which foreknows results from observation of their causes. Its possession makes one cogent, philosophical, calculative, and far-sighted as to results. It gives a desire to know the why and wherefore of all things—to sift appearances, and trace them to their origin.

An *excess* of Causality leads one to look beyond the visible for first causes, and to endeavor by insight and intuition to discover the hidden, obscure, and occult laws of Nature. Swedenborg is an excellent illustration of excessive Causality. His desire to know the origin of mental and spiritual phenomena led to very abstruse ideas in regard to both physiological and psychic subjects. At the same time, his researches brought to light many valuable discoveries, as shown in the "Animal Kingdom," but his persistency in pushing his inquiries in a microscopic fashion into the first causes of natural phenomena, together with his abstruse speculations and deductions upon them, makes his work too impractical for general use. Causation is the base of all natural phenomena, yet many of the processes of Nature are so refined, subtile, and minute as to entirely elude the comprehension of man, even when he has the aid of the most improved instruments, such as the telescope and microscope; hence, pushing investigation too far in this direction makes one's researches too profound and obscure for practical and popular use; and as man's powers and instrumentalities are limited, it seems a waste of time and talents to press our inquiries beyond the reasonable and demonstrable. One thus characterized should turn his attention to the practical and demonstrable in science, for the only medium through which knowledge comes to us *primarily* is our senses; hence, we must first bring all things under the crucial tests of sight, sound, smell, touch, or taste, before we endeavor to pronounce judgment upon them. The *base* or *premises* must first be susceptible of proof and demonstration before a verdict is rendered. If this plan is not followed

the mind may be carried away by any false statement, by dogma, sophisms, and assertions unsupported by *facts* and accurate observations. To *cultivate reason* one should accept the evidence of his senses in regard to material objects, and study the truths of Nature and science, as well as the laws of mechanism as promulgated by best-known writers and teachers.

Excess of Causality is observed in those inventors who endeavor to discover the laws of "perpetual motion," and similar improbabilities. Too much Causality is quite as great a defect in a character as too little.

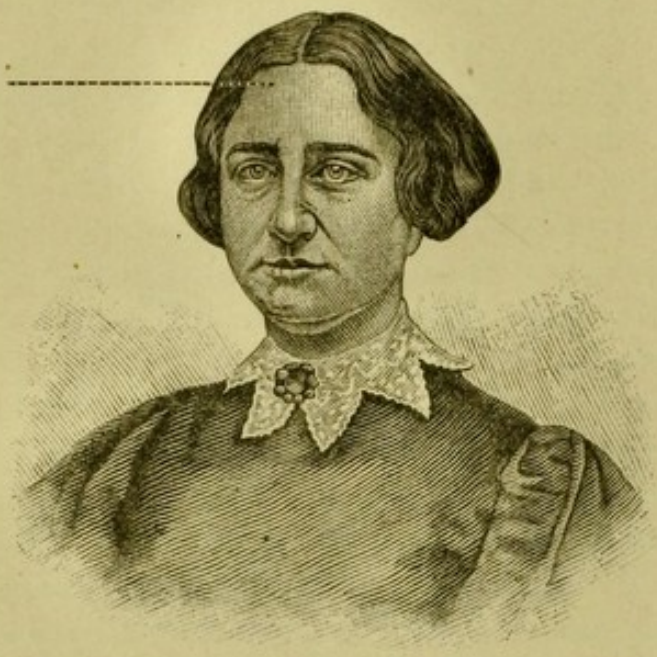


FIG. 118.—ANTOINETTE L. B. BLACKWELL, D.D.
(PASTOR, AUTHOR, REFORMER.)

Born in America. Conspicuous facial sign, Causality, shown by height and width of the bridge of the nose and development of the upper central portion of the forehead. The law of the straight line and square governs this face. The signs for the domestic functions and faculties are well defined. Conscience, Firmness, Love of Home, of Country, and of Young are conspicuous, as are Benevolence, Amativeness, Alimentiveness, Economy, Sanativeness, Pneumativeness, Color, Self-esteem, Modesty, Hospitality, Mirth, and Friendship. In the nose the signs for mental power are very decided. Ideality, Sublimity, Mental Imitation, Analysis, Constructiveness, Acquisitiveness, Veneration, Reason, Executiveness, and Self-will are prominent. The signs for the practical faculties—Form, Size, Observation, Order, Calculation, Memory of Events, Language, and Time—are marked, while Comparison and Intuition are prominent. The face of a highly-organized mind and body; in it the signs for intellectual power are equalled by a fine domestic and social nature.

A *deficiency* of Causality causes paucity of reflection and leads one to depend entirely upon the opinions of others in regard to most of the affairs of life. Superstitious beliefs in theological dogmas have done much to stifle and prevent the development of a knowledge of causation. Science is doing a great work in teaching that God rules by *law*, and that certain effects are sure to follow certain causes. Where Causality is small, the inventive faculty is at a minimum, and one thus deficient has constantly to be advised, and finds it impossible to pursue any vocation which requires reflection, foresight, planning, or judgment, but, sheep-like, must "follow the leader."

Facial and Bodily Signs.—The most cogent and indeclinable signs of causation are found in the nose and forehead. The signs of this faculty that are situated in the nose are found between the sign for Executiveness and the sign for Comparison, the latter lying above on the ridge of the nose, and both of these faculties are most powerful when the nose is broad at this part, and are most

ffective when found in combination with large Comparison, Executiveness, and Self-will. Comparison lies adjacent to Self-will, nd Causality lies next below it, contiguous to the sign for Executiveness, and both derive assistance and support from association with these two very high and superior faculties. Illustrations of he association of these four faculties are found only in the most ommanding intellects, as seen in the faces of eminent scientists, tatesmen, philosophers, ommanders, and great artists, thus proving that the ombination of these faculies (whose signs are in lose contiguity) creates haracters which require ot only the most profound nd prolonged powers of leductive ratiocination, but lso the will and force of executiveness to carry out ctively and aggressively, f need be, the logical conclusions of reason. Where he signs of Causality are ound upon a broad and ong nose, it is most effective in its action; the *length* showing *foresight* and *caution* in forming opinions and in making investigations, and the *breadth* disclosing a comprehensive mind and a vigorous visceral structure, thus giving *breadth* and *soundness* to the mental processes.

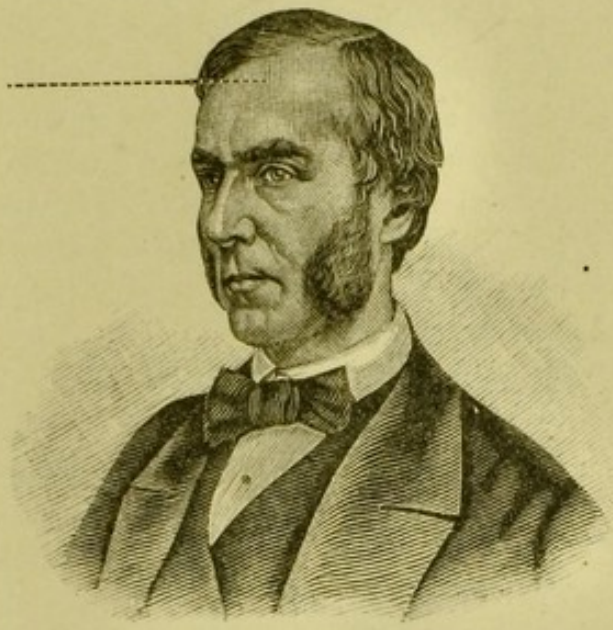


FIG. 119.—GOLDWIN SMITH. (AUTHOR, LECTURER.)

Born in England, 1823. Conspicuous facial sign, Causality, shown by height and width of the bridge of the nose and fullness of the centre of the forehead. The law of the straight line and square governs this face. This most comprehensive mind has a fine domestic and moral basis. The signs for Firmness, Conscience, Pneumativeness, Sanativeness, Alimentiveness, Economy, Love of Home, of Country, and of Young are very well defined. Benevolence, Amativeness, Self-esteem, Modesty, Hospitality, Force, and Friendship are prominent. In the nose the signs for Hope, Analysis, Mental Imitation, Ideality, Human Nature, Sublimity, Construction, Acquisition, Veneration, Executiveness, and Self-will are conspicuous. The color is decided and the quality of a high order. Form, Size, Observation, Locality, Weight, Memory of Events, Order, Time, and Language are largely developed; Prescience and Credenciveness are deficient; while Intuition is prominent, and Reason, Causality, and Comparison are of the highest efficiency. This is the face of one who is almost as good an observer as he is a thinker, and this combination of the observing and reflecting faculties has created a first-class literary luminary.

The signs of Causality in the forehead are not so easily understood by the beginner in physiognomy. Many believe that a high, full forehead is proof of the presence of good reasoning powers. Lavater observes that the highest foreheads which came under his observation were those belonging to very stupid and unreasoning persons. Height of the forehead merely is no indication of reason. *Breadth* of the forehead is a better proof of its presence. Fullness of the centre of the upper central part of the

forehead is one sign of the reasoning capacity, and must be relied upon where the nose has been injured, but the nose in a perfect state is the best index; for no great or good reasoner has ever been seen who disclosed a small, depressed, or flat nose, while many persons who have very *high*, *narrow*, and *full* foreheads, are deficient in causation and comparison, and others with low, wide, and receding foreheads have exhibited extraordinary capacity for logical generalization. High, wide, and full foreheads, if of a high quality, exhibit first-class talents, and these talents are of the most *practical* kind when the forehead recedes slightly. A forehead bulging at the upper part, or inclined forward and outward beyond the eyebrows, belongs to an infant idiot, a stupid person, or one afflicted with hydrocephalus, or "water on the brain." This is the form of embryotic man, and signifies *undevelopment*.

Description of Causality.—Quality is the most potent factor in deciding upon the signs in the forehead. If the quality be fine, and the signs for reason well defined, logical capacity and comprehensiveness will be manifested. More particularly is this the case where the face is of a pyriform shape, thus showing the supremacy of the mental system over all others. In this case the nose is comparatively small, yet the high quality in this instance compensates for lack of physical executiveness, as seen in the physiognomy of Herbert Spencer, for example. Here the pyriform face is associated with high quality, and the nose is relatively small. This combination discloses the capacity for clear, cogent, decisive, and most comprehensive reason; but, as he does not possess large bones and muscles, he depends upon the clearness, strength, breadth, and incisiveness of his demonstrations and generalizations; the lucidity and thoroughness of his arguments are supplemented by the most correct observations of natural phenomena, and hence are irresistible and incontrovertible.

As we approach the investigation of the *rationale* of the higher faculties, the signs and the philosophy become more complex, and we are obliged to pay attention to several circumstances in *combination* before pronouncing a verdict upon any single sign.

The bodily signs for the presence of Causality are best defined where the skin is fine and clear, the eye bright, the hair fine, and with relative width of chest and shoulders. Nothing in the human being is purely mental, nothing purely physical; hence, we are obliged to observe physiological and anatomical conditions before passing judgment on the ability of the individual to reason logically.

The superficial thinker will doubtless exclaim, "The reasoning faculties must certainly be purely mental, inasmuch as they are

not dependent directly upon the senses for their power to act." To use an Hibernicism, if one could think of nothing this assertion would apply; but, as the reflective faculties are for the purpose of judging, analyzing, separating, combining, and comparing the sensations and ideas acquired through the exercise of the eyes, ears, nose, mouth, and the sensations derived from the conditions of the entire visceral system, reason must *necessarily be connected closely* with these functions, and hence it follows logically that the reasoning powers of man are dependent upon and are affected by the nature and condition of both the senses and visceral organs.

If the sense-organs are normal, and constructed in accordance with the most perfect plan, it follows that the ideas arising from the action of these organs will be correct, true, and sound; whereas, if, on the other hand, the organs of sense be imperfectly constructed as to their mechanism, the ideas arising from such imperfect organs will not possess the same degree of power, clearness, and integrity as in the former case. An excellent illustration and proof of this position is had in the abnormal condition of the color-blind individual. In his case, inability to judge, analyze, and compare colors is caused by the imperfect construction of that part of the mechanism of the eye which judges of color, the *chemical* construction of the eye being faulty. Now, this idea can be readily apprehended by this illustration, but when I advance the theory that sound reason is dependent upon a normal and vigorous condition of the visceral structures, then the question becomes, perhaps, too complex for the casual observer, however reasonable it may appear to the medical man or physiologist. I think I have made the proof of this so clear in former chapters that it seems unnecessary to here present corroborative evidence. Yet, to make more obvious to the reader at this point the intimate relation of the senses with the reasoning faculties and the bond of sympathy and direct connection of the visceral structures and states with the capacity for sound reasoning, I will mention a larger number of persons who are well known to fame as reasoners, whose bodies and faces attest this law of physiognomy. Not only this, but their countenances will show that the signs in the forehead and nose are corroborated by the peculiarities of the structure of the body, and are disclosed by depth and breadth of the chest, width of the shoulders, vigorous abdominal system, and a well-developed muscular and osseous system.

In the physiognomies of all the celebrated jurists of every nation, the faculties of Reason, of Causality, and Comparison shine pre-eminent. In nearly every instance the bodily organization and nose are on the *broad* plan, and the facial signs for breathing,

digestion, etc., are corroborated by the bodily build, proving them to be of the greatest efficiency. Let the reader examine the portraits of Lord North, Earl Clarenden, Erskine, Blackstone, Ellenborough, Charles James Fox, Lord Brougham, and Justices Waite, Field, and Miller; also of other classes of reasoners, as, for example, the Herschels, Galileo, Kepler, Hobbes, Paley, Adam Smith, Dugald Stuart, Sir William Hamilton, Michael Angelo, Sir Christopher Wren, John Smeaton, John Stuart Mill, Jonathan Edwards, John Knox, Melanchthon, Sir Humphry Davy, von Liebig, Buffon, Agassiz, Metternich, Talleyrand, Pitt, Palmerston, Napoleon Bonaparte, James Monroe, Thomas Jefferson, Thomas Paine, Harriet Martineau, Sir Isaac Newton, Cuvier, Lyell, Hugh Miller, Charles Darwin, Elizabeth Cady Stanton, and Professors Huxley and Tyndall. These examples are drawn from every department of intellect and represent leading minds in science, art, theology, law, statesmanship, mechanics, generalship, etc. In all the preceding physiognomies there will not be found one small, narrow, flat nose, nor one which indicates visceral weakness. Did space permit, I might swell the list to thousands, but a sufficient number is here noted to give the reader ample scope for instituting comparisons and making generalizations. The world of thought and action has not been led by sickly, weak, ill-formed men and women. Nearly all the great reasoners of the world are distinguished as much by bodily vigor as they are by mental acumen and power. It is true that a few great minds have labored on through years of illness, and performed great works. How much greater might their achievements have been had they lived up to the requirements of hygienic law! Thomas Carlyle was a life-long sufferer from dyspepsia, yet he lived to an advanced age and performed herculean mental labors. His original inherited digestive powers must have been excellent, else he could not have lived so long in violation of health laws. His nose is one of the largest among historical characters, thus showing that his physiological structure was originally sound, but he overworked constantly, and paid the penalty of violated laws by a life of bodily and mental torture.

The process of Causation naturally precedes the other reasoning faculty,—Comparison,—for one naturally seeks the cause or origin of phenomena before instituting comparisons. Causality is found in the faces of all who excel in investigation, research, science, invention, mechanics, statesmanship, and jurisprudence. Without a germ of this faculty a race would never progress beyond a state of barbarism. Children in civilized races show the grade of evolution to which they have attained by constantly questioning, Why? How? What causes this and that? While

the youthful barbarian looks with a stolid indifference upon everything which he beholds, yet not a question as to its origin or use escapes him.

The cultivation of this faculty is of great importance, as it tends to originality, invention, and individuality, for every phenomenon of Nature is related to a cause precedent to its appearance. There is not a grain of sand or blade of grass but is the result of manifold causes, one following another. Indeed, the human mind is incapable of tracing to its origin the *first cause* of the growth of a single leaf. Yet by a study of the basic laws of Form one can be assured that all things in Nature—all phenomena —have law as a basis, and that law a mathematical one. I opine that it is not essential to our welfare and happiness here to possess a knowledge of the *great first cause* which so attracted the attention of the most eminent of ancient and mediæval philosophers. Yet it is our privilege and duty to know and comprehend many of the causes which precede and affect our destiny; and if ever there should arise a *necessity* for knowing the cause of causes, we may rest assured that it will be given to the world just when it is needed and when the minds of the masses are prepared to receive it. Until then, we had best employ our time in *practical investigation* and elucidation of laws and causes which we *can* demonstrate and *apply* to matters that will advance man's welfare and highest growth.

Practicality results from a balance of Observation, Causality, and Comparison. Wisdom is the result of this combination. I have known many very wise, useful, and practical persons whose educational advantages had been quite indifferent, yet who, by the exercise of their natural reasoning faculties, excelled many book-learned persons in actual wisdom and common sense. "A meagre soul can never be made fat by studying the laws of thinking."

The form of the forehead which expresses the most practical talents is one in which the superciliary ridge is prominent, and the outline of which recedes slightly backward from the superciliary ridge, and this form is observed in the foreheads of all the great "inquirers," investigators, and mechanicians of the world. The poet and painter have not so great a need of *practical Causality* as the former; their idea of causes is bounded by the ideal, the mystic, and supernatural, hence Causation in them does not take the practical turn which is observed in the physiognomies of the former classes.

The *square* and slightly receding forehead is indicative of mechanical and scientific Causality. It denotes the *order* and

squareness of the ideas, and in the world of science and mechanics ideas are characterized by concrete, square, and orderly methods of arrangement in harmony with the square and cube, which are the symbols of mechanics and science, and which are also the forms that underlie the "crystal foundations of the earth." Cuvier and Linnæus, both great classifiers as well as great inquirers into causes, exhibit the *square shape of the forehead.* Arkwright, the inventor, also presents this appearance, and the noses and bodies of all these individuals corroborate the shape of the forehead and indicate the possession of Causality. The "questioning temper" is largely an inherited trait, and a busy, suggestive mind leads often to great results. The aptitude for reasoning from cause to effect, as shown in geniuses of the first rank, like Sir Isaac Newton, is inborn, not imparted by education. Observation of this gentleman's physiognomy shows that the sort of Causality his mind would indulge in pertained to the inquiry into mathematical and mechanical laws and causes. His forehead is full at the upper central portion, while the signs in the nose for Causality, Comparison, and Analysis are exceedingly prominent. This organ is high, long, wide, and bony,—a first-class scientific nose,—and science depends upon the laws of logic for its demonstration as well as upon facts observed. His nose reveals the presence of all of these faculties. Observation of his nose alone, without seeing any of the connected features, would satisfy any good scientific physiognomist that it belonged to an intellect of the first magnitude. The lower part about the nostrils and septum, as well as the formation of the bridge, together with its entire outline and size, make it one of the most remarkable noses to be found in the physiognomy of the most eminent historical characters. This nose could never be mistaken for the nose of an unreasoning, illogical mind.

All those who receive as truth, without examination, every dogma, theory, and assertion which is put forth, are lacking in Causality, but those who desire the exact truth strive to learn the origin or cause of that which is asserted. Those with this faculty large place very little credence in purported "miracles" and large-snake stories, etc. They demand proof before believing; but another class, whose love of the marvelous overbalances their love of demonstrable truths and reasoning capacity, are possessed of omnivorous credulity, and, as Froude remarks, "Belief in the marvelous does not arise from evidence and will not yield to it;" so, logic, reason, or demonstration are lost on such minds, because they have not the mental calibre to comprehend them. Most of the metaphysical conjuring of the middle ages was performed by "philosophers" who lacked the balance of observation and demon-

stration, hence their cause-seeking proclivities were of no practical benefit, and their fine speculations and lofty theories "melted into thin air" at the approach of modern science with its instrumentalities for exact observation of natural phenomena.

The situation of the sign for Causality upon the ridge of the nose is most significant. The nasal sign adjoining Causality is the sign for Executiveness, and where this sign is well marked the character will be noted for the energy, force, and ardor with which it seeks causes, investigates laws, and analyzes theories, and having once established these satisfactorily the same energy will characterize the assertion and promulgation of the truths ascertained.

Comparison, the twin sister of Causality, is in close contiguity to it; lying just above and adjoining it is the sign for Self-will, a faculty which is of the highest importance in all mental processes. Self-will is especially necessary for putting into action any plan or idea which the reason has wrought out. In the faces of all the great minds of the world—those who have excelled through personal effort and merit—the signs of Self-will or Executiveness, one or both, are well-defined, for to reason upon a plan or theory without the power to enforce it would make reason of little account.

This group of signs well illustrates the method pursued by Nature in the arrangement of the visceral organs, those which mutually assist each other in their operation being in positions of such contiguity as to facilitate action in all, and the signs in the face of the visceral organs are grouped in such manner as to show their relationship. The signs of the mental powers also, which mutually assist each other, are found associated in such manner that they suggest their relationship.

An analysis of the components of brain structure shows that it is composed of *fibrous* membranes, vascular and serous matter, and white and gray neurine, the last also of a fibrous nature.

Scientific physiognomy teaches that Self-will is derived from the development of the muscular or fibroid system. The proof of this is found in the faces and bodies of those exhibiting the most will-power. Now, if the mental processes are dependent upon the will or volition to carry out actively their opinions and desires, it follows that those possessed of a fine development of muscle in combination with a good degree of reason will be most energetic in advancing and promulgating their ideas in an aggressive and forcible manner. I have no doubt that a dissection of the brains of those who have been active in generalship, reform, and other leading pursuits, would develop the fact that their brains were better endowed with fibrous matter than those of persons who were weak in will and deficient in force and mental courage,—so surely are

force, activity, and muscle related. One of the earliest symptoms of brain degeneration in insanity and softening of the brain is the loss of will-power. While the reasoning powers remain apparently in good condition, the will or volition is observed to be feeble and sometimes lacking. Dr. Carpenter mentions the case of a gentleman whose will had become so enfeebled that he was unable to carry out what he *wished* to perform. He observes:—

> Often in endeavoring to undress he was two hours before he could get off his coat, all his mental faculties, except volition, being perfect. On one occasion, having ordered a glass of water, it was presented to him on a tray, but he could not take it, though anxious to do so, and he kept the servant standing before him half an hour, when the obstruction was overcome.*

Color has *its effect* upon the action of the reasoning faculties, as well as upon every faculty. The brain, when dissected, is found to be furnished with pigmentary particles in the gray matter, and this coloring principle is also found in all of the ganglia of the sense-organs, proving conclusively that coloring pigment is essential to all mental action. It is logical to infer that those whose blood possesses the most color would be able to furnish the brain with a superior quality of blood, and thus enhance its power. I do not recall the physiognomy of a superior reasoner who presented a pallid skin and colorless or whitish eyes and hair. Most of the great philosophers were men of fine color in the skin, hair, and eyes, and this gave force, power, and vigor to their ideas.

The reader should not confound mere questioning with true investigation. Many persons ask questions to make others believe that they desire to learn or that they are observing. When one is endowed with Causality he seeks to pursue his inquiries as far as research has carried the subject. The mere asking of questions is no sign of a reasoner. Children habitually ask questions, yet this does not proceed so much from Causality (the desire to know the *origin* of what they see) as much as from curiosity, or a desire to be entertained. Individuals with a very small amount of Reason often imagine themselves possessed of considerable power in this direction, while great reasoners reflect in so *spontaneous* a manner as not to be aware of their superiority until by comparison with others they discover the difference; they reason without effort, and so easily that it does not seem at all wonderful to them.

In deciding upon the value of Causality observed in a character one must be governed somewhat by the knowledge of the influence which other faculties in combination have upon it. Where the practical faculties are deficient, as, for example, Obser-

* Mental Physiology, William B. Carpenter, M.D., p. 385.

vation, Size, Form, Locality and Order, etc., the ideas and theories evolved will be visionary and impractical, because lacking a practical and accurate basis. If Conscientiousness be measurably deficient and Reason large, the mind is prone to believe in falsities, and to evolve unsound hypotheses and theories. There must be a *balanced* condition between Conscience and Reason in order to make use of truth in the reasoning processes. It is thus perceived that in the use of all the higher faculties of mind a harmonious or balanced condition of faculties must be present in order to make them most effective. Where Causality is large in combination with the practical faculties, the mind dwells upon the laws of Nature and of mechanism. Such minds soon learn to separate natural causes from superstitious beliefs. Large Causality with large Conscientiousness lead to the investigation of *moral truths*, and those with good literary faculties and language combined will be able to write and speak on moral philosophy. Causality, Comparison, and Imitation large give ability for mental philosophy. Professor Alexander Bain's physiognomy is an excellent illustration of this combination. His writings upon moral and mental philosophy are most admirable, and show the possession of conscience, reason, and intuition in a very marked degree.

The development of Causality and Comparison in all of the higher animals is so marked that any one who has been long associated with them cannot fail to have observed its action. That these faculties are also present in a modified degree, very low down in the scale of organized life, none can doubt who has made a practical study of insects, birds, and reptiles. Now, many persons who have not examined the matter closely deny to the lower tribes the possession of any degree whatsoever of the reasoning power, referring all their efforts to "instinct," as if that were an explanation. Instinct or spontaneity in man is looked upon as genius, for the musical effort of a prodigy like Mozart, who played and composed at five years of age, were as spontaneous and automatic as any act of the lower animals could possibly be. It is related of the water-moths that they cover themselves with pieces of wood or gravel in order to maintain their equilibrium in the water. When they are too light they add to themselves a minute speck of gravel, and, when too heavy, a bit of pith or wood. In man such action would be deemed the height of inventive judgment, and it certainly exhibits in the lowly *lepidoptera* the presence of the faculty of Weight, of inventive power, and of capacity to reason from cause to effect. The mass of evidence in proof of the possession and operation of Causality and Comparison in many classes of insects and animals of various grades is so overwhelming

that it seems superfluous to introduce any examples here. One could fill volumes with the most incontrovertible evidence on this point.

The cultivation of Causality strengthens the mind, and gives boldness and originality to one's thoughts. Those who are deficient in original inquiry are like the sheep who blindly follow the one that has the most power to lead. Many are satisfied to have others do their thinking for them, and lean altogether upon the views and opinions of their doctor, minister, or friends; but those who would know for a certainty the cause and origin of phenomena must investigate for themselves, yet this need not prevent their giving due respect and credence to those whose opinions have been tested by practical experiment. A study of the natural sciences and of the laws of mechanics tends to strengthen the cause-seeking faculty, while speculative theories and superstitious beliefs founded on faith stifle the promptings of reason. The inductive method of reasoning—that which traces the effect from causes or facts—is the most practical, yet the deductive method—that which traces causes from the effects observed—is also useful. The first-mentioned method is like performing a sum in arithmetic; the latter method is like *proving* the arithmetical process. Both are of use. Listening to debates and to good logicians is an excellent way of strengthening the causative power. The endeavor to arrive at *the absolute truth* by irresistible proofs is calculated to lead to the most cogent conclusiveness.

COMPARISON.

Definition.—Ability to originate, comprehend, arrange, criticize, and compare ideas, plans, and systems; capacity to reason logically and to use analogy; power to comprehend complex systems by investigating their laws. Comparison assists philosophy, planning, and invention. It gives breadth of mind, good sense, and correct judgment. It creates a desire to learn laws, investigate principles, penetrate causes, and expound theories. This trait is large in lawyers, statesmen, generals, leaders, inventors, naturalists, scientists, orators, and chess-players.

An *excess* leads to sophistry and tiresome and useless theorising,—to the planning of impractical schemes and wild and visionary speculations.

A *deficiency* is exhibited by those who are unable to create, plan, or arrange ideas, or work systematically, and who fail to connect cause with effect. This defect is shown in those who have a narrow understanding, and who are incapable of comprehending profound, broad, or long-sighted plans in business, government,

or in mechanism. They are also unable to suggest new methods or to make experiments. They are incapable of making a logical statement or to comprehend one. They give *opinions* instead of logical *reasons*, and fail to perceive the difference between the "reason why" and a personal opinion on any given subject. A lack of reason is the foundation of bigotry and superstition, for those who are wanting in logic and common sense allow the emotions to rule them, and hence substitute feeling and personal opinion for reflection and reason.

Facial and Bodily Signs.—The most conspicuous and reliable facial sign of Comparison is height and breadth of the bridge of the nose, conjoined to length of this organ,—provided the quality be fine. The *nasal* sign for Comparison lies above the nasal sign for Veneration and joins Causality above. Fullness of the centre of the upper part of the forehead is also a sign, *if the quality be fine* and the brain system is dominant, or one of the principal systems. Where the osseous and brain forms are about equally exhibited and are of good or fine quality, and the bones are square, excellent reasoning powers will be manifested upon mechanical and scientific subjects. Where the brain form, conjoined with the vegetative or rounding form, is dominant and of fine quality, capacity for profound and prolonged reasoning upon metaphysical subjects will be exhibited. David Hume is a good illustration of this combination. Where the forehead is high, full, and broad, associated with fine muscular development, ability to reason upon art and metaphysical subjects will be manifested. This combination produces the rounding forehead, and the curved form is according to universal law the form devoted to art. Thus each combination reveals by its form and quality its *inherent* tendency and *direction*. Each of these combinations has its meaning registered in the form of the nose, as well as in the form of the brain and body, and mutually confirm each other.

Comparison is of the highest power in those characters who, with fine inherited quality, have also *a very long as well as high and broad nose*. Short, bony noses, no matter how high and broad, reveal less of this faculty than those which have *length*. Comparison of the nose of Lagrange, the eminent astronomer, with that of Gibbon, the historian, and the noses of Lagrange and Elizabeth Cady Stanton, grand reasoners, with those of Rubens and Miss Hosmer, celebrated artists, will illustrate the differences between those noses which reveal ability for the most *comprehensive* comparisons, and those which reason upon subjects requiring relatively less breadth and comprehensiveness. Flat-nosed persons and races are entirely destitute both of Comparison and Causality. Their

short, flat noses, depressed chests, and relative lack of breadth are most conclusive signs of the absence of the capacity to comprehend logical premises and deductions.

A broad, well-developed *body*, together with a high, broad, and long nose (if of fine quality) is the most favorable formation for the manifestation of a high degree of sound reason, with ability for prolonged and profound labors in this department of mentality.



FIG. 120.—ELIZABETH CADY STANTON. (LECTURER, AUTHOR, REFORMER, EDITOR, AND ORATOR.)

Born in Jamestown, N. Y., 1816. Conspicuous facial sign, Comparison, shown by width and height of the bridge of the nose, robust body, and fullness of the centre of the forehead. The law of the straight line, curve, and sphere governs this face. The physiognomist in delineating so regal a character as this finds language almost inadequate to express its powers and excellencies. To a highly developed, social, domestic, and moral nature this lady adds all of the higher faculties of the intellect. In this character, Firmness and Conscience, without being severe, are unswerving; Love of Home, of Country, and of Young are all of the highest order. As a wife, mother, and patriot, this lady is unexcelled. The signs for Benevolence, Alimentiveness, Mirth, Approbation, Friendship, Hospitality, Sanativeness, Color, Self-esteem, and Modesty are well defined. Resistance is large, as shown by her life-long efforts in opposing slavery, and in her unflinching endeavors to promote woman's enfranchisement. In the nose the signs for Ideality, Sublimity, Mental Imitation, Analysis, Human Nature, Construction, Acquisition, Veneration, Executiveness, and Self-will are prominent; so, also, are Form and Size. Locality, Mental Order, Calculation, Prescience, and Credenciveness are less than average. Language, as shown by the mouth and eyes, is copious, fluent, clear, witty, cogent, logical, and magnetic. As an orator, she is one of the most impressive and ornate, and is eminently well adapted to statesmanship, and would have made a good Secretary of State. With the highest powers of Reason she combines those of Intuition, while her sympathies for the oppressed of both sexes and of all races have led her to leave a home and life of luxury to travel and labor for their amelioration. The women of America will forever be her debtors for legal and property rights which she has been instrumental in gaining for them.

Another facial sign for Comparison, not so reliable as the former, is found in fullness of the centre of the upper portion of the forehead. The sign in the nose, as above given, is always to be depended upon, together with the *sort of reason* which will be manifested, for the *shape of the nose* discloses the mental tendencies of the character, and those tendencies will be toward the analysis of art, or of literature, or of architecture, or of science. The form of the nose will in each case decide the dominant tendency or direction. A well-developed nose is the distinguishing feature of the most highly developed races and individuals. It is a current belief that all large, high, broad, and full foreheads are evidence of fine reason and sound intellect. Nothing can be further from the truth. Such a forehead, if accompanied with large lungs and good digestive faculties, together with *fine inherited quality*, would be proof of

an excellent reasoner and of good intellect in some directions; but a projecting, high forehead, without these physiological gifts, and with a coarse, thick skin, would be indicative of stupidity or of very commonplace mental powers. Let the reader once comprehend the immense power which large lungs give to mental processes and how much is due to a sound visceral structure, and he will desire to examine the nose, nostrils, and entire face before passing judgment upon a character based upon an inspection of the size of the head or forehead merely. The rule is to observe, first, the *quality* of the subject under inspection, and then get the *direction* or ruling talent of the character (disclosed by the *shape* of the nose); then the *force* or *power* of the individual to carry out his dominant taste, shown by the *size* and *width* of the *nose*, and in this combination and classification will be found the key to the entire mental character. The domestic and other traits can be read by reference to those parts of the face where their signs are situated.



FIG. 121.—BENJAMIN THOMPSON (COUNT RUMFORD). (PHYSICIST, REFORMER, PHILANTHROPIST.)

Born in Massachusetts, 1753. Conspicuous facial sign, Comparison, shown by width and height of the bridge of the nose and form of the upper and central portion of the forehead. The law of the straight line and square governs this face. The projection of the eyebrows and the receding outline of the forehead disclose a character in which practical Reason is dominant. Whatever abstract plans this man made he was capable of putting into practical use. The size, form, length, and bony nature of this nose announce a man of might; the forehead is equally decisive of energy, of wise plans, and of prompt execution. The signs for Firmness, Conscience, Benevolence, Patriotism, Economy, Sanativeness, Color, Pneumativeness, Force, Caution, Approbation, Friendship, Amativeness, and Self-esteem are well defined and form a strong basis for the intellectual powers. The point of the nose stands high above the plane of the face, thus showing a far-reaching, aspiring, ambitious character; also showing a large degree of Human Nature. Sublimity, Ideality, Mental Imitation, Construction, Acquisition, Veneration, Executiveness, and Self-will are all strong traits. Prescience and Credenciveness are not large. The practical faculties of Observation, Form, Size, Locality, Order, Time, Calculation, and Language are very pronounced; while Memory of Events, Intuition, and practical Reason are dominant, and altogether show a character worthy of imitation.

Taking the forehead and nose together as guides to the discernment of signs of Reason is an infallible method, but where the forehead is high, broad, and full, and the nose small, the intellect will be of a common order, *unless the signs of high quality are present* and associated with a pyriform-shaped face.

There are many sophistical reasoners who can run parallels so near the truth as to sometimes deceive even the most logical. Such persons are known by round or full, smooth, shining faces,

rounding bodies, and the *fingers tapering to a point*, with the reasoning faculties, of course, in combination, but with small Conscientiousness.

DESCRIPTION OF COMPARISON.—The completeness and perfection of the reasoning process in man requires the action of two distinct traits, viz., those of Comparison and Causality. The soundness of the judgment in relation to cause and effect depends greatly upon the soundness and perfection of the visceral organization. It is true that an individual with a large brain of fine quality, developed in the reasoning faculties, will be capable, even in ill health, of logical reasoning; yet the same person in a state of robust health would be capable of far *greater* power and more vigorous and prolonged thought. The fact that some persons in a state of permanent ill health or great delicacy of constitution have evinced fine reasoning powers does not militate against the above statement. Alexander H. Stephens, for many years Senator from Georgia, was a life-long invalid, and of feeble physique at birth, yet was remarkable for his great mental industry and large and sound reason. *How much greater* this mind would have been in a normal condition we can well understand. This instance is often brought forward to prove that good health and a vigorous visceral structure are not essential to profound reason. That Senator Stephens was able to acquit himself of such arduous mental labor, involving so much logical acumen, was due to the fact that he had inherited a most uncommon *quality* of brain and body, as well as large size of brain; by great care of his physical

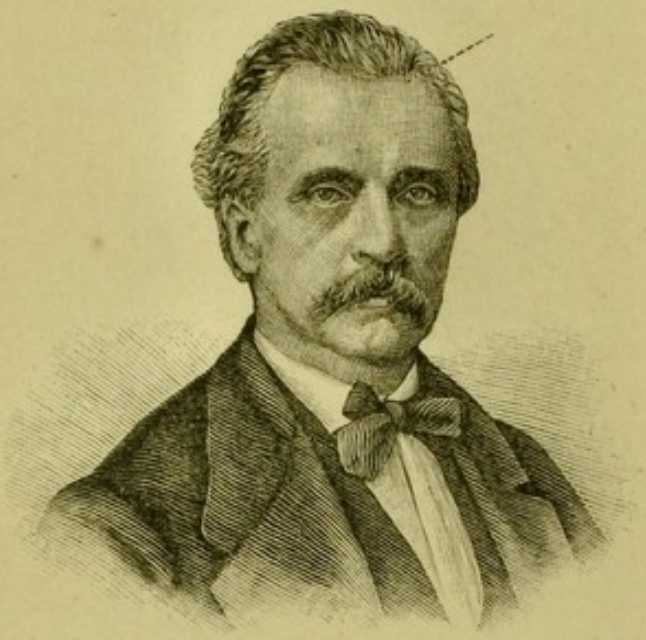


FIG. 122.—HERMANN LOUIS HELMHOLTZ. (PHYSIOLOGIST DISCOVERER, MATHEMATICIAN, AUTHOR, AND PHYSICIST.)

Born in Germany, 1821. Conspicuous facial sign, Comparison. The law of the straight line, square, and curve governs this face. The chin reveals Firmness and Conscience, also Patriotism, Love of Home, and Benevolence. Alimentiveness, Sanativeness, Economy, Bibativeness, Hospitality, Approbation, and other domestic traits are well defined. In the nose the signs of intellect are manifest. Analysis, Human Nature, Sublimity, Mental Imitation, Construction, Acquisition, Veneration, Executiveness, and Self-will show their power. Form, Size, Observation, Locality, Weight, Calculation, Mental Order, Time, and Memory of Events are conspicuous; while Causality, Comparison, and Intuition are supreme. This combination of faculties, with a high degree of quality, announce a most useful, comprehensive, and scientific mind. His most celebrated works, in which are elaborated his grand discoveries, are as follow: "The Conservator of Force" (1874), "A Manual of Physiological Optics" (1856), and "The Sensation of Tone as a Basis for the Physiological Theory of Music" (1862). In this last work Professor Helmholtz has succeeded in

"Untwisting all the chains that tie
The hidden soul of harmony."

powers he was able to make this development very effective. With robust health, he would doubtless have been a mental Colossus. His physiognomy shows that he was descended from a vigorous and long-lived ancestry. I do not know the circumstances of his birth, but I opine that some *accidental* circumstance in his prenatal life gave permanent feebleness to his physical powers.

The greatest and most profound reasoners are those who have inherited a fine and nearly equal proportion of each of the five superior systems, all of *superior power and vigor*. All this their faces disclose. They also disclose which part of the reasoning process is dominant in cases of disparity between them.

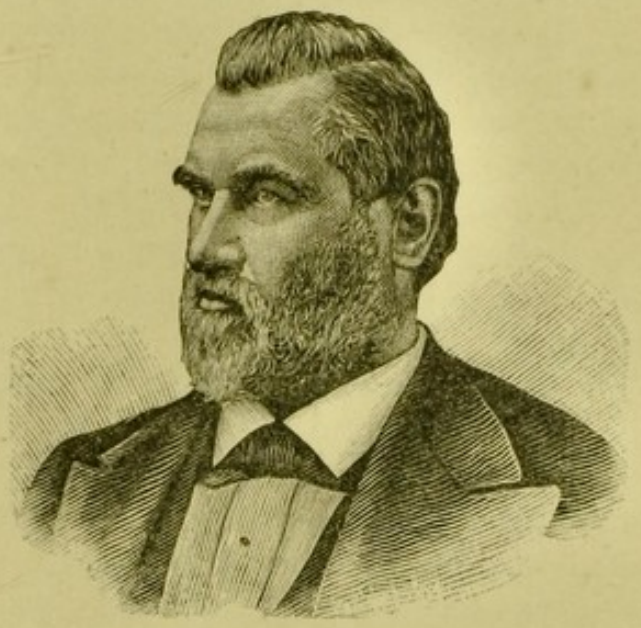


FIG. 123.—LELAND STANFORD. (MECHANIC, GOVERNOR, SENATOR, PHILANTHROPIST.)

Born in Watervleit, 1824. Conspicuous facial sign, Practical Reason, shown by the projecting superciliary ridges, where are grouped the signs for mechanical ability; shown also by the receding forehead. The law of the straight line and square governs this face. The key-note to this character is practicality. The domestic traits are well represented. The sense of Justice is strong, Firmness most decided; the full lower lip shows large Benevolence, and with such glandular development the faculties of Love of Home, of Country, and of Young must be also large. The signs for Self-esteem, Hospitality, Friendship, Amativeness, Alimentiveness, Pneumativeness, and Resistance are well defined. The nose is solid and broad, of proportionate length. In it the signs for Mental Imitation, Human Nature, Ideality, Sublimity, Constructiveness, Acquisitiveness, Veneration, Executiveness, and Self-will are conspicuous. The mechanical faculties are dominant. The signs for Form, Size, Locality, Weight, Observation, Order, Time, Calculation, and Memory of Events are very pronounced. Language is most apparent. Prescience is large, Credenciveness is small, and Causality and Comparison excellent. This mind ranks *utility* above everything, yet has sufficient Ideality and Constructiveness.

Comparison is that part of the intellect which leads one to see the various differences and distinctions in all mental schemes and conceptions; hence this faculty tends to criticism, analysis, explanation, analogy, and induction. It is especially the gift of those who study and investigate the grand and complex laws of Nature in astronomy and physics, yet it is of use in every vocation.

Another department of Comparison gives ability to criticise, arrange, and classify *material* substances in art, science, and literature. Humboldt, who, in his wonderful work, "The Kosmos," showed his understanding of the vast chain of natural phenomena, had perhaps the most *comprehensive* mind of any man in any age. His Comparison and Causality were of immense power, and the signs for these traits are observed both in his nose and forehead. Linnæus, the eminent botanist, who gave to the world his great system of classification of plants and a precise nomenclature for

the same, is another illustration of that comprehensiveness which results from a large development of Comparison and Causality. In works of this kind the mind must be able to spontaneously grasp the points of resemblance and dissimilarity, and thus by comparison assign to each object under observation its own true place and rank in Nature. Baron Cuvier, another of the world's mental Colossi, was able to build up an entire animal body from the inspection of a small bony fragment of the animal.

Comparison takes cognizance of the mechanical principles involved in arts and architecture, in scientific and surgical instruments, and in the appliances and implements used in the physical sciences, such as the telescope, microscope, the telegraph, telephone, electrical machines, etc. One sort of reasoning deals with the truths and methods of abstract reason on moral questions; another, with the concrete, or the principles involved in the operation of the sciences and arts.

The more Conscientiousness there is combined with reason, the more just and truthful will be the deductions. A man with large reasoning powers and small Conscientiousness will be sophistical and enjoy reasoning from false premises quite as well as from a true foundation; indeed, he will not be well able to distinguish between the two. Thus, it is proven that Reason (one of the *highest* attributes of the human mind and one of the *latest* acquisitions of the human race) must have as a foundation the assistance of Conscientiousness, one of the *earliest* functions evolved in the human organism. Comparison is the natural ally and companion of Causality. Possessing high powers, it holds its position in accordance with its importance. In the nose, its associated signs show by their character what direction Comparison will take when influenced by their association. Veneration, the first of the high faculties whose signs are found upon the ridge of the nose, is one of the traits found only among developed people. If observed upon the physiognomy of a semi-civilized person it denotes a high grade of development in that individual, for among such races are found fine physiques as well as good physiognomies, thus showing their tendency to *upward evolution*. Veneration, the faculty which creates respect for all admirable things, gives to Causality a respectful and submissive nature, assisting it to bow to causes and laws discovered by this inquiring mind. Above the reasoning faculties, upon the ridge, we find the nasal signs for Executiveness and Self-will. These two mighty mental forces give all the assistance which investigation and discovery require for promulgating and defending those theories, facts, laws, and principles which Comparison and Causality have wrested from Nature's

alembic. The philosopher, inventor, and discoverer must possess the elements of force and command to a certain degree in order that his theories and discoveries shall be thrust upon the world, for although the faggot and dungeon no longer threaten the bold speculator or daring inventor, yet self-will and self-assertion must be used by those whose efforts bring into existence knowledge which is revolutionary in its operation. I have sometimes been lost in admiration when reading of the efforts made by discoverers and inventors to *compel* the world to receive from their hands the principles in science, art, and mechanism to which under great sacrifices and amid mighty struggles they have given birth. Indeed, *force of mind*, originality, and invention are almost always accompanied by *strength* of body. The inventors, discoverers, philosophers, and originators of new theories, as a rule, have been men of strong physique, physical courage, and longevity. The portraits of Socrates, Aristotle, Bacon, Kepler, Voltaire, D'Alembert, Descartes, Condercet, Compte, David Hume, Charles Darwin, Benjamin Franklin, Martin Luther, Howe, John Locke, and the whole army of bold and original minds whose theories and works have blessed the world, disclose the fact that they were possessed of good muscular and visceral organizations. The signs in the nose for the breathing and circulatory functions, and for the stomach, are interwoven and closely related to mental signs and predicate mental powers, and hence it is that bold, ingenious, and original minds disclose strong, massive, and so-called "homely" features, viz., a large mouth, large high nose, full eyes, and broad cheeks and chin.

The only accurate method of arriving at a knowledge of the sort or direction the reasoning power will take in a given physiognomy, is to apply the "basic principles of form." The square-shaped forehead and high, long, bony, square-cut nose disclose the capacity for science, morals, and a certain branch of mechanical laws. The *rounding* forehead and broad, high, and long, muscular nose, rounding at the point and full at Constructiveness, assure us that the mind will exert itself upon metaphysics, astronomy, abstract philosophy, and invention, while the same muscular nose, if relatively *short*, will disclose the sort of reason which is involved in art, music, the drama, and dramatic literature, as in fiction, plays, etc. There are, of course, variations and combinations of all these different lengths, heights, width, etc., of the nose, suited to the talents which each character expresses, yet all can be understood by the keen analyzer and observer.

In discussing the faculty of Comparison, Professor Fowler observes as follows:—

Two organs of Comparison doubtless exist. The lower one, more appropriately connected with the physical perceptions, in comparing physical substances with each other and reasoning thereon; while the latter, combining more naturally with the moral faculties, reason from the physical to the moral world, compares ideas, criticises and discriminates between them, and imparts logical acumen.*

Although Professor Fowler (who is a good observer) tells us that two "organs" of Comparison doubtless exist, he fails to locate them in the forehead. It is impossible to comprehend the kind of reason which a given individual will exhibit by an inspection of the small portion of the forehead, where he says Comparison is situated. Let any good observer examine "the middle of the upper part of the forehead," and endeavor by that alone to understand and describe the sort of reason which will be exhibited, and I predict it will be an utter failure; yet examination of the outline and size of the nose will reveal it. The signs in the nose, taken in connection with the *quality*, are unfailing indications. When these and the sign in the forehead, taken in connection with its form, are observed, a *complete* summing up of the characters in regard to the *kind* of reason present can be had, but where the nose has been injured the forehead can be observed, or when the forehead is covered recourse can be had to an inspection of the nose.

Two distinct parts of the reasoning faculty must be used in order to complete the process. The *cause* of anything under observation must first be sought, and then it must be classified or relegated to its own division, according to the law of similar things. This is done by *comparing* it with others possessing the same appearance, form, quality, or characteristics. In this process *discrimination* performs a leading part. Thus it is that discrimination or reason is *common sense practically applied.* Where either of these two halves of the reasoning power are greatly lacking the judgment or estimate of a theory, idea, or thing will be partial or imperfect. The practical things of every-day life require the exercise of the reasoning powers quite as much as the investigation of the great and complex laws which regulate the solar system or which lie at the base of mechanical forces.

Inductive reasoning assists the discovery and application of natural laws. This sort of reason is used by modern scientists, and herein lies the extreme practicability and accuracy of their methods. The ancient Greek and mediæval method was the *deductive* form, which reasons from generals to particulars from a premise *assumed* to a conclusion in accordance with this assump-

* Human Science, O. S Fowler, p. 1128.

tion, regardless of whether the premise was based upon truth and observation of facts. The inductive method seeks to find a conclusion based upon the observation of a fact or a tangible object; hence, if its conclusions are in accord with its observation the whole is correct.

Reason is particularly adapted to the discernment and elucidation of natural laws. It was designed that man should be *master* of these laws, else the law-seeking faculty would not have been given him, and, although daring inquirers into the truths of Nature have lived in all ages of the world, yet the force of superstitious unreason was sufficiently powerful to stifle and postpone for centuries the widespread dissemination of laws and principles which Galileo, Bruno, and Bacon dared to avow, and for which they suffered.

The sort of Comparison which is used in the ordinary routine of daily life and in business is the same which the poet and orator use when engaged in giving vent to their thoughts by pen and voice. What makes it seem different is because it is *combined* with faculties *different* from those used in ordinary affairs. Ideality or imagination influences them. Mirthfulness and Wit, Constructiveness, Form, Size, and Language enable them to paint their illustrations of resemblances and differences in the forms of apt, mirthful, or witty simile, allegory, metaphor, or parable. Figures of speech result from an excess of Comparison, and all the great rhetoricians are indebted to this trait for their appropriate and convincing analogies, which often convince where argument fails. The philologist's labors are perfected through his ability to compare words, sentences, phrases, and languages. Comparison enables him to see incongruities and resemblances, and to generalize and classify the different parts of speech in diverse languages and dialects. The signs of this trait are large in the face of Noah Webster, compiler of the great "Unabridged Dictionary;" also in that of Mezzofanti, the linguist, who could express himself in fifty-six languages and was acquainted with sixty-four others. Comparison shines pre-eminent in the face of Bunyan, whose allegory of "The Pilgrim's Progress" has been translated into every civilized language. The portrait of Thomas Moore, the Irish poet, also exhibits it very largely. It was remarked that in his life of Sheridan "he made use of two thousand five hundred similes, besides metaphors and allegorical expressions."

It is this trait which gives the orator such convincing powers in setting figures of speech in "supposing a case," and when combined with the mechanical faculties the illustrations will be drawn from these sources, and in combination with Observation, Locality,

Form, and Memory of Events, historical powers will be manifested, as in Gibbon. With large Language added, it enables one to write on this subject. Eminent chess-players disclose large Comparison combined with Constructiveness, Form, Size, Locality, and Observation, as observed in the physiognomy of Herr Zukertort.

Comparison is so universal a faculty that it has existed in all historic ages, in nearly all races, and in combination with all phases of mentality. The German and Scotch equally possess the most universal endowment of this trait; the English come second, the Americans third, and the French possess the least; yet men and women noted for Comparison have developed in every civilized race. A high degree of Comparison has been also manifested among some savage races, notably among the North American Indians, whose orators and poets have exhibited its action in their speeches and poetry. Their foreheads, it will be observed, are usually receding, and this form of the forehead is often found associated with the most *practical* characters. The forehead of John Locke (renowned for his philosophical writings) presents this formation; so, also, does that of Arkwright, the eminent inventor. Many of our most eloquent orators exhibit receding foreheads. This shape of the forehead, when combined with a good endowment of Causality and Comparison, reveals reason of the most acute, accurate, and penetrating phase; for the receding forehead is one of the signs of an active liver and large lungs, and activity of these organs gives *clearness*, distinctness, and analytical power to the mind. Not only does this form disclose penetration, but it is indicative of the presence of the mechanical and observing faculties; hence, a high order of practical tendencies will be manifested where the forehead recedes to a certain degree, as shown in the face of Stanford.

As Comparison is a high trait, and one which brings its possessor into relation with the vast and comprehensive systems of Nature, it follows that its cultivation is of high importance. It cannot have full freedom of expansion so long as superstition and bigoted dogma are supreme. No, reader! *Freedom* of mind is opposed to the narrow restraints imposed by hide-bound creeds and venerable myths. No man can really enjoy the luxury of true and complete mental emancipation as long as he allows bigotry and superstition to control and fetter his mind. There is a happiness and ecstasy, an experience of mental exaltation, resulting from complete freedom from false theories and enslaving customs. Not until the last vestige of error and superstition has been reasoned out of one's mind can one realize this supernal condition. The only way we can understand God is through His works. How important, then, to cultivate that faculty which enables us to

realize the immensity and grandeur of the laws which explain and reveal them. The study of moral laws and the whole arcana of the sciences are of use in the development of Comparison and its twin sister, Causality. To be endowed by Nature with a large degree of Reason is to have inherited a liberal education, for Reason, supported by Conscientiousness, will establish in the character the supremacy of wisdom and justice.

INTUITION.

Definition.—Webster defines Intuition to be "a distinct inspection of the mind; direct apprehension or cognition; an act of immediate knowledge, as in perception or consciousness, distinguished from mediate knowledge, as in reasoning. Intuition is spontaneity of cognition and action, based on spontaneous cognition."

An *excess*, an immoderate endowment of Intuition, is seldom developed. Where this is the case, it is probably the compensation for the absence of Reason, Observation, or Practicality. If it prove an annoyance the cultivation of these faculties will tend to balance the character.

A *deficiency* can be remedied by bathing, cleanliness, and purity, thinking more and feasting and sleeping less. By this course the nervous system will become more sensitive, aspiring, and spontaneous. The brain and nerves will develop new powers. Avoid gross eating and drinking, and all low, brutal, coarse sports and pursuits; associate with the pure and gifted,—with the refined and noble; observe their methods and ways of life, and imitate them. Read the works of the purest poets, artists, and scientists. Cultivate the highest and best in your mind. So shall the entire nature become higher, more refined, and sensitive.

Facial and Bodily Signs.—Inasmuch as inherited quality is the most marked sign of Intuition, observation of the *quality* of the *skin*, hair, and eyes will show that those who possess very fine hair, very bright eyes, and very fine, clear skin are more intuitive than those who are the opposite of this; but as the brain is a part of the nervous mechanism, we must look to its *form* and *size*, also, for signs of quality. As the eyes show by their form, size, and condition their capacity for receiving sensations, they also must be subjected to examination before rendering judgment as to the relative degree of Intuition. The capacity for receiving sensations is in accord with the development of the sense-organs, viz., the senses of touch, taste, sight, hearing, and scent. Now, if all these senses are of the highest order of acuteness and efficiency, it follows logically that one thus endowed will have ability for instan-

taneous and spontaneous cognition of things observed. It also follows that if all of these organs are highly organized, the brain will partake of the same quality of fineness and capacity for receiving the impressions made upon the sense-organs through their several organs of sight, hearing, etc. This analysis shows us, then, that large, wide-open eyes of fine quality (shown by their brightness) are signs of the presence of Intuition, by reason of the greater expansion of the optic nerve, which is more expanded in a large eye than in a small one. The fineness of the skin and hair are also signs of this faculty; so also is the large size of the forehead, if *associated with fine quality*. A pyriform-shaped face, associated with large, wide-open eyes, is another very reliable indication of spontaneity of sensation and impression.



FIG. 124.—CHARLOTTE BRONTE. (AUTHORESS.)

Born in England, 1816. Conspicuous facial sign, Intuition, shown by the dominance of the brain and nervous system, large, bright eyes, and fine quality. The oval chin and curving eyebrows announce artistic capacity. The domestic and moral traits in this face are well developed. Conscience, Firmness, Friendship, Mirth, Modesty, Benevolence, Love of Home, and of Young are noticeable. The mouth and eyes by their size denote large Language. In the nose the signs for literary talent are evident. Ideality, Sublimity, Analysis, Mental Imitation, Human Nature, Construction, Acquisition, Veneration, and Self-will are conspicuous. Form and Size are large; Locality, Observation, Calculation, Mental Order, and Time are well defined, while Intuition is pre-eminent. The talent of this character was of the most original and spontaneous nature. With a most limited knowledge of the world and people, Miss Bronté wrote some very remarkable novels; her powers were almost instinctive.

Bodily signs are those which show the supremacy of the brain and nerve system over the bony and muscular structures; especially if associated with small limbs, small and spare hands and feet. A general sign is known by fineness and clearness of the skin; hence every part of the outer skin-covering will reveal the grade of Intuition in any given individual. If the bony muscular, or thoracic systems are dominant, the skin and hair fine, and the eyes bright, Intuition will be active in the direction to which each of these systems tends.

DESCRIPTION OF INTUITION.—Having thus given the physiological and anatomical signs of that faculty which is perhaps understood the least of all the mental powers, I shall proceed to analyze its sources, and shall show that this trait, which is considered by many to be of a nature transcending all others in its powers of apprehension and cognition, as well as being more "spiritualized" in its

operation, is just as much a part of the "fleshly tabernacle" which we inhabit as are all the other mental faculties. It is true that it is a trait dependent entirely upon *inherited* or *transmitted quality;* hence it is a condition of the body as a whole and not the special endowment of a *single organ* or system; for, although its primary signs are shown by the indications of the brain and nervous mechanisms, yet, where the signs for *high quality* of the brain and nerves are observed, *an enhanced quality of the entire organism* is always present. The same phenomenon is manifested throughout the animal kingdom. Animals that disclose dull eyes, coarse skins and hair, exhibit relatively less intelligence, quickness of apprehension, and capacity for receiving spontaneous sensation than do those whose appearance is the reverse. Compare, for example, the various deer tribes with the cinnamon bear or hippopotamus, and the differences will be apparent at a glance.



FIG. 125.—RICHARD OWEN. (NATURALIST, SURGEON, AND WRITER.)

Born in England, 1804. Conspicuous facial sign, Intuition, shown by supremacy of the brain and nervous system, and large, bright eyes. The law of the straight line, curve, and sphere governs this face. An amiable, moral, modest, persevering expression is here disclosed. The Quality is fine and Color well developed. The signs for Firmness, Conscience, and Benevolence are noticeable, while the wide mouth, full lips, and large, bright eyes evince fine linguistic capacity. Love of Home, of Country, and of Young are marked. Self-esteem is only average. The sense of Mirth and Wit is very decided. Friendship, Hospitality, Alimentiveness, and Sanativeness are large. The signs in the nose of Pneumativeness, Sublimity, Mental Imitation, Analysis, Construction, Veneration, Executiveness, and Self-will are highly developed. Form, Size, Locality, Weight, Observation, Credenciveness, Calculation, and Memory of Events are all of the first grade, while Reason and Intuition are pre-eminent. This character can take rank with the "mastodons" of learning and of usefulness.

Because of the difficulty in comprehending the action of Intuition, superficial observers have ascribed to it a *supernatural* origin, believing it to be allied in some mysterious manner with an incorporeal "soul" or "spirit." Now, the brain and nervous mechanisms are just as corporeal as are the heart, liver, and lungs, for they all depend upon blood and tissue for their power to act, and if an *exalted condition* or *quality* of the former produces the phenomena observed in the action of intuitive cognition, then the trait is no more "spiritual" than are the operations of Hope, Constructiveness, or Reason, although to the casual observer it may seem more abstruse, occult, and mysterious.

All of the higher operations of the mind are more complex

than the processes involved in what are termed "instinctive movements," viz., those of the muscular movements of the limbs, the act of eating, etc.; hence they appear to be mysterious to those who are incapable of critical and scientific analysis. Inasmuch as they are complex, they are more difficult of comprehension, yet by following the laws laid down in my system of practical and scientific physiognomy, and by comparison with other departments of Nature, we can easily comprehend the nature of such abstruse faculties as Intuition, Prescience, and Reason.

Phrenologians use the terms "Intuition" and "Human Nature" interchangeably, conveying the idea that Intuition is used only for the purpose of comprehending the *human mind and body*. Now, the perception of Human Nature is a separate faculty from Intuition, having distinct signs in the face; yet it is greatly aided by the influence of Intuition, which also assists us in our researches into *every* department of Nature. The scientist relies upon both Imagination and Intuition in making his investigations and discoveries; indeed, both these faculties are indispensable to the inventor and discoverer, as well as to the artist and poet.

That Intuition has a physical base is indisputable, and I think I have established that fact by the analysis of its action and description of its signs in the face and body. It is now in order to investigate its action and the resulting phenomena, as exhibited by those most gifted in this faculty. I will premise by saying that there are as many degrees of manifestation of this as of every other trait, some showing the presence of it in a most talented form, as exhibited in musical, artistic, and scientific geniuses; others apparently not possessing even a germ, as shown by the lowest races, such as the Digger Indian, and other undeveloped races. Among civilized people, even, there are others who are so dull, insensitive, coarse, or brutal as to be destitute of any apparent power of intuitive knowledge. Yet, as evolution has brought them into the grade where *progress* is *possible*, so such persons can, by intermarriage with those endowed with a greater degree of intuition, become progenitors of offspring who will manifest the presence of this trait. In this way such characters can be "born again," a system of "re-incarnation" which we all recognize.

What causes produce Intuition? How does Intuition make its appearance? What is its office in the human mind, and how is it manifested? Intuition is the crowning achievement of refined organization, or of the highest manifestation of mental power, for it *divines* or spontaneously arrives at an understanding of what it perceives or thinks upon with a lightning-like rapidity; that is to say, instantaneously or upon sight.

There are several ways of accounting for the causes which produce Intuition. That it is inherited there is no doubt; but when it is manifested in an extraordinary degree by a precocious child whose parents were not noted for anything approaching that degree, then it appears to the unscientific thinker to approach the miraculous, and to have a spiritual foundation. All things appear supernatural to those who do not comprehend their rational bases. A precocious child, in whose early life appears a wonderful capacity for music, number, art, or literature, may have received during its prenatal life a *quickening* impulse in this direction, through some modification of the brain and nerve structure or substance, by impressions made upon the mother's mind; or he may by the law of *atavism*, or "taking back," have received his germ-form from some remote ancestor whose talents were of a high order in the same direction, and this inheritance may have become more highly organized; or, as in singers, the musical or vocal mechanism involved may have been (as in the case of Patti) an inheritance from a long line of ancestors whose vocal apparatus by continual use became very highly developed, and in this *augmented* and *intensified* condition was transmitted to her, and through years of cultivation on her part of this already flexible and highly-developed organ culminated in a gift which seems supernal and almost superhuman. Now, musical intuition is one of the simplest forms of genius. Singing is a gift appertaining to a certain development of the vocal apparatus, yet musical composition would seem to involve something more of a mental nature; but when we find Mozart composing excellent music at four years of age, we see that something more complex is at work, and we must look to an *intensified degree of several faculties* for the explanation of the results which he wrought out at that tender age. No matter how wonderfully great the efforts of youthful geniuses may appear, not one of the many prodigies have evolved a gift which was not already in a certain degree the gift of others, thus proving that even the intuition of genius cannot *originate* any distinct or new faculty which is not already, in some measure, the property of other human beings. On this point, Dr. Carpenter tells us that

> The men who have divined and enunciated great truths stand out above their fellows as possessed of a genius which could not only combine but create,—of an insight which could clearly discern what reason could but dimly shadow forth. Granting this freely, it may yet be shown that the intuitions of individual genius are but *specially exalted forms* of endowments which are the general property of the race at the time, and which have come to be so in virtue of its *whole previous culture*. This appears readily capable of proof in the case of two forms of mental activity, the

tendency to which occasionally manifests itself so remarkably in individuals as a *congenital aptitude* that it must be considered as *embodied in their constitutions;* and which are yet so completely the products of culture that we are able to trace pretty clearly the history of their development. These are the ideas which relate to *Number* and those which relate to *Music.**

The popular idea of instinct is that it is something *inferior* to reason. Now, instinct and intuition are, in a sense, identical, for both act *spontaneously* or automatically, without previous reasoning upon what is perceived or concluded in regard to the object or idea under consideration, for Dr. Carpenter, quoting Sir John Sebright, observes that

> He went so far as to express it as his decided conviction that by far the greater part of the propensities which are generally supposed to be instinctive are not implanted in animals by Nature, but are the results of long experience acquired and accumulated through many generations, so as, in the course of time, to assume the character of instinct.†

Now, this is precisely what intuition and genius are, and it is in this manner that they are manifested; that is to say, as instincts, spontaneously, automatically, or, in other words, mechanically, and because they cannot help it. Let us read Mozart's account of himself, and we shall see that his musical intuitions or insight outworked in precisely the same manner as the so-called instinctive actions of the spider in weaving and balancing his web (and I think the reader will agree with me that the web of the geometrical spider is as pretty a piece of mechanism as one would wish to see). The following account of himself he wrote to a friend, and thus we have first-hand evidence of his spontaneity. He observes:—

> You say you should like to know my way of composing, and what method I follow in writing works of some extent. I can really say no more on the subject than the following, for I myself know no more about it and cannot account for it. When I am, as it were, completely myself, entirely alone, and of good cheer, say, traveling in a carriage or walking after a *good meal*, or during the night when I cannot sleep, it is on such occasions that my ideas flow best and most abundantly. *Whence* or *how* they come, I know not, nor can I *force them*. Those ideas that please me I retain in my memory, and am accustomed (as I have been told) to hum them to myself. If I continue in this way, it soon occurs to me, how I may turn this or that morceau to account, so as to make a good dish of it; that is to say, agreeably to the rules of counterpoint, to the peculiarities of the various instruments, etc. All this fires my soul, and, provided I am not disturbed, my subject enlarges itself, becomes methodized and defined, and the whole thought ere long *stands almost complete and finished* in my mind, so that I can survey it like a fine picture or a beautiful statue at a glance; nor

* Mental Physiology, W. B. Carpenter, M.D. † *Ibid.*, p. 229.

do I hear in my imagination the parts *successively*, but I hear them, as it were, *all at once*. What a delight this is I cannot tell! All this inventing, this pondering, takes place in a pleasing, lively dream; still, the *actual hearing* of the *tout ensemble* is, after all, the best. What has been thus produced I do not easily forget, and this is perhaps the best gift I have my Divine Maker to thank for. When I proceed to write down my ideas, I take out of the bag of my memory, if I may use that phrase, what has previously been collected into it in the way I have mentioned. For this reason the submitting to paper is done easily enough, for everything is, as I have said before, already finished, and it rarely differs on paper from what it was in my imagination. At this occupation I can, therefore, suffer myself to be disturbed, for, whatever may be going on around me, I write and even talk, but only of fowls and geese, or of Gretel or Barbel, or some such matters. But *why* my productions take from my hand that particular form and style that makes them *Mozartish*, and different from the works of other composers, is probably owing to the same *cause which renders my nose so*, or so large, so aquiline, or, in short, makes it Mozart's, and different from that of other people, for I really *do not study or aim at any originality*. I should, in fact, not be able to describe in what mine consists, though I think it quite natural that persons who have really an *individual appearance of their own* are also *differently organized* from others, both *externally and internally*. At least, I know that I have not constituted myself either one way or the other.*

This wonderful self-analysis of Mozart's is to us a revelation of that spontaneity or intuition which characterizes the methods of genius. He tells us that he composed best when quiet, when he was of "good cheer," after a good meal, or out in the open air, traveling or walking, but *how* his ideas came he knew no more than does the ant when it builds its ingenious nest, or the bee when it constructs its cell. It is plain to see that his earlier efforts were due *entirely* to an *inherited tendency* which enabled him without instruction not only to play upon instruments, but to compose or imagine fine and difficult concertos and quartettes at five years of age, just as the bee, ant, and bird create their dwellings without having studied the rules of architecture. His comprehensiveness of mind and of the science of Form is shown by his allusions to the peculiarities of his physiognomy and "outer and inner constitution," "the shape of his nose," etc., as representing a distinct individuality, one which revealed his particular characteristics by the peculiarities of its form, size, quality, etc. He tells us also that he does not *aim* at originality, and this is still another method of proving the *instinctive*, *intuitive* manner of his working, which produced superior musical efforts spontaneously and without purpose of aim.

The office and use of Intuition in the human mind is to arrive at a result with less labor than is demanded by the mere laborer's

* Mental Physiology, W. B. Carpenter, M.D., p 273.

methods of reasoning. Not all who possess the faculty of Intuition are infallible in their perceptions, for this trait like all others is influenced by other faculties in combination. Large Intuition combined with large Conscientiousness would produce a most uncommon degree of *accurate*, intuitive insight, for this faculty must be founded upon truth to make its results accurate. Intuition *alone* may lead one astray. If each faculty of the mind could act separately and distinctly, uninfluenced by the others, then large Intuition would be *unerring in its operation*. Many persons who possess large intuitive powers possess also large reasoning faculties, and these offer great assistance in the domain of pure intellect in abstract thought. These two powers of mind were large in Shakespeare, Newton, Kepler, and others who have evolved and discovered great laws and systems of Nature. The physiognomies of the above-mentioned persons exhibit all these signs, but in each case they have had the *assistance* of a good measure of *Conscientiousness* as a foundation upon which to rest and by which to test their ideas and theories. No single trait can operate alone, but must act in conjunction with others, just as in the body no separate organ can functionate without the co-operation of several others. The heart beats, but at the same time the lungs respire, the brain is moved to action, the blood circulates, and the process of assimilation goes on all at once, and each affects the other, without the consent of any. In the same manner when we commence with the design of using one mental faculty, it has the assistance *unasked* of several others at the same time.

The action of Intuition is not confined to geniuses, although in them it has its largest manifestation. It is found in many grades of mentality, and is often the compensation which Nature makes for those who are lacking in some other direction, as, for example, in the practical or observing faculties; or, in other cases, it takes the place of deficient reason or assists the weak. Intuition should be cultivated and developed, for not all who manifest this trait are geniuses, and, as before remarked, it may be the compensation for serious deficiencies.

It cannot be denied that women, as a class, possess a more general and universal endowment of this trait than man, and where it is largely exhibited in man it is usually an inheritance from some female ancestor, near or remote. Very few people know anything about the looks, physiognomy, and personal appearance of their ancestors three generations or more back of them; hence, in deciding from whence certain traits have come, the mass of people must depend upon the light which scientific physiognomy throws upon the subject. Certainly the science which can teach

us how to trace the entire course of animal evolution in the face can quite easily find the source and origin of all faculties whose signs are imprinted upon the countenance and exhibited in the walk, the voice, the gesture, the handwriting, the movements, and habits of body and mind. There is nothing occult or mysterious in all this; the faculties which are used in the investigation of other sciences are those which are used in discovering all these phenomena, and among them Intuition—insight, or a natural capacity for discerning the laws and operations of Nature—stands pre-eminent. It is one of the faculties upon which the physician and teacher rely for their power to heal and teach, and all great or eminent physicians and teachers exhibit the signs of this faculty. The physicist, scientist, and naturalist, too, must be endowed with high intuitive powers, else they will fall far short of the requirements of their profession. Artists in every department, if they achieve a high rank, possess this trait. Celebrated poets, painters, actors, orators, etc., are largely indebted to the operation of Intuition for their greatest efforts, for they, like Mozart, must be able without "aiming" at excellence to attain it in a spontaneous manner. This faculty lies at the base of all great inventions and discoveries in natural law. It assisted Newton in his discovery of the great laws of motion and Darwin in his discoveries of the laws of natural selection. I advise the reader, if he wishes to note the manifestation of an intuitive and observing genius, to read the "Origin of Species" and the "Descent of Man," by Charles Darwin, whose works have made an epoch in scientific thought, and have revolutionized natural science in this century.

The investigation of human nature, both in regard to its mental and bodily manifestations, is greatly aided by Intuition, for in intercourse with our fellows we must be able to *immediately* detect existing conditions of mind, and their grade or status of character. Without some natural provision of this sort we should be obliged to carry about with us certificates of character signed by those who have had experience with us, or else wait for years of acquaintance with each other before we could acquire positive knowledge of each other's characters; hence, character-reading is an ordinance of Nature, and common alike to man and animals. Lavater, Porta, Cicero, and many others were *geniuses* in this direction, and *divined*, as it were, the characters of those with whom they came in contact; yet Intuition is not Human Nature, but each depends upon the other for assistance. All of the higher faculties of mind are more and more complex in their operation and manifestation as they rise in rank, and it takes the highest and most finely organized faculties to comprehend in a talented manner the *rationale* of this complexity.

Thus we see in every century a few men and women who have shone resplendent in their intuitive comprehension of character. Shakespeare, among intuitional character-readers, takes first rank. Yet the number of physicians, scientists, orators, inventors, artists, and discoverers who have been possessed of talent and even genius in this direction is legion. It is highly essential to the actor, to enable him to comprehend, seize upon, and portray the emotions which stir the hearts of the masses, and arouse them to action. In woman, as the mother of the race, however, is the highest degree of Intuition needed and manifested, for the comprehension, training, education, and government of children requires its greatest power, and in this department of life the most universal and constant degree of intuitive insight is exhibited, rising in some instances to positive genius in this direction.

Intuition is a conservator of life, for by the insight into character, motives, and health conditions its possessors are *forewarned* of that which would be hurtful. Indeed, this faculty, like all sciences, is one of Nature's methods of foreknowing—of prevision and of protection.

Children in most instances possess a high development of Intuition, but, like many infantile instincts, it is stifled by the accumulation of technical and experimental knowledge which they gain by age and education. Most children, like many animals, instinctively feel the characters or *tone* of those about them, and even in infancy are attracted or repelled by the personal appearance, physiognomy, or magnetic atmosphere or aura which is thrown out from those with whom they come in contact. This intuitive "sensing" is their only method of knowing people, and of protecting themselves until experience and acquaintance have given them other methods of distinguishing character and conditions.

When we come to an investigation of the animal kingdom we shall find the highest forms of Intuition, not excelled even by human genius, for it must be understood that in the case of animals it is the acquisition of ages of practice in given directions which lead them so *unerringly* to do those things which are scornfully termed by man "instinctive," and which are looked upon by him as mere automatic acts, inferior to the reason, observation, and calculation which man uses in his works; yet when this same automatic, spontaneous talent is exhibited by an Arago or a D'Alembert in the science of numbers, or by a Coleridge, a Hartley, or a Byron in poetry, by a Mozart, a Bach, a Haydn in music, we enthrone them among the greatest of earth's geniuses, while eminence, riches, and immortal fame await them. Genius acquires its gifts precisely as the animal acquires his automatic powers of

building, providing, path-seeking, and character-discerning, viz., by an augmented and intensified transmission of powers, which by long usage upon the part of ancestors have become incorporated into the very *constitution*; or perhaps by the action of some obscure and hidden law of heredity and selection the germ of life of the genius has become vivified in some favorable maternal *nidus*, and, thus endowed, it shines forth resplendent in the world of mind or art, and we have a Cicero, an Aristotle, a Bacon, a Shakespeare, a Michael Angelo, or a Herbert Spencer; and the unthinking, unscientific world, looking up to the achievements of these men, exclaims: "From whence comes all this splendor? Neither father nor mother were like unto these." So slight is the knowledge of human beings in regard to their powers and natures that it sinks into insignificance when compared with the instinctive genius of animals, who, *without instruction*, can produce buildings, domiciles, nests, combs, dams, and webs founded upon the highest laws of architecture. They can trace their course through the boundless spaces of ether, and return to their homes without chart or compass; and all this they are able to do from birth, without education or training. What human genius has ever been able to accomplish this? In presence of such *facts* it becomes us, human mortals, not to be too *conceited*, *egotistic*, or top-lofty, but, in all conscientiousness, and in a spirit of comprehensiveness, to acknowledge that this wonderful *instinctive* knowledge of all the animal tribes is their compensation for the lack of the *hands* and developed *cerebrum* of man. Very happily has George Henry Lewes remarked that "Instinct, like chance, is one of those words which men use to conceal their ignorance." Yet the manner in which they use it betrays to an observant person the very thing which they would conceal.

One might fill volumes with accounts of the intuitional genius of animals. I bring forward no examples here, for they are all about us, and as numerous as the sands of the sea; hence it is needless to point to any special cases, for their number is exceeded only by their marvelous ingenuity. In some directions the humblest animal is superior to man; yet, by virtue of man's possessing hands, speech, an upright position, and a more complex brain and nervous system, he stands at the head of the animal series. Intuition is a gift which man shares in common with all the higher animals, differing in degree, yet the same in kind.

The portraits in this chapter are most of them those of superior persons, hence, as the reader has doubtless observed, very few deficiencies have been noted in their faces. In the chapter which follows there will be displayed and described the physiognomies

of many defective and abnormal beings, such as the criminal, the feeble-minded, and the undeveloped. The reader can institute comparisons between these and those. This course will afford a fine opportunity for discerning the differences existing between those who are highly developed in all parts of their organism and those who are greatly lacking in certain departments, and also between those of high and those of low quality. The subject of *beauty* according to art-standards has not been considered in this chapter. A *scientific* delineation of the face reveals meanings which art fails to expound as beauties; for the most part, art considers as beautiful the most infantoid forms of features and outlines of faces,—that is, those abounding in curves. The higher and more severe styles of beauty, viz., those which reveal the square and cubical forms, art does not, as a rule, consider beautiful.

The reader of the preceding pages has, I opine, learned that beauty of character appears in all normal forms, and that whatever form reveals genius, talent, morality, physical power, or capacity for usefulness may well be considered as beautiful. In order to have a comprehensive view of the human face and its associated character we must *enlarge* our understanding of the meaning of Form, and come to learn its inherent significations. We must, in short, come up higher into the domain of scientific knowledge,—into the adult stage of mind,—and from this height learn, accept, and apply what Nature reveals to us of the human physiognomy.

CHAPTER III.

The Human Face in Outline, Motion, Feature, Expression, and Color.

"The history of a man is his character, and his character is written on his organization and might be read there had we but senses acute enough to decipher the organic letters. There is not a thought of the mind, not a feeling of the heart, not an aspiration of the soul, not a passion that finds vent, not a deed which is done, that is not graved with an unfailing art in the structure of the body; its every organ and the constituent elements of each organ grow to the fashion of their exercise, and there is nothing covered that might not be revealed, nothing hid that might not be known."—H. Maudsley, M.D.

EVERY form in Nature reveals its own history. In order to be able to read this history, we must learn to apply the alphabet of form, and thus spell out the entire signification of the human face and body. Every motion expounds its own purpose. Natural gestures are a part of the personal form, correspond to it, and are as individualized as the features.

The outline or contour of each human body is a circumferential entity. Each distinct limb and feature is a fragment of this entity, and declares the homogeneity of the whole.

Each color and shade reveals the health conditions, native force, integrity of the tissues, and the intensity of the emotions.

The human physiognomy is the highest and most perfect of forms, because it includes, sums up, and expounds all form, hence contains the record of all lower forms and illustrates the laws of form and motion. Not only does each individual human countenance unfold its own bodily and mental status, but it is also the index of countless ancestral traits, types, and influences. Every face announces its possessors, grade in morality, mentality, and physiological activity, as well as his racial connections and national descent. It reveals also his mental aptitudes, often his sectarian proclivities, his habitual pursuits, his vices and his virtues, both active and latent, and to the scientific physiognomist it *sums up* the totality of its accompanying character.

The laws of muscular motion (from the action of which expression mainly proceeds) must be rightly comprehended in order to understand and translate motion and form into character. The two kinds of expression, permanent and transient, depend almost

entirely upon the motive apparatus, viz., upon the bones and muscles, for the power to express thought, feeling, and emotion, or the lack of them. It is true, that the soft tissue—the adipose matter of the face—assists expression and co-operates with muscle in producing dimples, wrinkles, folds, and outlines, while the nerve of the eye adds its quota of expression by its quality and activity. The muscles of the face are related to every part of the brain and to every internal organ through their nervous connections. Were it not for this intimate cerebral and visceral relation, the face could express neither thought nor emotion, hence there would result no more *beauty* nor *variety* of expression than is observed in the countenance of a dog or horse.

Thus, it is shown that each system, each tissue must be interrogated, and its constituents and character as well as its method of action be known, before passing judgment upon an individual. The *outline* exhibited by each separate being is an *epitome* of the entire character. The attitude habitually assumed, both in action and repose, is highly indicative of the man. The *movements* of the body in walking, and of the gestures of the limbs and hands, together with the accompanying movements of the head, are most decisive signs of inward mental and moral states. How rational must this last assertion seem in face of the fact that when an actor wishes to represent a character he alters his walk, his gestures, and habitual position to suit the one he would portray; and the walk, gestures, and movements of a noble character, how different from those of an ignoble one! All this goes to show, not only that the forms of the internal organs create different external shapes and varied phases of character with different degrees of power, but also proves that the contour or outline of the body, which is created by certain internal combinations of organs and systems, reveals the main design or animus of the individual. As forms are produced by the law of motion, so the mode of individual motion is indicative of the character thus produced. No postulate can be sounder than this. Contour and motion, then, are the first subjects for consideration in this chapter, as they are the first phenomena which strike our senses when a stranger approaches us.

This may not be evident to our perception, so accustomed have we become to the movement forward toward us of others; and so instantaneous and instinctive is our reception of the impression which we glean from the approach of an individual or of his retreating form, that many will believe that they receive the first intimation of his character from the expression of the face; but as it often occurs that our first sight of one is a sidewise view or

from behind, and when in motion, as in walking, gesticulating, etc., we consciously or unconsciously derive some accurate and important impressions from these circumstances,—ofttimes most vivid and startling ones, too, when the motions and gestures are energetic. As the individual approaches nearer, the *features* next command our attention, and then the general expression, color, and

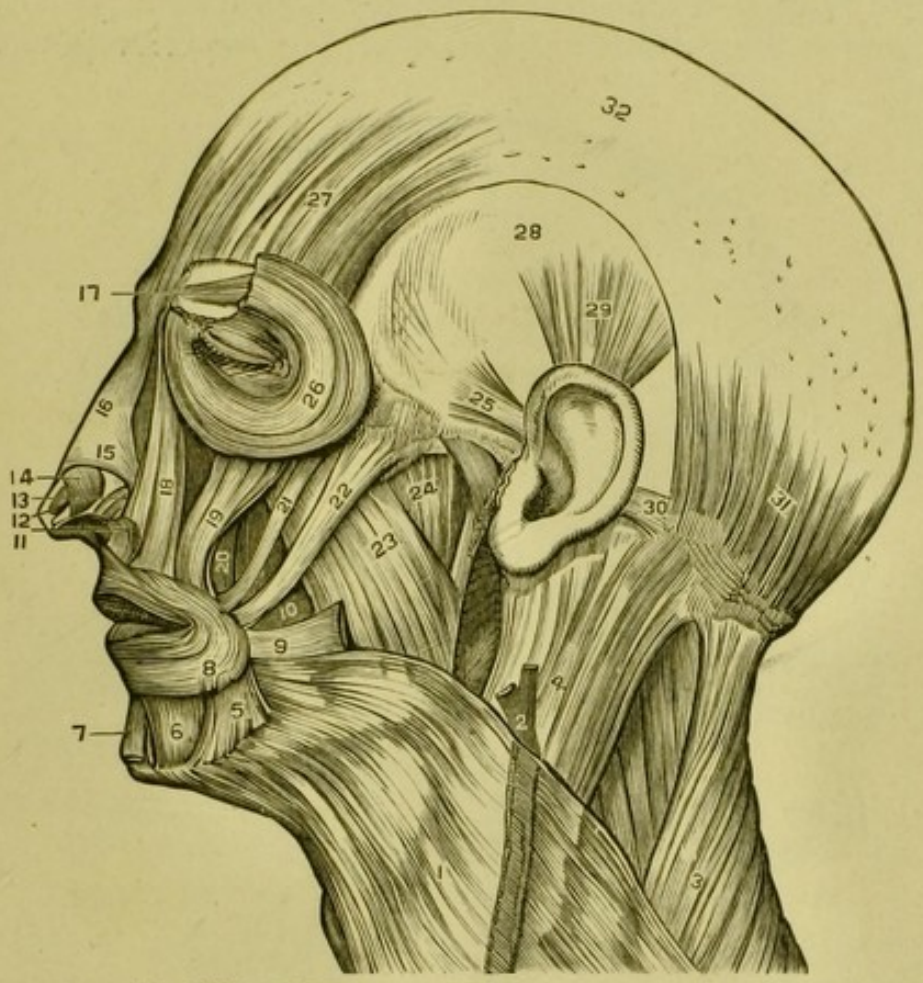


FIG. 126.—THE MUSCULAR MECHANISM OF THE FACE.*

1. Platysma myoides.
2. External jugular vein.
3. Trapezius.
4. Sterno-cleido-mastoid.
5. Depressor anguli oris.
6. Depressor labii inferioris.
7. Levator menti.
8. Orbicularis oris.
9. Risorius.
10. Buccinator.
11. Depressor alæ nasi.
12. Compressor narium minor.
13. Dilator naris posterior.
14. Dilator naris anterior.
15. Compressor naris.
16. Pyramidalis nasi.
17. Corrugator supercilii.
18. Levator labii superioris alæque nasi.
19. Levator labii superioris.
20. Levator anguli oris.
21. Zygomatic minor.
22. Zygomatic major.
23. Masseter—superficial portion.
24. Masseter—deep portion.
25. Attrahens aurem.
26. Orbicularis palpebrarum.
27. Frontal portion of occipito-frontalis.
28. Temporal fascia.
29. Attollens aurem.
30. Retrahens aurem.
31. Occipital portion of occipito-frontalis.
32. Tendinous aponeurosis of occipito-frontalis.

A close study of the above figure will go far toward enlightening the reader as to the very important part which the muscular system plays in the expression of character as shown by the face. Observation of this figure will soon convince the investigator that one well endowed with a fine muscular system is better able to express emotions than one who is greatly deficient in the development of this tissue. Examine attentively the muscles of the chin, the cheeks, the lips, the nose, and those of the mouth, and you will learn why it is that an organism which has inherited a fine development of the muscular tissue is capable of great mobility and variety of expression. The development of the muscles at the point of the nose is remarkable, and reveals to us the origin of the several signs of character which I have discovered and located there. It should be understood that muscular development varies in every subject. Undeveloped and barbarous peoples do not exhibit as fine a nasal form as do the civilized races, and among the latter there is as great a difference in the degree of development of the nose as there is in the external form of that organ; and this is also true of each facial feature, as well as of the limbs and trunk of each subject.

* From Gray's Anatomy.

voice. These are all combined, taken up instantaneously into our common sensorium and there announce themselves as a concrete whole, and we, with lightning-like rapidity, "sum up" the person and pronounce our verdict upon our conceptions of his status, and pass opinion as to our like or dislike of his personality.

The superior power of the face as a revelator of character to that of the skull is recognized by all intelligent writers on anatomy, for the reason that they are aware of the superior power of the

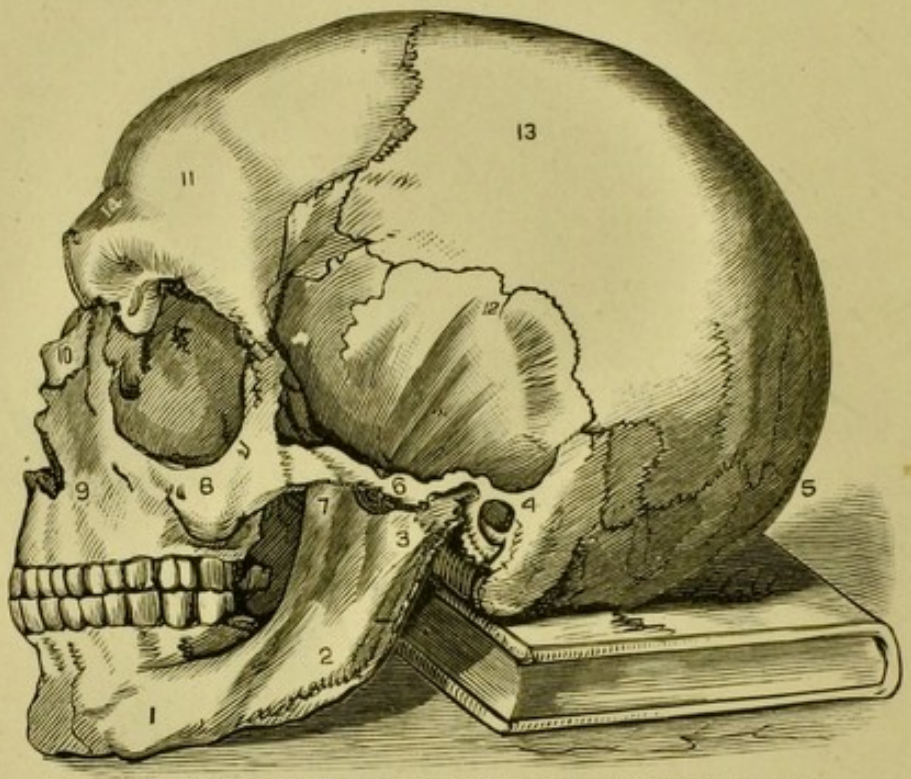


FIG. 127.—THE OSSEOUS FORMATION OF THE FACE.*

1. Inferior maxilla.
2. Angle of inferior maxilla.
3. Condyle of inferior maxilla.
4. Mastoid portion of temporal.
5. Occipital.
6. Zygoma.
7. Coronoid process of inferior maxilla.
8. Malar bone.
9. Superior maxilla.
10. Nasal bone.
11. Frontal bone.
12. Temporal bone.
13. Parietal bone.
14. Superciliary ridge.

The above figure gives a good idea of the solidity of the foundation of the face and head. A good osseous endowment is a grand inheritance, for it gives stability and reliability to the character. The teeth are not reckoned among the bones of the face, as they are tegumentary in character and belong to and reveal the condition of the alimentary tract in a large degree. The joining of the bones by sutures, which dovetail as it were into each other, is a marvelously fine piece of mechanism. The protection which the prominent eyebones affords the eye is still another manifestation of high architectural power. The parts of the bones of the face which express the greatest degree of stability are shown by a well-developed chin and jaws, nasal bones, frontal sinuses, and superciliary ridges.

fifty-five muscles of the face to express emotion. The contour of the skull always harmonizes with the body to which it is attached, but it is impossible to draw from it alone that *accurate* and *comprehensive* knowledge of character which can be deduced from a view of the face alone. The form of the head corroborates the form of the face and body, and phrenologists make their best "hits" by observation of the upper part of the face, about the eyes and eye-

* From Wells' New Physiognomy.

brows, for here is expressed more varied character in the formation of the bones than in other portions of the head.

The following opinion of Gray, one of the most celebrated of anatomists, in regard to the superiority of the face as an indicator of character, is most emphatic:—

A word on the lines of the face as indicative of expression. Every one pays unconscious homage to the study of physiognomy. When scan-

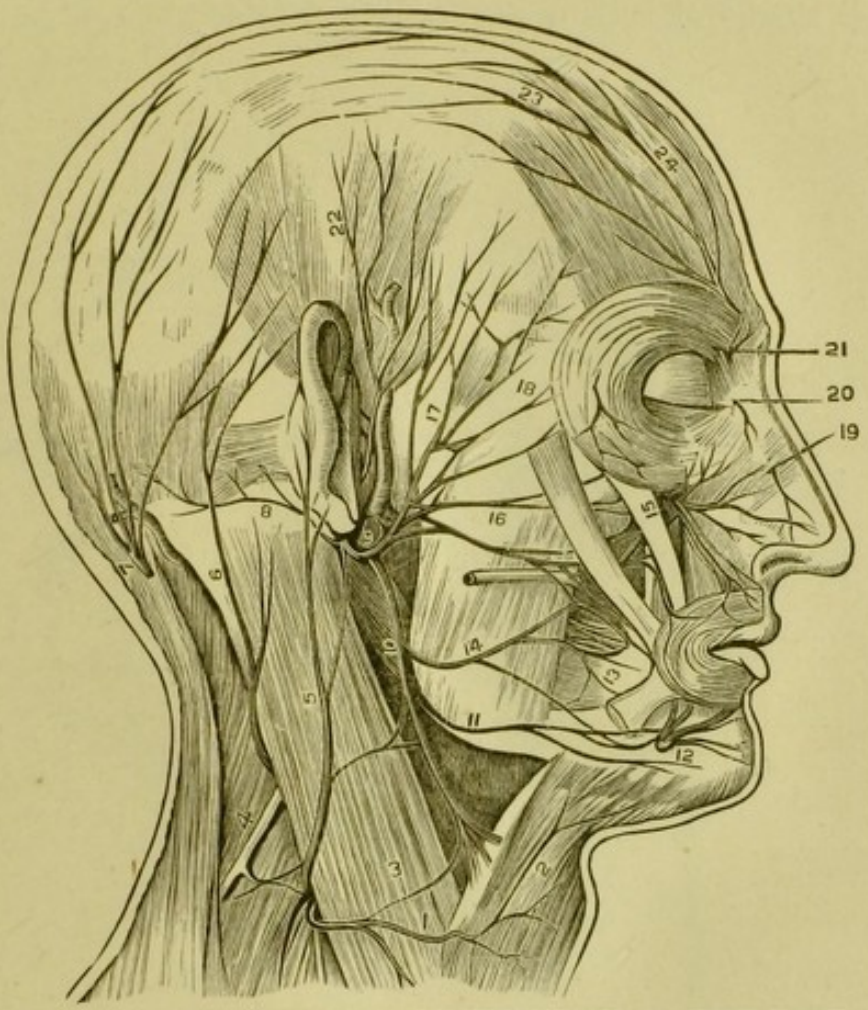


FIG. 128.—THE NERVOUS DISTRIBUTION OF THE FACE.*

1. Superficial cervical.
2. Platysma myoides (muscle).
3. Sterno-mastoid (muscle).
4. Spinal accessory.
5. Auricularis magnus.
6. Occipitalis minor.
7. Great occipital.
8. Posterior auricular.
9. Fascial.
10. Infra-maxillary.
11. Supra-maxillary.
12. Mental.
13. Buccinator (muscle).
14. Buccal.
15. Infra-orbital.
16. Malar and infra-orbital nerves.
17. Temporal.
18. Termination of temporo-malar.
19. Termination of nasal.
20. Termination of infra-trochlear.
21. Termination of supra-trochlear.
22. Temporal branch of auriculo-temporal.
23, 24. Supra-orbital.

The affluent distribution of the nerves upon the face reveals why it is that the face is so well able to express both temporary and permanent conditions of the entire organism. The muscles and nerves act in harmony, and together reveal the feelings and sensations, and by the co-operation of these two systems the movements of the face express what is passing in the consciousness of the subject. The more highly organized the facial nerves the more sensitive is the subject, hence, the better able is he to feel and express the more delicate grades and shades of emotion, as well as a greater variety of sensations than he who is less well endowed in this respect. Where the nervous distribution is elaborate and of the highest quality, in combination with an equally high development of muscle, we find the highest power for facial expression, as well as for sensation, as is observed in actors.

* From Gray's Anatomy.

ning the features of a stranger, he draws conclusions concerning his intelligence, disposition, and character. Without discussing how much physiognomy is really worth, there can be no doubt that it is a mistake to place it in the same category as phrenology, since the latter lacks that sound basis of physiology which no one can deny to the former. The muscles of the features are generally described as arising from the bony fabric of the face, and are inserted into the nose, corners of the mouth, and the lips. But this gives a very *inadequate idea* of their *true* insertion. *They drop fibres into the skin along their course, so that there is hardly a part of the face which has not its little fibre to move it.* The habitual recurrence of good or evil thoughts, the indulgence in particular modes of life, call into play cor-

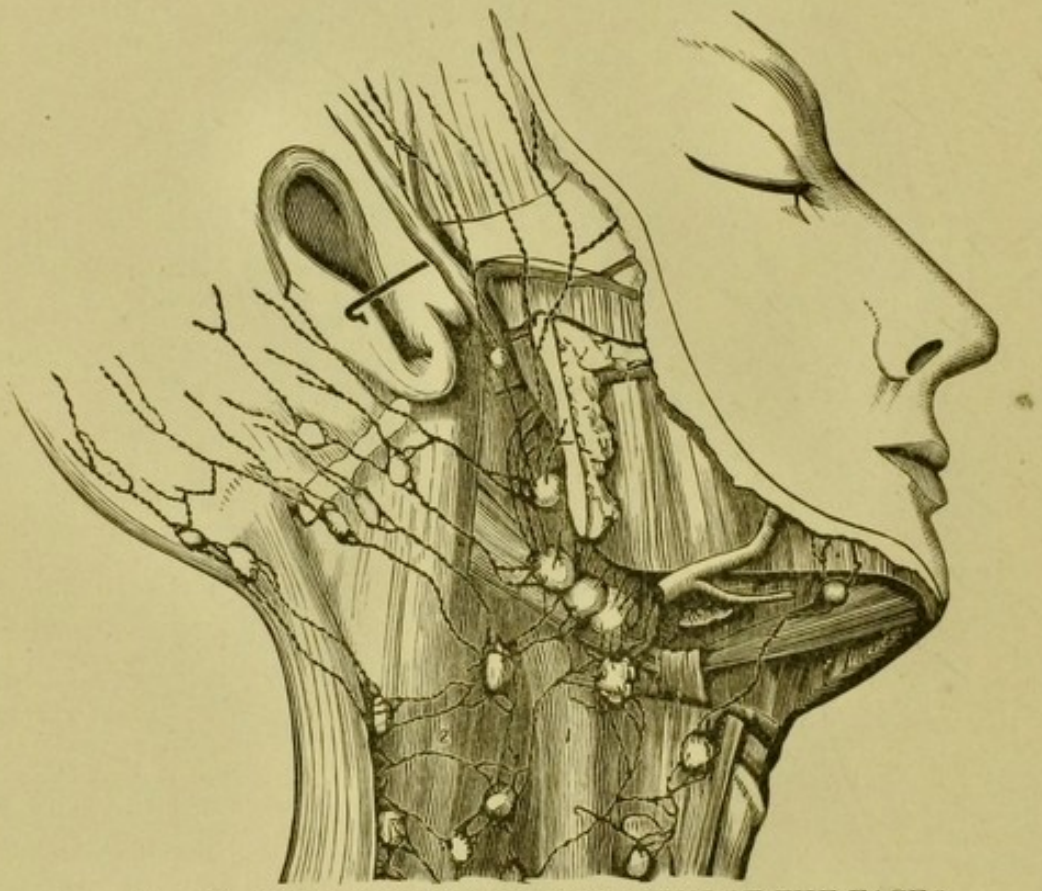


FIG. 129.—THE GLANDULAR FORMATION OF THE FACE.*

1. INTERNAL jugular vein. 2. DEEP cervical glands.

The above figure discloses the position of the glands of the face and adjacent parts. These vary in size in each individual, some being more richly endowed in this respect than others. In those who have inherited consumptive or dyspeptic tendencies, the glandular development is not so great as in those who possess a normal degree of this system. The glandular system is the base of supply of the domestic and social faculties; hence this tissue is a very important one, and its perfect organization is very much to be desired.

responding sets of muscles, which by producing folds and wrinkles give a *permanent cast* to the features and speak a language which all can understand and rarely mislead. Schiller puts this well when he says that "It is an admirable proof of infinite wisdom that what is noble and benevolent beautifies the human countenance; what is base and hateful imprints upon it a revolting expression."†

Let me add here, that until people generally understand the significance of certain expressions observed in the human face,

* From Gray's Anatomy.

† *Ibid.*, p. 919. Philadelphia, 1878.

they will not be able to determine which are benevolent and which are base. I discover beauties of expression in countenances which many other beholders term "homely," and sometimes "ugly." On the other hand, I perceive signs of moral weakness, of mental deficiency, of malice, spite, and revenge in some faces which the majority denominate "handsome," and even "beautiful." How is this dense ignorance to be removed? Simply by an application of the laws of scientific physiognomy, by observation and comparison, just as is the method of procedure in all other branches of knowledge.

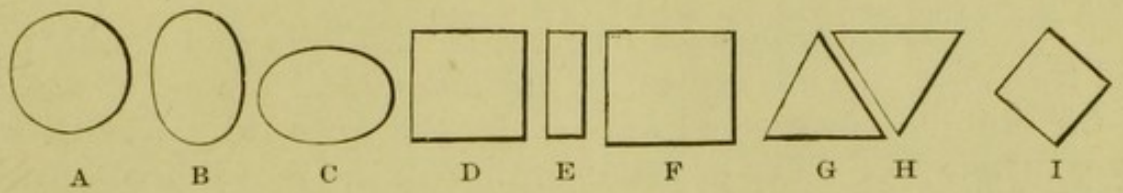


FIG. 130.—GEOMETRICAL FORMS OF THE FACE. (After Lavater.)

The outlines in the above figure are those which are most usually observed in the forms of the human face.

The first figure (A) is a primitive form,—globose like all infantoid objects. It is the shape more nearly of the infant's face and head,—also of the vegetative adult.

The second shape (B) is a modification of the former, and corresponds closely to the form which infancy assumes in its transition from infancy to childhood, hence is more nearly the distinctive contour of youth,—as, also, of the adult, muscular subject.

The third form (C) is a muscular form, and is found slightly modified upon the faces of short, squat, and relatively undeveloped adults. It is breadth without height, and this form is a low variety of the muscular class, and denotes commonplace, selfish, vulgar character, with commercial or grasping propensities.

The fourth outline (D) describes the form of the face of the highest type of character,—the cubical, such as is observed in the countenance of Martin Luther; it denotes solidity, equilibrium, reliability, rectangularity.

The fifth figure (E) illustrates angular character, and is a modification of the cubical, but lacking in the qualities of breadth and balance, which distinguish the cubical individual; at the same time it denotes honesty with narrowness.

The sixth (F) is a sort of caricature or burlesque upon the cubical character, and is a form of face rarely observed. It would declare a character solid, but not so well balanced as that of the one exhibiting the cubical form of physiognomy, yet preserving many cubical characteristics.

The seventh figure (G) belongs to a common variety of the vegetative class; the addition of two curves will create this type.

This form indicates large feeding powers combined with small thinking ability.

The eighth outline (H) is the pyriform-shaped face—*angled*, so to speak. This outline, with slight curvings, illustrates the brain form dominant, the power for thought combined with feeble nutritive powers.

The ninth form (I) is first cousin to G, and shows the same character on a larger scale, with more ability both for eating and getting; breadth here as elsewhere counting for something,—that is, for more capacity.

These are bare outlines, yet I believe every face is patterned after one or the other of these forms. They are modifications of the five most general shapes of the face, and are to be found universally present in the physiognomies of both civilized and uncivilized races.

Sir Charles Bell's ideas of the superiority of the face are as emphatically expressed in his work on the "Anatomy of Expression." He observes:—

The truth is that we are more moved by the features than by the form of the whole head. Altogether independently of phrenology it has, of old time, been acknowledged that fullness of the forehead, combined with those forms which have been noticed, is an indication of intellectual capacity, and, as we have shown, of human character and beauty. *Nearly all* physiologists have agreed in this view; while some are equally confident in affirming that anatomy affords no foundation for mapping the cranium into minute subdivisions or regions. As Nature, by covering the head, has intimated her intention that we shall not too closely scan our neighbor's

capacities, she has given us the universal language of *expression.* Man is gregarious; he looks for sympathy; it is not good for him to be alone; he solicits a unity of sentiment, and the *language which expresses it is in the face.**

In the preceding we have the testimony of two of the most eminent writers on Anatomy as to the superiority of the face as a revelator of character. I could fill a volume with evidence as conclusive from hundreds of other practical anatomists, but let these suffice; they cannot be gainsaid.

THE FIVE GENERAL OUTLINES OF THE FACE.

There are five general outlines of the head and of the face, and these outlines are caused by the shape and degree of activity of the internal organs, as well as by the outward muscular and bony framework. The globular outline of the face is accompanied by a low, broad, and rounding head and forehead; puffy cheeks; slow-moving eyes; soft, fat, double or triple chin; large mouth; full lips, and short, broad, and depressed nose. This form indicates mere domestic character, a good eater, sleeper, and sitter; a sort of human vegetable. (See Fig. 7, p. 67.) The dominance of the thoracic system, caused by the development of the lungs and liver, evolves a face which exhibits a rather long nose and prominent (particularly at the point), large nostrils; an acutely-defined, receding forehead, and in youth the lower part of the face inclined to the oval, except where square bones are present. It also produces a high, arched chest; bright, active eyes, quick motions, and lively gestures. This outline reveals a pure-minded, hopeful, cheery, and active character. (See Fig. 8, p. 72.)

The muscular form is characterized by roundness and curves, and is caused by the shape and action of the muscular or fibroid organs,—viz., by the peculiar shape and action of the stomach, the heart, and the reproductive system,—and the dominance of these organs produces the externally rounded, oval, and curved muscular development observed in artists, athletes, etc. The outline of the face (when this system is supreme, or one of the regnant systems of the body) is rounding; the forehead nearly perpendicular; the nose straight, relatively short, soft, and rounding; the face inclined to the oval; the eyes prominent; the head round; the eyebrows arched; the mouth of medium size; the chin oval or pointed. If the round muscles are present, the chin is inclined to the oval; but if the flat muscles are exhibited, the chin is more inclined to be pointed or narrow. (See Fig. 9, p. 75.)

* Anatomy of Expression, Sir Charles Bell, pp. 29, 51. (The italics are mine.)

The osseous outline of the face is shown by a rectangular form; the forehead inclined to be square; the eyebrows horizontal; the chin long, broad, and angular, rather than oval; the nose high, long, and bony; the cheeks rather prominent, and the superciliary ridge projecting. (See Fig. 10, p. 84.)

The fifth form of the face is caused by the supremacy of the brain and nervous system, and the form and action of this system gives a pyriform shape to the face, which is inclined to be narrow, with a delicately-molded chin, a long and thin nose, thin cheeks, eyebrows somewhat inclined to arch, although these will take the shape of the underlying bones. If these are square, the eyebrows will assume a horizontal form; if they are rounding, the brows will arch. The forehead is high, broad, and generally full, especially in the upper part, as well as perpendicular. (See Fig. 11, p. 94.)

These are the five superior outlines of the human face. All others are caused by combinations or modifications of these principal forms.

The student should be able by observation to judge how much of each of these several systems is present, and be able to estimate the comparative influence of each system in revealing character, as well as to know which are *dominant* and which is the *second* most influential in its effect. This can be determined by applying the law of the ovoid or sphere, the law of the square, angle, and straight line, to *each one of the features, and to each portion of every feature.*

MOTION.

The movements in walking, gesticulating, working, playing, etc., reveal the mind of the individual as well as his native and acquired powers.

The motion of the body and limbs in walking disclose and repeat the external configuration of the body.

Movements of the hands in gesticulating bear direct relation to the mental status,—the emotional nature,—and establish one's grade in the scale of development.

The set or position of the feet in standing harmonizes with the contour of the body, and reveals a great deal of the character. Now all these movements are the spontaneous expressions of the *real inner* man, hence are of the highest value in interpreting character. As *motion* is the underlying principle of all growth and development, it is *necessarily* the exponent of the organisms when they are perfectly developed or completed, as has been shown in the "Basic Principles of Form." A square-built man, with an upright mien, moves in a straight line, with measured, methodical steps,

showing the presence of Order, Time, Precision, and Measurement, the qualities which inhere and appertain to that particular form.

A person with narrow, sloping shoulders, long and thin build, long and narrow head and slim feet, will pursue a devious, winding, zigzag, serpentine course, as he threads his way along the street, without precision or regard to order. This form has not the regularity of movement of the square-built mechanic, nor the perfect curve of the artistic man, for he is neither one nor the other, and his gait discloses his status or rank in humanity; he is a *perverted* being, for no *true* specimen of humanity pursues this winding, eccentric mode of locomotion, and this last example teaches us that this malformed being has not been bred by normal methods, but that the countless motions of the nerve-forces and muscular fibres which assisted his prenatal growth were abnormal and eccentric. How truly does the following express the action of this law:—

> Every organism, from the lowest to the highest, can only work out those laws of motion by which its organization has been produced. The bee in making its cell copies the hexagonal facet of its own eye. The snake in its motion on the ground and in coiling itself around its victim, follows the law of its own construction. Fundamental laws are the fundamental instincts of motion in life.*

The perfectly curved motions of a well-formed artist, actor, or athlete, illustrates the law of the true curve (the segment of a circle). With these people the law of their motion in walking, in gesture, and in the exercise of their several pursuits, is exhibited by true, graceful, curvilinear motions of the body, hands, head, and limbs. The organs and organisms of all those who are *perfectly* curvilinear have been produced by normal, regular motions of the *fluids* and *forces* involved in their construction. Therefore, they present *true*, *regular*, *normal* curvation in all their members and movements; hence are able to execute *true* curves in the sway of the body in walking and dancing, of the hands in painting or other art works, as well as in posing, playing ball, rowing, swimming, etc.

The abnormally constructed being, who is not formed upon a true square nor a true curve, discloses his abnormal build by awkward and inapt movements, and can never be trained to perform easy, graceful movements, nor those which are essential to art-works, with the same degree of perfection as can the normal, curvilinear being, although he can be very much improved mentally and morally, by precept, example, and encouragement. Such beings come into existence under unlawful conditions. It is *no fault of theirs*, but it is our fault if we judge them too harshly and ridicule and revile them, instead of endeavoring to "square" them

*Sexology, p. 247. Chicago, 1867.

by all the knowledge and patience which we can bring to bear. These abnormal growths are observed in the vegetable kingdom as well as among crystals. Who has not seen a flower perfectly developed upon one side, while the other was very defective in its formation? This defect is owing probably to deficiency in nutrition or the inability of the juices and sap to carry equal quantities to both sides; hence the law of "Sinistrality," or one-sidedness, operates to produce this deformity, just as is observed in the peculiar crooked foot of some congenital thieves, or the oblique eyes of natural liars, for—

> The laws of motion are always regular, when undisturbed, and where the surrounding conditions are uniform, as seen in the formation of crystals and snow-flakes. If the division were unequal, the dividing line would not be true. The parts must be equal, because the laws of motion in a rotating body require and compel a perfect equilibrium or balance of motion on each side of its axis.*

GESTURES.

Natural gestures are in a pre-eminent degree indicative of character. The circumscribed and incomplete gesture of the secretive person is in marked contrast with the wide sweep of the hand and arm of the frank, friendly individual; so, also, the narrow-minded or cautious person will make very few gestures, and these with the arm fast to the side, and with the back of the hand turned outward or sidewise, and not with the palm open, and with only a feeble attempt at a curve; while the man with a frank, broad, and comprehensive mind makes a wide sweep of the arm and hand, as if he would embrace all creation in the area described, and with his palm outward and upward. The angular individual makes "elbows," and angular, jerky movements of the hands and head. His walk is also characterized by jerky motions, and often his utterance will be far from smooth and uniform; particularly is this the case in reading, unless he has been well trained in this respect. So homogeneous is man's nature, that a *peep* at his *knuckles* will reveal his method of speech and gait.

The gestures, carriage, and movement of an ignorant person are quite different from those who are by nature intelligent. To prove this it is only necessary to observe for a short time these two classes. Ignorant people, or those who are stupid by nature, make fewer gestures than those whose natures are more richly endowed. The reason of this is that the more sensitive being *feels* and *thinks* more, hence possesses a more mobile and plastic body. Stupidity is always accompanied by a body which harmonizes with it, hence we observe that stupid and narrow-minded people are ungraceful,

* *Ibid.*, p. 143.

and, if they make gestures at all, they are awkward and inappropriate, and this at once betrays their mental status; while the few gestures which they make, being natural to them, will be a reflex of their dominant powers, both mental and moral. A study of the gestures of the *ignorant*, *stupid*, *and criminal* will yield a harvest of knowledge in the science of Form, for a gesture made by the hand or arm, or a movement of the body in walking or in working, is as much a shape as though embodied in substance.

Congenital or professional criminals, as a rule, use very few gestures, for they are usually very secretive, and a secretive man never moves with the freedom of an upright character. All of their movements are comparatively restricted and stealthy. I cannot imagine a natural "crook," as they term themselves, standing with arms outstretched, palm outward, head erect, and with eyes looking upward to heaven. This position would be entirely foreign to his nature, hence never assumed by him. The terms which this class of people use is characteristic and doubtless *instinctive*, as, for example, the use of the word "crook" to designate themselves; and herein is another proof of the homogeneousness of mind and body. Instead of using free and frequent movements of the hands, arms, and head, they confine themselves to *stealthy*, *sidewise*, *oblique* glances, just as do the timid and nocturnal beasts of prey, whose natures resemble these human beasts of prey. The jerk of the thumb is one of their peculiar gestures. This can be used in a less noticeable manner than a movement of the hand, and is, besides, harmonious with the contracted natures of this defective class of beings. Who that has ever observed two of this class in conversation will have observed that, upon finding themselves the objects of scrutiny, one would signal to the other with a *sidewise* movement of the thumb, together with a *sidewise* glance of the eye, very quietly done, with scarcely a perceptible movement of the shoulder or body. Now, there are many other movements and gestures peculiar to this class, which must be observed to be understood. They are as distinct and characteristic as the gestures and movements of every other class of minds. Each profession, as well as each sex, exhibits gestures and movements peculiar to itself, for all gestures are dependent upon the forms of the body, and by observation we can very soon classify them, and assign each to its own proper position.

Mechanics gesticulate and pose quite differently from the professional man. Each profession *moves* differently. The actor's movements are different from those habitually made by the clergyman. A man of the world—of society—has an entirely different bearing and movement from that of the purely domestic man. It is thus

shown that the movements and gestures of each class and of each sex are a record of their character, pursuit, and natural powers of mind and body, for "all form indicates character," no matter whether that form is concreted with substance or not. The wreath of steam arising from the steam-pipe of a locomotive assures us of the circular form of the instrument which produced it, and the walk, gesture, position, and motions of each individual are forms *thrown off* from their organisms, and will reveal the shape of the bodies from which they receive their impetus.

Comparison of the form of the body with the motions it creates will reveal the character expounded by both.

Study the habitual gestures, movements, walk, and attitude of those whom you desire to know, and you will be richly rewarded, for, says Lavater:—

> Each man has his favorite gesture, which might decipher his whole character were he observed with sufficient accuracy to be drawn in that precise posture. Of equal utility would be a series of drawings of the *motions* peculiar to individuals. The number of these in lively men is great, and they are transitory. In the more sedate they are less numerous and more grave.*

All motions produce forms which are a part of the subject producing them. The numerous motions caused by the play of the facial features are wonderfully indicative of character. The forehead, it is true, is almost immovable, but the eyebrows, corrugators, and palpebral muscles move with rapidity and produce numberless expressions; so also do the muscles and fibres of the lower lid and parts adjacent imprint a lasting and truthful record upon the countenance. The nose, another great central organ, is immovable in its upper portions, but the nostrils are flexible, and by their size and shape tell us of the form and rate of motion of the blood in the internal organs,—the heart and lungs. Here, again, we have the record of both form and motion co-ordinated. The shape of the eyeball and the commissure tells us what shape the motions and gestures will assume. The full, round, *convex* orb reveals round muscles; hence, the gestures will be true curves, the pose of the body graceful, the movements in walking, dancing, playing, and in art-works will be easy, regular, and curvilinear; for the eye is the indicator of the condition of the entire muscular system, and from an inspection of this single facial feature we arrive at a knowledge of a great share of the character, for "all is contained in the least."

* Essays on Physiognomy, Lavater, p. 308.

MOVEMENTS.

The mouth presents an infinity of movements, and when in repose one could scarcely believe it capable of such numerous, complex, and beautiful expressions. It is the most mobile of all the features, not excepting the eye. The mouth has interior agents or assistants in the larynx, the palate, the tongue, and walls of the mouth, and many of the movements in speech arise in these organs and parts; but the *form* and *size* of the mouth will indicate to a scientific physiognomist the kind of language which will proceed from it, for language is based on sound, and sound is one *mode of motion;* hence, in the action of this facial feature we again find the co-ordination of form and motion. The *active* characteristics of the individual are disclosed by the movements of the mouth and surroundings and by the resulting expressions, for "out of the fullness of the heart the mouth speaketh." Let one, for a few moments, watch the movements of the muscles of the mouth and note the resultant expressions, and also the permanent imprint which these muscles have left about the mouth, and he will have an excellent idea of the dominant moods as well as of the quality or kind of language most affected by the subject under consideration. The more hypocritical the subject, the *more will this fact be evidenced* by the fixity of the muscles involved in the masquerade of thought and emotion.

If the human face were immovable we should not be long in learning the meaning of the outlines of the whole and of the shape of the features, but as *motion creates the greater part of its expressions and meanings* we are obliged to study the laws of motion as applied to form and concreted with substance.

No two persons in the world are just alike. No two persons that have ever lived were just alike. Even twins, conceived and nurtured under the same conditions are never quite alike, notwithstanding the similarity of their nurture, for the reason that each individual germ is the repository and outcome of many diverse ancestral influences. Not only are there no two persons *just alike*, but no person exhibits precisely the same form and size of the duplex features, viz., the eyes, cheeks, ears, and hands; neither can be found one whose nostrils, eyes, and eyebrows are *precisely* alike and the two sides of the body exactly similar. Indeed, the two sides of the face and the two ears in most persons might well be thought to have belonged to two different individuals, so entirely different are they in size, shape, and expression. Anthropologists have often declared that the right side represents the father and his family, and the left side the mother and her race. My own

observations in the majority of cases corroborate this statement. If this be a law of Nature, how can we expect that the two sides of any being should be precisely similar?

Differences in the Form of the Internal Organs.

It is taken for granted that every human being possesses exactly the same number of facial muscles, and it is vaguely understood that the internal organs, viz., the heart, the liver, the lungs, etc., are similar in all individuals. Neither of these assumptions are correct. The internal organs are as diverse in form, size, and color as are the external form, size, and color of individuals. The facial muscles, too, have always been the subject of dispute among anatomists, for they have appeared so varied in shape and different in number as to puzzle the most observant. In some subjects portions of the *labial*, *buccal*, and other muscles are absent. How can it be otherwise when such divergent characteristics appear associated with such perfectly contrary forms of all the features? It is just the same with many bodily muscles, for the savage and undeveloped man could not produce the same apt and complex movements as the most highly talented artist or mechanic in civilization, for the reason that such beings do not possess a muscular system as finely organized nor as sensible and flexible as the latter class. Dr. Gray has told us that

> The muscles drop little fibres all along their course in the face.

Now, it is certain, from the absence of expressions of various kinds in meagre beings, that these "little fibres" are greatly lacking in some and very plentiful in others who are rich in facial expression. The faculty of Mirthfulness exhibits in its labial signs a most extraordinary diversity in different persons in civilization; still greater is the difference between the savage and the most perfected races. Let a comparison be made between one naturally grave and sedate and one extremely mirthful, and there will be found about the corners of the mouth a different muscular formation, which will confirm the foregoing statement. Comparison of the appearances of other portions of the muscles of the face in diverse characters will prove that as character develops it takes on an increase in *quantity* as well as in *quality* of muscular endowment. Compare, for example, the lower third of the nose of the most gifted artist with that of a most commonplace character, and the former will disclose a far larger development of muscle in that region than the latter. It is just the same with all characters. The *more faculties*, the more development of *appropriate tissues with which to exhibit them.*

Mind is a question of physiological and anatomical development. What the soul may be I know not; mind is *material* in its present phase of existence. If this be true, no one is to be censured for discovering and asserting it. If it be false, it can be readily disproved.

Sir Charles Bell gives us many correct ideas in regard to the subject of expression. This subject is so little understood that I have decided to give many of his thoughts to the reader. There is a great deal said in art circles about the "divine" expression in the human face. This is all very well, if we only knew how to distinguish the human from the divine. As yet there has appeared to universal humanity no countenances other than animal and human ones,—each, in its grade, noble or ignoble. The lion, mastiff, and horse represent the noblest animal faces. The most elevated human countenances are found accompanying such characters as have striven for the rights of man and for the elevation and happiness of the race in every age and nation, regardless of danger and with no desire for fame or popularity. Among the many of these I may mention the following:—

Martin Luther, George Washington, Thomas Jefferson, John Howard, Earl Shaftesbury, Lucretia B. Mott, Peter Cooper, Florence Nightingale, George Peabody, Emily C. Judson, Madame Roland, Elizabeth Cady Stanton, Clara Barton, John Bright, Garibaldi, Elizabeth Fry, Susan B. Anthony, William Lloyd Garrison, John Brown, and Charlotte Corday.

Besides these there is an innumerable host of lesser and more obscure characters, whose humble and secluded lives have yet been as heroic, self-sacrificing, noble, and magnanimous as the former.

Now, in all these lofty characters we shall find only *human* faces, devoid of all expression of meanness and vice. Yet popular opinion does not always accord to such faces the possession of noble or divine expression, because the masses do not know how to distinguish between noble and base expressions, nor the many grades and shades of each of these traits. A face which has in repose nothing remarkable in its expression to the ordinary observer may become, under the influence of sudden emotion, positively *illumined*; yet the scientific physiognomist would see the *capacity* for goodness or greatness in the features while in repose. It is such expressions that leads one to say of them that they are "divine"; yet this is one of those loose and vague statements which it is the office of physiognomy to dispel; for until human expressions of vice and virtue are comprehended it is impossible to ascribe to the human face any appearance of "divinity."

Of this idea Sir Charles Bell remarks thus:—

Those who have professedly written on the antique say that to arrive at the perfection of the ancient statue the artist must avoid what is human and aim at the divine. But we speak of what stands *materially* before us, to be seen, touched, and measured. With what *divine* essence is the comparison to be made? When the artist models his clay he must have recourse to some abstract idea of perfection in his own mind; whence has he drawn his idea of perfection? This brings us to the right path in the inquiry. The idea of representing divinity is palpably absurd. We know nothing of form but from the *contemplation of man*. The only interpretation of divinity in the human figure, as represented by the ancient sculptor, is that the artists avoided individuality; that they studied to keep free of any resemblance to any individual; giving no indication of the spirit or of the sentiments or affections, conceiving that all these movements destroy the unity of the features and are foreign to beauty in the abstract.*

There is one gross error in the minds of the masses in regard to beauty of expression, and that is, that in order to have perfect beauty there must be present certain mathematical measurements. Nothing can be farther from the truth. Beauty of expression is not confined to such a rigorous standard. Nature herself gives the lie to this, and all of the best writers on art-beauty, etc., coincide upon the subject. Says Sir Charles Bell:—

Every scheme by which it shall be proposed to elicit the reasons of our feelings of admiration, love, or disgust by measuring the comparative areas of the head and face will fail.†

This eloquent writer quotes Addison as saying that

No woman can be handsome by the force of features alone any more than she can be witty only by the help of speech.

Hence, measured regularity of feature and harmonious proportion alone do not constitute all there is of beauty. If mobility of the facial muscles is wanting, or clearness and color of the eyes and complexion, true beauty is absent. In statues, I grant, there is beauty, but it is the beauty of *form alone*, true to *Nature;* hence, it possesses the same beauty that is seen in a grand marble temple or cathedral. It reflects the mentality of the artist. Beauty of form and outline are in the statue, but motion, color, and the play of the emotions upon the face and in the body are lacking. The body in motion as well as in repose displays great beauties of transitory form, and expresses by its movements a thousand characteristics. The Celtic races in conversation use not only the body to assist language, but they use all of the features of the face as well as the hands, arms, shoulders, and legs. Emerson says that the

* Anatomy of Expression, Sir Charles Bell, M.D., p. 22.
† *Ibid.*, pp. 25, 29.

"Englishman speaks with all his body." Dr. Maudsley remarks that

> He is a poor medical psychologist who cannot see idiocy in the walk as well as in the talk of his patients.

There are three modes of approaching the analysis and description of the face. One is by following the course of the evolution of the facial features. This plan would begin with a description of the mouth, as this feature was the first evolved. The second method would be to commence with a description of the forehead and follow down the face to the chin. The third method is the one I have employed all through this work; this is by commencing with a description of the chin and thence working upward, believing this to be a method the most easily comprehended, and also because it follows very nearly the course of evolution in face-building, for the mouth was the first facial feature evolved, and the signs of character about the mouth and in its immediate neighborhood—upon the chin—are all *directly* related to the action of the digestive functions. This method then follows most closely the course of the evolution of the domestic faculties and functions, and consequently of their associated signs in the chin and mouth.

Previous to discussing the various facial features I shall call attention to the several elements of Form as illustrated in the face and body. The application of these elements is essential to a just knowledge of each feature, face, and body.

The Basic Elements of Form as Exhibited in the Features.

In giving a comprehensive *résumé* of the human face, as I do in this chapter, it is here opportune to recapitulate the basic principles of Form and show how and to which feature each *element* of Form applies.

The normal factors of Form, as described in Chapter III, Part I, are as follow: The point, the line, the sphere, the angle, the square, and the cube. All of these find representation in the human countenance, and are significant of much that is both simple and complex. Not only so, but each of these elements has an occult or hidden meaning which cannot be elaborated in this work, but may appear in some subsequent work devoted entirely to that phase of physiognomy.

Each *element* of Form has an *inherent* meaning which it carries with it, and wheresoever found it announces its meaning without a word of explanation, for straightness indicates truth, uprightness,—normalcy. Crookedness or imperfect curvation reveals

untruthfulness or lack of normal capacity, and so of each distinct fundamental form; each one is self-explanatory.

The *straight form* or line, or horizontal and straight line, is the form appertaining to the mouth; that is to say, this is the *normal standard* for that feature. The *sphere* or circle belongs to the eyeball; the *acute angle*, to the commissure or corner of the eye. The *true curve*—a section of a circle—is the normal standard for the cheeks, the jaws, the chin, the outer edges of the red or upper margin of the lip, certain parts of the nose, the eyebrows or portions of them, the eyelashes, the head, and the forehead. Some foreheads are very much arched; others less so. The sphere is also well represented in the ear, as it abounds in curves, and some ears describe a semicircle in the upper part of the shell; also in certain barrel-shaped bodies. The *square* is exhibited in the bones of the face as well as in the bones of the body, and in *certain noses* which form a perfect square or angle in the junction of the nostril with the cheek. The *cube* finds representation in the rectangular and solid form of highly developed moral and scientific faces and bodies.

The curious student of universal principles who desires to find a common basis for all created forms, and who dreams that somewhere in the universe all the elements of Form may be found epitomized, has not far to go to find the realization of his dreams. The *human face* combines and illustrates all of the prime elements of Form; not one is here wanting.

THE POINT.

The *point*, or "least element of Form," is represented by the "blind spot" of the eye, so-called. This is the place where the optic nerve pierces the anterior surface of the eyeball. This point also represents the unit,—the number *one*. It is also analogous to the nucleus or *germinating* spot of cellular tissue. This least element of Form finds its illustration in the feature through which the *forms of the world enter the mind*—the eye. The point is the representative of the starting-point of growth, and corresponds to the beginning of the germinating process in all animal things.

THE SPHERE.

The *sphere or globe* is the most primitive of forms, and is exhibited by the eyeball—the only perfect circle in the human organism. It is true that the primitive cells of vegetable and animal tissue are spherical, but they are not fixed, and yield to pressure, and assume irregular forms. The eyeball retains permanently its

perfect globular form, hence is the best representative of the sphere in the human face.

The opening of the iris is always *round* in *man*, but in animals, whose range of vision requires to extend widely in a horizontal direction (as the herbivorous animals), it is in the form of an ellipse. In animals, on the other hand, that leap up and down in pursuit of their food, as the cat, and other carnivorous animals that seek their prey in the same manner, the pupil has the elliptical form, but with the long diameter vertical.*

It is thus shown that the true circle is exhibited only in the *human* eye.

THE CURVE.

The *curve* is a section of a circle, and finds its illustration many times repeated in the human face. It is calculated that there are "thirty-six curves in the face, and one hundred and forty-four altogether in the human organism."† The curve and sphere belong together as factors of form, and produce ease, motion, and variety of movement and expression.

THE LINE.

The *line* is conspicuously displayed in the physiognomy of man in the form of the normal-shaped mouth, and suggests, as its resultant signification, trueness, regularity, straightness, the basic element of *squareness*, hence the form best adapted to the expression of *truth* and *integrity*, or *wholeness*,—"the truth, the whole truth, and nothing but the truth." The *straight* line is the representation of moral principle, hence is the *only form* which would be in harmony with the expression of the truth through the use of language.

THE ANGLE.

The *angle* finds its highest representation in the angles of the eye and of the nose, where it joins the upper lip. The more acute the angle of the corners of the eye, the greater is the power for truth in *language*, as well as for fidelity in the monogamic relation, or *love* for *one* only, either in marriage or out of it. The obtuse angle exhibits much less capacity for fidelity in love and marriage where the eye presents an acute angle. This is in harmony with the basic principles of Form throughout Nature, and especially in the human physiognomy.

The eye is not only the sign for language, but it is also one of the prominent signs of Amativeness, or love of the opposite sex; hence, its highest manifestation *would call* for that form

*Hooker's Human Physiology, p. 295. †Book of Wisdom.

which Nature has assigned to integrity, fidelity, and truthfulness. And again, the angle is one of the elements of the cube, the "grand or completed form;" therefore, when we observe the acute angle in the corners of the eye, we shall surely find in its owner a certain degree of the truth-telling quality; also fidelity in dealing with the opposite sex.

In painting portraits of the human countenance, artists draw several straight lines and angles, and from these they produce the curves of the features, an instance of *inversion* quite significant; for, whereas Nature builds the human face by *curvilinear* processes, as is observed in the primitive cell of animal tissue, the artist works out upon his canvas the human physiognomy by first drawing straight lines and angles, and from these he constructs the "thirty-six curves" essential to the expression of a highly-developed Caucasian face,—a fine exemplification of the necessity of the *scientific element* of Form with which to produce a pictured representation of Nature's grandest achievement in architecture—the human face.

THE CUBE.

This form is best exemplified in the solid thorax of such bodies as that of Washington, Martin Luther, Napoleon, and other cubical-shaped bodies. This form of this part denotes powerful and perfect action of the inclosed viscera, and this combination gives force and vigor to the body and brain, and results in the grandest achievements of humanity, whether they be exhibited in great physical feats and labors, or by great moral, mental, or executive power, as in the case of Washington, Luther, and Napoleon.

It is thus that the cubical form stands representative of wholeness, soundness, or integrity of the thoracic structure. Those features and outlines of the face which present a tendency to cubic form belong to the most solid-minded characters, and herein is another application of this form.

The Signs in the Chin.

For convenience in localizing the signs that are in the chin, I divide it into three parts, by drawing two horizontal lines across it (Fig. 131, page 770); the lowest, just above the oval, or point of the chin; the second, just below the arching of the lower lip; while the line of closure of the mouth creates the third line, and thus assists the student in finding the signs of character in the chin.

In commencing a description of the features of the face I shall first describe the chin as being the base or lowest part of the

countenance. The chin is a comparatively recent feature in evolution. No animal has a chin proper, neither do undeveloped races possess a perfect chin. Many idiots possess only a rudiment of this feature. Infants exhibit very little indication of a chin, but it develops with advancing age, as the osseous system becomes perfected. The progressive evolution of this feature from infancy to adult life assures us that its *perfect development* is one indication of a more perfected character than where it retains its infantile form and size, or where it is never greatly developed in the adult.

The size and form of this feature depend mainly upon the development of the bony system, for the inferior maxillary or lower jaw is composed mainly of bone; the teeth and the enamel of the teeth are composed of the hardest substance in the human frame; hence, the chin is one of the most *substantial* parts of the face, when it is normal. If this characteristic be lacking, and the chin small and inferior in size, it follows that something *positive* is wanting, and the character comparatively negative; or if, on the other hand, the chin exhibits more muscle and fat than bone, we must infer that the disposition is more yielding, less severe, positive, and persevering than where the bones are long and wide, for the *nature* of these several tissues is very dissimilar, and whichever is supreme in the structure of the chin decides the character of the individual for firmness or for lack of it.

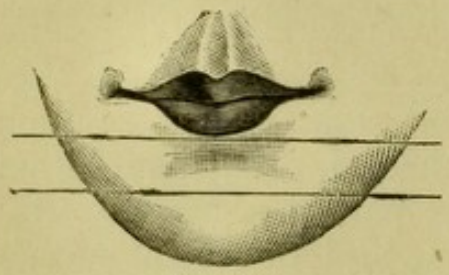


FIG. 131.

The reader has previously learned that the length downward and forward of the chin is the sign for Firmness; the *width* of its *bony* structure the sign of Conscientiousness; hence, the importance of a normal supply of bone in the chin.

The framework of the chin is composed of bone, and a well-developed chin should exhibit a fair share of this material. The three systems—the bony, the muscular, and the vegetative—assist in forming this feature. Where the osseous material is dominant, the greatest amount of positiveness or firmness is present. Where the muscular system is supreme in its structure, the art side of character is indicated. Where adipose tissue is pre-eminent, the character lacks firmness, and is given to ease, sociality or gluttony. These latter characteristics appertain only when fat is *dominant*. Many chins exhibit a so-called "double chin," yet possess a long and wide bony formation. Such chins must be credited with the firmness due to the bone present, and the sociality due to the fatty deposition must be *added* to the character in summing it up.

THE THREE GENERAL FORMS OF THE CHIN.

There are three general forms or outlines of the chin. All others are composites, blends, or modifications of these three primal forms. As before stated, every chin is composed mainly of one or the other of the three most important or primitive tissues, and in their structure they assume the form of one of the three fundamental shapes. The fatty chin is globose, the muscular chin is curved, and the bony chin is square. Each of these forms represents specifically the character which Nature has designated as its peculiar attribute.

The soft, *globose* chin of infancy and of undeveloped man is small, round, apparently all fat, and receding. When observed in the adult it denotes either a somewhat soft, yielding nature, an infantile or inferior intellect, excessive Alimentiveness, or too great a degree of sociality or gluttony, any one of which is a defect. It is a law of physiognomy that when a feature exhibits in the adult an infantile form, size, and condition, the character also retains something *relatively* weak, infantile, or negative.



FIG. 132.—The Globose.



FIG. 133.—The Oval.

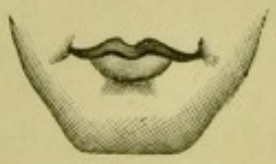


FIG. 134.—The Square.

The *oval* or *muscular* chin is caused by the supremacy of muscle, which always produces curved outlines and movements. This chin denotes a taste or talent for some form of art. Other facial signs in combination with it will indicate which department of art and what quality is present. I use the term "art" here comprehensively, including poetry, painting, acting, dancing, singing, and athletics, executively or appreciatively.

The *square* or bony chin announces positive characteristics, together with conscientiousness, order, precision, mechanical and scientific tastes, and moral courage. If of proportionate length also, it denotes constitutional vigor. The several forms of the chin show various degrees of functional power and weakness. These will be explained as we proceed.

The most general modifications of these three forms of the chin are as follow: The globose chin of infancy develops more bone as age advances, and thus takes on a more fixed and exact outline. Of course this outline accords with the general structure of the individual. If very muscular, an oval form will result;

if the bones of the body are fairly developed and square, a like form will appear in his chin.

The oval chin is modified almost indefinitely, and produces in different individuals diverse shapes. If the muscles are round, the chin will curve forward and produce an oval or round appearance of the *levator menti* muscle. (This is the muscle which assists in forming the end or prominence of the chin.) A curved outline of the lower jaw will be also exhibited, and this form of the jaw not only announces constitutional vigor, but also creative ability and dramatic tastes or capacities. The basic element of the sphere always represents by its curving form the presence of the *creative principle.*

Where constitutional vigor is wanting the chin is either sharp and very pointed or narrow and receding. The chins of congenital consumptives and dyspeptics are often narrow and sharp, together with narrow and perpendicular jaws without any outward curvation.

The straight muscle causes less curvation outwardly than the round muscle. So numerous are these modifications in form, caused by numberless combinations of the several sorts of bones and muscles, that I should only perplex the reader were I to attempt to define many of them; hence, I shall treat of only the most usual and general.

The square chin is modified so as to produce the broad and square and the narrow and square outlines; also a degree of squareness which is but slightly perceptible. The broad and square announces great constitutional vigor, together with thoroughness, moral principle, and reliability. This form denotes fidelity, hence those who possess this form of chin will be faithful in love, as in other matters. (These qualities are modified by very light eyes.)

The narrow and square chin denotes less constitutional vigor and relatively less moral courage. Where the square form is very slightly defined, the love of art and mechanism is about equally balanced, and courage is derived from the bony system as well as from the muscles. The moral and affectional nature will with this form be about equal.

There are two sorts of the *pointed* chin. One is a modification of the bony chin; the other a modification of the muscular chin. The pointed chin which projects forward is derived from the supremacy of the long, flat muscles. The narrow, pointed chin which points downward is derived from the dominance of the long bones, and announces weakness of the kidney system and narrowness of the pelvis.

THE THREE POSITIONS OF THE CHIN.

There are *three positions* of the chin which also expound character, viz., the perpendicular, the receding, and the projecting. The chin is perpendicular when it touches a line dropped perpendicularly down from the eyebrows and upper lip. This perpendicularity is the normal type. All others are deviations from this form. If they recede greatly, they denote one form of weakness; if they project *greatly* they announce another sort of deficiency. The receding chin lacks firmness and perseverance; while the chin greatly projecting is persevering in one direction mainly, and that is in saving. Where this projection is much exaggerated an avaricious disposition is present. This phase is a *perversion of the true economical faculty*, and all exaggerated forms accompany and disclose excessive deficiencies. Now, any face which exhibits a projecting and pointed chin announces that its possessor is wanting either in good, square honesty or in mental power, for which the desire to save is in some sort a compensation; that is to say, it enables such defective beings to exist and maintain themselves. I



FIG. 135.—The Perpendicular.



FIG. 136.—The Receding.



FIG. 137.—The Projecting.

have known many excellent persons to have the saving faculty well defined in the face and character; this is normal; but when it approaches the degree indicated by the chin which is greatly projecting, we shall find a large degree of avarice and a lack of sound judgment. Avarice is an exaggerated form of Acquisitiveness, and is derived from the muscular system. Penuriousness, as well as avarice, *sharpens* the features. It is a species of *littleness*, caused by weakness, both of faculty and function, hence exhibits itself by *narrowness* of formation.

I have observed the saving faculty very large in some individuals who were uncommonly *slow*, and the saving faculty was in their case the compensation for their lack of quickness. In some, excessive saving proceeds from a lack of commercial power; in others it arises from want of practicality, and in others deficient mental ability. The physiological law that all excessive development of one part is the sign of a deficiency of some other faculty or function is well illustrated in the peculiarities of the structure of the chin. No really grand intellect was ever known to possess

this shape of the chin and its accompanying characteristic, avarice. The great Sir Francis Bacon was dubbed the "wisest, brightest, meanest of mankind," on account of his love of gold, which he acquired in a dishonorable manner. His physiognomy, however, does not show an avaricious chin, but his dishonesty is disclosed by a *crooked nose*, curved like that of the beak of the bird of prey. This form shows intellectual capacity for gaining pelf, while the avaricious chin shows the propensity to *hoard up* what is gained, regardless of whether it is little or much that is acquired.

In denominating the perpendicular the *normal* type of chin I must explain somewhat my position on this subject. The perpendicular chin in its highest manifestation is found where the osseous system is dominant, and, as the osseous system is a later and more developed system than the muscular or vegetative systems, it is hence *higher* in rank. The muscular chin is often observed to be perpendicular in many gifted artists. It is often found in others to be receding slightly, and with these two classes it is often dimpled or cleft, and this denotes sensuous tastes, which are also art tastes.

We have found, then, that the perpendicular chin is observed in the best class of osseous individuals, as well as in the best or most perfected characters among artistic characters (and I here use this term "art" in its most comprehensive sense). We hence deduce that this form stands representative of development, and so the student of physiognomy will ever find it in Nature. And this evidence finishes the argument, for Nature is infallible,—the court of last resort, from which there is *no appeal*.

In my analysis of the several forms of the chin I give the law which expounds them and the natural or scientific base from which they derive their form and accompanying character. In order that my observations shall not be taken unsupported, I shall quote from that prince of observers, Lavater, who, however, gives no laws or basic principles by which to examine and prove his assertions. He observes:—

> Long experience has proved to me that a projecting chin always announces something *positive*, whereas the meaning of a retreating chin is always negative. The character of an individual as regards energy or weakness often manifests itself solely by the chin. A pointed chin ordinarily passes for a sign of cunning. I have, however, observed this shape in the most honorable persons, with whom cunning was a refined kind of good-nature.
>
> A soft, fleshy, and double chin is generally the sign and effect of sensuality; angular chins are only seen in sensible, firm, and benevolent persons; small ones are characteristic of timidity; round ones, with a dimple, may be regarded as a token of kindness or good-nature.

I establish three general classes for different shapes of chin. In the first I rank retreating chins; in the second, those which in profile are perpendicular to the lower lip; in the third, those which project beyond the lower lip. The retreating, which may be boldly called the female chin, since it is to be found in almost all women, makes me always suspect some weak side. Chins of the second class—the perpendicular—inspire me with confidence; those of the third are to me the proof of an active and shrewd mind, provided they do not take the shape of a "handle," *i.e.*, a nut-cracker shape, for this exaggerated form generally leads to pusillanimity and avarice.*

The following general rule, which Lavater applies to all the facial features, applies with equal force to the chin. He remarks:—

When the lineaments of the countenance are flat, without gradation, without character, without flexion or undulation, they denote dullness or stupidity.†

FORMS OF THE CENTRE OF THE CHIN.

There are three forms of the middle portion of the chin (that is, the part between the lower lip and the lowest part or oval of this feature) which denote diversity of character, and are highly



FIG. 138.—Flat, or Stupid. (A SIMPLETON.)



FIG. 139.—Convex, or Brutal. (A MALEFACTOR.)



FIG. 140.—Indented. (EDWARD EVERETT.)

important in the interpretation thereof. These three forms are the flat, or stupid (Fig. 138), the convex, or brutal and undeveloped (Fig. 139), and the indented, or highest type (Fig. 140). Of the latter Lavater remarks:—

A deep indentation in the middle of the chin seems to indicate without fail a judicious, steady, and resolute man, unless this feature is belied by other contradictory features.‡

I do not think that any feature can wholly neutralize the effect of a good chin. It may modify somewhat its indications. Lavater himself must have thought this, for elsewhere he observes:—

When the chin decisively indicates good sense the whole will certainly have the character of discernment and understanding. That chin decisively indicates good sense which is somewhat incurved or indented in the middle, of which the under part somewhat projects, which is marked with various gradations, incurvations, and lines, and below sinks in somewhat in the middle. A long, broad, thick chin—I speak of the bony chin—is found only in rude, harsh, proud, and violent persons.§

* Lavater's Essays, p. 186. † *Ibid.*, p. 463. ‡ *Ibid.*, p. 186. § *Ibid.*, p. 477.

Again Lavater remarks:—

The more chin, the more man.

Lavater lacked scientific training, hence his classification of forms wants order and his descriptions are lacking in minute details, and although his works are profusely illustrated they do not exhibit that accuracy of classification which ought to characterize scientific physiognomy; hence, these latter statements are loose and vague to the general reader. He probably did not intend to convey the meaning that a bony chin was rude and harsh because it was bony, but because it was long, wide, and badly shaped. The former statement would contradict the following assertion of his, viz., "the more chin, the more man." The converse of this would be true,—the less chin, the less of the firm, conscientious, and courageous, hence a negative, weak, unmanly character. All forms are *relative*, and close comparison as well as accurate observation are required to decipher small and minute differences in the forms of the several parts of each feature.

The several modifications of the three basilar or ruling forms, viz., the spherical, oval, and square, create a great variety of character—of that part of the character of which the chin stands representative, viz., the moral and domestic. Every departure from the strict regularity of the standard of normal types announces deviations which bring with them their own explanations if the basic laws of Form are applied to them.

When the countenance below the mid-line of the mouth is disproportionately long and wide, the character is correspondingly commonplace and gluttonous. A medium or proportionate length downward from the mouth denotes a better-balanced character than the former. A chin relatively short from the mouth downward discloses timidity and also a lack of vocal volume. All those gifted with powerful voices exhibit chins not only long downward, but they are accompanied with full cheeks. This peculiarity of form is demanded in order to produce powerful tones, which cannot be emitted by those who have very short chins, or who are disproportionately short from the junction of the lower part of the nose with the upper lip down to the point of the chin. All good singers disclose average or large vegetative systems, and this system tends to lengthen and widen the chin; it also gives softness to the tones and a sympathetic expression. The latter is derived from the strength of the glandular system,—an important part of the vegetative system.

THE THREE GENERAL CLASSES OF CONSTITUENTS IN THE CHIN.

The three general classes of character, the domestic, the artistic, and the mechanical, may be known in the chin by the dominance of one or the other of the three following-named tissues, viz., fat, muscle, and bone. Fat represents domestic character; in excess, gluttonous habits. Muscle denotes emotion and artistic tastes; and bone mechanical and scientific tastes.

The *outline-form* of the chin announces the character as well as the quality of the material of which it is composed, while its relative proportions give us yet another opportunity to decide upon a verdict.

DIMPLED CHINS.

A round dimple in the chin (Fig. 141) denotes art-loving tastes, for the reason that a round dimple is caused by a combination of the round muscle with the round bone, and this combination is the one best adapted to assist every species of art-work, except sculpture. The latter requires square bones and round muscles for its best illustration.



FIG. 141.

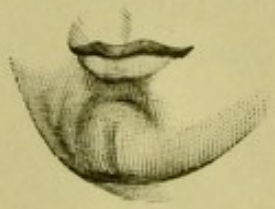


FIG. 142.

A straight-cleft dimple (Fig. 142) is found where the round muscle and square bones are combined. It denotes a love for art and beauty, the same as the round dimple. By observation of this one little peculiarity we get a clue to one of the dominating systems of the body, and this opens to our comprehension the greater part of the character. Nearly all of our great poets, painters, actors, many writers of fiction, as well as athletes, exhibit a dimpled chin—either a round or a cleft dimple. In all these classes the perception of beauty, and particularly the beauty of the opposite sex, is very marked. It is, in fact, a *part of their talent.* It is something *more than a mere personal taste;* it is essential to the successful working out of their ideas in acting, in painting, in all works of imagination based upon ideals formed in the mind and portrayed by voice, gesture, and position, as in singing, painting, acting, playing, and composing. Many singers exhibit the dimpled chin as well as many composers. Among the latter classes examine, for example, the chin of Liszt, Beethoven, Mozart, Handel,

Schubert, Schumann, Arthur Sullivan, and many others. Among singers it is almost universally present. Observe the portraits of Miss Thursby, Madame Materna, Emma Abbott, Signor Ravelli, Mr. Santly, Campanini, and others. Of poets who possess this "beauty spot" their name is legion. Examine the portraits of Southey, Byron, Burns, Goethe, Corneille, Dryden, Pope, Keats, Goldsmith, Herrick, Moore, Marvel, and others too numerous to mention. The majority of painters, writers of fiction, orators, architects, actors, and athletes, without number, exhibit a dimpled chin and thus announce that the muscular is one of the dominant systems. A great majority of actors and actresses not only reveal a dimpled chin but dimpled cheeks, hands, arms, and shoulders. An inspection of the following-named persons proves that love of art, agreeability, and benevolence are associated with dimples and talent. See, for example, the *personnel* of Lotta, Lawrence Barrett, Joseph Jefferson, William Warren, Modjeska, Mdlle. Croizette, Mdlle. Barretta, Mdlle. Richemberg, Molière, and Irving. There are many other actors thus characterized which the reader may prove by collecting a number of their portraits. Examine among painters the physiognomy of David Rembrandt, Lorraine, Murrillo, Vandyck, and Doré. Orators are almost universally endowed with a dimpled chin. See the faces of Clay, Bossuet, Charles James Fox, Erskine, Burke, John Adams, Wendell Phillips, Beecher, Ingersoll, and Richard Brindley Sheridan. Observe the portraits of the following writers of essays, fiction, the drama, etc.: La Bruyèrè, Addison, Sir Walter Scott, Madame de Staël, David Hume, Gibbon, Des Cartes, De Foe, Swift, Voltaire, Macaulay, Linnæus, Benjamin Franklin, Halley, Bunyan, T. B. Aldrich, Howells, Thoreau, Draper, Geoffrey, Saint-Hilaire, and Washington Irving.

In all faces in which the muscular or artistic chin is observed, when not dimpled, it will be found to possess a rounded shape, soft and mobile. This chin is to be classed with the dimpled chins. It does not follow that because the chin is dimpled that artistic *talent* is present. This depends upon the form and quality of brain in combination. Many persons exhibit only a *taste* for art and beauty; others possess varying degrees of talent of various sorts. A taste and love of an art is often possessed by one who has very little *executive* talent for that art. Such a one may make a good critic if experienced in the observation of artistic works.

FORMS OF THE CHIN.

The physiological and anatomical knowledge of the body, to be derived from observation of the several forms of the chin, is

most useful. Taken in connection with the form of the lower jaw (of which it is really a part), we may extend our knowledge of the size and activity of several organ systems within the body. The broad and square chin (Fig. 143) denotes a strong and active kid-

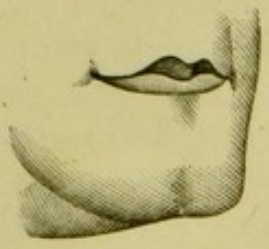


FIG. 143.



FIG. 144.

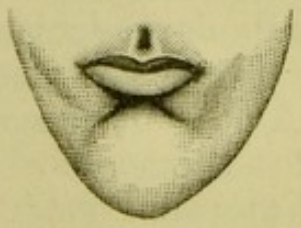


FIG. 145.

ney system, unless the eyes are very light-colored; in this case the system is not as vigorous as where the eyes have a normal supply of color. A broad, bony chin shows constitutional vigor and assurance of longevity. A narrow and receding chin (Fig. 144) announces relative weakness of the kidney system. A very sharp, pointed chin, with long, narrow lower jaw (and these two forms are usually found associated) always denotes feeble digestion, together with general constitutional weakness. I have never observed a very aged person with this formation. Those who exhibit this peculiarity of form usually die young, either of diseases of the intestinal system or of consumption. (See Fig. 145.)



FIG. 146.

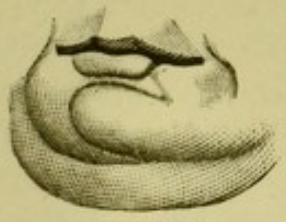


FIG. 147.



FIG. 148.—A CONVICTED THIEF.

Another peculiar form of chin rarely seen is the long, peaked, and upturned chin, which Lavater names the "Menton de galoche" (Fig. 146), which he claims is the sign of a rickety predisposition, and he also adds that it is an infallible sign of a "faulty conformation of the pelvis, which is dangerous to woman in child-birth."*

* Lavater's Essays, p. 186.

This last assertion is doubtless true, for abnormal narrowness of the lower part of the face indicates feebleness or defective organization of the functions related to the vegetative system; hence narrowness of the bony structure of this portion of the face indicates much less vigor of *all* these functions, inasmuch as they are mutually dependent on each other and their relations to each other very intimate and complex.

A chin composed mainly of fatty tissue (Fig. 147) not only denotes silliness, feebleness of intellect, or idiocy, but also indicates dropsical tendencies, gout, tumorous growths, and various chronic disorders.

Irregular-shaped chins (Fig. 148, page 779) are composed mainly of muscles with slight depressions all over, as if intending to dimple, announces a nature inclined to crooked and devious methods. I have seen such chins in the physiognomies of first-class burglars, who had also other irregular-shaped features, viz., crooked eyes and mouth, and also in those of relatively feeble honesty.

THE "FEMININE CHIN."

Many writers upon physiognomy denominate the small, receding chin the "feminine chin." I do not assent to this misnomer and false classification. Were it not for the beard with which Nature has supplied men they would stand convicted of possessing as small chins as women, numerically speaking. There are as many weak-principled and childish men as there are immoral and petty women. Were it not that kind Nature prepares a sort of "masked battery" for men's chins which enables them to hide from women their moral and domestic deficiencies by means of a heavy beard very many weak, "womanly" chins would be revealed in all their littleness. I never make a delineation of an individual whose face exhibits a beard and moustache without taking pains to discover the exact size and form of both the chin, jaws, and upper lip. Women, it is true, exhibit more affection and emotion than men, but the very strength of their affections often impels wives and mothers to heroic deeds in the defense of their loved ones. In all ages of the world women have appeared who, without parting with their love and femininity, have played the part of heroines in times of war and desolation. Some have led in battle, like Joan of Arc; some ascended the scaffold, like Madame Roland; others have defended their hearths and homes; others still have commanded ships when their husbands have become disabled; again, many have served as nurses and soldiers upon the field of battle. Yet I doubt if one such possessed either a weak chin or lacked true femininity. No, reader! Heroism, like intellect,

has no sex. Believe not the fallacies and fictions of so-called physiognomists, who would ascribe to man *all* the stronger and nobler traits, because his head is big and his brawn great; and to woman all the weaknesses of human nature, because she is smaller and *finer* in every way. The Greeks did not so erroneously judge of human nature; they personified *all the stronger traits*, such as wisdom and justice, in the figures of their *Goddesses*,—a subtle way of showing that these personifications are creative states of mind, and that they understood the female to be the best representative of the human creative power, in being the creator of the race through maternity. Artists ranked, in their minds, as something less than woman; mere material creation seemed to them much lower than woman's transcendent power as the *creator of* artists—of man.

Forms of the Jaw.

THE UPPER JAW.

The upper jaw is a negative feature, being necessarily passive in its fixed position.

THE LOWER JAW.

The lower jaw is an active agent, powerful to a degree, positive and decided in movement, and one of the chief agents in articulation and mastication.

The lower jaw, strictly speaking, is one continuous bone termed the "vomer," or ploughshare, which it resembles in shape. (See Fig. 127.) "It is divided into the body or chin, the sides, the rami, and the processes." The chin is termed the "mental process." So intimately associated are the several parts of this feature that it is impossible to adequately describe the chin without at the same time describing the form and meanings of the sides, angles, and rami of the jaw.

The several forms of the lower jaw are highly indicative of character, and to them we must bring to bear acute observation and analysis if we would master their full significance. The figures at the head of this chapter will give the reader the names and positions of the bones and muscles of the face. Reference to them will greatly facilitate one's comprehension of the anatomy of the parts mentioned.

As the signs of the vegetative system are found mainly in the lower part of the face, by applying to this part the basic laws of Form we shall be able to interpret the character by the various signs found here. We have learned in these laws that the spherical form or any portion of a sphere, as, for example, the segment

of a circle, is indicative of primitive growth and conditions; that, in short, the curving form announces *creative* tendencies, also more vigorous conditions than the perpendicular or straight form. If we apply this law to the formation of the lower jaw we shall find that it is an infallible expounder of existing conditions. In infancy, the lower jaw-bone presents a more obtuse angle than in the adult, but as the infant advances to adult age the angle becomes more acute, hence shows the presence of more bone, and the sides and rami combine in forming a more curved outline. The outline of the cheek is also modified from the *globose* appearance present in childhood. Globosity is *primal*. Curving is the next stage of formation. When we observe the youthful face as it approaches the age of puberty, we find that the infantile form of the cheeks, the nose, the chin, and the jaws are changed, and the globose cheeks of infancy have given way to a graceful curve of the cheek and lower jaw. The nose also has risen in the centre and attained a more dignified contour than that presented by the concavity of infancy. The convex or rounded outline of the forehead is changed to the perpendicular or slightly receding form. All this is due mainly to the development of *bone*, and with this process more *intelligence* and *stability* of character appears.

Width of the bony structure of the lower jaw is thus shown to be one of the facial signs, not only of vigorous, physical functions, but of more powerful mental faculties. *Breadth of jaws* is one of the signs of longevity, as well as of strong vegetative powers, for the breadth of the lower third of the face belongs to and indicates the condition of the visceral structure, and, as vigor of this part of the organism is essential to prolonged mental effort, we shall expect to find, in the faces of those whose mental efforts are the greatest and most prolonged, a normal width of the jaws, and especially a *nice* degree of curvation outwardly of the lower jaw-bone and muscles. It is true that many eminent writers have exhibited only a fair degree of outwârd curvation of this feature. An analysis of their works will establish the truth of the basic law of Form as applied to them. All writers on profound and recondite subjects exhibit relative width of the lower jaw; so, also, do all persons whose discoveries, researches, and inventions are on a large scale. While writers and theorizers on the lighter and less comprehensive subjects disclose a lower jaw relatively less wide, and the reason for this is very well explained by Dr. Cross, whose analysis of this feature I shall now offer. He observes:—

> Broad jaws, therefore receptive of much food, argue powerful functions, but as functions are not necessarily intellectual, and as the intellectual faculties are indicated by the brain, and the strength of the intellectual

faculties by the breadth of the brain, so the relative breadth of head and of jaws shall mark the natural channel for the flow of intellect. Accordingly, where the jaws are *broader* than the head, there the channel for the flow of intellect is wide, but the fountain is scanty. This relative conformation of head and jaws is the characteristic of strong passions and weak intellect. Accordingly, also, where the jaws maintain nearly the same breadth as the brain, there the fountain keeps the channel full. This relative conformation of head and jaws bespeaks a character who can exert all his intellectual powers on a subject,—who is calculated for scientific pursuits. Accordingly, also, where the jaws are much narrower than the head, there the channel is *too* narrow for carrying off the profuse supply of the fountain, so that the intellectual current passes down in an impetuous jet. Here the mind acts most forcibly and most keenly upon a small spot at a time. While the narrow head with broad jaws represents a large smoking fire; while the broad head with broad jaws represents a hot smelting-furnace; the broad head with narrow jaws represents the keen, sharp flame from a blow-pipe.*

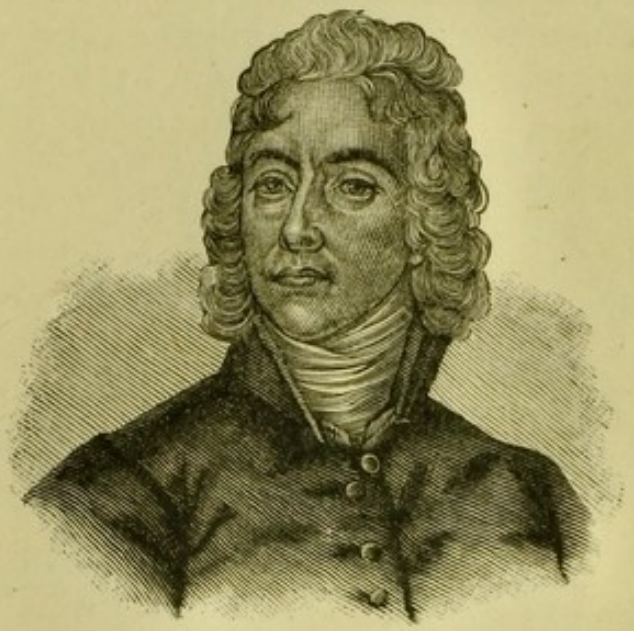


FIG. 149.—PRINCE TALLEYRAND.

The latter contour of head and face is observed in the faces of witty, bright, smart people, quick at retort and repartee. Several of our prominent humorous writers disclose this form of countenance (Fig 149). Still more sharpened at the chin and the forehead, and the features not quite so wide as the former, we have the sly, crafty, foxy form of face, which shows inferiority of judgment and intellect generally. It is exhibited by a sly, insinuating manner, dealing in hints, allusions, suggestions, and innuendoes, which is a modified form of wit.

In describing the several normal or most useful forms of the lower jaw, I shall follow the course of Nature in evolution, or the progressive development of this feature from the embryotic to the most perfected form.

EMBRYOTIC LOWER JAW.

The evolution of the lower jaw is a most interesting process, and the *form* of this feature which is gradually developed in the human embryo is most instructive. A human embryo at six weeks has not as much of a jaw as an ape or a marmoset. Below the mouth there is no trace of a face; from the lower lip there is

* An Attempt to Establish Physiognomy on Scientific Principles, John Cross, M.D., pp. 179, 180.

a backward slope to the neck, or what will eventually be the neck. At the fifteenth week of prenatal life, about as much chin is exhibited as is found in the ape and chimpanzee, and it recedes at about the same angle. Were the chin to remain at this stage of development the character would possess no more stability, perseverance, and conscientiousness than an ape; but from this time onward until birth the bones of the lower jaw develop, and unless the child is idiotic the chin and lower jaw gradually assume a normal size and form. During early childhood the chin remains small and the lower jaw-bone narrow and receding. If these peculiarities continue until adult life, the character will be wanting in perseverance, stability, integrity, courage, and application. These latter qualities inhere in the bony structure and are exhibited by bone development, but, as it occurs that the softer tissues are dominant in early life, we shall observe that the chin is at first round, receding, and soft. The outline of the bone in plump infants is almost hidden by the globose form of the cheeks and by the *fat of the neck*. Later, the outline assumes an oval form, and still later the *permanent* form of the jaw appears, and it is this last form which reveals to us the character of the individual for firmness, perseverance, and integrity, or the lack of them. It is this form, also, which unfolds the strength or weakness of the visceral organs and the width of the pelvis. Narrowness of the bones at this portion of the face denotes relative weakness of several visceral organs, for Nature is harmonious and sets her signs and signals in the face in order that the related interior mechanism and external form of the body shall be understood.

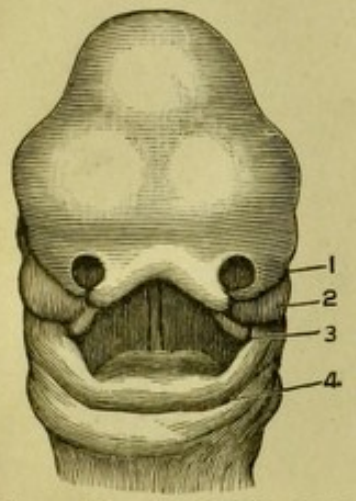


FIG. 150. — HUMAN EMBRYO. (After Haeckel.)

1, external nasal process; 2, upper jaw; 3, the tongue; 4, lower jaw.

THE INFANTILE JAW.

The form of the lower jaw peculiar to infancy, immaturity, and undevelopment is shown by narrowness of its bony frame and an obtuse angle or lack of curvation of the muscles of the sides and rami. This form denotes absence of force and perseverance, as well as immaturity, and if observed in an adult it betokens either idiocy or a very small degree of firmness and reliability.

THE DYSPEPTIC JAW.

This form of the lower jaw presents a perpendicular or almost perpendicular line from the malar or cheek-bone to the chin. In

most congenital consumptives and dyspeptics this is quite marked, and is a sure indication of a short and sickly life. I have never observed this peculiar formation in the physiognomy of any very aged person. It is a transmitted form, and usually descends from parents who have a narrow and perpendicular formation of the lower jaw-bones. When transmitted from both parents, those who inherit this form and its associated weakness disclose their feebleness of the viscera and lungs very early, and usually die before reaching maturity, unless surrounded by the most favorable circumstances. Such persons lack vital energy, and if possessed of a good brain form will plan much more than they can execute, and will be constantly hindered in carrying forward their plans by constantly-recurring attacks of ill health. This class of people may exhibit common morality, but we cannot expect that they will display moral heroism, nor that they will be able to command a regiment, a war-ship, or quell a mob, no matter how fine or active the brain may be.



FIG. 151. — COUNTESS OF HUNTINGTON.

THE WEAK OR NEGATIVE JAW.

There are several distinct forms of the weak jaw, each of which disclose varying mental and physical defects. The most commonly observed are the perpendicular and narrow, which indi-



FIG. 152.—OLIVER GOLDSMITH.

cates feeble digestion, and the short and obtuse jaw, terminating in a receding chin. This is the characteristic chin of childhood. It denotes (when observed in the adult) lack of perseverance, of strong moral principles, firmness, and decision, as well as weakness

of the kidney system and relative feebleness of the entire visceral structure.

THE CONSUMPTIVE JAW.

The form which discloses the tendency to this dread disease is marked by general narrowness of the face at the upper part of the cheek, flatness of the malar bones; narrow, sharp nose; thin nostrils, hollow cheeks, and usually a thin lower lip. (See Fig. 145, page 779.) This conformation of face and jaw is an inherited one, and has been transmitted from ancestors whose physique was very much impoverished. The entire formation denotes feebleness of both visceral and thoracic structures, hence it follows that the mental powers are correspondingly feeble. With a dominance of a brain form of a fine quality in combination, a considerable degree of mental brightness may be manifested in early life, but life itself will be short and painful.

Where the brain system is *not* one of the *dominant* systems a very ordinary grade of intellect will be present. The subject will scarcely reach the adult stage. The nearer the approach to embryotic forms, the greater is the weakness of the physical powers and a lack of positive force and substantial, reliable character, for where the bones of the jaw do not develop normally in size and form the characteristics of undevelopment are naturally associated. These characteristics are relative, of course. They do not imply that the character will be altogether childish, but that there will be relatively less of the substantial and firm quality exhibited which belong to a normal character, and which are always exhibited by a normal proportion of bone, muscle, and fatty tissue in these parts of the face.

CRAFTY AND WITTY JAW.

There are several grades and phases of intellect manifested by those with the sharpened chin and slightly perpendicular jaw. Those whose wit takes on a keen, cutting, satirical manner present a sharper aspect of jaw and chin than where the nature of the wit is more good-natured. Voltaire's face is an illustration of the former, while Sterne's countenance denotes the latter. Voltaire evinced also great powers of chicanery, subtlety, and craft in his management of his enemies and opposers. We may with truth denominate satire, sarcasm, and wit "intellectual cunning," while the common, low grade of cunning used by those who are deficient in mentality may properly be designated "animal cunning," inasmuch as it is the compensation for a lack of intellectual vigor, breadth, or acumen.



FIG. 153.
LAURENCE STERNE.

A man may possess considerable intellectual power of a crafty, astute nature. It does not follow that he is weak because of this species of cunning. Such an intellect was exhibited by Richelieu. He possessed an intellect of a high order, but all turned in the direction of governmental diplomacy, in which chicanery, intrigue, and craft, so much used in European politics in his day, were dominant. His was cunning on a *grand* scale. He showed talent for hiding his own designs while discovering those of others. The shape of his nose proves him to have been possessed of a comprehensive intellect, while the shape of his lower jaw and chin reveals his craft and adroit *finesse*, but not moral heroism.

An examination of the lower jaw and chin of the following-named persons will give a good idea of the witty jaw and the cunning jaw in their several phases and aspects: Mark Twain, Cardinal Fesch, Duke of Buckingham, and Voltaire.

The general conformation of the head and jaws which produces that peculiar sharpness of the chin and jaw which denotes wit is not one of the indications of weakness of the physical functions. It is the result of the dominance of the brain form with a subdominance of the muscular and bony system; hence, the jaws are relatively less developed and less square, and the chin less bony and prominent. It is this combination—viz., brain first, muscle second, bone third—which creates those imaginative, witty, playful tendencies that are found in many first-class writers whose works abound in wit, sarcasm, and playful, sportive, mirthful, and ingenious fancies. The witty jaw and chin (for we are obliged to combine these two features in order to illustrate this peculiarity) proceeds from the relative breadth of the forehead and the tapering of the face downward. Now, where the forehead is relatively narrow, combined with narrow jaws and a sharp chin, then the former shape of the face is modified to that degree which denotes less intellect and more cunning, for cunning is wit diluted, so to speak. The physiognomy of the fox is a good illustration of the cunning jaw which indicates animal wit, while the faces of Voltaire and Sterne are the best examples of sharp, keen wit and intellectual cunning. The remarks on this peculiar form of jaw and chin by Dr. Cross are quite appropriate, and I quote them in this connection. He observes:—

> The tapering of the head and face from above to below indicates natural cunning,—natural only, for the broad face may be trained into artificial cunning and the sharp, tapering face into artificial sincerity, *not, however, without leaving corresponding impressions on the soft parts.*
>
> In examining the anterior plane of the face we found that recession from the perpendicular indicated deficiency of animal character. On now examining the lateral plane of the face, we find that recession from the

perpendicular also indicates deficiency of animal character.* Cunning is at once an indication, a consequence, and a partial cure of some primary deficiency. If an animal were sufficiently wise to keep clear of all difficulties, and courageous enough and strong enough to stand his own ground, he would not have stood in need of cunning. A face, therefore, tapering into narrow jaws denotes a character whose basis of animal appetites and passions is feeble; but this tapering face, while indicating such radical deficiency, also indicates how the character is compensated by cunning—by stratagem. A bestial face, tapering from above downward, indicates sheer cunning, whose object is self-preservation, whether in acquisition of prey or in elusion of danger. Human cunning may be said to run ultimately into the channel of self-preservation, but has so many meanderings through all its windings and turnings of social life, and through the extensive and complicated field of human intellect, as scarcely to join the great animal stream before it disembouges itself. The cunning of the fox is directly and exclusively devoted to stealing prey and eluding detection, but human society is so organized that the Sternes and Voltaires are necessitated to discharge their cunning in wit. A human head and face tapering from above downward bespeaks wit, keen in proportion to the sharpness of the jaws.†

THE CURVED OR ARTISTIC JAW.

This form of jaw, when terminating (as it generally does) in an oval chin, is significant of normal strength and a taste for art and beauty. The curving is caused by the dominance of the muscular system, hence a love or taste for art and beauty will be present; also, agreeability of disposition, unless contradicted by some other sign.

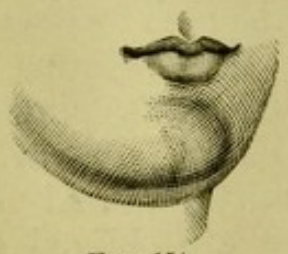


FIG. 154.
CLAUDE LORRAINE.

The oval form of the muscles shows that movement is easy, and ease of movement denotes a certain degree of agreeability. When the curved jaw terminates in a rounded chin, in which there is a round dimple, we can safely predicate that talent or taste for art of some sort will be manifested, and a sort of good-natured benevolence or generous disposition as well.

THE DRAMATIC JAW.

The most perfect or normal form of the adult lower jaw presents a curved outline. When it is *greatly curved* we shall find that it signifies *creative power* of a dramatic nature, and this form of jaw is observed in the physiognomies of many who are eminent in various phases of *creative art*.

As we have found that globosity denotes immaturity and perpendicularity, when not in its normal place, weakness and defective organization, so we shall find, while observing the forms of the

* The writer here uses the term "animal" to indicate both the vegetative and animal functions.
† An Attempt to Establish Physiognomy on Scientific Principles, J. Cross, M.D., pp. 180–182.

rounded lower jaw, that it expresses what the segment of a circle always signifies when found in living organisms, viz., creative or original powers. The primitive animal or vegetable cells are circuloid; their mission is creative of new tissue, and the circular form is the only one adapted to that formative process. When we observe this circular or semicircular form in any feature we may know that creative effort of some sort is indicated. The *sort* of power which is present is shown by the particular feature in which the curving is exhibited.

The lower jaw of a majority of the most celebrated dramatic painters, poets, writers of fiction, actors, singers, playwrights, etc., exhibit this form. The reader is referred to the faces of the following for examples of this law and its associated form. I denominate as dramatic artists all those whose works express or exhibit the



FIG. 155.—BENJAMIN R. HAYDON.
(HISTORICAL PAINTER.)

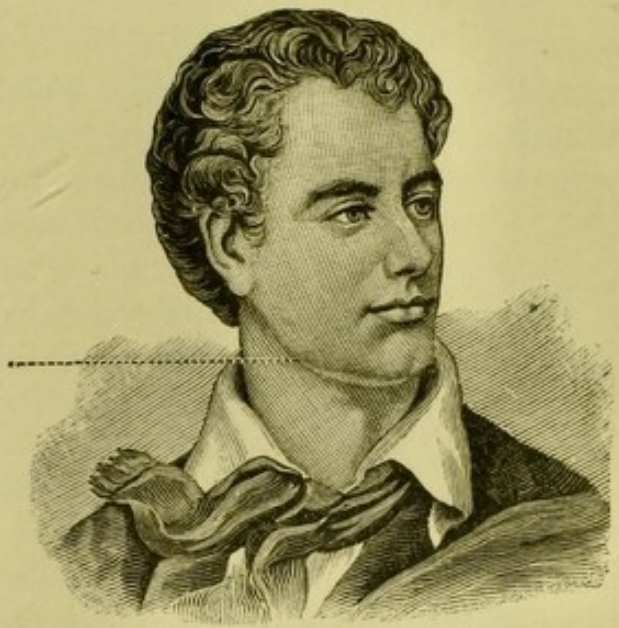


FIG. 156.—LORD BYRON.
(DRAMATIC POET.)

main elements of the drama, viz., tragedy, comedy, or farce. Now, in the works of the following-named artists will be found highly-dramatic elements embodied or expressed. The shape of the chin and lower jaw will reveal their power in this direction.

See, for example, among orators, Mirabeau, Henry Ward Beecher, Ingersoll, Henry Clay.

Among poets, Corneille, Miss Barbauld, Byron, Mark Akenside, Keats, Schiller, James Hogg, Alfieri, Abelard, Klopstock, Ovid, Petrarch, Goldsmith, Herrick, Horace, and Elizabeth, Queen of Roumania ("Carmen Sylva").

Among painters, B. R. Haydon, greatest of English historical painters; Doré, Holbein, Van Dyck, Vernet, Turner, Powell; Elizabeth Ney, German sculptress, and Canova, sculptor.

Among actors, actresses, and opera-singers, observe the following: Sarah Siddons, Philip John Kemble, Charlotte Cushman, Talma, Molière, Forrest, David Garrick, Nat. Goodwin, and Lotta.

Of writers whose lower jaw is dramatic, and whose works are dramatic, I name the following: Miss Louise Alcott, Dickens, Lucy Larcom, Mrs. A. D. T. Whitney, J. Fenimore Cooper, T. B. Aldrich, W. D. Howells, Joseph C. Neal, La Bruyere, Mad. de Staël.

There are many others in each of these classes, but a sufficient number are here mentioned to give the reader an opportunity to make generalizations and comparisons.

Many persons in private life also exhibit this form of jaw and chin, but wherever observed a love, taste, or talent for dramatic works of some sort will be found associated with this peculiarity.

THE SQUARE JAW—MORAL, MECHANICAL, SCIENTIFIC.

The square-shaped jaw has many significations, for its form denotes a high grade of development in a moral, mechanical, or scientific direction. This form must not be confounded with the *angular* jaw, which indicates quite different traits. The squaring of the square jaw is observed to be situated upon the sides of the jaw, and when combined with a certain degree of *width* of the chin always denotes a high degree of conscientiousness and moral power, with either mechanical or scientific tendencies. These two classes of traits are in close relationship, inasmuch as they are both based upon the laws of Nature and are closely related. Signs in other parts of the face will point out to which of these two departments of mentality the mind belongs.

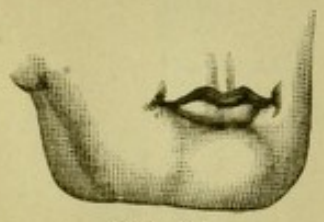


FIG. 157.
SIR ISAAC NEWTON.

The lower jaws of Jonathan Trumbull and Roger Sherman, heroes of '76, show the square form, and their conduct was heroic in the "times that tried men's souls." The signs for Conscientiousness, Firmness, Perseverance, and Moral Courage are strongly defined in their chins. All these traits inhere in the osseous system, and their signs are in the bony structure of the lower jaw and chin.

Squareness of the chin or lower jaw denotes fidelity to whatever one is most interested in, hence an individual with a square jaw will be faithful in love, as well as prompt and steadfast in business relations. The signs for principle and morality are found in the *bones* of the chin, while the signs for art, love, and emotion are revealed by the form and development of the *muscles*. If the

chin is more bony than muscular, integrity is the stronger; if the muscles dominate, the affections are supreme. Where the fatty tissues are most developed a sense of ease, comfort, and sociality, with love of eating, drinking, and sleeping, will be manifested, and the double and triple chin will register the supremacy of these tastes and appetites.

THE ANGULAR OR CONTRARY JAW.

This peculiarity of the lower jaw is shown by a decided angularity of the bones at the junction of the side of the jaw with the ramus, or where the bone commences to ascend to join the malar or cheek-bone. It denotes absence of ease in the movement of the muscles, and the lack of easy movements shows by contrariness or angularity of conduct—opposition to the wishes and plans proposed by others. In form and movement this jaw is just the opposite of the curving jaw, and it indicates precisely opposite traits. In the curving jaw great ease of action is obtained by reason of the roundness of the bones and the supremacy of the muscles. This combination gives ease of motion to all the joints of the body, and this is, of course, indicated in the motions of the jaw as well. Those who possess this combination are *imitative*, and readily adjust the muscles to suit any position required. They can also make gestures in a graceful manner, and evidence, by their imitations of the walk, voice, and manners of others, that the muscles have free play, and are not impeded by angularity of the joints. This perfect freedom of the muscular system tends to agreeability, whereas the movements of the former are less free, and, as angularity presupposes defective organization of some sort, it is shown in this case by perverse opposition to the will or wish of others, *regardless of whether it be for one's own interest or not.* The angularity which is disclosed in the jaw is an attribute of the entire bony and muscular framework of the body to which this jaw belongs, and registers its facial sign in the lower jaw, particularly. It is a species of contrary will-power, and quite as often acts in opposition to its own desires as it does to the will of others. Sometimes the subject of this unlovely trait will oppose at first what he really desires, and later will accede to the plan first proposed, working by the law of contrariety which is in harmony with his structure, the sign for which is signally conspicuous in his physiognomy.

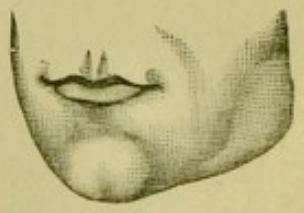


FIG. 158.—VOLTAIRE.

Those in whom this sign is observed are either lacking in good sound judgment or practicality, or knowledge of human nature, or

some other important trait. We must look to the indications in *each individual case* to learn which of these faculties is lacking.

The angular form observed in the lower jaw of the bull-dog, the zebra, the South African dauro, the ass, donkey, and quagga, denotes in these animals precisely what it does in man. The character for contrariness of all these animals is well known, added to which the ass and donkey are somewhat knavish and the others fierce—both states of undevelopment. Now, contrariness in man and animals indicates a lack of something which is required to balance the character. Fierceness in men and animals is a symptom of undevelopment, and the signs of these defects are found in the same place in the physiognomies of both these classes. They will all exhibit more or less of the perverse, refractory, unruly, antagonistic, and retroactive traits of character.

The angular jaw is a perversion of the square form; hence, it exhibits neither the steadfastness of square bones, nor the easy movements of round, pliant muscles. It is an unfortunate *chemical* combination. This is an exemplification of the law of the angle *misplaced*. That is to say, an acute angle does not *normally* belong to this feature. It should be *gently curved* to facilitate ease of motion in speech, etc., and as it is just the reverse of this normal method it announces contrariness and opposition both in speech and action. The basic laws of Form wherever applied expound the character, and nowhere are they more strikingly revealed and proven than in this instance.

PROGNATHOUS JAWS.

The projection forward of both the lower and upper jaws which is observed in several negro tribes is prognathous in contradistinction to the more regular and perpendicular form of jaws and lips observed generally in the Caucasian race. This form, termed by anthropologists "Orthognathous," is characteristic of the majority of all the Caucasian races, the European, the Anglo-saxon and their descendants. Yet among all these races the prognathous jaws are frequently met with. It is, I believe, the most frequent among the Irish race, and is also found in other European people, among whom a generous diet and social advantages have been absent for generations. Now, although this form of the jaws belongs by virtue of evolution to savage or semi-barbarous people, it shows up in every civilized country among those who have been impoverished for generations — among those who have lacked ample nutrition, education, refinement, and social opportunities. This is why it is so frequently met with among the poorest of the Irish peasantry, for this people has for generations been deprived

of nearly all the accessories of civilization, and this long-continued impoverishment has been followed naturally by degradation of structure, as well as by degradation of moral and mental powers. This long arrest of development has resulted in a genuine "atavism," or reversion to savage types, for it has been observed in hundreds of instances by many observers that the children born in America of parents whose jaws (one or both) were prognathous presented a more modified and comely form than that of their parents or elder brothers and sisters born under the disadvantages of the serf or peasant modes of life. In this case, an ample diet and improved social advantages tended to bring the offspring back to *normal* types and forms from which they had retrograded through generations of deprivation.

The prognathism of the negro is caused by an exaggerated growth forward of the jaw-bone and teeth, and an uncommon development of the lips.

PROGNATHISM OF THE UPPER JAW is caused by an outward inclination of the upper jaw-bone and a protrusion of the teeth and lip, but the form of protrusion observed among the Caucasians is *usually* somewhat modified from this form. In these cases the chin recedes and the alveolar process and the teeth project and are met by a similar projection of the teeth and lips of the upper jaw.

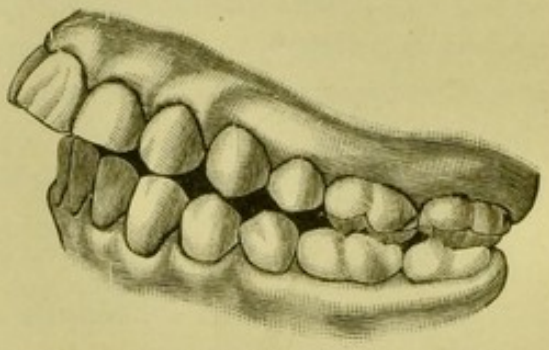


FIG. 159.—PROGNATHOUS JAWS.

In others the prognathism is apparent only in the projection forward of the upper-jaw teeth and lips.

Some jaws are very decidedly protrusive; others less so. This feature thus characterized is always indicative of a sort of kindly, generous, or easy, good-natured disposition, which is doubtless in each separate case the compensation for a defect in some other faculty and feature, for all notorious exaggerations of feature or faculty are defects for which the law of balance of compensation furnishes a remedy, or seeks to do so by the peculiar development of some other feature and faculty. All imperfections of the mouth, the jaws, the lips, and teeth are indications, first, of inherited defects of the nutritive system; secondly, of existing and inherited defects of the vocal and linguistic capacities. Inasmuch as the mouth and its accessories are the organs both of alimentation and speech, it follows naturally that peculiarities in the structure of these parts would be the indications of peculiarities in speech and digestion. The inference to be drawn from this interaction and

consensus of function and faculty is that all imperfections and departures from the normal forms of structure of the mouth, jaws, etc., would give rise to defective mental powers. This is the case, as exhibited by those having hare-lip, crooked mouths, cleft-palate, too thin or too thick lips, a mouth disproportionally small, or by lisping, stammering, or hesitating manner of speech, all of which refer to mental or moral defects. The theory of the relation of mental and moral states to oral conditions is sustained by the experience of prison surgeons, who state that large numbers of professional criminals exhibit defects of speech of various sorts.

Now, prognathism is a departure from the normal form of the Caucasian jaw, and may be of two kinds, dental or maxillary. In the former the teeth *only* project; in the latter, the projection is caused by the elongation of the jaw-bone. The negro's jaw is an excellent illustration of the latter; while the more modified form of *dental* prognathism is the variety most frequently observed in civilized communities. The evolution of the lower jaw-bone as observed from infancy to adult life is an additional proof of the above assertions. In the Caucasian infant the lower jaw recedes greatly from the line of closure of the mouth; later it assumes the line of perpendicularity, while in some very firm characters it projects slightly forward of this line.

Mons. Quatrefages asserts that "all races and all individuals are more or less prognathous." My observations in physiognomy do not corroborate this statement, for those whose teeth close evenly together while in a normal position cannot be said to possess any degree of prognathism whatever. Those whose teeth of either jaw project one beyond the other are in that degree prognathous.

I am aware that in ill-balanced characters this appearance is frequently met with, and so numerous are the subjects who exhibit teeth which do not exactly meet that they form a *majority* of the human family. So rarely do dentists find a subject whose teeth do thus meet, that it seems to be the prevalent opinion among them that this is the *normal* structure, for so I have been assured by those eminent and experienced in that profession. I cannot accept as correct their opinion upon this phenomenon for two reasons: first, because a cutting, biting, and grinding apparatus is most perfect where the opposing points meet *exactly;* secondly, because in the best-balanced physiognomies the incisor teeth, which are intended for biting and cutting, come together evenly in the act of closing them or in biting, whereas those not so evenly balanced exhibit often a slight projection of the upper over the lower, or of the lower beyond the upper teeth. A critical and ex-

tended knowledge of scientific physiognomy is needed in this department of knowledge, as well as in pathology and psychology, in order to rectify the errors constantly made by those who take the majority of *existing forms* as proofs of perfection, instead of following the course of development shown by the combined sources of embryology, evolution, and ethnography.

PROGNATHISM OF THE LOWER JAW-BONE is evidence of a comparatively undeveloped mind; it denotes an uneven or crude disposition as compared with those possessing the *normal* form of this feature. Where the jaws are both prognathous they can very materially assist in grasping, and in this case are a true prehensile and are analogous to the same function in the ape tribes. Such feature greatly exaggerated is never seen associated with a first- or even second- class intellect. It belongs to the commonplace or inferior character. The slight prognathism of the upper jaw, which I have observed in the physiognomies of many excellent persons of good intellect, does not denote the grade of inferiority indicated by the prognathism of the lower jaw, while it is always evidence of a certain degree of good-natured, kindly generosity.

The section devoted to the "Upper Lip" which follows gives all necessary information in regard to the physiognomical appearances of the upper jaw; it is therefore not treated of separately.

THE SIGNS IN THE LIPS.

THE UPPER LIP.

When we wish to learn the signification of a feature, we must first observe its use and purpose in the human economy,—the tissues of which it is composed, and its mode of action. Now the lips, as before remarked, are for several purposes. Their primal functions in the human family are mastication and articulation. All other uses have evolved as civilization has progressed, and thus perfect lips have become the indicators of a grade of *refinement*, the absence of which cannot be remedied by the perfection of any or of all the other features. The reason is obvious and may be analyzed thus: The mouth and lips are primary features, assistants to the most primitive of all the functions,—digestion. Now, if these features reveal a high grade of development in regard to form, size, color, and quality, it is an infallible sign of the high grade of the *entire personality*, as a result of civilization and refinement. Where the domestic and sympathetic functions and sentiments, as represented by the mouth and lips, are perfected, we shall find lovely characteristics, even if great intellect is not

present, for the perfection of primitive faculties shows a *fine* grade of *all* the associated faculties,—it gilds and refines all the others.

The lips and adjacent parts are representative of the fluids and soft tissues of the body, and as the entire body is built up by means of fluidic action the importance of its representatives cannot be ignored. The ancient Greek philosophers recognized fluids as important factors of human character, for Sir Charles Bell states that

> The ingenious reasoners of ancient Greece ascribed the diversity of disposition to the texture of the frame, not to the features nor to the proportions or shape of the skull, but rather to the *mixture* of the elements of the body, and more to the *fluids* than to the *solids*. These distinctions, familiar to all, have, in every succeeding age, been attributed to the humors. When we speak of the *constitution*, the temper, the humor of a man, we are in truth adopting the language of Hippocrates, who treated of the four radical humors,—the sanguineous, phlegmatic, choleric, and melancholic.*

The lips, in order to express harmonious character, must be of a relative proportion, for, says Lavater:—

> All disproportion between the upper and lower lip is the sign of folly or wickedness. The wisest and best men have well-proportioned upper and under lips. *Very large* lips always denote a gross, sensual, indelicate, and sometimes a stupid and wicked man.†

The physiognomical observer will find, upon comparing irregularities of the mouth and teeth with their associated characters, that they are, *without exception*, the evidences of unbalanced or abnormal functions and traits, for when the *primitive* functions and faculties are of a low grade the character is pitiable and impoverished in a most essential part. When the *foundation* of an edifice is weak and defective, all the fine gilding and painting of the walls and ceiling will not compensate for this defect. If one examine the features of Zola or Rabelais, he will find that their intellectual and literary ingenuity is saturated with the grossness evolved from their unrefined domestic and sympathetic faculties. Their lips and mouths are physiognomically eloquent, for the exaggerated size and grossness of these features, together with their soft, dimpled chins, reveal the source of their filthy lucubrations. Rembrandt, the great artist, discloses also great grossness of mouth and lips; his life was that of a low voluptuary, and many of his paintings took their inspiration from this part of his nature. If one examine the lips and mouth of Mozart, Goethe, Burns, Sir Isaac Newton, Addison, Handel, La Bruyèrè, Sir Walter Scott, Edward Everett, and Ralph Waldo Emerson, great beauty

* Anatomy of Expression, Sir Charles Bell, p. 130. Fowler & Wells, New York, 1883.
† Lavater's Essays, p. 475.

of these features will be observed. Of the latter, Oliver Wendell Holmes remarked that

> He had a look of refinement centring about the lips which is rarely found in the male New Englander, unless the family features have been for two or three cultivated generations the battleground and the playground of varied thoughts and complex emotions, as well as the sensuous and nutritive port of entry.

Let one compare the lips of Mad. de Staël (Fig. 103), of Angelica Kauffman, or of William Pitt (Fig. 35), with those of the native Tasmanian woman and Mrs. M. (Fig. 60), and the relative degrees of culture and refinement in these two classes will be at once apparent.

The unity of mind and body is nowhere better proven than in the evolution of the lips. Continental Europeans, as a class, are better endowed in this respect than Americans or English, and for the reason that for generations the cultivation of the *domestic* sentiments has been unrestrained, and the fine arts, music, painting, and the drama have been accessible to the masses for ages. Whereas, the religions of the latter race have tended to *suppress* the display of emotions of all sorts, and the development of a taste for the opera, the drama, and the universal cultivation of music have not been fostered as upon the Continent, hence the emotions, domestic sentiments, and the æsthetic tastes have not made as strong an impress upon the faces of the descendants of these peoples. A most remarkable difference may be observed between the lips of the Germans, Italians, and Spanish, and those of the English and Americans. In the former, the signs for Amativeness, Love of Young, Sociality, and Sympathy, together with Patriotism and Love of Home, in the chin are *most decided;* in the latter, much less so.

The muscles of the mouth and lips, being extremely flexible and capable of describing many diverse shapes, we may naturally expect that *permanent* expressions will follow as the result of emotions and speech that are habitual; thus, the passions of rage, scorn, envy, and malice, if often indulged, mark their presence upon the muscles about the mouth, and the subject of these passions *cannot escape detection*, for scientific physiognomy, in teaching what is normal and what is abnormal in the development of the facial features, lifts the mask from hypocrites, whose smiles only serve to show that they are foreign expressions and put on the *outside for a mask* to cover viciousness. The moral of this is that in order to *seem* amiable we must *become* so in reality. The so-called "upper classes" of England cultivate what they term "repose" of manner and stolidity of expression, and suppress all spontaneous emotion as far as possible, as not consistent with "high

breeding." This kind of "breeding" is an excellent fashion for dolts, hypocrites, and criminals, for it enables them to hide the play of the muscles of the face, which would at once "give them away" and tear the mask from their assumed character of being "highly bred." All *true thoroughbreds* can make it apparent that they are such, not by self-suppression but by self-assertion,—by naturalness,—and nowhere is great refinement shown so strongly as by the *unrestrained* expression of the lips and adjacent parts. The master of physiognomy, Lavater, had great opportunity to study the manners of the aristocracy of Europe, and he probably had some of them in mind when he wrote the following:—

> Very discreet, very cold, or very dull, but never truly wise, never warmly animated, never capable of fine sensibilities or tendencies, are those the lines of whose countenance never conspicuously change.*

The movements of the muscles of the mouth, lips, and adjacent parts are highly significant of character. No matter how much one may dissimulate, these movements will betray innate and habitual states of mind, even should the speaker assume a softness of tone and amiability of manner for a purpose; the *constrained* and unaccustomed movements of these muscles will reveal the true character and show by their stiffness and inapt motions that they are performing a part not habitual. On the other hand, one may derive both profit and pleasure in observing the play of muscles about a mouth that is accustomed to use sentiments of sincerity, amiability, and refinement. To watch the play of the labial muscles in certain faces, which the world terms "homely," is a treat to a physiognomist. I do not say that all ugly faces exhibit beautiful movements of the mouth, but there are some countenances which art would stamp as plain, at least, that to the scientific physiognomist would reveal some traits of surpassing goodness and sweetness; and these traits are disclosed more by the movements of the mouth, lips, and adjacent parts than by the outlines of the features, and for the reason that all of the domestic and social signs of character, as well as social and linguistic, are clustered about the lower third of the face.

It is thus shown that art-beauty and scientific beauty are in some cases quite different. Science is intended to reveal *truth*; hence it insists upon making goodness or truth the *synonym for beauty*, for, says Dr. Cross:—

> All living beings in the great sum of things have their ranks in the scale of life on the same level of elevation with their physiognomical beauty; indeed, the correct association out of which *true* beauty arises constitutes the science of physiognomy.†

* Essay on Physiognomy, p. 462.
† An Attempt to Establish Physiognomy on Scientific Principles, J. Cross, M.D., p. 4.

With these general and preliminary remarks I will now proceed to the analysis and description of the lower lip.

THE LOWER LIP.

The part of the face which lies above the point and middle portions of the chin belongs properly to the lower lip by virtue, first, of a similarity of tissues, the dominant ones of which are glandular and fibroid; secondly, by reason of contiguity.

In all properly-developed human beings the part just below and toward the sides of the red-colored portion of the lower lip discloses two fine signs of character, viz., Love of Home and of Country. When this part is full these traits are strong; when this part is flat they are relatively weak. The tissues about the lower lip are soft, caused by a normal supply of the juices supplied to the glands in this portion of the face; hence these traits would be here indicated which disclose faculties of an *emotional* character, such emotions as glands, fat, and muscle in combination would create. All indications about the mouth and its immediate neighborhood show that they are of a glandular, fibrous, and adipose nature. This is in consequence of their close proximity to the mouth, which is the principal facial feature concerned in nutrition or alimentation. A glance at the figure that describes the glandular formation of the face at the head of this chapter will show how greatly the mouth and adjacent parts depend upon the *softer* tissues and muscles for the power to masticate, articulate, and express emotion, as well by movements of these parts in producing vocal sounds. All signs whose indications are situated in muscular or glandular tissues are shown by well-developed fullness of the part involved. Deficiency is known by flatness or hollowness.

We have learned that the muscles "drop little fibres" all along their course in the face, so we shall find a great diversity of expression about the lower lip in different persons. So diverse are these forms that disputes have arisen among the most eminent anatomists in regard to the *number* of muscles comprised in the lips. It must be apparent to all thoughtful persons that as each individual mouth is associated with a distinct and diverse character (and many of these characters widely divergent in their powers and peculiarities), so each mouth would present an entirely distinct form and appearance. This is really the case, and it is this diversity of labial structure that had led anatomists to differ so radically in their opinions and descriptions of the structure of the lips.

The lower lip of an undeveloped, miserly, unsympathetic individual would present much less fibroid and glandular development

than the lip of one whose character was precisely the opposite. Dissections of the lower lip of two persons thus differing in structure would lead, of course, to entirely conflicting descriptions of these features. Under the light of scientific physiognomy all these discrepancies are cleared away, and we are thus enabled to know that a description of one pair of lips will not suit all cases, and that only a *general description of the labial muscles* can be given. Swedenborg has noted the differences of opinion of anatomists on this subject, for he observes that

> All myologists differ both in their plates, descriptions, and enumerations of the labial muscles. Santorinus saw many more than other anatomists. Verheyen added a new risor muscle. Winslow discovered several. "So much variety," says he, "is met within the muscles of the lips in different subjects that it is not surprising that anatomists differ in their accounts. In some subjects portions of these muscles are wanting; in some it is scarcely possible to distinguish them; in others there are particular fasciculi which are not generally to be found."*

Fortunately for the cause of physiognomy we are able to study the racial and national peculiarities of the savage face from the numberless cuts which adorn the works on ethnology. And in civilization art is the handmaid of science and photography aids our scientific study of the face by its numberless "counterfeit presentments" of all classes of people, and thus we are able to observe the labial forms of those who are or have been eminent in the expression of Patriotism and Love of Home, the two faculties whose signs lie adjacent to and just below the lower lip, and, indeed, we may say with justice, form a part of it.

Patriotism, or love of country, is not altogether a trait of civilization, neither is it confined exclusively to the human family, although it here exhibits its highest manifestation. Various animals exhibit a lively affection for their own climate as well as for their own habitat within the peculiar zone which is their birthplace. This is their form of patriotism. Animals manifest a strong love of country in many ways similar to man. Many animals that are carried away from their native countries, and even in a state of freedom, exhibit intense homesickness and often die from the intensity of this emotion.

Fullness of the lip, as seen in Figs. 25 and 26, is the facial indication of love of one's own country. It is wonderfully developed in great orators, statesmen, poets, painters, rulers, leaders, and reformers, as their works testify, and is corroborated by their physiognomical structure of the lower lip. Some men have this portion of their face concealed by a beard, hence one of their chief

* Animal Kingdom, Emanuel Swedenborg, p. 53.

facial beauties is hidden; but among the innumerable persons who have shown by their deeds, as well as by their words, their possession of this trait, I may mention the following, taken at random from portraits before me: George Washington, Wm. E. Gladstone, Emperor Alexander II, of Russia; Bismark, von Moltke, Napoleon I, Lord Brougham, Henry Grattan, Thackeray, Thos. Moore, Goethe, Rosa Bonheur, Robert Burns, Macaulay, Count Cavour, Ben. Franklin, Frederick the Great, Fitz-Green Halleck, Daniel Webster, Wm. H. Seward, Lamartine, Francis Joseph, of Austria; Ericsson, John Quincy Adams, Harriet Hosmer, Admiral Farragut, Florence Nightingale, Walter Scott, Lady Burdette-Coutts Bartlett-Coutts, Abigail Adams, John Adams, Henry Clay, Gerritt Smith, Starr King, and Björstjorne Björnson.

All truly noble characters possess this trait, and in many comprehensive philanthropists it widens out, and such minds regard the entire world as their country, and with Thomas Paine they can truly say, "The world is my country." This is indeed the highest manifestation of patriotism.

Under the centre of the lower lip, and between the signs for Love of Home, is an indentation which differs in depth in different faces. Should this place not exhibit an indentation, a certain degree of symmetry, of beauty, is wanting; and as all physical and facial defects argue mental or moral deficiencies, so we shall find that the character whose face exhibits no indentation here, or who shows a slight fullness instead of a slight depression, is not so richly endowed with good sense, true sympathy or sensitiveness, as where this part exhibits a normal indentation. In order that the lower lip should *curve*, and also that the *levator menti* muscle in the point of the chin should round, a depression must necessarily exist between the two places. If it does not. true beauty and true sympathy are lacking.

A face to express beauty, strength, and fine character of an artistic nature, must abound in *curves*, *flexions*, *indentations*, and *undulations*.

A face to express beauty, strength, and high character of a mechanical or scientific cast, must exhibit both *curves* and *angles;* but it must disclose one curve in the descent from the forehead to the nose, and describe *two* curves in the profile outline of the chin,—one curve of the lower lip, the other a curve of the point or lowest portion of the chin.

A handsome or well-formed lower lip is of unspeakable physiognomical value, as it reveals a high grade of character in a certain direction, as well as being the indicator of *general* refinement.

If the primitive or vegetative faculties have become. refined

by ages of culture, this development will be revealed in the mouth and lips pre-eminently; hence it follows that if the lips exhibit an abnormal form or a lack of development, the social, sympathetic, and domestic faculties are correspondingly defective. No better proof of this statement can be had than by reference to the lips and mouth of undeveloped, immature, criminal, miserly or unsympathetic persons, and by comparing them with those of the most refined.

THE EMBRYONIC LOWER LIP.

The mouth, in the early stages of embryonic life, is a relatively large, irregularly shaped opening (Fig. 150), occupying nearly the whole of the space which is afterward the region in which the facial features make their appearance. Later in gestation, the development of the body and bodily organs produces the development of the facial features, for organ and function develop or appear simultaneously with facial feature and mental faculty. The figure quoted shows how exceedingly low in development the lips are, while the internal visceral organs concerned in digestion are as yet unperfected. This knowledge is a part of the science of evolution, and, taken in connection with the science of physiognomy, it throws a flood of light upon the signification, not only of mental signs in the face, but also gives us a great amount of knowledge as to the facial signs of the visceral organs, which I have discovered and localized.

I introduce the above figure in order that a general knowledge of the evolution of the mouth and lips may be had, and thus by following systematically the onward progress of these features to infancy, thence along up to the highest development possible to humanity as it now exists. From this rich and high growth I propose to show their *retroversion* or degradation to abnormal, impoverished and criminal types, such as are exhibited in the countenances of the idiotic, the feeble-minded, the miserly, the unsympathetic and otherwise defectively organized beings, and which are the result of long-continued abuse or misuse of the bodily organs and functions; and as these internal organs develop progressively as the features develop, so their degradation caused by unhygienic modes of life is registered in the face, for this is the dial or register of what is contained in the mind. Long-continued want of nourishing food produces such impoverishment of the general system as to mark its conditions upon the lips, teeth, cheeks, and gums; so, also, a bountiful supply of good, nourishing food for generations makes its effects felt both in the internal form and action of the alimentary system, and also stamps its effects upon the external contour of the body, and finally registers this condi-

tion in the shape of the mouth and lips, the external and facial features and organs of nutrition and of digestion.

In the figure spoken of there are no indications of lips. It is only later in *embryonic* life that these features are evolved, and at birth the normal infant exhibits full, red, moist lips. The infantile state being pre-eminently the age of alimentation, its facial signs would be naturally more prominent than any others; such is the case as observed in well-nourished infants.

INFANTILE LOWER LIP.

The lower lip of all normal infants is full, pouting, rosy, and moist. If well nourished and the digestion perfect, this appearance continues to the adult stage, and shows that the glandular system is normal and creating warmth, color, and adipose tissue



FIG. 160.—MARY AND SUSIE.

with which to clothe the bony framework of the child. The re-region about the mouth, especially at its corners, is full, and a soft cushion of fat appears in which several beguiling little dimples nestle cosily, and speak only of *love* and *hunger*, the two most pressing demands alike of infant and adult,—the two great forces which underlie life and in their results rule the world.

Undeveloped or immature infants present less labial development at birth, with not so much beauty of form and color as normal infants, and, when the system has become impoverished by wasting disease, there is a falling off in size and color, and the shape of the lips presents a less beautiful appearance than when in health. The distended mouth of a crying infant appears some-

what like the irregular opening of the embryonic form. In laughing, the lips and mouth form curves of beauty, proving that the latter act is normal; the former act not so much so.

Happiness and comfort are the ultimate aims of life; laughter is the normal expression of both; crying, the natural outlet for pain and suffering. The one creates strength and beauty; the other, in excess, weakness and ugliness.

The lower lip is the facial sign for the glandular system, and, as the chief office of all glands is to secrete liquid material for the upbuilding of the tissues of the body, we shall, therefore, expect that the lips of those who live mainly upon liquid foods, or who indulge greatly in soups, sauces, milk, ale, beer, lemonade, etc., would disclose this propensity. Observation of the mouth and lips of those who live mainly upon a liquid diet reveals this taste by the large size of the mouth and the development of the lips, particularly of the lower lip. Comparison of this class of mouths with those who are poor feeders and whose digestion is feeble will show us the form and color of the mouth and lips just the reverse of the former. Infants are liquid feeders, hence their mouths are relatively large and flexible. The intellect has not as yet attained sufficient power to shape it into intelligent expressions, but when the child begins to talk and think the lips and mouth assume more intelligent forms, and after the diet changes from a liquid to solid nutriment the shape of the lips, cheeks, and corners of the mouth change materially, the globose form of the infant's cheeks is changed to a more artistic curve, and the lips are not so pouting.

The lower lip has many uses besides those of mastication, tasting, and articulation. Its changes in form and color denote pathological conditions of great service to the physician in detecting and diagnosing certain diseases, such as fevers, etc. Its size and color in the healthy subject announce power in the direction of digestion, and so we come to consider the gustatory lip.

THE GUSTATORY LIP.

The sort of lower lip which detects flavors and enjoys drinking and eating is full, protrusive, red, and moist. The line of closure will be of varying form according to the character of the subject. As a rule, however, the largest eaters have the largest mouths and the fullest lips. Negroes make good cooks, and are good judges of flavors, and possess large mouths and lips. Individuals with small mouths (if the lips are full

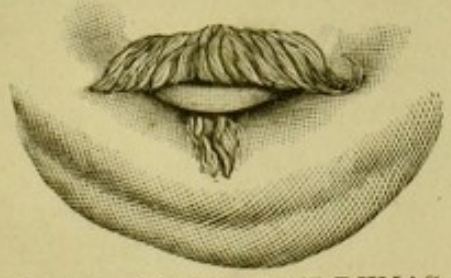


FIG. 161.—ALEXANDRE DUMAS.

and red) have considerable gustatory power and excellent digestion, as the lower lip is the facial sign for glandular action, as well as of the sentiments and feelings which flow from a well-nourished organization. We have seen formerly that an organism full of rich, warm blood and juices, and supplied with strong fibres and warm tissues, is more actively helpful, sympathetic, and sociable than one whose body is wanting in blood, color, warmth, and strength. We shall expect to find, then, that those who disclose the facial sign large for the glandular system will exhibit more sociability, more linguistic taste and capacity, hence greater desire for associating with others at meal-times and in social converse.

This combination of traits would naturally have their signs registered in the face and upon features devoted to their exercise, viz., upon the mouth and lips; hence it will now be in order to investigate the "sociable lip."

THE SOCIABLE LIP.

This lip, by its size, color, texture, and moisture, tells us of the internal alimentary condition.

A very full and red lower lip of *coarse* quality discloses a great eater and talker (if the mouth be large). If the quality or texture of the skin be fine, with this appearance, sympathy, generosity, and sociability will be present, and the language chaste and refined.

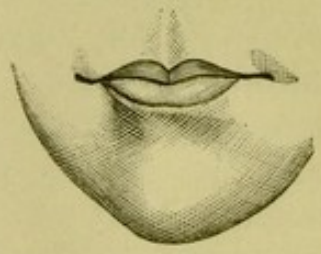


FIG. 162.
WILLIAM PITT.

There is a nice distinction to be made between sociability and friendliness. Examination of the conduct of some shows them to be of a chatty, talkative disposition, yet lacking in the active offices of friendship. This class will disclose a full lower lip, usually a well-developed upper lip, but with flat upper cheeks where the sign for Friendship is situated; while others will exhibit both sociable traits and an active, friendly spirit. The latter are characterized by both a full, rounding, red lower lip, and a full upper cheek, the signs for Language and Friendship. It is by understanding the development of the several facial signs which renders the knowledge of individual peculiarities so easy of comprehension.

THE LINGUISTIC LOWER LIP.

The lip which approaches most nearly to the normal form and size, if of fine quality and of bright, healthy color, is the best adapted to language. All great orators and actors, as well as brilliant conversationists, exhibit well-formed and well-proportioned lips of a normal color, thus showing the activity of the blood

and juices of the body. This activity gives warmth, fervor, and enthusiasm to the language, and thus the speaker is able to impress his hearers more forcibly than he who speaks in a weak, faltering, hesitating, lackadaisical manner.

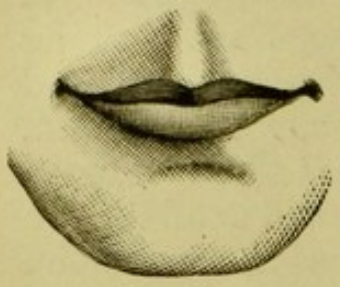


FIG. 163.
DE WITT TALMAGE.

The linguistic lip is well curved, *firm* in appearance,—that is to say, not flaccid or loose,—of a bright-red color, and the mouth relatively wide.

The linguistic lip and the sympathetic lip are somewhat similar in shape, for "out of the fullness of the heart the mouth speaketh," and a sympathetic person will be often prompted to eloquence in pleading the cause of the suffering. No one can succeed as a pleader or persuader whose lips are thin, pallid, dry, and ill-shapen; such a one will not succeed as a lawyer, minister, auctioneer, or book-canvasser.

THE WITTY LOWER LIP.

This form of lip shows a depression through the centre. It is an unfailing indication of wit and mirth.

Lips *too large* cannot enunciate clearly and concisely, hence the tones are thick and blubbering, like "Brudder Bones," of the negro minstrels. Lips which are *too thin* are too weak to produce strong tones, and so emit faint and sharp notes, which fail to command respect. A voice which is rich, full, and clear always commands the attention and respect of the listener.

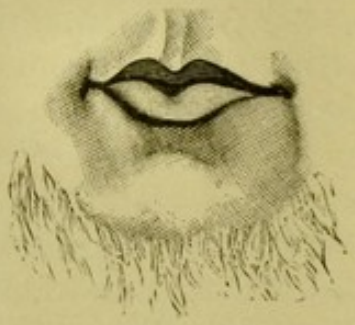


FIG. 164.—JULES FAVRE.

Good orators, actors, and singers not only exhibit full lips, but the parts adjacent to the mouth are well developed; particularly is this the case below the lower lip at its sides, where the signs for Patriotism and Love of Home are situated. The centre of the upper lip is also full at the sign for Amativeness, and these traits in their combined power yield to the speaker a rich endowment of sentimental emotion, which, when portrayed by the actor or orator, never fail to arouse the feelings of the audience to the highest and most spontaneous enthusiasm.

THE BENEVOLENT OR SYMPATHETIC LOWER LIP.

There are so many forms of the benevolent or sympathetic lip that it would be impossible to describe more than those most commonly observed. Sympathy may always be predicated where

the lower lip presents a normal fullness, normal color, and is moist, or has a fresh appearance. A lower lip which is congenitally thin, pallid, and dry betokens a want of sympathy through lack of bodily vigor and power. Let it be understood, however, that finely organized persons—those in whom the brain system is dominant—will exhibit *relatively less size of the lip*, but more *power*, by virtue of quality or fineness and keenness of organization and sensation. Many of the latter class possess far more sympathy and benevolence than a big-lipped negro, or a coarse, burly, thick-lipped gormand. The mental class show their benevolence in a mental manner by wise plans and schemes for the amelioration of large numbers of the needy, and this may be known by the general signs for the brain system.

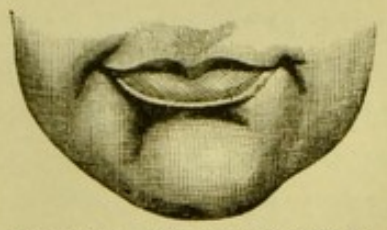


FIG. 165.—WILBERFORCE.

The general form of this lip is elliptical in its outward curve, and slightly arched from corner to corner. The reader will observe more and more as he progresses in the study of the face that arches and curves in the facial features indicate activity, health, and beauty; the lack of them relatively less health, activity, and beauty. *Exaggerations* of the normal size denote either coarseness, stupidity, or lack of activity, and consequently less beauty.

If the lower lip is exceedingly protrusive and the quality of the skin coarse, there will be less sympathy and benevolence, and more of selfishness, gluttony, and sensuality, together with a great capacity for "gab," instead of reasonable conversation.

Where the texture of the skin is fine and the lower lip *very full*, a great deal of generous feeling will be manifested. This exaggeration of the normal size is due to the action of the law of compensation. Usually where these appearances are noted we shall find a deficiency in the structure of the *chin*, which is in such cases very receding, thus indicating a want of firmness; or it may be narrow, showing lack of justice; or it may be both short and narrow, denoting absence of both these faculties. The very full under lip is *usually* associated with a small or receding chin. A normally-shaped chin needs no counterbalancing effect of undue benevolence, for a balanced justice and conscientiousness will see that whatever is due to others shall be meted out to them. Still, I have known many lovely characters who exhibited this unbalanced form of lip; they were very kind and generous, but not firm, persevering, nor severely strict in their demands for justice. Their moral conduct came from the strength of their other faculties, and from the warmth of their affections. It is in these ways that

Nature endeavors to *level up* or balance each character which is possessed of faculties which are excessively strong or excessively weak.

There are many phases of the sympathetic feeling, and it is manifested in a variety of ways. Some feel and *do* for others; some sympathize and *give* of their means; while others *talk*, plan, and *write* for the distressed, or use their influence and position to assist the needy. Another class become missionaries, and endeavor to save souls. Still another class become socialists, and strive to save bodies. Others look entirely to mental improvement, and thus this feeling fortunately shows in as many ways as there are human needs. The signs of character in combination with each individual lip will show whether sympathy, generosity, benevolence, or philanthropy will be manifested, for all these are different phases of the same faculty.

The lower lip, which presents the most normal form of sympathy, is also the best for conversation and oratory.

THE SECRETIVE LOWER LIP.

Secretiveness has its signs in both lips, as well as in the shape of the line of closure of the mouth. The signs of concealment in the lower lip are known by thinness and sometimes dryness of the red part, which is concealed from view when the mouth is closed.



FIG. 166.
A CONVICT.

Small mouths, with thin, pallid lips are extremely uncommunicative. When we reflect that the lips and mouth are used for many purposes, we can easily understand why a defectively constructed lip indicates a lack of linguistic and other capacities. The mouth and lips assist gustatory taste, singing, talking, whistling, crying, laughing, chirping, groaning, shouting, playing upon musical instruments, and often are used as a prehensile implement to grasp and hold on to objects. From this exhibit of the functions of the mouth and lips, we can estimate to a nice degree how much power and variety of movement inheres in a well-developed pair of lips, and also how much less expression in many directions one is capable of whose lips are lacking in normal development. It has been said that the oyster in one respect knows more than man—it knows when to shut up. This may be true, but it is evident that, unlike the man, it does not always know when to open its mouth, else it would not be so often devoured by its aquatic enemies, which are lying in wait for just this injudicious act on the part of the oyster.

Nature has been extremely kind to defectively organized or

unbalanced beings by bringing to bear upon their cases the law of compensation; for when we find a very uncommonly defective person,—one who is wanting either in mental, moral, or practical power,—we observe that the law of compensation steps in to his aid and shuts the mouth tightly, and such beings are very chary of opening the mouth to discuss any subject which may be under consideration in their presence, for should they, like the oyster, unguardedly open their mouth, their lack of logic, or reason, or truth, or common sense would be at once apparent; hence, the meaning of large Secretiveness is self-explanatory—*there is something to hide.*

The *form* of the secretive lower lip is various, depending upon the general corporeal development observed in each subject. Sometimes the line of closure forms an arched shape, thus: ⌒. In others it is just a simple horizontal cleft, as if cut with a knife.

The lips of secretive people are usually firm, and seem held in constraint by the force of the will. This is really true, for such persons are constantly *on guard*, and when under any powerful emotion they give way to speech they will make the most astounding disclosures, such as no well-balanced judicious mind would ever communicate.

Secretive people are very fond of knowing other people's affairs, and will listen with avidity to all that is said; sometimes even getting in close proximity to the key-hole in their greed for knowledge, and when they are seized with a *gushing impulse* they are quite as apt to reveal the affairs of others as well as their own.

Those who have cultivated Secretiveness for a number of years shut the mouth closely, and shut in all or nearly all of the red of the upper lip, and sometimes nearly all of the red of the under lip, which is revealed when the mouth is opened.

There are other facial signs of Secretiveness; these will be treated in their proper order.

THE CRIMINAL LOWER LIP.

The lower lip of congenital criminals is almost always disproportionally small and thin, or else greatly exaggerated in size. Often the two lips are unequal in size and the line of closure irregular, crooked on one side, or raised up or lowered at one corner, or by some irregular or ugly shape testify to their departure from a normal form.

In some cases the upper lip is thin and pallid, and seems drawn to the lower one as if by a cord; the sympathetic traits are absent, and the faculty of Benevolence will be wanting.

A lower lip which describes a bias form—that is, one which

rises upward at one side from the centre, while the other side remains straight or horizontal—is false, untruthful, prevaricating, and unreliable; that is to say, when it is congenital.

Criminals usually show their depravity most in the mouth and eyes. These features are mobile and flexible to such an extent that they can be greatly changed from their normal form, as we often observe in the countenances about us. Congenital crookedness of these two features argues crookedness in speech, inasmuch as these are the facial signs of Language, and both dependent upon the muscular system mainly for their power to perform movements, Now, one may be perfectly honest in regard to the payment of just dues (if his bones be straight and square he will be inclined to this principle), but if, at the same time, his eyes are crooked, one looking in one direction and the other in another direction, or his mouth awry, he will be inclined to falsify and misrepresent the truth, even when the truth would serve him better.

All *crookedness* of the muscles indicates either crookedness of the language or lack of sexual morality. The lower joint of the leg of a natural rake is often observed to be crooked, and this appearance of this limb is an unfailing indication of licentiousness or unbridled passion. The law of "Skewism" or "Sinistrality" throws out its warning signals upon various parts of the face and body. Even the crooked position of the feet, or the shoulders, if sloped too narrowly, announce the crooked or slippery nature of those thus characterized; and thus Nature, provident mother that she is, forewarns us, by these danger-signals, of the presence of immorality, and in this manner attempts to guard her children from the sin of reproducing progeny from such defective types.

The laws of Form, when applied to every part and feature of the human being, will unfold the entire character, and we shall be able by this test to know in just what manner or method a man thinks; for, says one of the greatest of artists:—

> A man generally thinks according to his formation, and not only does he think according to his formation, but he acts and works in accordance therewith.

A knowledge of the laws of Form, together with the inherent meaning of the geometric elements of Form as applied to the human face and body, will enable young people to avoid intermarriage with crooked, criminal, weak, and defectively-organized beings. It is in this manner that *scientific selection* will supplant the slower and less certain method of "natural selection," the method now pur-

sued by the law of evolution in the attempt to carry forward the race to physical, moral, and mental perfection.

A flaccid, loose, flabby lower lip is also a sign of weakness, and denotes both a lack of gustatory taste and deficient linguistic ability; if it be pale as well as flaccid, a dyspeptic or consumptive tendency may be inferred. Lavater observes of this condition, that

> A perfect agreement may be observed between the lips and the character; whether they be firm or soft and flexible, the character is always of an analogous description.*

Lips that jerk, twitch, or quiver, or that are tremulous (when they are not the effects of nervous shock) are signs of either imbecility, weak-mindedness, debauchery, or criminal tendencies. All these phenomena are the reverse of the normal condition, and when a feature is precisely opposite to what is normal it has its origin in weakness or criminality, or both.

THE UNDEVELOPED LOWER LIP.

There are many diverse forms of undevelopment of the lower lip, each of which signifies a certain sort of deficiency either in sympathy, gustatory power, or vocality.

A thin, flat, dry, pallid lower lip, with a disproportionally small mouth, signifies relative lack of digestive capacity, together with absence of the sense of flavor, taste, etc., also relatively feeble linguistic powers with small amount of sympathetic feeling. If the lower lip be thin, flat, and red, and the mouth of normal width, the gustatory capacity will be greater than in the former case, and the sympathies more active. Many misers and hermits exhibit undeveloped lips, thus showing the absence of those beautiful domestic traits the possession of which lead men and women to desire family and friendly associations. When a character shows by the impoverishment of his lips that he is deficient in benevolence or sympathy, love of home, of country, of children, and of the opposite sex, he is poor indeed, and does well to hide himself away in hut or cave. His company could benefit no one, and probably he could not be much benefited by the society of others. Such beings *instinctively* feel their deficiencies, and, like some sick



FIG. 167.—A BASHKIR. (After Lavater.)

* Lavater's Essays, p. 190.

animals, they withdraw themselves from the society of those to whom they would be only a nuisance.

There are many grades of undevelopment shown in the lower lip, and in proportion as it is lacking in size, color, form, and moisture will the character be wanting in some one or more of the traits whose signs are situated upon and about the region of the lower lip. In some, the lip is observed to be habitually dry. This peculiarity indicates a close-fisted character; one whose heart will never run away with his head.

Moisture of the lips denotes activity of the glands, which are the sustaining powers of the domestic emotions. Accidental dryness of the lower lip denotes some pathological disturbance of the glandular system; so, also, does change of color. Physicians understand the significance of labial changes and are influenced by them in their diagnosis and prognosis of various diseases.

When both lips are undeveloped, there is very little red color in the lips and the mouth seems like a mere gash, whose lipless line makes it appear like the mere opening for a receptacle for food. This form is a reversion to low animal types, and resembles the fish mouth in its line of closure. The mouths of many species of deer present this form also, and these creatures are singularly *silent*, rarely uttering a sound, except when in great pain.

The absence of the curved form in lips shows lack of power,—vocal and gustatory,—as well in animals as in man. Herbivorous animals have relatively less labial development than the carnivorous classes, whose appetites are stronger and who are more *noisy* in the demonstration of their emotions. Contrast the lips of the sheep, the goat, the horse, and deer with those of the cat, the bull-dog, the lion, and the tiger, and their facial differences will be as perceptible as are the traits whose signs are registered in the lips.

THE STUPID LOWER LIP.

Lavater gives as one sign of stupidity the projection of the under lip, which measures one-half the width of the mouth. It is also one sign of avarice.

All projections forward of the line of closure of the under lip, beyond a normal fullness, are indicative of disagreeable traits. Projections forward of the upper lip, beyond a line dropped perpendicularly by the side of the nose, although they may reveal a want of balanced character, are more favorable to character than the excessive projections of the under lip. In many cases where the entire upper lip has a forward direction, commencing at the under part of the nose, there is a positive degree of kindly generosity or

active sympathy; but this formation, and its accompanying characteristic, is the *compensation* for some defect which the observer must decipher, as the defect varies in different persons. In some it shows by a want of normal practicality; in others, absence of a large degree of the moral sense, or a lack of reasoning power, etc. The cause must be sought for in each individual case.

In reading the meanings revealed by the form of the lips, we must bear in mind the rule laid down by Lavater, that "All disproportion between the upper and lower lips is a sign of folly or wickedness." Now, Lavater did not bring science to his aid; else he would have modified this statement somewhat and softened the terms, for a man may possess a disproportioned upper lip without being either greatly wicked or extremely foolish. That he will exhibit some defective faculty and function in a greater or less degree I am certain, and this defect, together with its compensatory trait of kindly-generosity, are both revealed by this form of lip.

If the projection of the upper lip exceeds a certain degree, it is termed "prognathous," and is the certain sign of a low grade of evolution, as observed in savage tribes, the Ethiopian, for example. If the under lip assume a prognathous form, it also reveals undeveloped character. When both lips are extremely full without being prognathous, and the quality coarse, they are evidences of coarseness, gross alimentiveness, sensuality, and mental dullness, and exhibit the acme of powerful animality; but if the quality is of an average fine degree, the indications will be softened to epicureanism and great sociality, and disposition to loquacity or fluent conversation.

THE DESTRUCTIVE LOWER LIP.

A mouth whose lower lip curves downward or outward, just where the canine teeth are situated, denotes destructive and cruel tendencies. This form of lip is seen in the lower lip of cruel and ferocious carnivorous animals, notably in the lip of the lion, the tiger, the panther, and the cat. It is always associated with an unfeeling disposition, particularly if *the eyes be very light.*

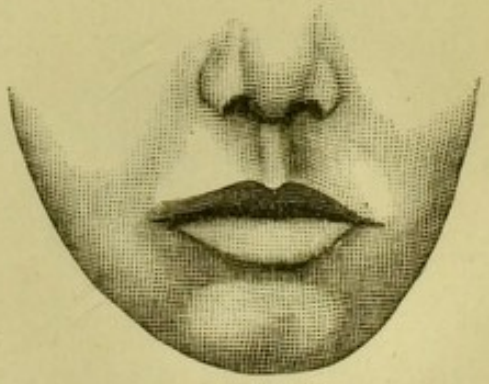


FIG. 168.

I have observed this form in several intellectual persons. In these the destructive tendency was shown by sarcasm, invective, and a disposition to combat and oppose the theories advanced by others in debate and by writings. In others it may be shown by a

tendency to destroy clothing, furniture, etc., by violent and improper use of them. This lip always shows a good degree of bright color, and the canine teeth are well set out, so as to give a sort of corner or squared look to the sides of the lower lip. The mouth of the bull-dog gives one a good idea of this peculiar formation.

The mouths of sheep, and other graminivorous animals, are just the reverse of the former. The canine teeth in these classes incline *inward*, and the jaw curves at this point, instead of squaring, as is the case with the carnivorous animals and destructive people. In conversation and in laughter this peculiarity of feature is most apparent, but is not always conspicuous when the mouth is closed.

THE UPPER LIP.

The upper jaw being a comparatively passive feature, and the lower jaw a most active and flexible one, it is evident that the lower lip would express more active passions than its fellow. The muscles which assist the lower lip in its movements enable it to do a variety of things of which the upper lip is incapable. It is true that the upper lip has a superior muscular attachment, but the lower lip, by its attachment to the more freely-moving lower jaw, possesses more mobility. It is thus able to express more active sentiments and passions, and to make more energetic movements than the upper jaw.

DIVISIONS OF THE UPPER LIP.

To facilitate the reading of the upper lip it is divided into three parts (Fig. 169). The sign for the faculty of Amativeness is situated in the centre, while the two signs for Love of Young are placed on either side of Amativeness.

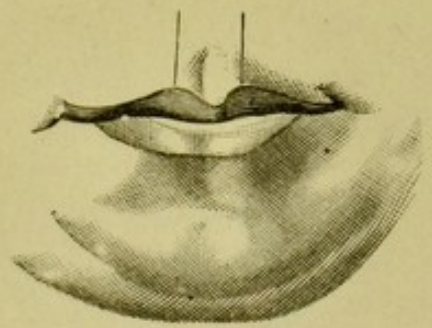


FIG. 169.

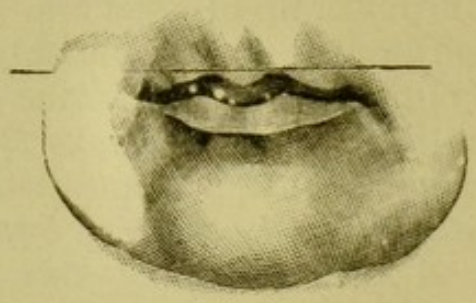


FIG. 170.

The upper lip may also be divided horizontally into two parts (Fig. 170), viz., the red-colored portion and the part which lies above the colored portion, and which reaches to the nostrils.

The colored part is sensitive, and well supplied with nerves and glandular tissue. It is also moved by a portion of the *orbicularis oris*, a muscle which is circular and extends all around the mouth.

The signs for Amativeness and Love of Young are located in the colored portion of the upper lip; Mirthfulness is indicated by the upward curve of its corners; while Self-esteem and Modesty have very decided facial signs in this feature. It is thus shown how important a factor in physiognomy is a well-developed *upper* lip.

Now if this feature be thin, pallid, and constricted in appearance, these two beautiful domestic faculties are relatively weak; not only are the sentiments of Amativeness and Love of Offspring lacking, but these deficiencies point to physical defects of the related physiological organs, viz., of the generative capacity, and of the glandular tissues connected with the function of lactation. A want of development of the features of the face always refers to and is the index of impoverished conditions of internal organs and



FIG. 171.

functions. As narrow nostrils denote small or weak lungs, so a thin, upper lip announces defective or weak conditions of the reproductive forces of the body.

The *normal position*, A, of the upper lip is perpendicular, while the convex or outward curving of the middle portion, B, is an *exaggeration* of the proper position. This last form is observed in great egotists, braggarts, and "blowhards."

All variations in the form of the white portion of the upper lip relate to Self-esteem or an absence of it—to great self-hood, self-feeling, independence, dignity, egotism, or to its opposite, excessive imitation, and a lack of dignity and independence and corresponding demand for the approval of others.

THE EMBRYONIC UPPER LIP.

In the human embryo, in its early stages, the mouth is lipless (see Fig. 150, this chapter), and the places where lips eventually evolve do not at all resemble the perfected lips of the normal human being, nor do they prefigure such development. It is only

in the latest stages of prenatal life that the lips are perfected as we find them at birth. The mouth and its accessories develop *pari passu* with the development of the visceral and other internal organs.

As the evolution of the digestive organs progresses the mouth, lips, and cheeks assume a more complete form, until at birth the physiognomy reveals by its appearance the condition of the digestive apparatus. If the lips and mouth are normal in size and shape the digestive function is also normal.

The foregoing statement teaches why undeveloped lips are the indications of undeveloped visceral organs.

An embryonic upper lip in its early stages is characterized by thinness and is destitute of color. The mouth is a mere hole, and the lips have no resemblance to human lips, nor indeed do they resemble the lips of an animal; they are expressionless and barely rudimentary. Now, the nearer the approach of adult lips to this form, the closer is the resemblance to rudimentary lips and their allied signification—undevelopment. In the lips and mouth are situated the signs for the primitive functions, viz., digestion and reproduction; hence the appearances noted in these features stand indicative of these two functions and their associated sentiments.

The upper lip tells us of the condition and development of the reproductive system; the lower lip, of the state of the glandular system; and *both together* announce the degree of amative sentiment and sympathetic feeling to be found in the character.

We kiss with *love* and *kindness*, for the placing of the two lips against those of the beloved object is a spontaneous act of affection, the natural language of both passion and sympathy; for kisses, by their spontaneity and warmth, indicate sexual or benevolent feeling, and these feelings depend for their expression upon the *strength* of the organs, to which they are physiologically related.

When one is excited by emotions of sympathy or amativeness it never occurs to one to pat the head of the beloved object with the hand; the kiss upon the lips is the true language of *love*, and although caressing is also one expression of love it is a secondary sign and subordinate to the kiss upon the lips.

THE UNDEVELOPED UPPER LIP.

Those upper lips which are thin, flat, and white down to the line of closure of the mouth are to a certain degree undeveloped. Such mouths betoken a great deficiency of Amativeness and Love of Young; hence a lack of procreative energy and sympathy for children, and in this case the individual will fail to care for or

attract either the opposite sex or children. It is true, if the subject possess an agreeable disposition and fine mental gifts, he or she may attract those who value these qualities above mere physical graces, but at the same time he will never be as popular with the majority of the opposite sex as a more magnetic person. The fact is, that each mental faculty has a physical base from which it derives support, and from the large development of which it is able to give out an aura or force quite perceptible to those who come under its influence.



FIG. 172.
AN IMBECILE.

There is no faculty of the human mind that exerts a more powerful influence upon others than Amativeness; no faculty which gives out a stronger magnetism; none that are both more attractive and more repulsive. Now, as the procreative function is the base of creative talent we will not find with the undeveloped upper lip much originality unless the brain system is large and of fine quality and of a suitable form for mental efforts. In this case it will take a philosophic turn and not a mechanical or artistic one, for these professions require a plentiful supply of muscle, and a thin, defective upper lip discloses a defect of muscular and glandular tissues.

Where the upper lip is very thin and colorless, and the mouth small, the structure of the reproductive system is always faulty and wanting in power. Females with such a lip and mouth are poorly adapted to wifehood or maternity; while men with such a formation of the mouth and lip will scarcely make a devoted, enthusiastic, marital companion.

THE PHILOPROGENITIVE UPPER LIP.

This long and awkward word is meant to express "love of young," and as we have no better word in our language to express this sentiment in a single word I am obliged to use it. The upper lip which reveals a fine degree of this lovely domestic trait is known by the downward droop at either side of the centre of the lip. It adjoins the sign for Amativeness and lies next to Mirthfulness, its natural and necessary associate.

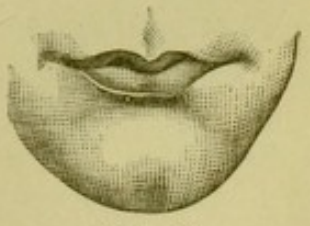


FIG. 173.

There are many degrees of its manifestation, some lips exhibiting delicacy of development; others disclose an upper lip resembling the lip of the St. Bernard dog, the mastiff, and retriever. These all have the outer corners of the upper lip *overlapping* the lower one and shaped like a little scallop. This exaggerated form is indicative of *physical* love of offspring, and is shown by a desire

to have many children, and those thus characterized are particularly fond of them in infancy and regret to see them grow out of that stage.

The normal development of this sign in the upper lip (or even its exaggerated sign) is a mark of beauty and assists in forming that lovely curve of the line of closure of the mouth known as "Cupid's bow." This line is composed of three perfect curves, and is observed in the mouths of all who have a fine development of Amativeness, Love of Young, and Mirthfulness. Examine, for example, the mouths of Goethe, Mozart, David Hume, Edmund Burke, D'Alembert, Molière, Claude Lorraine, Cromwell, Addison, Benjamin Franklin, Sarah Siddons, William Pitt, Baron Cuvier, and Henry Ward Beecher. In all of these the signs for Amativeness, Love of Young, and Mirthfulness are quite marked; that of Benjamin Franklin is particularly decided in the sign for Love of Young. This last trait was so great in him as to lead him to make a companion of his illegitimate son, for it was he who assisted him in his kite-flying expeditions when he "brought the lightning down from heaven." A rare instance of parental love for a *man* to exhibit, and certainly very commendable in him to care for his natural child.

Mouths deficient in the sign for Love of Children are straight, instead of drooping, and pale and dry at the sides instead of being moist and red.

THE MODEST UPPER LIP.

Modesty, like all faculties, has several facial signs. Persons possessed of high or fine quality exhibit some phase of this self-protective trait. Its principal facial sign is found in the depth of the groove or channel which runs down the upper lip and seems to divide this feature in two parts. Another sign of Modesty is found in the fineness of the texture of the skin—in its purity and clearness. The analysis of this last sign is that the finer the skin, the more sensitive the person; and sensitiveness of the nervous system leads one to purity of thought as well as to cleanliness of body.

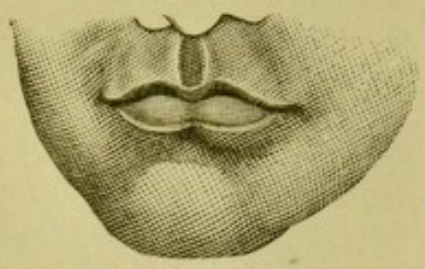


FIG. 174.
SIR WALTER SCOTT.

The location of the first-mentioned sign for Modesty is noteworthy. It divides Self-esteem and runs down into Amativeness. In the first instance it tends to check egotism, and in the second place puts a guard upon Amativeness, which, unbridled, would lead to impure language and gross conduct. The grouping of the

signs in the face of related faculties is not the least wonderful of the facts of physiognomical science.

THE IMITATIVE UPPER LIP.

A relatively short upper lip with an inward curve is an unfailing indication of the presence of some phase of imitative ability. Nature always tends to assist or compensate every character for its defects. Now, a *very short* upper lip is a departure from *proportion*, hence is not normal or balanced. The compensation which restores the equilibrium is in giving to the character a certain degree of imitative ability, or, in some cases, *talent*, by which the individual is able to attract and hold the affections and interests of others. Many, if not most, actors, actresses, musicians, and some poets exhibit this form of upper lip. Shortness of the lip alone is not evidence of imitative *talent;* this latter quality depends upon the possession of fine quality of the brain and nervous system.



FIG. 175.—MIRTHFUL MAY.

There are many grades of each faculty, and one with a short upper lip of *coarse quality* would not, of course, display the same degree of imitative talent that one would who possessed a high quality and a suitable brain. A short upper lip denotes relative lack of Self-esteem. Nature always compensates by bestowing a large share of Approbativeness; hence, we shall find that those with this peculiarity of feature display more temper and are possessed of less dignity, independence, and self-control than those with a longer upper lip. As a rule, they are more entertaining and amusing through the power of their imitative ability. They can play, act, sing, recite, and relate stories in a very attractive manner. Their Approbation leads them to make great efforts to gain applause, and this is to them highly gratifying.

This course is just the opposite of that pursued by those with large Self-esteem. The latter desire the approval of their *own* judgment; the former seek the approval of others, and herein lies their satisfaction and reward.

There are several peculiarities of form observed in the short upper lip which are not common to the long upper lip. In many subjects a slight outward curving of the lower part of the lip is seen; in some others this outward curving is very marked, and the curvation is so decided as to prevent the closing of the lips, the upper always projecting slightly beyond the lower one. I regard all these departures from the normal perpendicularity of the upper lip as indicative of defects,—as tokens of *slight* prognathism, yet

not so decided as to indicate savage or barbarous conditions of mind. Still, persons thus characterized will be uneven and fitful in temper,—now calm, and again exhibiting a sudden and violent outburst of anger, or they may exhibit violent love or other emotion. It always relates to an unbalanced state of the emotions, and absence of equilibrium is, in a certain degree, undevelopment. In coarse persons these peculiarities of the upper lip denote animality in many ways. In some it is related to gross amativeness; in others, selfishness; in other cases, terrible outbursts of passion, accompanied with unjust and unmerited suspicions and accusations, are the proofs of a lack of self-control and self-esteem. Observation of all the other features in each individual case will decide which of these several defects is the exciting cause.

Where the upper lip is relatively short the muscular will be one of the dominant systems, and this system is the one best adapted to art and imitation, as well as to passion and emotion. The long upper lip is always the sign of the dominance of the bony system, for the lip in a balanced character marks the length of the *bony structure* of the *upper jaw;* this is longer where the osseous is one of the dominating systems. Bone gives length; muscle shortens and rounds those features in which it is the principal tissue.

In almost all of the typical faces of the ancient Greeks we find all of the signs of the dominance of the muscular system, or of the combination of the brain and muscular systems; and, as they were an art-loving race, we shall find that these physiognomies have all the signs of muscular supremacy, the most conspicuous features of which are the short upper lip and the curving or "dramatic" jaw. It is in the peculiarities of these two features alone that we can prove the dominance of muscle and the possession of the imitative faculty. We do not imitate with our *bones* any more than we love or hate with our bones. Emotions of all sorts are the offspring of soft and variable tissues, and muscle and glands are the best adapted to the exercise of variable, shifting moods. Bone alone is competent to display the more solid and enduring traits.

THE SECRETIVE UPPER LIP.

The form which this peculiar feature assumes is in harmony with its purpose and interests. It is often pointed downward in the centre, and seems as if trying to overlap or close entirely the cleft of the mouth. In some countenances the whole red part of the upper lip is hidden from view when the mouth is shut, and forms with the lower lip only a horizontal cut or cleft. Some very secretive people expose a certain degree of the colored portion of

the upper lip. This is where Amativeness is well defined. Yet it may be mentioned, in passing, that extremely secretive characters rarely possess a large degree of Amativeness; neither do they possess a very large emotional nature of any sort, and what little emotion is present in them is constantly suppressed or held in check, and thus depreciates through want of exercise.



FIG. 176.
ROBESPIERRE.
(THE SECRETIVE UPPER LIP.)

The secretive mouth should not be confounded with the meditative mouth. The profound thinker talks more than the secretive one, but, when he does speak, wisdom, good sense, and truth accompany his utterances. It is true, he does not show as great loquacity as the linguistic individual, yet can talk to the purpose and intelligently when he does converse. The upper lip of the most silent animals is similar in form to the secretive upper lip in the human family. The mouths of the several deer tribes, the giraffe, and some others are of this formation, and their upper lip projects slightly beyond the under lip.

THE SELF-ESTIMATIVE UPPER LIP.

Self-esteem is known by relative length of the entire upper lip, from the nostrils to the line of closure of the mouth. Disproportionately short upper lips denote a want of Self-esteem, but always betoken a large share of Approbativeness and imitative ability of some sort. Exaggerated length of the upper lip gives to the character egotism and extravagant ideas of one's importance, and lends a ludicrous dignity to the character which is apt to unduly magnify its powers and importance.

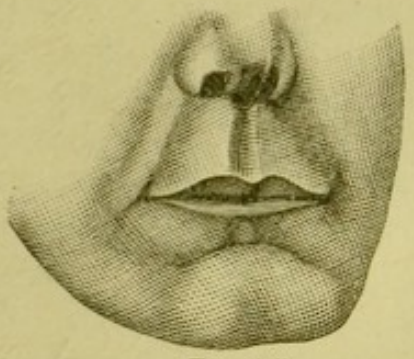


FIG. 177.

A normal share of Self-esteem is a fine possession, for it shows that the character is independent, self-respecting, dignified, and quite opposed to lowness, meanness, vulgarity, and quite capable of holding the feelings under control.

One with large Self-esteem may or may not have the sign for Firmness large, yet some physiognomists have made the mistake of placing the sign for Firmness in the length of the upper lip. It is true that long-continued persistency in any direction, whether in thought or in manual labor which requires great perseverance, will make its impress upon the upper lip. It tends to close the mouth firmly and gives a slight fullness to the central portion of the upper

lip; but these are *secondary* signs, and are the result of the *firm set* of the lower jaw-bone which always characterizes those with bony chins, who have been very persevering.

To keep a "stiff upper lip" is an oft-repeated caution to those who might be capable of breaking down from the position assumed. The complexity of the muscles about the mouth, lips, and jaws renders it impossible for any of the features to act with or impress their movements upon one set of muscles alone; hence, the co-operation of the muscles of the upper lip with those of the lower lip and lower jaw affects the expression of all these features in varying degrees, and thus stamps the result of their action upon *all* the features in close proximity.

The locality of the sign for Self-esteem can be proven by observation of those who exhibit a long upper lip, and that of Firmness can be also known by comparison of the behavior of those with a long chin with those who exhibit a short or receding chin.

Self-esteem is a force which is a sort of will-power, inasmuch as it holds the individual to a certain consistent course of conduct, and this is of itself *persistent*, a secondary sort of firmness, and often mistaken for it by those unaccustomed to analyze closely the components of human character.

Nearly all of the traits have several phases of action, and these must be comprehended by those who would give accurate delineations of character.

For good examples of a normal or balanced degree of Self-esteem, examine the portraits of Thomas Jefferson, Charles Bradlaw, von Bulow, Horatio Seymour, Sir Rowland Hill, Hon. William M. Evarts, Lord Brougham, Zachary Taylor, Franklin Pierce, General Domingues, Dom Pedro of Brazil, Lord Randolph Churchill, Hon. John Marshall, Fletcher Harper, and the Duchess of Marlborough.

THE AMATIVE UPPER LIP.

If the centre of the upper lip present an unusual degree of fullness, redness, and moisture, the sentiment of Amativeness is excessive. Where there is a good brain system in combination with this indication we may expect to find creative talent of some sort; either a talent for acting or painting, for poetry, or for some other form of art. An *excessive* development of the centre of the upper lip is to be found in the face of Ellen Terry, Nat Goodwin, Madame Modjeska, Oscar Wilde, Bernhardt, Annie Louise Carey, Eugènie, Pappenheim, Lucca, Albani, Trebelli; quite full in Mrs. A. D. T. Whitney, Elizabeth Stuart Phelps, T. B. Aldrich, Charles Egbert Craddock, and in the upper lip of the eminent painters

Raphael, Vandyck, and thousands of others well known to fame as original *creative* minds. All these have an excellent brain in combination.

If the centre of the upper lip is excessively full and moist, the red portion seems loose and showing horizontal wrinkles, the inner side turns outward in laughing, and the *animal phase* of sex-love is dominant. This peculiarity is observed in the faces of coarse, low characters. It is not accompanied by any large development of the brain system, but may co-exist with a large development of the muscles, and is hence found among horse-jockeys, low comic actors and singers, and other specimens of low-class, *imitative characters*. Imitation, it may be remarked, is a degree lower than creation.



FIG. 178.
HENRY WARD BEECHER.
(AMATIVE UPPER LIP.)

Where the upper lip exhibits an excessive development of the red portion and there is a corresponding lack of intellect or moral power, it becomes by this unbalanced condition a *criminal feature*, and those thus characterized pursue a licentious career and are among those who commit assaults upon helpless women and children, and who are guilty of sins against chastity and decency. They really constitute a *morbid variety* in this direction. The faces of many professional criminals disclose great disproportion between the size of the upper and lower lips, indicating small benevolence or sympathy and inordinate amativeness of the criminal type.

There are many grades of power of this faculty, ranging all the way from undevelopment to talent and genius. The grade of *quality* of the subject should always be taken into account in summing up the character; also the amount and quality of the brain system. It is by the faculties in *combination* with Amativeness that we decide as to its method of action and its power of control,—whether it be normal in action, or exaggerated to an immoral degree.

THE NORMAL UPPER LIP.

In all well-balanced characters the colored portion of the centre of the upper lip will be of a decided red or pink color, moderately full, moist, and firm, and in finely-organized subjects the texture of the skin will be very fine. These appearances indicate a *normal* degree of Amativeness and a normal development of the reproductive system, as well as a balanced degree of Love of Young. The form which a normal

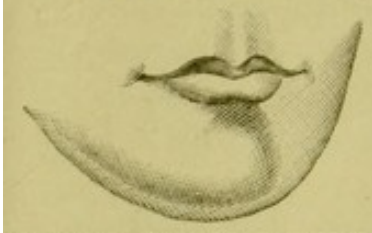


FIG. 179.—NORMAL UPPER LIP.

sign for Amativeness assumes is a slight *curve* on the upper edge of the red portion of the lip and a rounding curve outwardly.

An upper lip to be normal must in length present harmony of proportion; neither too long nor too short; neither too thick nor too thin at the sign for Amativeness. In short, it must present a well-balanced form and size, such as would appear harmonious to those having a good share of the faculty of Proportion. In a small, narrow face the width would, of course, be less than in a large, broad face,—in accordance with the laws of Proportion.

THE MIRTHFUL UPPER LIP.

The signs for Mirthfulness in the human face are so numerous that one may find them in every feature in the face except in the nose. This organ being pre-eminently the indicator of thought, we shall fail to find the signs for any of the softer emotions in its *outlines*. The nostrils, it is true, co-operate in the emotions of surprise, rage, revenge, jealousy, and also in mirthfulness to a degree, but are not particularly disturbed by laughter, for the reason that this act opens the mouth, whereas all of the other emotions, except surprise, close the mouth, and thus doubly expand the nostrils.

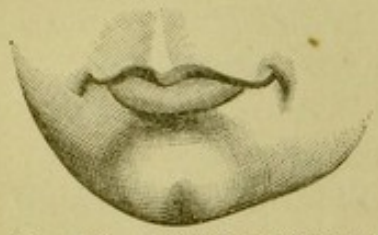


FIG. 180.—COUNT CAVOUR.

Mirthfulness in the upper lip is shown by an upward curving, adjoining and externally to the sign for Love of Young. It is properly the aid and ready assistant to that trait, and these two faculties are always seen in combination. When one is large, the other is always well defined.

The sign for Mirthfulness in the upper lip sets a sign of beauty in the face. It also assists in giving an arch and piquant expression to the mouth in conversation and in laughter, and helps to form the third curve of the upper lip. The upper lip of the most noted comic actors and actresses disclose this sign and its accompanying expression, which expression is assisted by the signs of Mirthfulness in the eyes and other features, and all combined add a charm to the comicalities of such actresses as Lotta, Mrs. John Wood, Croizette, Aimèè, Coquelin, and Nell Gwynne.

It is also well marked in humorous writers. Observe the portraits of Hume, Voltaire, Madame de Staël, Oliver Wendell Holmes, Lucy Larcom, T. B. Aldrich, Phœbe Cary, S. S. Cox, Bret Harte, Col. Robert G. Ingersoll.

Among artists it is large,—Hogarth; "Cham," the celebrated French caricaturist, and Thomas Nast. Observe, also, the physiognomies of Charles James Fox, Henry Ward Beecher, and Daniel

Dougherty (orators), who are celebrated for humorous, witty language.

Short upper lips are more mirthful than long ones, for a short upper lip pre-supposes an imitative character instead of a sedately individualized one, such as large Self-esteem creates. Most especially is the short lip indicative of Mirthfulness if the lip shows signs of Love of Young and the cheeks indicate large Approbativeness, as is usually the case with deficient Self-esteem.

All of the *imitative* classes of artists, actors, and many writers of humorous and witty works, exhibit a short upper lip somewhat curved in the centre.

The Voice.

The elements, features, and factors concerned in the production of the human voice and language are shown externally by the mouth, lips, nose, frontal sinus, cheeks, throat, chest, and abdomen. Internally the organs of speech are the diaphragm, the lungs, the larynx, the pharynx, the tongue, the soft palate or roof of the mouth, the nostrils, the frontal sinus, the walls of the cheeks, the teeth, and lips.

The voice is related to the ear, and this feature indicates, by its shape, size, and quality, the capacity of the voice, and also reveals the *personal* capacities of each individual in regard to his ability for speaking or singing. A full description of the ear will be given later in this chapter.

Further analysis of the active voice is had in the analysis of the faculties of "Music" and "Language" in the preceding chapter.

Knowledge of human character is derived mainly from three sources. The most important sources from whence we derive this knowledge are the face, the hand, and the voice; these three parts of the organism epitomize the entire personality, each in a different manner and in varying grades. The hand tells of some things which the face does not; it also *corroborates* what is seen in the countenance. The voice gives us a clue to character which the secretive individual thinks he hides.

The *intensity* of *emotion* is best expressed by the voice; the *power* of *action* by the hand. The capacity for thought is shown by the face, but principally in the outlines of the nose and forehead. Thus, each of these features must be examined in order to render a just delineation of character. There are other aids to the comprehension of character not so directly decisive as those above named, yet very useful as corroborative of other indications. Among these may be mentioned the *movement* in walking, the

gestures, the habitual attitude, the set or position of the shoulders, the position of the feet, also the hand-writing and hand-shaking. Some of these indications are shown by forms concreted, as in the outlines of the shoulders, nose, and forehead; or they are modes of motion, and arise from the movements of features; concrete forms translated into abstract forms; thus revealing characteristics by motion. One law of form shows us that the motion made by a body through space will bear direct relation to the form of the body thus moved; hence the movement of an upright and square man in walking are just the opposite to that of an angular or of a sneakish person.

Every movement whatsoever is indicative of the character, and can be comprehended by applying to it the basic laws of *form*.

The voice being a mode of motion will now be analyzed. It is as *vital* a *motion* as are the movements of the hands or body, and gives expression to the *interior states of mind and emotions* through its relations to the muscular system, and to the sympathetic or ganglionic and nervous mechanism.

Although the voice cannot be termed a "feature" in the sense that other physiognomic features are spoken of, yet as the mouth, lips, nose, and cheeks are all concerned in the production of vocality, and as the voice is one of the most important factors in the exposition of character, both mental and physiological, and as sound produces abstract forms, it would be a serious omission were I to ignore this most important department of human nature.

The hand has been aptly termed the "second face." The voice might, with equal justice, be termed the second person or the "double" of the material individual; for its tones, like the gestures of the hand, express almost every faculty of the mind. Were people sufficiently observant, and were the auditory apparatus of the majority of the civilized human family of *normal* power and *construction*, there would be no hindrance to the comprehension by the masses of *all the fine gradations* of character which are expressed by the tones of the voice alone.

Civilization produces so many disorders and imperfections of the vocal and auditory apparatus as to make perfect vocality quite as rare as perfect hearing or perfect sight; yet the average intelligence is probably equal to the grade of development of the sense-organs and mental powers as now developed.

The voice reveals the *dominant* system or systems of the organism, and thus the observer can learn by the first sounds emitted to which class of mind the speaker belongs, and thus he can assign to each his own class of *form*. It unfolds also the inherited degree of intelligence, as well as the acquired or cultivated condi-

ion. By it one can learn the grade of *temper*, whether mild, amiable, cold, indifferent, sharp, high-strung, spiteful, revengeful, malicious, slow, or stupid. It also announces *sexual states*, and tells with certainty which part of the body *one lives the most in*, for the glutton has an entirely different voice from the sensualist, and both differ from the loving and affectionate voice of purity and moderation. Independence and servility, clearness of mind and confusion of ideas, nobility and lowness, energy and dullness, force and feebleness, courage and timidity, with all the varying degrees of each of these traits, are surely indicated by the voice. It needs only *close observation* and *keen comparison* to grade and classify each one of these several types.

Lavater, the greatest of physiognomical observers, was so profoundly impressed with this idea that he tells us that

> If the student have a good ear he will certainly acquire the knowledge of temperament, character, and what class the forehead belongs to, by the voice.

This observation is scientifically correct, for sound and form stand in the most intimate and direct relation to each other.

I have shown in the description of the faculties of "Language" and "Music," Chapter II, the essential forms and shapes of the mouth, nose, and face, for the production of musical, conversational, and oratorical tones, but in order to go into the analysis of tone as a revelator of *individual character* the *forms of the body* must in a measure be understood, for the bodily shape has much to do with the *quality* of tone and vocality, aside from the construction of the vocal cords, larynx, soft palate, mouth, cheeks, etc.

An individual in whom the thoracic system is dominant speaks with a clear, sonorous tone, and uses the expulsory muscles of the diaphragm in emitting sounds. Now, this tone is always accompanied by a *receding forehead*, for the dominance of the thorax creates sharply-defined outlines and causes the forehead to recede. There are other causes more occult and abstruse than this, but I have no space here to go into this department of physiognomy. Such is the fact, however, as shown by all those whose foreheads recede, provided they have a normal degree of health when the observation is made.

The voices of those in whom the vegetative system is dominant speak in a peculiar throaty, thick tone, unless under the influence of anger, when they assume a shrill, senseless sort of sound; thus this voice tells us what sort of character we have to deal with. Even in the dark this voice would inform the listener who had studied this work that the forehead of this person was

low, circular in outline, and inclined to the perpendicular in profile, and that he possessed all the traits and peculiarities belonging to the vegetative individual.

The voices of those in whom the muscular system dominates are of two general kinds: those with round muscles speak in a rich, sonorous tone, and convey to us the form given in the description of this system; those with the flat muscles develop a finer, softer tone, with less roundness, richness, and power. Where the muscular system is dominant, the forehead will be perpendicular in profile; whether it be square or round depends upon the sort of bone in combination. Where the brain system dominates, the voice is apt to be weak, yet decided, somewhat sharp, clear, and not energetic, except under excitement, when it becomes sharp and shrill.

As a rule, the clearer the voice, the clearer the mind; the sweeter the voice, the more affectionate its possessor. Sensitiveness is indicated by the voice, and exhibited by a rather mild and slow way of speaking. Some voices are "too sweet to be wholesome;" such voices are proofs of insincerity, deceit, or secretiveness. One of the most belligerent women I ever met had assumed a tone which was ludicrous in its *softened affectation;* her entire body and head as well were of the most pronounced bull-dog, fighting build. The most casual observer would have known that her voice and face did not correspond.

Rough, *harsh* voices denote strong, harsh characters. Affected speech reveals the sly, shallow, or conceited character. Indeed, all affectations are assumed to cover defects.

Rich, *full*, and *rounded* voices tell us that some form of art-talent is present, and that the social gifts are well developed.

Lisping tones betray a want of good balanced judgment. Such tones are *infantile* in their nature, and if found beyond the age of childhood are to be placed in the category of relatively enfeebled mentality or morality. Lisping in an adult is usually accompanied with untruthfulness or weak judgment.

My experience of inherited imperfections of the organs of speech leads me to the conclusion that they are indicative of mental or moral defects. Tongue-tied, lisping, stammering, hesitating speech certainly denotes enfeebled intellect or deficient moral power. In some instances, hesitation and unconscious repetition is exhibited by those who have received *nervous shocks*, and also by those *enfeebled by age*, and these cases are proof positive of the above assertion, for these classes have become *enfeebled by age and accident*. Where these same defects are *congenital* the accompanying mental or moral defect will be apparent upon examination of the physiognomy.

It is a law of evolution, as well as of physiognomy, that when undeveloped, immature, or infantile features or indications are exhibited in the adult, the trait or faculty which is represented by such defective feature or function is in an undeveloped or infantoid state. No law can be sounder than this. No phenomena easier to demonstrate. The chief obstacle toward a recognition of the association of mental faculty with physical function is found in the existent belief in the minds of the majority that mind and body are two separate entities; whereas, all research proves that they are a *unity*, and a very close and complex one, too,—so close and intimate that no one can tell where mind ends and the physical begins. If we are to ever realize the fact that form is the outward expression of interior states and shapes, we must certainly believe that congenitally-deformed or imperfect conditions of the mental mechanism which is associated with it, and of which it is the exponent, are revealed by departures from the normal standard of form.

The voice is mainly exercised by the aid of the muscular, fibroid, and cartilaginous system, hence belongs to the motive system. The tongue is one of the chief organs of speech, and therefore part of the motive or muscular apparatus. The lips are instrumental in the production of tone. The *line* of the mouth is another great factor, and this is formed and shaped by the *orbicularis oris*, a circular *muscle* which extends around the mouth. The roof of the mouth, or soft palate, is an effective accessory to volume and clearness. It is partly cartilaginous and partly osseous. It is *arched*, and the higher and broader the arch the better is it adapted to produce sonorous tones. One of the chief differences between the mouth of the ape and orang-outang and that of man is found in the formation of the roof of the mouth. This peculiarity of structure has been noted by many observers, and the learned Dr. Cross writes of this appearance thus:—

> It is in virtue of this hollow in the roof of the mouth that man can mold off his thought into words, and it is from want of a sufficient hollow in the roof of the mouth that the ruder part of mankind and many idiots have deficient articulation. The inability of the orang-outang to speak does not arise from laryngeal defect, for he can drive the voice through the mouth, but from want of a sufficient *concavity* in the roof of the mouth, and from want of a sufficient brain. Thus, Nature did not endow her creatures with speech until they had acquired brains to think and coolness to arrange their thoughts. The more deep, ample, and regular this concavity, so that the tongue may have freedom to perform its innumerable and quick evolutions, the more distinct must be the speech, and the more cool, steady, and persevering must be the animal appetites.*

* An Attempt to Establish Physiognomy on Scientific Principles, J. Cross, M.D., pp. 190, 191.

This quotation is pregnant with meaning, and shows that intellect and oral capacity stand in direct relationship with each other, and in this scientific truth we have the foundation for the claim I make that all congenital imperfections or defects of the mouth and lips are *indicative of defective or enfeebled mentality or morality*, and also that the basic laws of Form, when applied to the external forms of the mouth, lips, and cheeks, are indisputable indications of mental, moral, and physiological powers and weaknesses, according to the appearances observed. The various defects in speech, such as lisping, hesitancy, tongue-tied, or thickness of expression, as if the mouth were full of saliva, are indications of defects and peculiarities which must certainly be associated with an intellect which partakes of these conditions, and that is, in correspondence and harmony with them.

An eminent teacher of elocution, Prof. Alfred McLeod, who has exceptional opportunities for observing impediments in the speech of large numbers of children, has given us some most instructive ideas and statistics in regard to the imperfect articulation of school-children; his observations have led him to see the connection between mental deficiencies and defective speech. He observes:—

> When we come to consider the number of positions and motions of the vocal apparatus required in speech, and the exquisite delicacy of these operations, we cease to wonder at the prevalence of defective utterance. But when we learn how *dependent speech is on mental processes*, on mental associations and on volition, one rather wonders that impediments and defects are not more common.*

Among the impediments to perfect articulation, he cites the following:—

> Defective hearing, or inability to "catch" the sound of certain letters.

This defect is like that of color-blindness, where the subject is unable to distinguish more than two or three colors. Beyond these he can make no distinction. Many persons omit or drop certain letters and parts of words through inability of the hearing apparatus to perceive them. Others have the same habit through carelessness. Other impediments of speech arise from malformation, among which Professor McLeod mentions the following: "Cleft palate, high palate, palate resting upon the tongue, hare-lip, teeth resting upon the tongue, double row of teeth in one jaw, enlarged tonsils, tumor on the base of the tongue, stammering, hesitation, repetition;" to which he might have added lisping and

* The Voice, Alfred McLeod. Aberdeen, January, 1888.

tongue-tied articulation. This observer adds the highly-interesting information that the different percentage between the sexes is very great; the percentage of defective articulation of boys is 4.21, as compared to 1.17 in girls! This wide discrepancy of the relative power of the two sexes in regard to the perfection or development of the sense of hearing and speaking is matched by the statistical knowledge which we have in regard to the relative ability of the two sexes to distinguish colors. The discrepancy existing between the male and female sexes is in this department very much greater and almost beyond belief. I have given the estimates in the part devoted to "Color," and, taken in this connection, it would be interesting to learn the reason *why* the sense organs of the male should be so *much less developed and less perfect congenitally* than the same faculties and sense organs in the female sex.

To follow out this line of investigation and seek the results of the numerous observers in every field of research relating to the human faculties would fill a large volume; hence I have only space here to call attention to the fact that, however interesting all such information may be to the student of physiognomy, it must be sought for in the reports and statistical tables of teachers in the several schools, asylums, homes, etc., for the treatment of defectively-organized children and adults.

Another most important field of inquiry is the construction and evolution of Language taken in connection with the evolution of the voice. Max Müller, Prof. William Whitney, and other philologists have written many important works upon these subjects; but here again want of space forbids my pursuing these channels, although they are properly a part of the physiognomical history of man. It is sufficient to say that the voice, as well as the language, of races has developed and perfected in the proportion as their physiology and anatomy have developed and perfected. And this explains much in regard to the congenital defects of the voice and of language which afflict such large numbers of children. In many cases it is a real *atavism* or reversion to the condition of the vocal organs which are observed in those undeveloped races that have not yet arisen to the high grade attained by the most perfected human races. In some instances, as in hare-lip and split-lip, the imperfection arises from incompleteness of the formative process in prenatal life. The junction of the two edges of the upper lip which should have united at the centre remains open until after birth, when a slight surgical operation is required to effect a closure, and this condition creates a more or less defective articulation. The so-called "wolf's jaw" is caused by failure of the upper-jaw processes to adhere in

the middle line, in the early stages of fœtal life. This defect of structure leaves "an open passage from the mouth cavity directly into the nasal cavity" (Haeckel). Who can doubt that such serious defects of structure in so important an organ, or rather in two organs, the mouth and nose, should produce corresponding imperfections of the intellect or of moral sense? The fact that this form of imperfection involves the speaking apparatus, and lies near the brain, and makes its impress upon the face should be a signal proof to physiognomists of their effects upon the mental and moral status. I have reason to believe that congenital defects of the hand and feet are correlated with peculiarities of the temper or mental and moral states, but in a relatively less degree than where cerebral organs or facial features are involved. Byron was club-footed, caused, it is said, by his mother's almost insane bursts of anger during his prenatal life. In this connection, speaking of the moral sense, Emerson remarks that "veracity derives from instinct and marks superiority in organization."*

If mind were a separate entity, then the acts of the body would not affect mental conditions, but as physiognomy teaches that the mind and body are a unity, intermingled and interblended in the most complex and subtle manner, so it is apparent that all bodily states affect the mental and moral powers, and *vice versâ*, all mental states affect the bodily organs; hence it is that any facial appearance which is congenitally abnormal or defective points to abnormal or imperfect conditions of the particular faculty of which that imperfect feature is representative. The organs of speech are indicative of both mental and moral powers, and these must therefore be enfeebled by defects of any part of the organs of voice, speech, and articulation.

Every slight peculiarity of speech betrays some individual characteristic of the reflective faculty. *Excessive softness* betokens hypocrisy and is the natural companion of a too-smooth face.

Very harsh voices belong to the rude and unfeeling. In this connection I may mention that I have observed a peculiarly harsh or coarse voice in those who were refined and intelligent, but who were foredoomed to bronchitis or consumption. In these cases a peculiar construction of the lungs and larynx produces the voice which I term the "consumptive voice." I have noticed this in the voices of those who were apparently in normal health, yet who did not have any other symptom of their coming doom, and this was unknown to them. The voice was inherited along with the peculiar construction of lungs and larynx which produced it.

As voices cannot be described accurately by the pen, it is

* English Traits, R. W. Emerson, p. 120.

impossible to give the reader an exact understanding of these differences. Now, if it is possible to read one trait of character in one instance by one peculiarity of the voice, it is logical to infer that all mental states and grades can be also thus read by the tones of the voices.

Many eminent observers have remarked the signification of tones. The following is to the point:—

> Words reveal the intellectual state. So we have the incisive and compact utterance of the clear thinker in contrast to the intellectual status of the wordy bankrupt. Voice reveals the sensitive state. None fail to appreciate the clear, honest voice of health and refinement, the mincing fop, the muddy vocality of vice. Inflections reveal the moral state. The positive inflection of the man of *conviction*, the circumflex of a double dealer, the mechanical and nasal *whine* of the hypocrite are interpreted by all.*

It is indisputable that all are spontaneously and unconsciously influenced by the tone, pitch, and quality of the voices of those with whom they enter into conversation, and they as unconsciously act upon the knowledge which those voices reveal to them of the mentality and general character of those with whom they converse. Some voices soothe, while others irritate; others still fairly *exasperate* one. Let a person with a rich voice, full of sympathy and intelligence, approach a company, and as soon as the *tones* of that voice are heard all are at once attentive, because its intonations announce the *power* of the individual to whom it belongs, and this intelligence is conveyed to the listeners in the most instantaneous and subtle manner, although the speaker may have as yet only uttered the commonplaces of salutation. Such voices *command* attention and respect wherever heard. Now, if intelligent, sympathetic voices involuntarily produce such decided effects upon those who hear them, is it not reasonable to suppose that voices of the opposite class convey an equal amount of intelligence as to their owner's mental and moral calibre? Let one with a sharp, thin, nasal twang, on a high-pitched key, endeavor to be heard, and there will be an immediate attempt of the company to retire to distant parts of the premises. Such voices cannot *hold* together any number of people for long, neither can such a voice produce other than a disagreeable impression upon the listeners, no matter how interesting the subject under consideration may be.

Sound creates *form* as it moves through the air, and, in accordance with the perfection of the instruments producing it, it will make an agreeable and intelligent or a disagreeable impression upon the listener. Thus voice is shown to be a real and tangible part of the individuality, and so much a part of the

* Vocal and Action Language, E. N. Kirby, p. 83. Boston, 1885.

physiognomy that it cannot be dispensed with in the delineation of character. I consider a fine conversational voice a great charm. It is more rare in America than a fine singing voice. There are several causes for this. In the first place Americans are relatively less muscular than the Europeans. They are also more nervous. Adding these two causes together, they produce the thin, high-pitched nasal tones which are so distinctly American. This national peculiarity could be in a great measure *remedied* by parents and teachers were they to give *slight attention* to the pitch of the voice in childhood, and thus *place* the child's voice upon an agreeable key while it is yet unformed and easily modulated. The first days of the child in school should be devoted to teaching it how to breathe properly, and how to pitch its voice rightly in speaking and reading. No mere book-learning should take precedence of these two most important matters. General development of the muscles and development of the lungs by breathing exercises, together with a properly-pitched voice, are studies of great importance to every child, for they conduce to health, long life, and certainly to beauty of form, attitude, speech, and physiognomical expression. Whatever aids normal exercise of the larynx, mouth, and lips assists beauty of facial expression. This can be easily proven by observing and comparing the dreadful contortions of the mouth and gasping for breath of an improperly-trained singer, with one who has had the best instruction. The latter exhibits lovely expressions of the mouth, and sends forth the loudest tones with ease and freedom. I have seen some faces, which in repose were very beautiful, completely distorted by the reckless or untrained movements of the muscles in talking and laughing. This was the result of bad habits of speaking, and could have been easily remedied by practicing before a mirror, as do many fine actors and elocutionists.

Unconscious imitation is often the cause of the ugly movements observed in some faces. Many children contract strabismus by playing with cross-eyed children. The unconscious imitations by children of all sorts of abnormal muscular movements observed in those about them teach us two important things. One is that children should not be permitted to play with those afflicted with cross-eyes, Saint Vitus' dance, or jerking and twitching of the muscles, and trembling of the eye or eyelids, for in most cases they are *imitated spontaneously*, without special design on the part of the child.

The second lesson to be derived from this marked aptness of the muscles for unconscious imitation teaches parents with what slight effort children can be trained to perform a variety of things

tending to a knowledge of art and science, by the use of simple objects, such as are used in the kindergartens, without at all taxing the intellect. The movements of the child's hand in piano-playing are among the harmless methods of exercising the muscles without at all overtaxing the brain, and children may be taught this or the use of any other instrument, such as the sewing-machine, before being taught to read.

Elocution is a fine study for young children, for the breathing exercises and light gymnastics practiced by the Delsarte system in particular not only develop the voice, but give grace and suppleness to all the limbs. The effect of elocutionary exercises upon the intellect is wonderfully strengthening to the brain as well as to the body. Instead of giving a child *books* to study to improve its thinking powers, a course of lessons in elocution would attain that object with more certainty. When I am asked to prescribe treatment for a dull child I invariably order gymnastics and elocutionary exercises, and the same course may be pursued with good effect by the child whose *precocity* of intellect threatens early decline. It is to be understood, of course, that a *judicious* use of *these* hygienics must be made under charge of a competent teacher.

The voice is capable of emitting sound independent of the organs of speech—the tongue, the lips, cheeks, and teeth; hence by this division of functions it must be apparent that the voice alone would indicate some traits distinct from those revealed by the *articulate* powers. This is really the case, and this analysis of powers shows how the voice is an indicator of vital, interior, moral, and physical conditions; while the organs of speech—the lips, tongue, teeth, etc., together with their manner of articulating—belong by pre-eminence to the mental powers, with a subdominance of the moral and physiological states. Man could use the voice were he deprived of the power of articulating words, and use it with great power too, if he sought to develop it by proper exercise. The voice proceeds from the lungs, sustained by the muscles of the diaphragm, and thus the *tone* of the voice reveals the *inner* man—his amount of vitality, his bodily structure; hence the amount of energy, clearness, or feebleness of mind and body. This is well demonstrated by comparison of the tones of the different races of civilized men with their bodily structure. The French speak more from the forward part of their mouth, with the teeth, tongue, and lips. The Italian speaks more from the middle of the mouth and the lips, while "the Englishman speaks with his whole body. His elocution is stomachic, as the American's is labial."* I think Emerson should have said that the

* English Traits, R. W. Emerson, p. 108.

American's is nasal, for in comparison with other nations we find that the majority of our countrymen and women pitch the voice so as to speak either in head tones or nasal tones; rarely do they use the chest tones. I am convinced the majority could develop fine chest tones were they trained to use them in childhood. The English are very muscular, and their lungs are relatively broad, and herein is the basis of a powerful and sonorous voice. In accordance with this broad, muscular build, the larynx must also be large and strong, and thus we have the foundation for those rich and beautifully-modulated voices heard in the conversation of most English people. The Englishman's voice reveals his sturdy, hearty, positive, sincere mind, as well as his compact, healthy, hardy body. The French speech is truly Celtic; unlike the Englishmen, they use the least energetic manner of speaking, *i.e.*, with the forward part of the mouth, and the lips, and also nasal tones. This method is more indicative of *surface feeling;* it is not as *interior*, vital, and positive as that of the English. It is for this reason that the French supplement their language with such an infinity of gestures, and the effect of gestures is to call attention away from the body, hence speech which requires many gestures to assist its explanation is never as solid, positive, vital, and sincere as a language that contains in its essence all these qualities. Now, the language of a race belongs to and is in harmony with the grade of development to which the race has attained. And the English language, in its construction, is like the Anglo-Saxon races in their bodily build, and its peculiar grade of development harmonizes with their intellectual and moral status as well; and in a certain degree the language suits the mind and bodily conformation of the Anglo-American people, who should endeavor to harmonize more completely with the genius of the English tongue by cultivating the chest tones.

The American method of using the voice is in harmony with their use of the language, for, unlike the English, they use the adjective portion most, whereas the English use more the Saxon part, or noun element; but the subtleties of this subject are, perhaps, too complex for a work intended for popular reading. The science of physiognomy has its occult and esoteric department, *like all things in Nature*, but this I have endeavored to hold in abeyance in writing this work, for that which is most interior, hidden, and abstruse would seem to many who do not *think profoundly* to be fanciful, superstitious, or the effect of mere impractical imagination. I should wish never to have my ideas classified upon either of those bases, yet the fact remains that Nature has a secret arcana into which only those who have mastered her external phenomena

can hope to penetrate. The voice comes from the interior of the body, and is, therefore, one of the guides to its most interior meanings, and this is why it is so prolific and many-sided in its revelations of the most interior, vital, moral, and mental states. In the translation of these subtle tones, as in the recognition of all of Nature's finer manifestations, the greatest degree of sensitiveness is required. Gross beings would fail entirely in comprehending them.

Let the reader by all means study voices, compare tones with the shape of the forehead, the nose, mouth, lips, and ear. He will observe that the faces of all who emit powerful tones, either in speaking or singing, have the lower third of the face relatively long and the cheeks round and the lips full. The forehead, too, of those who possess sonorous voices is different in shape from those whose voices are faint and low. The frontal sinus in all great speakers is large, thus giving the required size of this cavity for producing sonorous reverberations. In order to attain the greatest effects from any instrument the mechanism involved must be the most perfect; hence, in deciding upon one's ability as a speaker we must have in consideration the *form* of the *nose*, *forehead*, *chin*, *cheeks*, *and lips*, *and the line of closure of the mouth.* The eyes assist in this quest, for where they are large and *full* the voice is more apt to be strong and rich, and the owner inclined to excessive and fluent use of the faculty of Language.

The Mouth.

THE LINE OF CLOSURE.

The line of closure of the mouth is highly significant of character, taken either in combination with the shape of the lips or without reference to them. The line of closure, like all of the

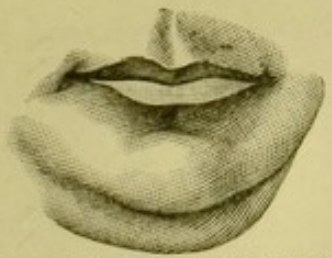


FIG. 181.—NORMAL LINE.

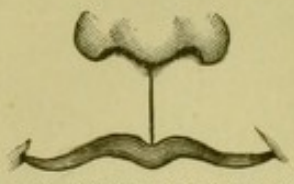


FIG. 182.—NORMAL MARGIN.

features, has its foundation in the curve. This is its primitive form. A feature which is intended for so many purposes as is the mouth must have the ability to execute curves, to form a circle, when necessary; hence, it is a most *flexible* feature. Now, in the

most perfected mouths we find that *the line of closure* describes straight, or nearly straight forms, for the mouth, like the larynx, "must be able to construct every gradation of form from the line of fissure to the complete circle."

In the *upper edge* of the red portion of the *upper* lip, we find *three* well-defined curves (see Fig. 181, normal outline of margin), and in the lower edge of the colored portion of the lower lip there are generally in artistic mouths *three* slight curves or undulations (Fig. 182), and in the lower lip of profound thinkers this lower line is, as a rule, formed by a single curve extending from one corner of the mouth to the other. (See Figs. 186 and 187.)

In analyzing a mouth there are certain indications which must be examined if we wish to gain an accurate *knowledge* of that department of character which is represented by the mouth. Lavater has given several rules for this purpose, and I cannot do better than to translate and insert them. He remarks on this point:—

> Examine carefully in every mouth:
> (*a*) The two lips properly so-called, *i.e.*, the upper lip and the lower lip separately;
> (*b*) The line which is the result of their junction;
> (*c*) The centre of the upper lip;
> (*d*) The centre of the lower lip, each of these parts in particular;
> (*e*) The base of the middle line;
> (*f*) Finally, the corners which terminate that line, and where they leave off at each side, and by which it is shaded off. Without these distinctions it is impossible either to draw a mouth well or to form a correct judgment of it.*

What Lavater terms "the base of the middle line" is the scallop shape formed by the downward projection of the upper lip at the place where I have located signs for Love of Young; for this scallop-shaped line he had no name, as he gave *no specific names for facial signs.*

In infancy the line of closure is more curved than in the adult stage. In the mouths of orators and in those of profound thinkers, the line of junction is usually straight, or nearly so. The curved form accords well with the soft flexibility of immaturity, and when the line of junction presents three slight curves or undulations in the adult stage we find that the artistic sense is the dominant one, and, as the artistic is not so highly a developed sense as the scientific, so in the most developed scientists and inventors the line of closure is the more nearly *straight.* These are subtle distinctions which will grow upon the discriminating observer, and will by continued observation prove (although the indications are minute)

* L'Art de Connaitre les Hommes par la Physiognomie, p. 190. Paris, 1820.

that the distinctions are great, and the signification in entire accord with the basic laws of Form.

Infancy is the age of curves. We shall, therefore, find in the artistic classes (who are not so highly developed as the scientific and mechanical classes) an abundance of curves in and about the mouth and lips.

THE GRAMINIVOROUS MOUTH.

The mouths and faces of those whose taste inclines more to a grain and fruit diet than to meat-eating are usually of the form observed in the grain-eating animals. Their mouths are small, with delicately-formed lips, relatively narrow lower jaw, and thin cheeks. The disposition of this class is peaceable, and their passions are not easily aroused. They are lacking in physical courage and expend all their energies upon useful industries. They are never leaders and commanders, but follow where others with more force lead the way.

The sheep, the horse, the deer, and other grain-eating animals present the same facial form and similar mental and moral characteristics.

THE SINGING MOUTH.

The line of closure of the singing mouth is characterized generally by the straight form, with full, red, protrusive lips. Almost all singers possess a tolerably wide mouth. Rarely is it very small; some even being quite wide, as is the case with Madame Christine Nilsson, Frau Materna, Sofia Scalchi, Emma Thursby, Annie Louise Cary, Albani, Valleria, Geistinger, Madame Sainton-Dolby, Campanini, Gatty, Huntley, and others. One great point of difference between the singing mouth and the meditative mouth is that the latter discloses less of the red portion of the lips, which are not usually so full as the former. It is impossible to do justice to the singing mouth without at the same time giving a description of the accessory physiognomical signs, as the mouth alone forms only a portion of the mechanism concerned in the production of musical sounds. In order to exhibit any form of art the mechanism suited to the purpose must first be had in the bodily organization. Painters must possess flexible muscles and a fine endowment of color. Sculptors must have a good mechanical mind, along with artistic tastes and imagination. The actor must, like the

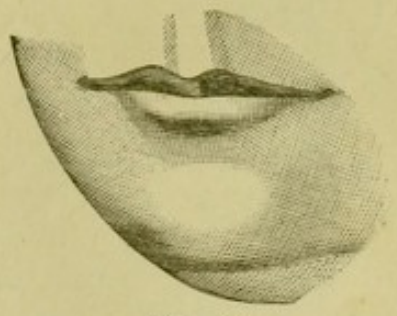


FIG. 183.
MISS EMMA THURSBY.

singer, possess flexibility and an excessively emotional and sensitive organism. The singer, in order to produce volume, must have *space*—area—in the construction of the larger mouth, nose, cheeks, and frontal sinuses.

The most decided facial signs of a singer are, then, a short, round, muscular nose, full cheeks, length of the face from the nostril to the point of the chin, length downward and forward of the chin, and height of the roof of the mouth. This formation gives the right construction for the production of loud, sonorous tones.

The *quality* of the sound depends upon the quality of the muscles and cartilages of the vocal cords and larynx, and of the sensitiveness of the auditory nerves. The ears of all good singers are rounding, and exhibit width and depth of the cavity of the auricle or shell of the external ear, together "with a large pendent lobule." For further descriptions see the faculty of "Music," in Chapter II.

THE ARTISTIC MOUTH.

There are manifold forms and sizes found among artistic mouths; yet all without exception are conspicuously *curved* in both lips, and with a serpentine line of closure. As a rule, the lips are full and more or less protrusive, showing a bright-red color.

As under the term "artistic" I include a great variety of callings which all demand the supremacy of muscle for their exercise, so it may be well to state that the above form of mouth with many variations can be found in the physiognomies of painters, poets, singers, athletes, actors, etc. Each of these classes of artists have, however, some slight differences which will be examined seriatim, yet all possess more or less of the domestic, sentimental, emotional, and sympathetic faculties, for these are the bases of their arts, and must have their signs in and about the mouth and lips. Of course, one expects to find individual peculiarities of structure in the singing mouth that are not essential to the poet or painter; yet all have many of the emotional traits in common.

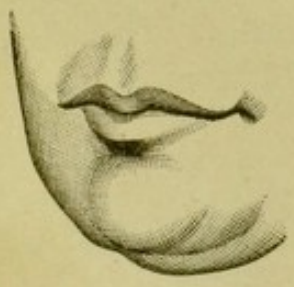


FIG. 184.
ROSA BONHEUR.

THE CONVERSATIONAL MOUTH.

All good conversationists exhibit in the formation of the lips and mouth several signs in common. The line of closure is wide, or at least moderately so; straight, also, with full, red, moist lips, in which the colored part is quite distinct. These lips abound in

curves. Witty, mirthful talkers have the outer corners of the upper lip *curved upward*, while dimples play about the corners of the mouth and cheeks. Indeed, in some witty, mirthful faces I have observed slight dimples in various parts of the chin and cheeks while the subject was engaged in conversation of an amusing nature. Voltaire, Sterne, and Samuel S. Cox are excellent examples of this mouth.

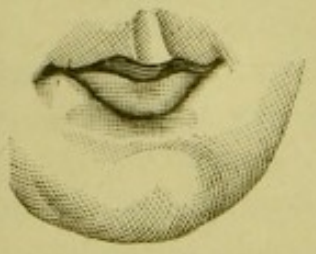


FIG. 185.
JEAN JAQUES ROUSSEAU.
(CONVERSATIONAL MOUTH.)

The following-named persons exhibit various forms of the conversational mouth: Horatio Seymour, Thomas Moore, Oscar Wilde, Oliver Wendell Holmes, Henry D. Thoreau, Sir John Lubbock, Harriet Martineau, T. B. Macaulay, William E. Dodge, Count Andrassy, Franz Liszt, Lady Blessington, Richard Porson, Buffon, Cuvier, Faraday, Johanna Baillie, Thomas Arnold, D.D., Ida Pfeiffer, Prof. Richard Owen, and Harriet Beecher Stowe.

There is a wide difference between conversation and mere talking. Fluency is not conversation; neither can loquacity be ranked as such. The mouths of vulgar, loquacious gabblers are exaggerated forms of the conversational mouth. Their lips are full, coarse, protrusive, and sensual-looking; their chief lingual characteristics are fluency, coarseness, and absence of good sense. This class become horse-jockeys, bar-room oracles, patent-medicine venders, peripatetic "professors" of hair-dye and corn-plasters, and "cheap John" auctioneers. When they talk and harangue their audiences their lips are so loose and flabby and there is so much of them that it appears often as though part of their lips would escape. Their language is of the same quality and quantity as their lips—coarse and plenty of it.

THE ORATORICAL MOUTH.

If the mouths of all great orators are examined we shall find that they invariably show the line of closure to be straight, horizontal, and wide; the lips full, red, protrusive, and moist, with relative length from the nostrils to the point of the chin. This affords space for volume.

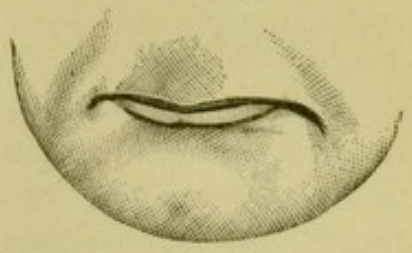


FIG. 186.
JOHN QUINCY ADAMS.

To make a practical test of this foregoing statement examine the portraits of John C. Calhoun, Henry Clay, Starr King, John Adams, Charles James Fox, Patrick Henri, Comte de Mirabeau, Edmund Burke, Abby Kelley Foster, Mary Livermore, or any other eloquent speaker, and these signs in

the mouth will be present, together with large, full eyes and a normal degree of color of the eyes, hair, and complexion.

Almost all the great orators have possessed a great deal of color, and this, added to their mental powers, has assisted in creating *fervor* and enthusiasm. A pallid orator and one with very light eyes has never appeared.

One very marked peculiarity of the lower lip of orators is the large size of the sign of "Patriotism," fullness just below the red portion of the lower lip and slightly toward the sides.

The upper lip of the more profound orators—those who are engaged in the attempt to solve the problems of government and other weighty subjects—disclose very little of the colored portion of the upper lip. This peculiarity is seen in the physiognomy of Henry Clay, Daniel Webster, and Calhoun, but in the faces of the humorous, witty, dramatic, story-telling orators the lips show the entire red and are quite protrusive. Observe, for specimens of this kind, the mouths of Henry Ward Beecher and Robert G. Ingersoll; the former was a grand comedian, and the latter is very humorous and witty; Gough also was a fine actor. There are others of this stamp. Such I class among artistic mouths rather than among those who are profound logicians as well as able orators.

THE MEDITATIVE MOUTH.

All physiognomists who have described the mouths of thoughtful persons agree in their description. Lavater, the most accurate of physiognomical observers, tells us that

> A lightly-closed mouth, the dividing line of which is straight, and in which the outer edges are not visible, is a certain indication of a studious mind. When the lips are closed gently and without an effort, and their outline is correct, they indicate a thoughtful, firm, and judicious character.*

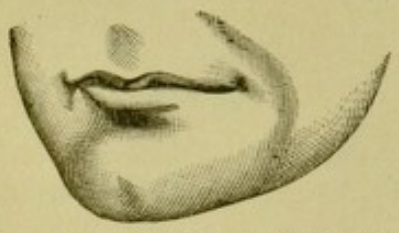


FIG. 187.—SAMUEL HOUSTON.

The mouths of thoughtful people as they advance in life become more and more compressed, so that very little of the *colored portion* of the lips is seen. The red of the upper lip is almost entirely hidden. Profound thinkers live more *interiorly* than do artistic people, such as singers, poets, and painters; hence, the mouths of the former will be closed *firmly* and the red portion of the upper lip particularly will be nearly hidden. The artistic classes live more in the *external*,—in the sensational part of their natures,—and they show the greater part of their lips; their eyes,

* Translated from "L'Art de Connaitre les Hommes par la Physiognomie," p. 192.

also, are larger, more alert; their lively movements and gestures and the poise of the head all show that they live mainly in the *outside* of themselves, instead of in the interior—the meditative part of their organism.

The mouths, as well as the eyes and poise of the head, of deep, patient scientists, mechanics, philosophers, and inventors change greatly with advancing age; their lips, which in youth have been full and red and somewhat protrusive, change in after-life, so that the red portion is not nearly as visible; the eyes are lowered and thoughtful, and the head inclines slightly forward and to one side. All these changes have been wrought by *concentrated* and consecutive meditation, and as thought is *interior action*, so the eyes being the avenue through which sensations enter the mind and the mouth the mechanism by which thought is communicated orally, it is logical to infer that the signs of long-continued thought would stamp their impress upon these features.

As the brain is the part of the mind where sensations are translated into consciousness, we shall find that this organ will incline forward, as this position favors reflection, in a manner, by shutting out passing sights; so we shall find this to be the customary attitude of many contemplative minds. See, for example, the portraits of Dr. Abernethy; James Watt, the inventor; Wollaston, eminent physicist; Sir Samuel Romilly, statesman; Sir Joseph Banks, discoverer; Captain Cook, navigator; John Smeaton, civil engineer and inventor; Samuel Johnson and Noah Webster, philologists; Samuel Wesley, divine.

Benjamin Franklin's mouth is the mouth of a thinker and talker combined; so also is that of Daniel Webster. The following-named persons present excellent specimens of the "meditative" mouth: John Dollond, inventor; Lord Mansfield, Chief Justice of England; James Bradley, astronomer; Edmund Halley, astronomer; Lord Shaftesbury, philanthropist and statesman; Sir John Herschel, astronomer; Henri Milne Edwards, scientist; Vasco da Gama, discoverer; Professor Huxley, scientist; Matthew Vassar, successful manufacturer; Elliott C. Cowden, merchant; Daniel Webster, orator and profound reasoner; James B. Eads, engineer; Cyrus W. Field, electrician; Edwin D. Morgan, statesman; ex-President Thiers, and Admiral Napier. All the above-named persons were deep thinkers, and their eyes, mouth, and general facial expression corroborate this characteristic.

THE COMMON-SENSE MOUTH.

A mouth of medium size, with the line of closure straight and horizontal, and the lips showing considerable of the red portion,

and of medium fullness, gently closed, and of equal proportions, is certainly indicative of a well-balanced mind. Oliver Cromwell's mouth is an excellent specimen of this type, and is the most beautiful feature in his face. Some characters possess a *talent* of common sense. All their acts appear to be well done, and the best that could be done under the circumstances. This class of people are noted for the *general excellence* of all they undertake rather than for any special gift. Robert Morris, one of the signers of the Declaration of Independence, was one of this class, and his character shone pre-eminent in all his endeavors. His mouth discloses a well-balanced character. So also do those of Edward Everett, Gerritt Smith, Thomas B. Macaulay, Goldwin Smith, Albert Barnes, Harriet Martineau, Lucretia Mott, and Matthew Vassar, who endowed Vassar College for women.

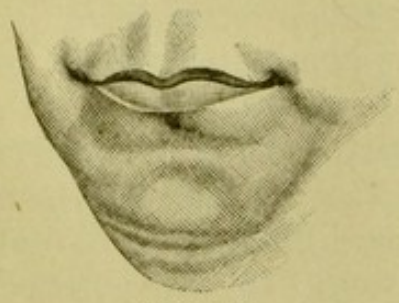


FIG. 188.
BENJAMIN FRANKLIN.

THE ORDERLY MOUTH.

This variety of the mouth is most met with among scientists, mechanics, and those who are extremely orderly, precise, and

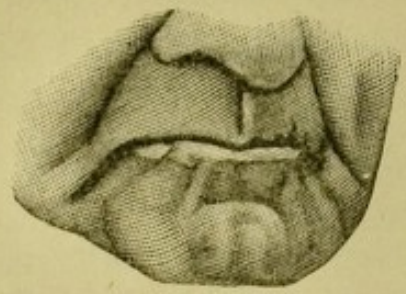


FIG. 189.—(WM. E. GLADSTONE.)



FIG. 190.—(MICHAEL FARADAY.)

TWO TYPES OF THE ORDERLY MOUTH.

accurate; hence, the osseous will be one of the dominant systems. Lavater describes this mouth, and I cannot do better than to reproduce his description. He remarks thus:—

> A mouth firmly shut, the cleft of which runs in a straight line in which the margin of the lips does not appear, is certain indication of coolness, of the spirit of application, the friend of order, exactness, and neatness.

THE ECONOMICAL MOUTH.

This mouth presents many of the characteristics of the common-sense mouth, for *true* economy is based on good judgment and a conscientious regard for the use of money, material, time, strength, health, friends, and opportunities. This mouth is wide, the semi-circle of the upper and lower jaw-bones both presenting an uncom-

mon width, together with well-developed lips and breadth of chin (sign for Conscientiousness).

A *talented degree* of economy demands high faculties and a comprehensive intellect; and one sign of breadth of mind is seen in breadth of the jaw-bones, or rather that portion of them which forms the semicircle or alveolar process, where the teeth are inserted in the jaw. Breadth of this semicircle indicates not only comprehensiveness, but also larger conscientiousness than where the semicircle is narrow and contracted, and the teeth overlapping each other for want of space to grow evenly in a normal manner.

I hold that *true economy* is produced by a combination of Reason and Conscience, both large, and where the quality of the individual is fine in combination we find the best exhibition of this trait.

Now, there are many grades of the *saving* faculty, from a talented degree of economy to a petty, paltry method of hoarding for the love of accumulation, which is exhibited by those whose mental outfit is quite limited, and who are incapable of giving on a large scale. Such beings are compensated by the faculty of saving by littles. In this class are many industrious, thrifty persons who are not misers, but who are yet constructed morally and mentally on a much smaller pattern than the true talented economist. These characters are not usually possessed of fine tastes in art and literature; hence, their nature does not crave the materials and opportunities for the enjoyment of such tastes; therefore they have no inclination to expend time and money in this direction. Their want of intellectual capacity is shown by narrow jaws and a small mouth, and this same narrowness indicates that Conscientiousness is *not very large*, nor very strong; hence, this class of individuals will not be actuated by the *highest motives* in their endeavors to acquire, but will, like the rat and other rodents, accumulate by methods not always the most honorable, and in some cases petty stealing will be practiced, and also the hoarding up by littles what is thus accumulated.

As before remarked, there are many grades of this faculty. Some of the narrow-mouthed economists will endeavor to acquire by depriving themselves of all bodily comforts, or what normally-constituted beings consider such; yet some very saving people seem not to have any need of what others deem actual necessities. It is, therefore, no sacrifice for them to do without these things. Then, too, their happiness is derived from small accumulations, and the knowledge that they are constantly adding to them. They do not seek the indulgence of such expensive luxuries as are involved in the enjoyment of music, literature, and hospitality, and in the

exhibition of æsthetic tastes. The entire facial make-up of these small savers is in harmony with the mouth and jaws. The eyes are round, small, and bright, and the nose never very large. They resemble in looks and manners the squirrel, the 'coon, the opossum, the weasel, the ferret, and the fox. The lips are thin, and closed tightly. They are small, active, neat, and secretive, and always on the lookout for small chances to gain a *little*, and are great chatterers of small talk. The acquisitive or saving mouth has been well described by J. Stanley Grimes and quoted by me in the description of the faculty of "Acquisitiveness," page 541.

THE DESTRUCTIVE OR CARNIVOROUS MOUTH.

This mouth is in direct contrast to the preceding one, for it depends upon physical capacity and power. It resembles the carnivorous animals in size and form, and is indicative of force, courage, and strong passions of various sorts. It is wide, and the lower jaw and lip curve outwardly just over the lower canine teeth, producing the appearance observed in the mouth of the lion, the tiger, and other carnivorous beasts. As a rule, those who exhibit this form of mouth display a combative disposition, and seek to overcome their opponents by physical means. They also evince destructive tendencies of all kinds.

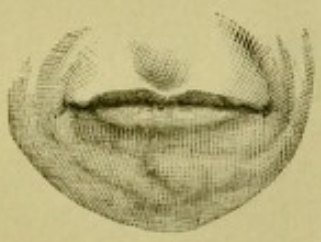


FIG. 191.
CHIEF GERONIMO.

I have observed this form of mouth in some persons of refined tastes, but their destructive proclivities were shown by carelessness in the use and handling of articles, ornaments, etc., and by destroying their clothing and furniture by abuse of them, by rough handling, and by lack of proper care, etc.

The lips of the destructive mouth are very red; the tongue large, wide, and strong, and the taste for flesh-meat is most decided.

CRIMINAL MOUTHS.

The forms of the mouths of congenital criminals, as a rule, "speak louder than words," and announce their grade in the scale of morals. They are of many diverse shapes and sizes. In some the dividing line of the mouth is all *askew*, one side rising higher than the other, and in some cases one side will be found wider than the other, measuring from the centre of the nose. In others, the line of closure is similar to that observed in some batrachians, the toad, for example. In others it resembles the forms of several of the fish tribe. I have seen some individuals whose mouths resembled those of the cod, the trout, and the mackerel. Those human beings who possess the latter form of mouth are said to be

possessed of an inherited appetite for intoxicants. My own observations confirm this. Now, this habit is abnormal, and leads to every species of wickedness. This peculiar formation of the mouth shows that it is abnormal, for it is a reversion to a lower-type form, and reveals the peculiar characteristic of that form, viz., love of fluids, as well as a taste for intoxicating fluids.

The *curved* shape of these several classes of mouths exhibit the action of the law of *perversion*, or the law of the *skew;* their obliquity and deviation from the straight and horizontal or normal form of the line of closure of the mouth betrays their departure from the strict line of rectitude. They not only indicate abnormal thirst, but, as this form is the form of a very low type in the scale of development, it denotes either relative stupidity, insensibility, or brutality. It is not a *human form* at all. Lavater has noted this mouth, and ascribes to it the qualities of theft, mendacity, and brutality. The more nearly the human mouth approaches in form that of any animal, the more the accompanying characteristics of that species will be exhibited, and the lower in the scale of development the animal, the lower will be the moral status of the individual thus characterized.

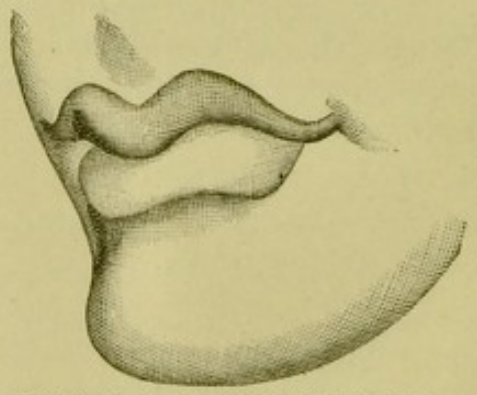


FIG. 192.—A SENSUAL MOUTH.

Some criminals exhibit their vicious propensities by great disproportion of the lips. In some cases the lower one is very full, coarse, and protrusive, setting far out beyond the upper one, which is thin and pale. In others, the under one is thin and flat, and the upper lip large, thick, and projecting. In the latter case there will be excessive sensuality, insensibility, and grossness in conversation, together with gluttonous tastes.

Observation and comparison of a collection of notorious criminals will reveal the fact that the signs of criminality are to be found, first, in the *motor* or muscular apparatus of the face,—in the mouth, eyes, and in the soft parts of the cheeks; secondly, in the motive apparatus of the trunk, limbs, feet, etc. All these indications are explained elsewhere in several places; hence I shall only allude to them here in order to show that it is upon the most *flexible* and malleable parts of the system that criminal, vicious, stupid, and brutal signs appear.

One great lesson to be drawn from this is, that inasmuch as these signs appear in the most *flexible* muscles and softest tissues, the attempt to *improve* and *elevate* these victims of transmitted

faults is most encouraging, for the very *elasticity* of these parts proves that they are susceptible of *modification*, for where the movements of muscles are often repeated in the same direction they become *permanent;* then, too, there is a law of *automatism* of the muscles and a periodicity of motion of the nervous system through the action of which oft-recurring sensations and movements of these two classes of motor-powers create permanet conditions and forms.

The signs of criminal disposition are treated of in the description of the lips and eyes. The reader can refer to these for further instruction.

That the principle of skewism, scalenism, or sinistrality was understood in its *practical results*, at least by Lavater, is shown by the following. He remarks:—

> Of him whose figure is oblique; whose mouth is oblique; whose walk is oblique; whose handwriting is oblique,—that is, in an unequal, irregular direction,—of him the manner of thinking, character, and conduct are oblique, inconsistent, partial, sophistic, false, sly, crafty, whimsical, contradictory, coldly-sneering, devoid of sensibility.*

The Cheeks.

GENERAL REMARKS.

The cheeks of the human face are composed entirely of soft tissues, muscles, fibres, adipose material, nerves, vascular tissue, lymphatic glands, and an elastic skin, and by reason of their being composed entirely of the soft tissues of the body they are more susceptible to changes of their form than those features which depend upon bone or muscle exclusively for their outlines.

As before stated, all facial signs of character are situated in the tissue or constituent from which the *associated* mental faculty or faculties derive their power. It is thus that Nature *points us* to the *source* or *base of supply* of each individual faculty. Now, the origin of all of the signs of character found in the lower cheeks is *intestinal.* Hospitality, Alimentiveness, or Digestion, Friendship, Approbativeness, and Mirthfulness are *directly related* to this system. No one can doubt this who has ever made observations upon the changes wrought in this feature by good digestion, by dyspepsia or consumption, or by the sudden falling away of the cheeks through loss of appetite, or by a wasting disease. No animal possesses cheeks, properly so called. This part of the physiognomy is in them wanting. The development of character

* Essays on Physiognomy, Lavater, p. 463.

which I associate with this portion of this countenance is also in them measurably lacking. Animals do not exhibit in a *refined* manner those traits whose signs I have located in the cheeks, although they do possess the germs of all, and exhibit them in an animal-like manner in varying degrees. Instead of cheeks they have jowls or chops, and those who do not possess these are devoid entirely of any semblance of cheeks, and so we may truly say that the *developed cheek* is a purely *human* feature. Like all facial features, it observes an orderly progress in evolution and development, and in the perfectly-matured human being one's grade in Sociality, Friendship, Hospitality, and Approbativeness is at once settled by reference to the cheeks. Very little is noted in regard to the significance of the cheeks in works of art, of anatomy, or of expression. This neglect is so wide-spread that when I came to this portion of my work I found scarcely any authority by which to emphasize my own deductions. It is true, anatomy tells us all about the muscles, fibres, vascular apparatus, etc., of the cheeks, but nothing about the *forms* which are developed by the action of the juices which arise from the collection of tissues composing these features. Poets and lovers have written the most upon "rosy cheeks," "dimpled cheeks," etc., but I cannot accept as correct the deductions of these rather unscientific and partial thinkers. Art has perhaps enlightened us the most as to the *forms* of the cheeks, yet nothing in art-writings instructs us as to their physiognomical significance, except in a vague and general manner.

The cheeks in the human face are of great assistance both to mastication and language. The space gives room for the tongue in comminuting the food into small fragments, while the same area enables the singer, orator, and linguist to produce greater volume. The cheeks of all great singers are particularly full and rounding; they are full naturally, for the body and face of a great singer are suited to the performance of vocality from birth,—afterward by cultivation the cheeks become more distended by the constant practice of loud tones; yet they are never soft or globose, for the life-long practice of loud tones develops the muscular fibres of the cheek, and although they are elastic, as is required for vocal utterance, yet there is a firm and tense quality of the tissues which is not present in the soft, fat, globose cheek, which has not felt the effect of vocal gymnastics. Let the reader examine the cheeks of all great singers and speakers, and I dare affirm there will not be found one with hollow cheeks among them. See, for example, the physiognomies or portraits of Materna, Scalchi, Patti, Huntley, Neilson, Madame Sainton-Dolby, Campanini, Robert G. Ingersoll,

Spurgeon, Daniel Dougherty, and Wendell Phillips. Among pulpit orators the cheeks of all who are in health present a rounded contour. See the Rev. Drs. Field and Joseph Thompson, Bishops Elder, Keane, and Simpson, and Rabbi Samuel M. Isaacs. Indeed, one will fail to find thin or hollow cheeks in the countenance of any one whose profession leads to constant use of the voice in the production of *loud tones*, from the pulpit orator to the auctioneer, and peripatetic venders of all sorts.

Animals are incapable of producing the sweet, melodious modulations which are characteristic of the human voice, for the reason that they lack the necessary mechanism, among which is that development of cheek observed in the human face; hence, the members of the animal kingdom bellow, howl, roar, whistle, mew, and growl, and the nearer a human voice approaches any of these sounds, the more defective is the speaking apparatus and the more the character partakes of some animal-like faculty.

A *use* for rounded cheeks has here been noted; beauty always follows use as a matter of course; that is to say, physiognomical beauty, as is proven in the case of the rounded cheeks of orators and vocalists. How much superior in form are these to the hollow, sunken cheeks of the dyspeptic or consumptive; for, says Dr. Cross,

> Every organ is physiognomically good in proportion to its aptitude for performing its whole vital and animal functions.*

The beauty of form and color observed in the cheeks of the most beautiful and healthful human beings proceeds from, firstly, inherited form and quality; secondly, from such condition of the intestinal system as will continue to supply the quantity and quality of blood and nutritive juices necessary to preserve the original form and color. When by reason of old age the cheeks shrivel and become sunken or wrinkled, these changes can be accounted for mainly upon the ground of a less vigorous appetite or enfeebled nutritive powers. All changes of this part of the countenance are directly traceable to the condition of this digestive function, hence we are justified in associating the signs of character observed in the cheeks with the *intestinal* system mainly.

With these preliminary remarks I shall draw your attention to the *two* general divisions of the cheeks.

THE TWO DIVISIONS OF THE CHEEKS.

For the purpose of description and analysis the cheeks may be divided into two parts, the upper and the lower. The lower part, as we have seen, is almost entirely composed of soft tissues.

* An Attempt to Establish Physiognomy on Scientific Principles, J. Cross, M.D., p. 3.

At the same time it is somewhat modified in form by the shape of the lower jaw-bone, as well as by the structure of the alveolar process (the bone in which the teeth of the upper jaw are inserted), also by the size, form, and condition of the teeth.

The upper part of the cheek depends mainly upon the form of the underlying malar bones and the muscles of mastication.

Let us examine, first, the several forms, colors, and appearances of the *lower* cheek, and afterward follow with a description of the upper portion.

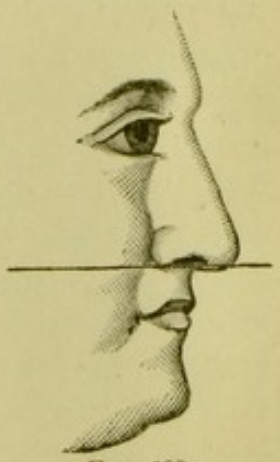


FIG. 193.

The several general forms of the lower cheek are eight in number; all others are modifications or combinations of some one or more of these general forms. These eight forms of the lower cheek may be classified as follows: The embryonic, the globose, or infantile; the gluttonous, or exaggerated; the oval, or art-form; the rectangular, or moral; the irregular, or criminal; the concave, or consumptive, and the dyspeptic.

THE EMBRYONIC CHEEK.

In the early stages of prenatal life the human embryo has developed very little of that rounded appearance of the cheeks which characterizes the matured infant. At the second month of prenatal existence the human cheek is as devoid of development as that of the hog, which it somewhat resembles, and, as it reveals at this stage no appearance of a chin, the cheeks are very meagre indeed. (See Fig. 214.)

Now, sickness often reduces the cheeks to such an enfeebled condition as to cause them to *retrograde* to an almost embryonic state. There are also some undeveloped races, notably the native New Zealander, whose cheeks approach the embryotic in form, or rather in lack of form, for in these races there are many who exhibit such a formless, shapeless, chaotic condition of the cheeks as would justify one in saying they had no cheeks, only a place where they might develop. All these appearances teach us that the more nearly any given cheek approaches the form of the embryo, the more lacking is the character in those traits of which the normal cheek stands representative. The more the lower cheek approaches an oval or rectangular form, the more is it indicative of normal powers in the direction of friendship, hospitality, agreeability, and health.

In the earliest stages of embryonic life the intestinal system is not perfectly developed, and its sign in the face (the lower cheek)

is also deficient in development. It will be discovered that facial features and physical functions advance *pari passu*, step by step, all along the line of progressive growth. It is precisely the same with the faculties and functions of the human organism. The development or non-development of facial features not only marks the progress of functional or physical growth, but it also discloses the grade of evolution of the mental and moral powers. How essential, then, is it to the student of physiognomy that he should observe with the eye of *accuracy* all stages of growth, and all diseased and imperfect grades of facial development, in order the more thoroughly to comprehend the several grades of the most mature, healthy, and perfect forms. All imperfections of the human face register and reveal imperfections of some physical function, and consequently disclose moral or mental deficiencies. A thorough comprehension of the knowledge of progressive evolution of the body and face of the human embryo, taken in connection with scientific physiognomy, will point at once to the origin of the defect in the body and its corresponding facial undevelopment. Deficient development of facial features is shown mainly by *concavities*, while development, power, and perfection are disclosed by convex or full forms; hence, full, rounded cheeks disclose more power and stronger digestion than concave or hollow cheeks. A convex nose, if broad, is indicative of greater mentality and stronger constitution than a concave nose of the same width.

Prominent cheek-bones announce greater strength and constitution than those which are flat. Rounded limbs are relatively stronger than flat ones, and thus by comparison of forms, and by application of the basic laws of Form in all stages of development, one may gain a wonderful amount of accurate physiognomic knowledge.

THE GLOBOSE OR INFANTILE CHEEK.

This form of cheek is observed in infants, vegetative beings, gluttons, and some idiots. The full, globular form is indicative of primitive growths. In infants it is normal, for here it represents the beginnings of development. In vegetative adults, it denotes a relatively immature condition of mind, for, as has been shown, the outline of the body denotes the *form* or condition of the mind, and primitive forms reveal relatively youthful states.

Many idiots retain the globular form of the lower cheek throughout life, and the other parts of the body harmonize with this facial feature. The arms, legs, and hands of such subjects present a full, puffy appearance, and exhibit a characterless expression, and one can readily see that there are no marked character-

istics accompanying their limbs and hands. Such a soft, fatty, boneless combination possesses no force, hence the mind is wanting in capacity to express ideas, and the body, of course, having a very weak guiding apparatus, can create nothing.

The walk of this class reveals their immature mental condition. The motions of the body in walking are irregular, and create a rolling or shuffling gait, lacking in precision in stepping and marching, thus indicating absence of the faculties of Time and Order. The arms and hands are relaxed, and "flap" about without any attempt to carry them in a normal or graceful manner.



FIG. 191.—CHERUB, BY RAPHAEL.

There are many degrees of feeble-minded persons who exhibit this formation, more or less modified by varying degrees of bone and muscle. The more bone, the more hard sense; the more muscle in combination, the greater the capacity for art-works. The vegetative system large, with a good share of muscle, is often accompanied with musical capacity and a good voice for singing, and, as singing does not require a high grade of mental power, we often observe these two systems dominant in those who excel in this department of music.

THE GLUTTONOUS CHEEK.

Great gluttons and gormands are often characterized by round, full cheeks, which sometimes hang down in soft folds upon

the neck and breast. Representatives of the "Fat Men's Clubs" are good illustrations of the above. Those who eat voraciously without exercising sufficiently are prone to accumulate a large amount of soft, fatty tissue in all parts of the body; most especially does it develop about the mouth, lips, cheeks, and abdomen. Many large eaters work off the surplus fat, and thus maintain equilib-



FIG. 195.—THE "DIAMOND FAT LADY."

rium of the several systems of functions, but in most cases increase of weight induces a disinclination to exertion, which assists the accumulation of the carbonaceous materials of which fat is composed; and as this accumulation goes on the subject becomes more inactive, more sleepy, and more obtuse mentally; the respiration is labored, the action of the heart and lungs impeded, and the visceral organs clogged by adipose matter, and thus the entire system takes

on an abnormal condition, which often ends in dropsy, hypertrophy of the heart, enlarged liver, or other disorders.

The gluttonous cheek in adults who possess normal mentality differs from the globose form of the idiot or infant. Once seen and compared, they cannot be confounded.

Alexander Dumas, the celebrated French novelist, is a good illustration of the gormand, while Daniel Lambert is the highest type of the glutton. The cheeks of Louis XIV of France and George III of England betray their gluttonous appetites.

Many great drunkards develop gluttonous cheeks. In their case they are tinged with a dark-red or purplish hue, with red veins very prominent. Some are more gluttonous in drinking than in eating. This class exhibit very full, round cheeks, which are often of a yellowish-white, waxy or pasty-looking color. In these the facial sign for Bibativeness is most decided.

OVAL OR ARTISTIC CHEEK.

The oval form here, as elsewhere in the face and body, represents the art side of Nature. Those who exhibit a pure oval-



FIG. 196.—LADY PITT.

shaped face are possessed of æsthetic tastes, and if educated accordingly will excel in some department of art, being better adapted to this than to mechanical pursuits. They are graceful in motion, and in the arrangement of flowers, drapery, clothing, etc., display a great deal of taste, and as far as possible surround themselves with beautiful objects, and seek artistic associations. Those with

this form of cheek possess a taste for *belles-lettres*, such as poetry and fiction, and with a good brain system in combination will incline to metaphysics and speculative religions. The hands of these classes are handsome, and the bones and joints almost invisible, the finger-joints dimpled and tapering, and the nails oval.

The portraits of Madame Recamièr, Nell Gwynne, Mary Anderson, Patti, Sarah Siddons, Raphael Van Dyck, Landseer, and scores of painters, poets, actors, and artistic writers display the oval form of the cheek. Many oval-faced persons display beautiful dimples in the cheeks.

THE RECTANGULAR OR CONSCIENTIOUS CHEEK.

This form of cheek belongs to the square-boned individual, and denotes the capacity for science or mechanism, and shows the presence of large conscientiousness and firmness; also the ability to comprehend hard, cubical, solid, concrete, common-sense ideas.



FIG. 197.
ROGER SHERMAN.

This form of cheek has a subdominance of the oval, if the subject be in good health, for where digestion is perfect it always gives a certain degree of roundness or curvation to the soft tissues of this part of the face. The limbs, hands, and fingers will agree in form with the cheek, and exhibit large, bony joints and a square form the entire length of the fingers, with square tips and nails. The cheeks of Washington, Lincoln, Gladstone, Tyndall, Thomas Jefferson, von Bulow, John C. Calhoun, and Lucretia Mott are of the rectangular form, and their lives and works were "squared" by principles of right and justice.

THE DIMPLED OR BEAUTIFUL CHEEK.

Although the ancient Greek artists in their works ignored the dimple in both chin and cheek, it is highly significant of character wherever found. It is a custom of writers who are ignorant of the high physiognomic value of certain features to deny them any precise or physiognomic value or meaning. To illustrate this I quote the following from the work entitled "Romantic Love and Personal Beauty." Its author, Henry T. Fincke, observes thus:—

> One of the most essential conditions of beauty in a chin, if we may judge by the descriptions of novelists, is a dimple. Yet it is doubtful whether a dimple can ever be accepted as a special mark of beauty. Temporary dimples (for the production of which there seems to be a *special muscle*) are interesting as a mode of transient emotional expression.*

* Page 412.

How very singular this writer should so lack the logical faculty as not to be able to see a great significance in a feature for which "there seems to be a special muscle" appropriated "for its expression!" One would think that muscle material was so plentiful that Nature in a random mood threw out muscles all over the human face without intending them for any permanent use and destitute of any meaning whatsoever. If this were the intention of Nature she chose a limited field for her exhibition and displayed a wanton waste and ignorant prodigality.

The several varieties of dimples are produced by *distinct causes* and have *diverse origins and significations.* The dimples of infancy, such as are observed in nearly all well-nourished babes, are caused by a soft, fatty deposition of adipose material in such quantities as to cause the skin to form the little dimpled appearances seen upon the breast, body, hands, wrists, and about the mouth. The class of dimples observed in the chin and cheeks of adults (who are not of the vegetative form) are caused by a peculiar formation of the muscles which holds down the muscles in these features, and thus makes a permanent impression there. Dimples depend for their form upon the form of the underlying bone, and also upon the peculiarity of the muscle itself.

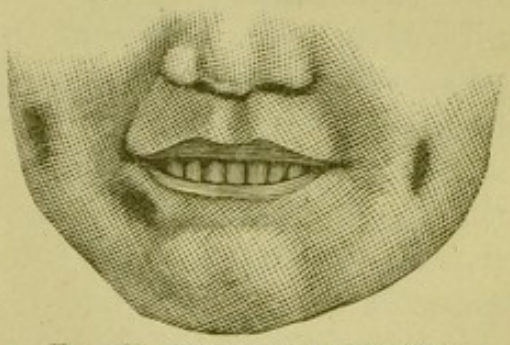


FIG. 198.—DIMPLED CHEEKS.

Can I ever sufficiently impress upon the mind of the student of physiognomy that "to despise the minute in Nature is to despise the infinite?" Every line, wrinkle, fold, and expression, no matter how minute or transitory, is pregnant with meaning. How much meaning, then, must there be in so large a facial feature as a dimple in the cheek, such as is very often observed in dramatic artists and in many greatly-gifted social characters, whose affability and approbativeness are their strongest traits!

Dimpled cheeks are seen to the best advantage while those who display them are engaged in the active duties of agreeable hospitality, pleasant conversation, and social entertainment.

The dimple in the chin, although more permanent in its expression than the dimples of Mirthfulness or Approbativeness, is so highly significant of character as to enable a scientific physiognomist to decipher one's kindly and art-loving tastes and tendencies by this feature alone, and not only may these two faculties be predicated upon the possession of this single dimple, but the entire body can be described by one look at this little "imprint of

Cupid's finger"; so, also, by this feature can the *general shape* of the *face* be known, for in this case it will be oval in the outline of the lower part, the eyebrows arched, the head round, the joints small, rounded, and supple, and their bones hidden by muscular development, the fingers inclining to taper, and the eyes large and prominent. All this and *much more* can be learned by the observation of a single little dimple in the chin.

Dissimilar-shaped dimples have diverse significations. A perfectly round dimple, like the one in the chin of Schubert, the eminent composer, discloses the highest capacity for art. In his case this form is caused by a combination of round muscles with round bones, and this is the most favorable combination for playing upon musical instruments. He possessed also a creative brain system, and this peculiar combination of brain, bone, and muscle imparted sensitiveness to the nervous system, and creative power, as well as great flexibility of the motive apparatus,—all essential to the production of music.

A dimple which presents a straight, cleft-like form has a signification quite different from the *perfectly* round dimple. The perpendicular dimple or cleft is caused by a combination of square bones with round muscles, and also a combination of flat muscles with round bones. These combinations indicate more taste for art than executive ability for art-works, yet those thus characterized are capable of achieving a fine degree of proficiency in some department of art.

Dimples of the face are never observed in infants prematurely born, nor in infants who are poor and lean; neither are they found in the physiognomies of congenital idiots. But in the mature, healthy, happy, rosy, well-nourished babe they are almost universally present, and are found about the mouth, cheeks, hands, and body in several places, thus evidencing that they are the signs of the presence of comfort, happiness, and mirth.

There are two classes of dimples in the cheeks, situated in two different localities, and these are, like the dimples in the chin, subdivided into two general sorts. The dimples near the corners of the mouth are some of the facial evidences of mirthfulness, love of fun, good humor, and wit. These also are of two sorts, the round and the perpendicular. The round ones belong to those sportive characters who can *create* mirth in various ways. The cleft-like dimples are seen in the faces of those who appreciate and enjoy mirth, fun, wit, and humor, but who have relatively less ability to create it. In these mirth is not as spontaneous as in the former. Now, in all comic actors, writers, poets, painters, etc., the dimples near the corners of the mouth are very apparent, and if

they are not so deep as to be seen when the face is in repose they become visible upon the slightest attempt at conversation and in smiling.

The second class of dimples found in the cheeks is situated one or two inches outwardly from the mirthful dimples. These dimples are of two forms, round and cleft-like, or they assume the form of perpendicular lines which are seen in smiling and laughing. These dimples in their several forms indicate varying grades of Approbativeness. These dimples or lines are always found in the faces of artists, actors, and singers, and also in the physiognomies of those refined social characters who are gifted in the art of making delicate complimentary speeches, and who are also fond of receiving them in return. Surely a talent as creative as this requires a "special muscle" for its expression in the face; and this it has and *retains*, as any one may prove by comparing the cheek of a very approbative, agreeable lady with that of a morose, gruff, boorish fellow. The signification of dimples in the chin has been described at length in the analysis of that feature, hence unnecessary here.

In all my reading, research, and personal observation I have never learned that any savage race has exhibited either dimpled chins or cheeks. I have never observed in ethnological works a dimpled cheek or chin in the countenance of any individual among savage, barbarous, or undeveloped races. The engraving of the details of the face in all works is singularly neglected; and dimples may have appeared in some semi-civilized races, and not have been represented by the artist's graver. Still, I do not believe that these characters are ever present in the savage, for the reason that Mirthfulness is *never* well developed in them; therefore its facial signs—its wrinkles and dimples—are not exhibited in their physiognomies. It is logical to conclude that they have not reached such stage of refinement and of muscular evolution as would produce either this beautiful feature or its associated talent and signification.

If the Greeks did not reproduce this facial sign in their grand works of art, it was, as Winkelmann states, for the reason that they wished to approach as nearly as possible to their conception of the divine, and avoid as much as possible the imitation of any particular human being. I suppose they regarded the dimple as a feature of lightness, mirth, and sociality, hence not sufficiently grand and awful for the expression of divine character. It is strange, however, that they did not introduce the dimple in their ideals of Venus, Daphne, Cupid, and other light and joyous characters.

Dimples of the cheek and chin are tokens of the affectional nature, and denote the active passions of amativeness and a desire

to please and attract the admiration of others, hence they are significant of fine powers which tend to race-improvement. For my own part, I consider dimples among the most pleasing and beautiful features to be found in the face, highly expressive and significant of great beauties of both mind and talent. They are certainly indications of evolutionary elevation and refinement.

Dimples upon the hands and body will be treated of in their own connection.

THE CONCAVE OR CONSUMPTIVE CHEEK.

The physiognomical principle that hollows and depressions of the features denote weakness and lack of beauty, and that full or convex features indicate strength and beauty, is nowhere better illustrated than by a comparison of hollow cheeks with those which are full or rounding. Where the cheeks are extremely hollow, we may conclude that the process of digestion is very feebly performed, and this inability tends to both dyspepsia and consumption. Where the tendency is toward consumption the cheeks will not only be hollow, but the jaws and chin, as a rule, will be narrow and almost perpendicular instead of curving outwardly like the "dramatic jaw." The nostrils will be narrow, and in some a pinched appearance of these features is observed.



FIG. 199.

There are several methods used to remedy hollow cheeks other than by using plenty of good food. Rubbing them a few minutes every day round and round with the hands develops the muscular fibres of the cheek. Talking is a light gymnastic method of producing plumpness. Playing upon a wind instrument is still another method of filling out the cheeks and at the same time of strengthening the lungs. Singing and elocutionary exercises are pleasant methods of inducing a better shape of the cheek, but no remedy is as good as plenty of well-digested food and out-of-door exercise in the sun. This is a radical cure. Many persons have overcome a tendency to consumption by blowing upon a wind instrument, and their cheeks have filled out finely from this exercise. The cheeks of all professional singers are round and tense; never soft, flabby, or shapeless.

THE CONCAVE OR DYSPEPTIC CHEEK.

One of the forms which denote weakness of the digestive function is shown by hollowness of the cheeks in the lower part, and sometimes in the upper part as well. Where this is congenital it is almost impossible to remedy it, yet much may be done to

strengthen and develop feeble powers of assimilation and nutrition by a judicious diet and by *plenty* of *fresh air* and *rest.* Food suited to the taste and that which digests easily is most essential in these cases. Change of climate is often one of the greatest incentives to a precarious appetite and an enfeebled digestion. Those who live on the sea-coast should (if the lungs are tolerably large and sound) go to the mountains or to the hill-country; while, on the other hand, those who reside in the mountains or hills should seek the invigorating effects of the ocean breezes.

Sponge-baths, quickly applied, are an efficient aid to the dyspeptic, but on no account should hollow-cheeked persons take a full bath unless there is a good red color in the cheeks and a vigorous circulation. As a rule, hollow-cheeked people do not exhibit very deep color of the complexion. Very often they display a pallid, ashen, or sallow tint of the skin, and when the latter is present complications of the liver may be predicated.

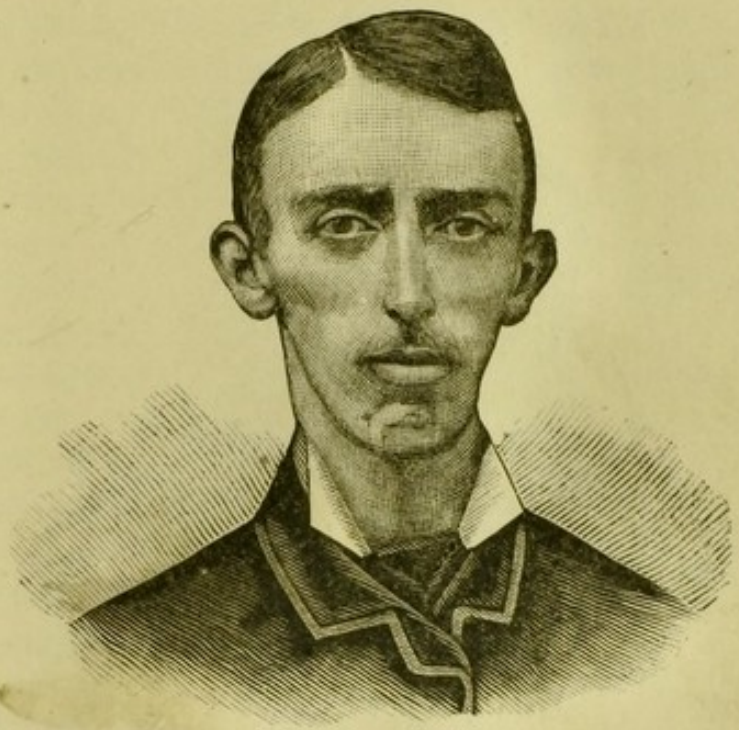


FIG. 200.—CONCAVE OR DYSPEPTIC CHEEK.

Those who from birth have hollow or flat cheeks are congenital dyspeptics, and are consequently not as strong in the friendly, social, and hospitable traits as those whose cheeks are the reverse. In order to exhibit these traits in their highest power, there must be, first, a large supply of nutritive material,—good warm blood,—in order that strength shall be created to carry forward the active duties of friendship and hospitality; and, second, to enable one to "warm" toward others, else the desire to fraternize will be absent. Friendship and hospitality are the most active and spontaneous in those whose cheeks exhibit normal fullness, and where they are too full for a normal size and shape a gluttonous or selfish tendency is present.

All *exaggerations* of normal form and size lead away from the true and proper function, and tend to grossness or coarseness. *Deficient* size and abnormal forms point to feeble action and weakness of function and reveal defective faculties. This statement is

verified by comparison of hollow-cheeked individuals with those who exhibit a normal development of the lower cheek, together with those who possess an exaggerated or gluttonous form of the features.

There is no animal as gluttonous as the hog, and its body exhibits in its adult stage the same appearance as the human hog, who has crammed and stuffed until his skin is overlaid with deep wrinkles, and his eyes, like those of the hog, are scarcely discernible on account of the rolls of fat which he has manufactured out of the good things which he did not share hospitably with others.

There are other indications of weak digestion and dyspepsia, which will be noted in their proper connection.

THE CRIMINAL CHEEK.

Many congenital criminals exhibit a peculiar-shaped lower cheek, which is unlike any other form previously mentioned. It cannot be classed with the globose nor artistic, and certainly not with the rectangular or any *true* form. It is the result of the operation of the law of sinistrality, or the law of the skew. It is a chaotic, soft, flabby, and repulsive-looking cheek, without any marked outlines such as characterize all the other forms, and is always allied to other criminal features.

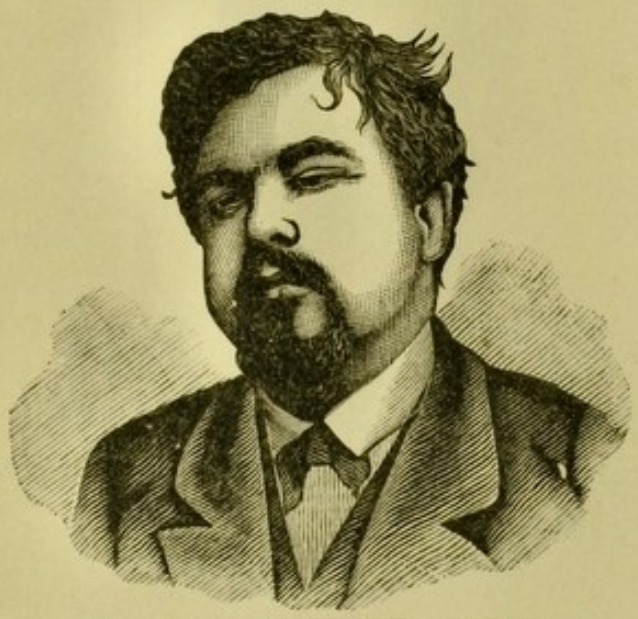


FIG. 201.—A CONVICTED THIEF.

The criminal cheek does not present the characteristics either of the infantile, globose, or gluttonous cheeks. It gives one the idea of a mass of soft, doughy substance, which has fallen into a chance or hap-hazard form, and has not been acted upon by any normal law of shaping; and this is really the case. To the keen physiognomist it reveals a long tale of broken laws, of neglect, of open defiance of moral and hygienic rules, and such a course would naturally produce ugliness, uncomeliness, and positively hideous forms, as well as absence of decided moral and mental tendencies.

All soft tissues under the operation of normal law assume either the globose state of infancy or the oval form of the adult stage, and this regular action of normal law produces quite different results in form from those created by the law of perversion or

irregularity described in the chapter on "The Basic Principles of Form."

All criminals are not characterized by this form of cheek, but a large number of them exhibit irregular or chaotic shape of this feature; yet, wherever it is observed, some other sinister feature or features will be found in company with it, and are thus *additional* evidence of the action of the law of sinistrality, or imperfect curvation.

All deviations from normal types reveal departures from normal action in the nutritive system; hence, all exaggerated forms, as well as those that are undeveloped or wanting in normal fullness or roundness of outline, indicate defective methods of the assimilative processes.

Those who exhibit criminal cheeks seldom possess a fine, healthy color in them, for a criminal state of mind goes with a defective body, and, as color is evolved mainly from the digestive process, so these unfortunate beings show by the absence of a bright, fresh color of the cheeks the abnormal operation of the digestive function. Very few, if any, congenital criminals exhibit a fine, bright, clear red-and-white color of the complexion. Some have thick, muddy-looking skins, or present a dull, leaden hue, or a waxy-looking skin, or one thick with pimples or blotches.

It is true that some criminals exhibit oval and rectangular faces, but these, as a rule, are not congenital criminals, but have fallen into crime through some great temptation or under the influence of bad associations and bad examples.

THE NORMAL UPPER CHEEK.

The upper cheek is very greatly influenced in its form by the shape of the underlying malar bones. Prominent cheek-bones are in some cases a national type, as, for example, the Mongolians, the North American Indians, the Siamese, the Esquimaux, the Papuans, the Samoieds, the Calmucks, and others. Among European races the Hollanders, the Scotch, the Scandinavians, and Swiss exhibit several varieties of height and breadth of the malar bones, and in these races are almost universally high.

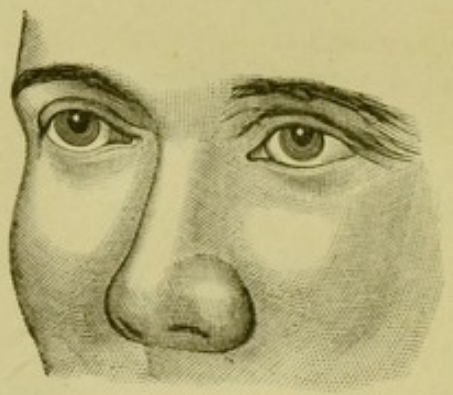


FIG. 202.
NORMAL UPPER CHEEK.

Of what *use* in the animal economy are high and strong cheek-bones? This is always the first question to ask in regard to physiognomical appearances. Large and strong bones every-

where, and in every animal organism, are found attached to strong and large muscles, hence their chief use is for motion or to produce motive power. The larger the muscles, the greater power they can exert, and large size shows that they have been greatly exercised. Large bones are produced by the use of foods in which bone-making elements preponderate, and also by lime-water and sunlight. Large cheek-bones, hence, belong to those whose ancestors have led an outdoor life, and who have lived on bone-making foods, such as grains, etc., and who have been accustomed to eating food which required an unusual *degree of power* in its mastication. The races in which this formation is most marked are those that live mainly out-of-doors, or the descendants of those that have thus lived.

As evolution advanced man from a nomadic, arborean existence to that of semi-civilization, his foods became of an entirely different nature from those formerly used. Instead of having to tear and grasp bones with his jaws, he has learned to soften his nutriment by cooking, and, as he began to cultivate grains and fruit, mastication became more and more easy; hence the muscles of the jaws and cheeks and the malar bones decreased in size and power, until now, in some subjects in civilized races, the jaws have become so small from the use of very soft-cooked food for ages as to cause them to be abnormally narrow, and the proper number of teeth are unable to find room in the contracted jaw-bones. The cheek-bones, too, have grown smaller and smaller until their narrowness is one of the physiognomical signs of weakness and shortness of life.

ABNORMAL FORM OF CHEEKS.

Cheeks that are flat at the malar bones, and which present a perpendicular line where a curve should be, denote consumptive tendencies, as well as intestinal weakness, as shown by Fig. 203.



FIG. 203.
ABNORMAL CHEEKS.

The jaws are still used by savage tribes as a prehensile implement, and in civilization sailors and others often make use of the mouth in grasping knives and other implements, when both hands are occupied. Occasionally a "woman with an iron jaw" appears in entertainments, and edifies her auditors with feats of skill in lifting chairs and other heavy articles by means of her jaws alone. All this goes to show that decrease in the size of the cheek-bones, to a certain degree, is in the ratio of advancing civilization and refinement, and this is

supplemented by a corresponding increase in beauty, according to both art and physiognomical standards, but beyond a certain decrease in size it denotes weakness.

At any rate, the most beautiful of all the civilized races are found with such development of the bones and muscles of the cheeks as to serve in shaping the contour of the face into a beautiful oval, or such modification of the oval as contributes to a symmetrical appearance of the face, as, for example, the rectangular. Symmetry also has its signification in this instance; it denotes comparative refinement as well as the proper strength for the use to which the improved form is put, viz., the grinding and crushing of cooked foods, and the emission of loud yet melodious sounds.

High cheek-bones also have their physiognomical significance. In savage tribes they indicate brute force, ferocity, prehension, gross feeding powers, and combative propensities. In civilized beings all of these indications have toned down. Combativeness is softened to active *self-defense*, to defense of one's family and friends, instead of aggressive warfare. No races are more clannish than the Hollanders, Highlanders, and Scandinavians, and in these classes the high cheek-bone has this significance. One peculiar modification of the malar bone stands for the sign of natural physician. This sign, and its accompanying healing instinct, is large in the North American Indians. The modifications and refinements of this sign are very subtle, yet to the cultivated physiognomist and evolutionist they appear plain, simple, and natural. All of the great physicians of the world present a certain slight protuberance of the malar bone which cannot be mistaken in character after being once observed and located. Many natural healers exhibit this formation without the mental development of the former. Yet in these the cheek-bones are so formed as to show that the healing instinct and power are present. See, for example, the portraits of Drs. Rush, Conneau, Warren, Abernethy, Sir Astley Cooper, Hahnemann, Thompson, founder of the "Thompsonian" system; Priessnitz, founder of the "water-cure" system; and Dr. Tanner.



FIG. 204.—SAVAGE CHEEK-BONES.
(AN INDIAN CHIEF.)

Thus it is shown that what was in the savage a disposition to defend life and gain a living by brute force becomes, in its more cultivated aspect, self-defense, and, going higher still, it is refined into the desire and capacity for protecting life by remedial efforts. Such is the evolution of this one species of selfish force,—a wonderful lesson which Nature affords us, both in progress and evolution, and in progressive physiognomy.

In all good surgeons Force is one of the dominant traits. When this is allied to skill the ability is present for performing those great operations upon the human subject which, without a large degree of force, could not be successfully accomplished.

One of the signs for Sanativeness is relative development of the malar bones. *Width* of the *bony structure of the face* at this point is one of the signs of longevity.

Very high cheek-bones, in combination with coarse quality, are indicative of commonness and coarseness. The same development, with a finer quality, denotes self-defense, clannishness, natural capacity for nursing and healing by laying on of hands and manipulation.

The natural physician has a smaller development of this bone than the former, and those who are flat at this part are never good nurses, and dislike exceedingly to undertake the care of the sick.

Such, in detail, is the significance of the malar bones in their several physiognomic aspects.

The Nose.

THE EVOLUTION OF THE NOSE.

A comprehensive history of that greatest of facial features, the nose, would fill a large volume, but as the scope of this work precludes such amplification, I shall endeavor, within the limits allotted me, to give the reader such data as will enable him to have a fairly good idea of the immense significance of this almost sublime feature,—a feature far removed from an animal form, although serving an animal function in the human economy. This feature is of such vast physiognomic importance that Lavater, speaking of it, observes that

> A nose physiognomically good is of unspeakable weight in the balance of physiognomy. It can be outweighed by nothing whatever.*

As the reader progresses in this chapter, I opine he will be quite in accord with the above opinion of this great observer, and

* Essays on Physiognomy, Lavater, p. 472.

will, I hope, imbibe some of my own enthusiasm in regard to this facial member, which is both organ and feature,—both highly mental and highly physiological in its form, function, and significance. As this part of the chapter will be very lengthy I shall at once proceed to a slight description of the evolution of the nose, as shown by Haeckel, and then quote some of the masterful analyses of Dr. Cross in support of my theories upon the mental significance of this regal feature.

Fortunately for the advancement of scientific physiognomy, it is able in this era to draw upon the most advanced and comprehensive methods of evolution, anatomy, physiology, and cognate sciences. These sciences not only aid in the analysis of human nature, but also *verify* my conclusions drawn from observations of the *form* of the features, and the colors and qualities of the human face and body. Had these ideas been promulgated in the preceding century they might have been regarded only as tentative or empirical, but, like many other subjects of human research, they have appeared contemporaneously with other advanced theories, and thus receive their support and verification.

It is an axiom that the laws of all phenomena are correct if they agree with the operations of the phenomena, and are in harmony with other *established laws*, hence it is that I so often appeal to the writings of the best-known minds of this age for that authority which might be denied my own rather positive theories; and, again, these extracts afford instruction in many sciences which could not be elaborated within the limits of this work. To the reader who desires a thorough knowledge of the features of the face, the following description of the evolution of the nose by Professor Haeckel will be most interesting. Its farther evolution (after birth) of the flat and snubbed noses of the savage and immature classes will be considered under the head of the "Forms of the Nose":—

The history of the development of this sense-organ (the nose) is of high interest. Although the human nose, externally viewed, seems simple and single, yet in man, as in all higher vertebrates, it consists of two perfectly distinct halves of a right and left nasal cavity. These two partitions are entirely separated by a vertical partition, so that the passage into the right nasal cavity lies only through the right nostril, and into the left cavity only through the left nostril. Posteriorly, the two nasal cavities open separately through the two posterior nasal apertures into the head of the pharynx, so that the pharynx may be entered without touching the cavity of the mouth. This is the passage by which air is usually inhaled. The mouth being shut, it enters the pharynx and thence passes through the windpipe into the lungs. Both nasal cavities are separated from the mouth-cavity by the horizontal, bony palate-roof, to the back of which the soft palate and the uvula are attached like a hanging curtain. In the upper and hinder portion of both

nasal cavities the olfactory nerve extends over the mucous membrane which lines these parts. This is the *first pair* of brain-nerves which issue from the skull-cavity through the sieve-bone. Its branches extend partly over the partition wall and partly over the inner walls of the nasal cavities, to which are attached the "shells" or spongy bones of the nose,—complex bony structures. These "shells" are much more further developed in many of the higher mammals than in man. In all mammals there are three of these "shells" in each of the two nasal cavities. The sensation of smell is produced by a current of air containing odoriferous matters passing over the mucous membrane of the cavities and there coming in contact with nerve-ends.

The peculiar characters which distinguish the olfactory of mammals from that of lower vertebrates are represented in man. In all specific points the human nose exactly resembles that of the Catarhine apes, some of which indeed possess an entirely human external nose. (See *Semnopithecus nascius.*) The first rudiment of the *olfactory organ in the human embryo* does not, however, show any signs of the fine form of the future Catarhine nose. Indeed, it *first* appears in the same form which persists for life in fishes,—in the form of two simple pits or grooves in the skin of the upper surface of the head. In all fishes two of these mere blind nose-pits are found in the upper surface of the head. Sometimes they are situated at the back near the eyes; sometimes near the snout; or, again, near the mouth-opening. They are lined by mucous membrane in folds, over which the end-branches of the olfactory nerves spread. Comparative anatomy thus still shows us simultaneously in the ascending series of the double-nostriled vertebrates, from fishes up to man, all the various stages of development of the nose, which the very highly-developed olfactory organ of the higher mammals has passed through *successively* in the different periods of its tribal history. *The first rudiment of the organ of smell in the embryo of man*, and in that of all the higher mammals, makes its appearance in the *same entirely simple form* which is retained *throughout life by the nose of fishes.*

At a very early stage, and while no trace of the characteristic facial structure of man is yet visible, a pair of small grooves appear on the front of the head and before the primitive mouth-cavity. These were first discovered by Baer, and by him properly-enough named "olfactory grooves."

The external nose is not developed until long after all the essential *internal* parts of the olfactory organ have been formed. The first trace in the human embryo during the first month shows that originally there is *no trace* of the external nose. It afterward grows out of the anterior nasal portion of the primitive skull. The form of nose which is characteristic of man does not appear till a *period far later.*

Much stress is usually laid on the shape of the external nose as a noble organ, occurring exclusively in man; but there are apes which have very human noses, as, for instance, the nosed-ape already mentioned. On the other hand, the external nose, the fine shape of which is so extremely important to the beauty of the facial structure, possesses in certain *inferior races* of man a shape *anything but beautiful.**

The preceding account of the evolution of the nose shows us that it first appears in the human embryo as two simple pits. This rudimentary stage and appearance has its counterpart in the faces of some individuals of the undeveloped races, whose pictured

* The Evolution of Man, Ernst Haeckel, vol. ii, p. 240 *et seq.*

representations by Lavater and by writers on ethnology show their noses to be little more than two round holes in the plane of the face where the nostrils are usually situated. These classes of noses indicate animal characteristics almost entirely devoid of anything of a mental cast. Now, from this low form of the nose up to the most perfect nose of the scientist or philosopher are many intermediate forms, each increasing in size; each indicating higher grades of mentality; thus proving that the basic law of physiognomy, viz., that "the size of the nose controlled by quality is the measure of power," is in harmony with Nature's manifestations, and that the flat nose of the negro and the snub-nose of many Caucasians are indices of comparative undevelopment of other parts of the body and mind.

The prominent part which the nose plays in speech and in vocalization must be borne in mind. The savage tribes have a language which lacks resonance and richness. Their vocabulary is extremely limited, being confined to a few hundred words at most, and totally incapable of the melodious vocalization of the more advanced races. Not only are they incapable of comprehending ideas involved in the language which the highest races use, but they are also physiologically defective in the structure of the throat and nose, and in all the parts involved in fine vocality. Mind and function develop together, and when they are on a low grade, both mentally and physiologically, their noses and mouths disclose their low mental as well as low linguistic status. The variations in lingual capacity are far less marked among individuals of the civilized races, yet between the ornate and fluent language used by a Webster or a Clay to the limited vocabulary used by a commonplace or feeble-minded youth there are many gradations.

There are many variations of structure of the labial, laryngeal, and nasal organs. The more developed these organs, the more comprehensive and fluent the language.

These structures in infants being unperfected, prevent the perfect enunciation which characterizes their later efforts, while the same organs in the feeble-minded and idiotic are very far from the normal standard in form and size. In these classes *imperfect curvation*, not only of cellular tissue but of the *organs as a whole*, is apparent; hence, the manifold defects in speech that are observed in asylums for these unfortunate creatures prove a valuable lesson to the physiognomist.

The nose and mouth of these two classes would disclose these differences in grade without referring at all to the brain or form of the head.

The development of the human nose from childhood to the adult stage is most instructive. In infancy it has the form which is characteristic of those races that never arrive at a highly developed stage. Later, as the mind becomes active and the larynx and the bones of the nose and head are developed and perfected, the nose rises and at about the age of puberty assumes the size and form that it permanently exhibits. This lesson in nasal development in connection with mental development is witnessed in the progress of every individual from birth to adult life, and yet it seems to have failed in impressing upon observers any very important physiognomic lesson. So true it is that what is common and habitual to man impresses him the least. Were each one of us to look upon a human face for the first time in our lives, after arriving at manhood, we should regard it as the most singular object which we had ever beheld, and immediately commence an investigation of it; but, as it is the most common and familiar object we behold, by a strange inconsistency, less is known of its real significance than that of any other object with which we are familiar.

As the nose and nostrils develop in size, the *lungs* become larger, and as respiration on a large scale gives the power for active movements, so we shall find that it also energizes the mind. Dr. Cross analyzes this function as follows:—

As the nose is the proper entrance into the respiratory organ, and as the energy is proportioned to the respiration, so the size of the nostrils must stand indicative of the *whole energy* of the animal. By the nostrils are to be understood not merely the two external orifices, but also the two nasal passages in their whole extent. Although the nose is less complicated in structure, in function, and in physiognomical expression than the mouth, yet, as breadth is more nearly connected with life than food, and as the chest is situated above the body and the nose above the mouth, so the nasal organ must indicate qualities of a stronger and more dignified nature than animal appetites and passions,—indicates, indeed, that very energy which it is the great business of the passions to rouse into action. The nose may be said to occupy all the upper jaw above the roof of the mouth or the floor of the nostrils. Above, it is separated from the brain by the cribriform plate of the ethmoid bone and by the clinoid processes, or *sella turcica* of the sphenoid bone. On either side it is bounded by the orbits and by the cheek-bones; below it rests upon the roof of the mouth. Thus the nose forms a long, *arched* vault, broad below, narrow above, the two anterior extremities of which look into the atmosphere; the posterior into the gullet. The nasal cavity also extends on each side into the maxillary caves, upward into all the spongy bones and frontal sinuses, and backward into the cellular structure of the *sella turcica*. Thus the nasal cavity is extended and enlarged in every possible direction, and has actually by its encroachments hollowed out and undermined the whole fabric of the upper face. *Thus the two openings, mouth and nose, which lead into the two great vital organs, occupy nearly the whole face.*

In making a study of the evolution or development of the nose, we are first led to examine the noses of animals, among which the elephant takes first rank in nasal structure, as his proboscis is not only nose but hand, and capable of many diverse intelligent acts. Its length and flexibility are qualities which excite our attention, for it is the most unique feature presented by any animal. Compare the mind of the elephant with the size or length of his proboscis (for thus does its *size* show forth), and we shall find that its intelligence, reason, and intellect are in direct relation with this feature. No other animal possesses his sagacity, his foresight, his carefulness, for length of nose is indicative of all these qualities; most particularly of Cautiousness, as shown in the long noses of the Hebrew race, the most provident, far-sighted, and cautious of all races.

The horse and some species of dogs come next in rank in the size of nose, shown mainly by length. Some dogs are short-nosed, and these are not so intelligent as those with a longer one; they are less careful, also. Several of the ape tribes have long noses, but their physiognomic value is neutralized by the close approximation of the eyes to the nose, which in man or beast denotes relatively less breadth of mind and less intelligence than where the width is greater, as in the dog, horse, and elephant. And so we might continue the analysis of the nose as related to animal intellect indefinitely, but we must pass on and note the absence of development of all infantile noses. Without exception they are all flat in the centre, and resemble the forms which many immature persons exhibit throughout life.

Among the undeveloped, rude, barbarous, and savage races that retain a relatively undeveloped form of nose are the following, viz.: The Mongolian, the native Australian, the Negro, the Calmuck, the Malay, the Polynesian, and the Esquimau. Undeveloped noses, depressed in the centre, with nostrils spreading out low and flat are found among the undeveloped, immature, and poorly-organized of the Caucasian races, also in infants and many feeble-minded persons, and idiots, and other comparatively defective human beings.

A thorough investigation of the faces of all the previously-named classes will show that the nose advances in the ratio of intelligence, and that a finely-formed nose is not only indicative of improved functional powers, viz., those of scent and of resonance of the voice, but it is the best facial indication of *intellect*, showing not only the kind or sort of mentality, but also the degree of force or power which will be exhibited.

All of the several aspects of the nose will be treated seriatim,

commencing with its physiology and its three divisions, followed by the physiological and mental signs which Nature has placed upon it, and which I have been so fortunate as to discover.

Before entering upon the analysis of this grand facial feature, I deem it necessary to define my use of descriptive terms, inasmuch as there seems to be a woeful absence of *precision* in the application of these terms, and also great confusion of ideas in regard to the comprehension of the forms of the facial features. The majority of people are apparently more unobservant of the forms of the human face, its *lines* and *features*, than of any other objects; while they are able to discuss intelligently a picture, or describe a gown or hat, with the utmost accuracy, I have been amazed at the utter ignorance displayed by otherwise intelligent people as to the precise form, color, and texture of faces and features which they daily observe. I am also surprised at the lack of precise terminology used in attempted descriptions of the several parts of the features. To clear up this confusion I subjoin the following definitions, hoping that their application may assist in the comprehension of my analyses and delineations of the nose:—

The under part of the nose I term,	The base.
The two openings at the base,	The nostrils.
The outer and lower sides at the nostrils,	The wings, or alæ.
The extreme point,	The tip or lobe.
The top of the nose from the root to the tip,	The back or dorsum.
The partition between the nostrils,	The septum.
The fine hairs inside the nostrils,	The cilia or vibrissæ.
The highest part of the back of the nose,	The bridge.
The sides of the nose above the wings,	The sides.
The point of junction with the forehead,	The root.

With these definitions of the several areas of the nose, my analyses and descriptions can be fully understood.

THE PHYSIOLOGY OF THE NOSE.

In accordance with the method pursued throughout this work, I shall discuss, first, the physiological aspect of the nose; afterward, its mental significance.

The physiological uses of the nose are many and varied. It is used primarily for

(*a*) Breathing, inhaling, and exhaling.

(*b*) Scenting, to protect the lungs and stomach from noxious gases, foods, and drinks.

(*c*) Warming the air to protect the sensitive lungs.

(*d*) Carrying the blood to the brain rapidly, and in large quantities.

(*e*) Assisting the *general* circulation of the blood.

(*f*) Assisting the voice in producing sonorous tones.
(*g*) Energizing bodily movements.
(*h*) Filtering the air by its passing through the cilia, thus excluding dust, etc.

The larger the nose and its accessories, the more powerfully will all of these functions be manifested, provided fine quality be present.

The deeper the inhalation, the stronger will be the mental manifestation; that is to say, the better the breathing capacity in a given individual, the better able will that individual be to manifest *his mental power*. It will not make him more mental, nor give his brain a higher quality than was his birthright, but it will enable him to make more useful that which he already has; it will increase his mental powers in the direction of activity.

Large, high, and broad noses exhibit more nearly the sense of scent than narrow and high, or depressed noses. In the animal kingdom this is well illustrated by comparison of the greyhound with the bull-dog and blood-hound. The former has little, if any, sense of scent, while the latter displays an intense carnivorous phase of the scenting function.

A *long* and *broad* nose will warm the air which enters the lungs more than a flat or thin nose, for the reason that the air passes over a *greater surface* before reaching the sensitive lungs. Thus does a long nose better *protect* the body (physiologically) than a short or narrow one. Later, we shall find that the longer the nose the more watchful, guarded, and careful is the individual (mentally). The noses of the majority of consumptives are either high and very thin, with very narrow nostrils, or very short, and depressed at the centre.

Deep breathing (through the nose) assists the general circulation, and a large nose and nostrils reveal this power, for the *rate of the motion of the blood* stands in direct relation with the size of the nose, lungs, and heart.

The *functional action of the brain* is also strengthened by the impulse given to the volume of blood sent to that organ by powerful and deep inspirations.

The *voice* is most especially affected by the size and form of the nose and nostrils and the accessory organs the frontal sinuses. The size and form of the nose, together with the development of the sinuses, contribute to produce sonorous tones.

Energetic movements of the body depend mainly upon the amount of air inhaled. Those who possess large lungs and heart are the most rapid and continuous in motion. The race-horse is a good example of this structure; the various deer tribes, also, whose

thoracic development is relatively greater than the muscular system. The mind is also clear and active, and the sensations intensely keen, with this development.

Large lungs, associated with small or medium-sized brain, afford the best combination for rapid locomotion and mental activity. A large brain with average or small lungs indicates slow movements. The brain seems by its co-operation with the lungs to be the controller of bodily movements. It may be considered as an organ of co-ordination, for it certainly by its relative size affects the movements of the limbs. A large front brain, unless associated with a large nose, nostrils, and large lungs, is a sign of either great stupidity or excessive slowness of thought and movement. The ancient writers, from Aristotle down, are all agreed upon the idea that a great forehead indicates great dullness. They did not apparently relate the lungs to the brain as I do. Had they done so they would have given a more enlightened view of the size of the forehead. Daniel Webster had a forehead of noble proportion, but his chest-cavity and digestive powers were *equally great;* hence his ability.

The preceding are the purely functional or physiological uses of the nose and its accessory organs. When we arrive at the consideration of the mental significance of the nose we shall find that it has many more mental meanings than physical offices.

The intimate relation of the brain—the principal mental organ—will then become apparent, for the respiratory system, the nose, and the intellect advance *pari passu* in development from the ape to the man.

Observation of those races that have remained fixed and stationary in their undevelopment for thousands of years (as the negro, for example,) shows that their noses have retained the same form that their ancestors then bore. The sculptured remains of Egyptian and other schools of art, as discovered by archæologists, prove this to be the case. All of which goes to show that the development of intellect and the nose stand in direct relationship and rise and fall together.

Doubtless the width of the nose at its root in the negro affords such expansion of the olfactory ganglia as creates in him powerful scenting capacity. Yet I doubt that his scent is as susceptible to delicate odors as one less wide but of *higher* quality. The width of the root of the nose, of the back, and of the nostrils all denote more power of those functions and faculties which they respectively represent than if these parts are narrow. Breadth always indicates vigor or power, and narrowness denotes weakness, unless the *quality* is sufficiently high to offset mere size or quantity.

Thus, breadth of the nostrils always announces large, capacious lungs, on the principle of homogeneity. Nature makes every part to match every other part, and wherever there is a large thoracic cavity the nostrils are large in order to assist the ingress and egress of the large volume of air required to fill the lungs. Large nostrils presuppose a powerful heart, for the heart stands in direct and intimate relationship with the lungs, and if the latter are large the heart must be correspondingly vigorous to assist the process of circulation. Thus, we have in the nose the signs for the lungs and heart.

The part performed by the *liver* in the process of clarifying the blood is no less important to mental manifestation than it is to physical purity and soundness. The liver is a "clearing-house" for the blood; it is in this organ that the purification of the blood takes place; hence, this organ must be on the most intimate terms with the lungs and heart, as all three are equally interested in the circulation of the blood. The relative position of each of these organs in the body is such as to favor their associated efforts. Their signs in the face are also in such contiguity as to point to the intimacy of their action. The sign for the liver is the downward development of the septum of the nose; its situation is between the two nostrils, which are the signs of the lungs. All three of these organs contribute by their power and development to create the necessary nourishment for powerful cerebral action; hence, the more vigorous these three organs collectively, the greater the ability of the brain to think clearly and profoundly. The liver by its vigor assists directly to clear the blood, and when thus purified it is sent *directly* to the brain. It is thus shown how directly the brain is dependent upon the action of the liver for ability to think clearly. Thus, we see that those who exhibit the sign of an active liver in the septum of the nose exhibit also the faculty of analyzing—of clear thinking. It does not follow that they also think *profoundly*—that is seen by other signs; but they will be able to analyze *clearly* whatever they are attracted to by the combination of their other faculties.

I cannot now name any person eminent as a *logical* thinker in whose face or portrait the sign for analysis—for an active liver—is absent.

The sign for one other grand function is found in the nose. At the bridge the sign for the *stomach* is found. If the nose be *broad* and *high* at this point the stomach is congenitally vigorous, but where the nose is very flat, or thin and high at this part, the stomach-digestion is relatively weaker. In order that the brain, as well as the body, may be vigorous, it is essential that the

stomach be strong and normal in all its operations, in order to be able to prepare the aliment received into it for the next stage of digestion, viz., that performed by the intestinal tract. Where both these divisions of the digestive system are vigorous, perfect assimilation of all the food received is accomplished, and a large supply of that nourishing fluid, the blood, is created, and thus the entire system, the brain not only, but the nerves, the bones, the muscles, and all other tissues of the human economy are supplied with the nutriment essential to the manifestation of strength of body and mind. Where the digestion is perfect, the liver active, the breathing apparatus sound, and the circulatory system harmonizes with the digestion, we may reasonably expect a manifestation of great strength of body or great mental vigor, or both combined.

All of the above-named organs, viz., the lungs, the heart, the liver and stomach, are closely related in the process of creating, distributing, and cleansing the blood. Mental power and vigor depend upon the quantity and quality of blood furnished to the brain, and this last statement reveals how and why the nose becomes the indicator of both mental faculties and physiological functions.

It is thus shown that in order to have perfect intellects we must seek to have perfect bodies, composed of organs that are *normal in size and activity.* The most powerful mental characters in the world's history have been men of large physical powers, and these men, *without exception*, have exhibited large noses. Mental force demands fuel, and this fuel is manufactured in the stomach, heart, liver, and lungs. These together form a great "steam box," or driving power, for that mighty engine—the human mind.

The intestinal system has representation in the nose, through the sign for Acquisitiveness; also by the *color* of this feature, for as color is evolved from the glands and exhibited by the arteries and veins, so the color of the nose denotes the health-conditions of the blood. The fullness of the sides of the nose, just above the wings (see the sign for Acquisitiveness) denotes both intestinal and muscular vigor. Weakness in these functions is shown by concavities or a pinched appearance at this place, as is often seen in the noses of congenital consumptives. Thus is the physiological mapping of the nose completed. Its mental chart is yet more wonderful, for as every tissue of the body is comprised in the nose, viz., bone, nerve, ganglia, muscle, cartilage, skin, blood-vessels, arteries, mucous membrane, glands, and cilia, so also do the signs of the mental faculties which are situated upon the nose find their

representation in these several tissues. The more forceful traits, such as Executiveness, are shown by *bone* development; the softer and more yielding, as Constructiveness, Imagination, Imitation, etc., are exhibited by the muscular or fibroid development. Thus is another link added to the marvelously complex chain of both revelation and evidence, which are piled like Ossa upon Pelion, in order that the proofs shall appeal to many sides of our intelligence, and that they may be remarked by many diverse explorers.

THE ANATOMICAL FORMATION OF THE NOSE.

The consistency of the nose is dependent upon the kind of tissue that enters most largely into its structure. Bone, muscle, and cartilage, together with veins, glands, and nerves, are the main constituents.

The size as well as the shape of the nasal bones varies, yet the *number* is the same in all civilized races at least.

TABLE OF ELEMENTS TO BE CONSIDERED IN RELATION TO THE NOSE.

In order to make anything like a systematic analysis and description of the nose, the following conditions and details should be examined, as well as the evolution, the physiology, the anatomy, and the signs of intellect which Nature has placed in the nose :—

(*a*) The three general forms: The concave or negative, the straight or passive, the convex or positive.
(*b*) The three general sizes: Small, medium, large.
(*c*) The three widths: Narrow, medium, wide.
(*d*) The three general heights: Flat, medium, high.
(*e*) The three general lengths: Short, medium, long.
(*f*) The three general forms of the nostrils: Narrow, oblong, round.
(*g*) The three positions of the nose relative to the plane of the face: Horizontal, upward, downward.
(*h*) The characteristics of these three positions: Noble, aspiring, ignoble.
(*i*) The three stages of development of the septum: Downward, even with the lower edge of the nostrils, above the nostrils.
(*j*) The three general widths of the septum: Narrow, medium, wide.
(*k*) The three forms of the lobe or tip: Pointed, rounded, angular or bevel-edged.
(*l*) The three horizontal divisions: Artistic and literary, executive, self-willed.
(*m*) The three principal constituents: Cartilage, muscle, bone.
(*n*) The three grades of consistency: Soft, flexible, hard.
(*o*) The four physical functions, the signs of which are situated in the nose: Breathing, circulation, digestion, motion.
(*p*) The six organ systems, the signs of which are found in the nose: The lungs, the liver, the heart, the stomach, the muscular and the osseous systems.

The evolution and physiology of the nose will also be discussed, and an exhaustive analysis of *forms* will be made. Whatever may be here omitted in regard to this most wonderful feature of the face must be learned from the living subject.

GENERAL REMARKS.

We can very easily facilitate the analysis of the nose by subdividing it into three parts—lower, middle, and upper; for as the nose is a most developed and significant feature, so is it complex in its multiform meanings. It is true that it is not as complex in its mechanism as the eye or ear, but there are reasons which preclude the necessity for such complexity. In the first place, it is an *external* organ, mainly; yet it has accessory organs that are hidden from sight. External features never exhibit the same complexity as internal ones, for they have arisen out of that occult stage, leaving the intricate machinery hidden, and stand forth simplified, yet significant of many things. This is the case with the external part of the ear, while the more complex and intricate mechanism, which renders it so susceptible to the subtleties of sound, is buried deep beneath its bony encasement. The external shell or auricle reveals the most hidden meanings as to the capacity of both sound and hearing. At the same time it discloses many characteristics, which will be discussed later under their own proper headings.

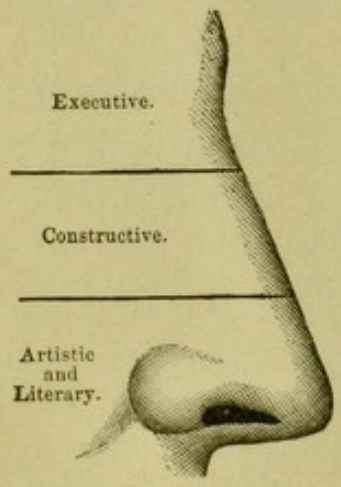


FIG. 205.

The olfactory nerve, which is devoted to the perception of scents and odors, sends forth its branches and filaments to the nose, at the root of which lies the olfactory bulb. From this bulb arise filaments, which are distributed to the nose and nostrils in a very liberal manner. It is this elaborate and affluent nervous distribution upon the inner walls of the nostril, and upon its surface, that gives to the developed nose of the highly-bred Caucasian its grade as a first-class representative of the intellect.

The subtleties of nervous mechanism, and of nervous ramification, together with high quality, are the causes which conduce to a high grade of development of an organ or feature; hence it is logical to infer that the ramifications of the olfactory nerve in the brain, and throughout the whole extent of the nose, would be more diffused in the higher-organized being than in the brain and nose of the immature, defective, or barbarous classes. Reference to the inner mechanism of the olfactory nerve, both within the

brain and within the external nose, will show that it has high duties to perform, and it is by the physiological analysis of the mechanism of a feature, added to its external shape and observation of its use and purpose, that we arrive at a just and comprehensive knowledge of its rank and importance in the human economy.

Added to this is the fact that scenting is one of the more primitive functions—for as inhalation of the atmospheric air is the first act of life, so the sense of scent acts in unison with it, and scents the air even before it reaches the lungs. I have shown that all primitive functions are the most important, and exert a controlling influence upon the individual; hence the olfactory apparatus must take rank as among the very highest in the human economy. And the nose, viewed from every stand-point, is the most important feature of the face, and is significant of *more functions and faculties than any other feature.*

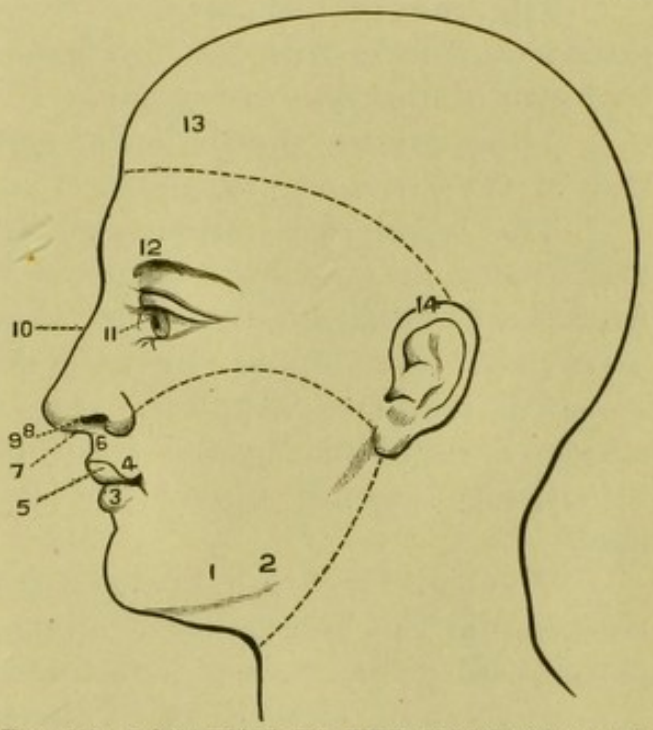


FIG. 206.—LOCATION IN THE NOSE OF THE SIGNS OF THE VISCERAL ORGANS.

The nervous mechanism of the developed Caucasian nose must be much more elaborate in its ramification than that of immature beings; for nerve elaboration and sensitiveness are two of the most important factors in the development of a finely-formed and finely-organized nose; hence I use as an illustration the so-called Greek nose, this form describing the mean between the most powerful nose, the executive, and the flat nose—the feeblest of noses.

Language utterly fails to adequately describe the full significance of the nose; yet science makes the *attempt*, for no other department of knowledge could do even this with any hope of success.

The lowest part of the nose exhibits the signs for the lungs by the two apertures—the nostrils. These are also the principal signs for Pneumativeness.

The sign for the liver is shown by development of the septum.

The sign for the intestines is fullness of the sides above the wings.

The sign for the heart is shown by the size of the nostrils and the color of the skin.

The sign for the muscular development is shown by general *fullness* and *roundness* of the entire feature.

The sign for the nervous system is shown by general development of the lobe or tip of the nose, and by the quality of *the texture of the skin-covering.*

The sign for the bony system is shown by *height*, *width*, and solidity of the upper part, and relative length, for the dominance of the muscular system shortens and the dominance of the osseous system lengthens the nose.

The sign for the stomach is shown by height and width at the bridge, and width or fullness of the sides just below it.

The root of the nose, if *full*, broad, as well as high, and nearly on a level with the forehead at its junction, is a corroborative sign of the *muscular* system.

These are the physiological aspects of the nose and the situation of the physiological signs.

The wonderful harmony existing between the human mind and body finds its most convincing witness in the signs in the nose, from the fact that all signs are situated in and exhibited by the *particular tissue* upon which the associated faculty depends for its ability to manifest its power. The sign for Executiveness, for example, is exhibited by the *bones* of the bridge of the nose, and this faculty depends upon a fine development of bone to manifest itself.

The sign for Acquisitiveness is found in muscular and adipose tissues, and this faculty relies upon the development of these two systems for ability to act in a talented manner, and thus of each sign in the face, as well as in the nose. Every sign will exhibit itself in its *own appropriate tissue.* These are examples of the beautiful harmony of Nature, as well as of the far-reaching discoveries of this system of physiognomy, for, although these harmonious proofs have existed since man came into existence, *no system* has hitherto brought forward all of these subtle links of the complex chain of evidence of the relations of mind, body, and face.

LOWER DIVISION.

Mental Signs: Artistic and Literary.

The signs of most of the artistic faculties, as well as of several of the literary and constructive traits, are situated in the *lowest division* of the nose. Some of the faculties employed in the

investigation of science are also located in this part. The greater the *width* of the lobe and depth of the septum, the better developed are the artistic and literary faculties, or that portion of them which depends upon nervous sensitiveness and muscular action for their expression.

Hope is an enterprising faculty and is required to sustain the efforts of the artist, poet, writer, mechanic, and painter. It irradiates with a golden effulgence the ambitions of the struggling

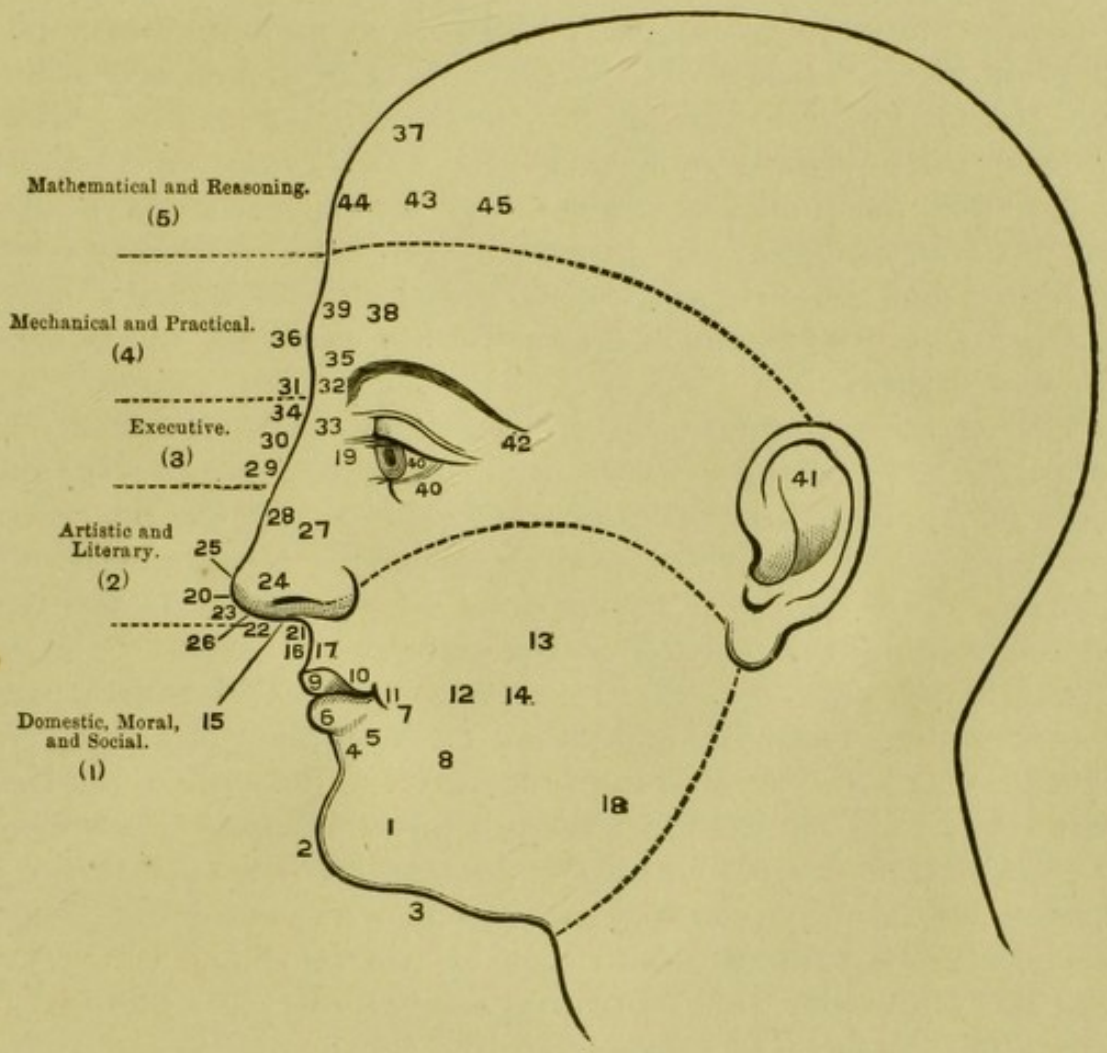


FIG. 207.—LOCAL SIGNS FOR THE MENTAL FACULTIES.

This table of numbered names refers to the numbers upon the above outline. There are several which are omitted from this list, for the reason that they have several facial and bodily signs or are general,—Color, for example. Those which are omitted are described in their own proper order: these are Color, Sanativeness, Force, Time, Order.

1. Conscientiousness.
2. Firmness.
3. Economy.
4. Love of Home (centre).
5. Patriotism (side).
6. Benevolence.
7. Bibativeness.
8. Alimentiveness.
9. Amativeness.
10. Love of Young.
11. Mirthfulness.
12. Approbativeness.
13. Friendship.
14. Hospitality.
15. Pneumativeness.
16. Self-esteem.
17. Modesty.
18. Resistance.
19. Secretiveness.
20. Cautiousness.
21. Hope.
22. Analysis.
23. Mental Imitation.
24. Sublimity.
25. Ideality.
26. Human Nature.
27. Acquisitiveness.
28. Constructiveness.
29. Veneration.
30. Executiveness.
31. Self-will.
32. Credenciveness.
33. Prescience.
34. Form.
35. Size.
36. Observation.
37. Memory of Events.
38. Locality.
39. Weight.
40. Language.
41. Music.
42. Calculation.
43. Causality.
44. Comparison.
45. Intuition.

aspirant for fame, and gives to every leaden cloud a golden lining. It is a necessary component of all aspiring characters, and enables the starving inventor and the destitute genius to bravely and cheerfully work out the grand conceptions by which they hope to immortalize themselves. The sign for this bright star of character is found upon the septum of the nose, just where it joins the upper lip. (See No. 15, Fig. 207.) The next sign in the septum, Analysis, just forward of the latter, is indicated by the *width* of the septum as well as by its downward projection. (See No. 22, Fig. 207.) The office of this mental faculty is to separate the component parts of an idea or object, and judge of its constituents and related uses. It is as useful to the poet as to the scientist. The philologist requires its powers, as well as the writer, actor, and painter. The inventor, mechanic, composer, and orator rely upon it, also, for correct knowledge of the various substances and elements with which they deal; hence, all well-endowed artistic, literary, scientific, musical, and mechanical minds disclose the sign of Analysis in varying degrees.

The third sign upon the septum is Mental Imitation (No. 23, Fig. 207). This sign is situated just forward of and adjoining the sign of Analysis, and includes the *under* part of the lobe or tip of the nose, which projects downward where this trait is well developed. This faculty is required by all classes of people who pursue avocations that involve mental discriminations.

The fourth sign (No. 25, Fig. 207) in this division of the nose I term Ideality—Taste—Imagination, for it manifests these several aspects of what is clearly a single faculty. The skilled physiognomist will be able to discern which of these phases presents itself. This trait, like its companions upon the septum, is needed not only by artists, but also by scientists and inventors. The latter classes have made many brilliant discoveries by the assistance which this faculty has afforded. It is shown by *width* and *height* of the lobe of the nose. A flat and broad lobe, like that of the negro, would indicate neither taste nor imagination. Such flattened forms denote the purely animal indications of the nose, and the tip is like that of many animals—broad and flat.

The sign for Sublimity is so closely associated with that of Ideality as to require close observation upon the part of the beginner in order to distinguish them and to give each its due. All noses which exhibit large Sublimity, as a rule, have a large development of Ideality. These two traits are the attributes of high development, and characters in which these faculties are largely represented are uncommon characters, for very commonplace persons, devoid of the four last-mentioned mental traits, dis-

close noses comparatively undeveloped at the tip, which in them is usually sharp-pointed or deficient in septal development, or else gross and bulbous,—the exaggeration which is always a proof of abnormal development, and which argues coarseness or gross living; and this bulbous form shows, by its swollen veins and purplish hue either degrading or abnormal habits of its owner, or else inherited inflammatory tendencies. Looked at from every stand-point, it is unnatural or abnormal.

Another grand trait which has its sign in the development of the lobe of the nose is Human Nature (No. 26, Fig. 207). This is known by *height* of the nose above the plane of the cheeks, and shows by a projecting forward, as if the nose were intent upon exploration of objects not easily reached. Width and height combined would give more power to this faculty. A sharp, high, and thin point would manifest only commonplace curiosity in regard to Human Nature,—would like to know more of the every-day doings, habits, and affairs of people than of their scientific, physiological, and hygienic conditions. The latter would be the subjects of inquiry of those exhibiting the *broad* and high nose. Breadth of any feature or of any part of it always discloses *more power* of the trait it represents than where it is narrow. Now, all great artists, such as actors, painters, writers of fiction, poets, etc., require the best sense of Human Nature. Accordingly, we find in their noses the point standing high out from the plane of the face. Scientists, too,—those who treat of ethnology, physiology, anatomy, and hygiene,—exhibit fine development of this sign. It is necessary for the salesman and superintendent, the executive officer, the detective, and teacher, and this peculiarity of the nose is found well defined in all of these classes who greatly excel in their vocations.

All who have to deal with large numbers of the human family, as well as with the animal races, need this trait, and if successful will exhibit it. It brings them *en rapport* with all animate nature.

One other most useful as well as ornamental member of this galaxy of stars—and one often relied upon by all the others in this group—is Constructiveness (No. 28, Fig. 207). This sign is close to the sign of Ideality, and all first-class poets, painters, writers, mechanics, and scientists exhibit a large share of this faculty. Its sign is fullness at the sides of the nose, just above the wings. It is muscular development aided by sensitive nerves that makes this fine faculty most effective. The noses of all good or great mechanicians are quite full just at this place; so, also, are the noses of writers of fiction, history, plays, and sermons, for all

classes of constructive mentality require its assistance in the arrangement of their several works. The more of this faculty they possess, the more ingenious and original will be the machine, statue, play, poem, or plot which is brought forth.

The associated group of signs in this division of the nose announces the presence of distinguished company. Let us see who are these noble visitors who delight, evidently, in "high society." First we observe "Miss Starry Hope," with all her illusive smiles; next, the Grand Analyzer, who does not disdain to pick a sonnet to pieces nor to look cynically upon a Voltairean witticism, nor to kindly criticize the fine colors of a picture hanging upon the wall of the "salon;" neither is he averse to the discussion of the principles of Sound and Light; nor would he shrink from the task of reviewing the works of Racine, Newton, or Byron, and would undertake the task of writing an elaborate criticism upon the acting of Rachel or Ristori. So versatile is this gentleman's genius that, "like the atmosphere, it touches everything." For close companion he has Mental Imitation. This associate is needed, for he also attempts to not only imitate but to improve upon all the mental powers exhibited by all about him, and thus often succeeds in going beyond them all. This is his office—upward progress.

Sublimity, a close companion of the last, is a grand character which does not stop short in his investigation of the stars and comets, but he pulls them to pieces, and analyzes the nebulæ out of which they are made. The more vast and magnificent an object or theory, the better is this grand companion pleased. The sculptor, painter, poet, and actor often call upon him for aid.

Then comes the lovely maid, Imagination, or Ideality, with all her subtle witcheries to enchant and enthrall all of the beforementioned grand old gentlemen. Will she succeed? Yes, every time. Not only will she ensnare the proud and refined of earth, but she reckons among her captives the Indian in the forest amid his whispering deities; the negro on the sands of Africa, who sees his angry god or avenging spirit in the lightning's flash and thunder's roll, and the rustic lover, awakened by the mystic spell of love's imaginings, looks upon his first beloved as a goddess. So potent is the influence of this mighty yet gentle maid that she may bid her subjects see gold in every leaden sky, and, behold! the gold is there. The transformations which this wonderful power creates defies even Father Time himself, for she puts new hearts into old bodies, but I am afraid she can scarcely perform that other miracle so much desired,—the placing of old heads upon young shoulders.

In this company, so distinguished, so "thoroughbred," and so exclusive (that they keep always by themselves in the lower third of the nose) we have a remarkable group of signs which are highly developed in the noses of the finest artistic and scientific characters only. And this group thus shaped is proof conclusive that the evolution of the nose at this part has reached its acme, for when it becomes exaggerated in form, as in the "bulbous" nose of the drunkard or vulgarian, it is indicative of traits just the *opposite* of these, so highly refined. All further evolution of this part of the nose will be in the direction of increased fineness or *quality*, not in size.

Not the least insignificant in this group of gentlefolks is Acquisitiveness (Fig. 207). Now, were all the rest of this notable company destitute of materials with which to build and decorate their fine-art objects, we should have neither picture, poem, statue, or temple, nor would the ingenious architect and mechanic be able to build bridges, houses, or any other useful edifice; so kind Nature aids by giving to these muscular companions the assistance of Acquisitiveness. This gives the desire to collect money, materials, and food. Thus supplied, all goes well with the noble ladies and gentlemen, for they must have resources, and so Nature gives to nearly all artistic people the love of acquisition. One likes best to gain *money*, another fame and applause, another strives to collect old books, pictures, statues, pottery, while others are satisfied with second-hand rubbish. Each has his "fad" to strive for. It is well when Acquisitiveness does not degenerate into a vice, as has been observed in the characters of some of the "old masters" of art, who resorted to dishonest practices by passing off their pupils' pictures as their own work in order to gratify an abnormal development of acquisition. Some even become inveterate gamesters with the hope of gaining gold rapidly.

In a balanced degree this is a most useful trait, and conduces to future comfort by urging its possessor to renewed struggles for money and materials. Every human being has need of its power, and its sign is placed most significantly right among the mechanical, artistic, scientific, and literary signs, thus showing that all these works require its aid.

The whole mechanism of the face in regard to the *placing* of the signs for faculties I regard as the most ingenious, the most wonderful, and most sublime piece of divine art, science, and mechanism in the whole range of universal construction. No *mere words* can express my feelings upon this point. The more I contemplate this fact, the greater is my wonder and admiration. Would that I could excite something of this feeling in my readers!

MIDDLE DIVISION.

Mental Signs: Constructive.

Above the preceding interesting group of signs *Nature* places those which are required to more fully carry forward and conserve the works wrought out by those lower down. Without the ability to respect and *control* one's self, one's works, and also to control others and their works, man's usefulness in art, science, and mechanism would be unavailing. Accordingly, we find the signs for the faculties of Veneration and Executiveness adjoining and lying above the literary and artistic group, yet sufficiently near not only to make the nose beautiful in form, but also near enough to assist the character by self-control, and assist it to submit to law. A great architect must be possessed of a resolute will, able not only to control himself, but also able to dominate hundreds of others who may be in his employ, or whom he may have to sustain or oppose. In this case, Executiveness, Veneration, and Self-will must be present in a talented degree. The executive force manifested by such characters as Brunel, Vauban, De Lesseps, Roebling, and Stephenson, is, in itself, a *great talent*, aside from their constructive ingenuity, which is of the first order. So, too, the indomitable *will* of Farragut showed in his naval career as a talent which "backed up" his other great and splendid traits, and enabled him to make them *all* effective. Genius and talent must have the assistance of forcible, energetic qualities to sustain them.

The sign for Veneration (No. 29, Fig. 207) is large in the nose of Michael Angelo and other great artists. So, also, are Executiveness and Self-will (same figure). Veneration is found in varying degrees in male and female noses, and is shown by a slight upward curve just below the bridge of the nose. Its office is to aid the character in its efforts to respect and submit to law, order, propriety, God, old age, and all persons, places, and things entitled to respect. The concave and pug-nosed classes, not possessing any of this faculty, cannot show it in their actions, and are, therefore, unable to control themselves properly, and totally unable to control and command others except by bullying or by force. Their lack of Veneration is shown by their impudent behavior. Those who have the faculties of Veneration and Executiveness large are able to command and control themselves as well as others, through being *permeated* with the *principles* of submission and command, for he who can best understand law is best able to enforce its provisions as well as to obey its commands. Executing law is, in reality, obedience to laws that have been made for the guidance of the executive officer, as, for example, our President is the servant

of the sovereign people, and must obey the laws by which he was placed in office. He *obeys* and commands also.

The post of honor in the nose belongs of right to Executiveness, the commander and conqueror, and this faculty, when exhibited in a large degree, rises high in a curved form at the highest point of the back of the nose. So true is it that the *arched* form represents power, for in this form of the nose Executiveness finds its highest illustration in the noses of the most aggressive commanders of ancient and modern times. As Veneration gives nobility and high-mindedness to the character, so Executiveness goes farther and *compels others to come up* to the law, and thus, whether they wish or not, they are compelled to defer to the laws of the place and country in which they reside, or pay the penalty.

In this middle division, then, we find a company of stern companions, of great use to those other friends in the lower division and of great use to the character every way, and of the greatest importance to the community as well. There are comparatively *few great leaders.* Were it not for the few *natural* superintendents, overseers, commanders, etc., humanity would resemble a flock of sheep without a leader. By a wise ordering of providence great leaders have appeared just when a great cause required their aid. Martin Luther, Washington, Elizabeth Cady Stanton, and other leaders came forward when the mental and moral status of the masses were sufficiently advanced to recognize the value of their services. All these characters possessed large Veneration and Executiveness, hence they were able to be the *law makers* for thousands who now rise up and call them blessed.

UPPER DIVISION.

Mental Signs: Executive.

The upper division is situated above the sign for Constructiveness, and fills out the nose between the eyes with muscular tissue, and creates the sign for Self-will. It causes a fullness at this place, and the greater the fullness the more powerful is the will. It can be readily distinguished from bone. If it exceed a *certain degree* of fullness, and assume a *perfectly straight outline* of the nose where it joins the forehead, it is in a sense an abnormal development of the faculty, and selfish will is the result, instead of Self-will, balanced by reason and justice. This sign is composed *entirely of muscle*, hence its propriety as a sign for pure will.

All departures from the normal standards of form in any feature, whether those appearances be more exaggerated or less than the normal size and form, are to be regarded as abnormal in

action *unless rectified, moderated, or balanced* by some other feature. Now, Lavater tells us that "the nose, to be physiognomically good or great, must exhibit some gentle inflexions or undulations," particularly in the descent from the forehead to the nose, and where Self-will is *too* greatly developed to be normal no undulation appears at this place; hence, the perfectly-straight outline *here* is not according to the normal or highest standard.

Extremely selfish will is an indication of stupidity; hence, where the descent from the forehead to the nose is described by a right line without any inflexion whatever, it is indicative not only of selfish will, but of stupidity to a certain degree. The very fact that selfishness is dominant is the proof of an *obtuse mind.* A selfish policy is ever a *short-sighted one*, and a comprehensively-benevolent mind will plan on so large a scale as to gain more in the end than he who looks only for present petty gratifications.

The perfectly-straight line should occur but three times (normally) in the face, viz., in the nose *below* the brows, in the upper lip, and in the mouth, which should be straight and horizontal. In regard to the so-called Greek profile, Winkelman observes:—

> The nearer the approach to the perpendicular, the less is there characteristic of the wise and graceful.

Noses greatly depressed or very thin and narrow between the eyes exhibit very little pure will, and the owners of such noses are relatively deficient in muscle *all over the body*, but may have great Firmness, which is a sort of compensation; hence, an observer remarking this small portion of the face alone could be able to describe the form of the head, eyes, eyebrows, neck, limbs, body, hands, and feet, as well as the dominant traits and voice. Of course he would have to understand the principles of scientific physiognomy to enable him to do this.

The sign for Self-will stands *alone, yet connects* two remarkable groups. The executive and the practical signs are here grouped, the one below and the other above the local sign for Executiveness. Both groups need the aid of an *intelligent* and balanced will to make their labors of the highest efficiency, and it seems to be the plan of Nature to always closely associate in the body those organs and functions which require mutual aid of each other. To make this *interior* plan harmonize with the exterior, the *signs* of these several functions and faculties are observed always in such contiguity as to facilitate the task of *locating them*, and of deciding upon their power or weakness.

With these remarks, the description of the three divisions of

the nose is completed. Taken in consideration with what has preceded it, and with what will follow upon the subject of this organ, the reader will, I opine, have a rather exalted regard for that most noble, most human feature—the nose.

The nose is the great *central* feature around which all the other features revolve, so to speak. It is the *sun* of the facial system, and reveals at the first glance the most interior conditions of both mind and body; it gives us the most positive, direct, and incontrovertible knowledge of the interior man, and instantaneously reveals a man's capacity for thought and action.

The main part of the nose is osseous, and the soft or cartilaginous parts take their form from the nasal bones in a measure. Bone and flexible muscles constitute the principal constituents of the nasal organ. The skin, the blood-vessels, the nerves, and coloring pigment assist in its expression.

The nose is more indicative of character than any other feature, or, I might say with more accuracy, it reveals *more characteristics*, both mental and physiological, than any other facial feature or pair of features. The nose is the facial indicator of the *collective mind*. The *form* of the nose announces the *direction* or dominant tastes, proclivities, and powers of the individual, while its *size* reveals the degree of power and energy which will be applied. We have previously noted what the mouth, chin, lips, and cheeks disclose, but neither of these features, taken singly, give as much information concerning *mental traits* and *physiological functions* as this great central feature. The mouth instructs us in regard to the *digestive* capacity, and the mouth and lips inform us as to the *affectional* or *emotional nature*, but the nose exhibits the signs for several physiological functions, and also points out the dominant mentality, together with the degree of energy which will be manifested in the exhibition of mind.

The eyes may appear to poets and lovers to be the "mirror of the soul," and the forehead may seem to phrenologists to be the "dome of thought;" but when the aforesaid "dome" is covered by a hat, or thick head of hair, and the "mirror" closed by sleep, injury, or death, the scientific reader of character is not hindered in his task of reading the human mind and body by all of these obstacles. If he once get a glance at the noble outline of the nose and nostrils he can render a just verdict, and no art of dissimulation, no muscular trick or affectation, can here avail; for the fair proportions of the nose cannot be made to assist in any concealment of the *mental powers*. This feature thus stands the *positive* indicator of the most interior recesses of the human mind and body. I do not claim that it reveals any knowledge of the "soul,"

for my work deals mainly with a material mind in a physical body. I therefore leave to those more learned on the subject of soul-power the task of describing its locality and appearances. I should like to be able to do this, but as I lack the ability I will not profess what I cannot perform. The study of the *human body and mind* is surely a *noble pursuit*, and worthy the best efforts of the most capable and benevolent of the race. Generations of students will not suffice to reveal all that there is to be known upon the subject, for human nature is progressing under the inexorable law of evolution, and its interpreters must advance with this upward movement, and, like the astronomers, each generation must add its quota of knowledge to be added to and built upon by those who follow.

A comparison of the noses, first, of infants and immature adults, such as idiots, the feeble-minded, and dwarfs, with those of the most normal and developed adults, leads us to the conclusion that one basic principle of scientific physiognomy is correct, viz., that "the size of the nose, controlled by quality, is the measure of mental and physical power," and a comparison of all of these classes with savage and undeveloped races proves another basic law, viz., "the shape or form of the nose indicates the kind or direction of mental power." With these two principles as a guide to the analysis of the nose I will commence the description of the morphology of this grand organ, for it is both organ and feature combined.

The *general* and universal laws of form may be applied to the analysis of the nose. The several *combinations* of these forms will reveal individual characteristics. It is thus that individual noses are constructed, yet each one can be assigned to a particular class. When we reflect that *there are in the world no two noses precisely alike*, it is evident that nothing less than the application of *basic principles of form* would be adequate to discover their meanings. Notwithstanding the immense number of diverse noses that have been and are now in the world, no two could have been exactly alike, for the circumstances which mold one human being never surround another, and it is the minute circumstances which, aggregated, affect the organism of man. Even twins, who usually resemble each other greatly, could not be *exactly* alike.

Let me, by way of premise, observe that the basic laws of Form control and expound most emphatically the meanings of the nose, and the student is asked to apply these laws to the several forms of the nose and carry them to their logical conclusions.

The horizontal line of the *nostril* (Fig. 208) is the most *perfected* type of outline for this part of the nose; hence, is the normal standard of form for this line. It betokens noble characteristics.

The upward outline of the nostrils (Fig. 209) is relatively less perfect and mature, and discloses infantoid, inquisitive, and hopeful tendencies.



FIG. 208.—Horizontal. FIG. 209.—Upward. FIG. 210.—Downward.

THE THREE GENERAL OUTLINES OF THE NOSTRILS.

The downward line of the nostril (Fig. 210) indicates a melancholy, groveling, or malicious character. Any departure from a normal form, either upward or downward, in any feature, signifies a departure from the highest or most perfect method of action. These three classes of forms of nose will be treated at length in the pages which follow.

THE FORM OR OUTLINE OF THE NOSE.

Seen in profile the nose presents three basilar or general forms. All others are modifications or compounds of these primitive forms. In the outline of the nose and nostrils nearly all of the basic elements of Form are found, and when applied reveal characteristics in harmony with those laws. These three basilar forms of the nose are as follow: the concave or negative,



FIG. 211.—Concave. FIG. 212.—Straight. FIG. 213.—Convex.

THE THREE BASILAR FORMS OF THE NOSE.

Fig. 211; the straight or passive, Fig. 212; the convex or positive, Fig. 213.

The concave or rudimental nose is observed in all infants, in many immature beings, such as the commonplace, the feeble-minded, and idiots, and among many undeveloped races, as, for example, the Russian peasants, the Tartar, the Esquimau, the Hottentot, the Malay, the native Australian, and the Ethiopian.

THE CONCAVE OR IMMATURE NOSE OF THE ADULT.
NEGATIVE CHARACTER.

There are several forms of the concave nose observed in adults. One presents a concavity from the root of the nose to the end, where two apertures appear facing the observer, as is seen in the noses of animals. As the *arched* form, wherever observed, denotes power and energy, health and beauty, so the opposite form—the concave—ever indicates the opposite qualities. Let it be understood that the concavity of the nose, where the depression is found at the part termed the "bridge," or at the place that is usually highest in well-developed noses, is generally observed in combination with a very short, muscular, *turned-up sharp tip*. Where this is the case we have the most immature and the least developed of adult noses. Such noses do not indicate ability for command, nor even for much self-control. The energy of this class is mainly expended in opposition—in fractious, unreasonable conflicts, whenever its owner is willing to put forth any great amount of energy. It is this quarrelsome trait that has earned for this species of nose the term "pug-nose;" hence "pugnacity," the verb expressive of a quarrelsome disposition, harmonizes with this shaped feature.

There are many shades and grades of character represented by the nose which exhibits a marked depression at its centre. Its significance ranges all the way from simple dullness or feebleness of intellect, through lack of executiveness and self-control, to passive, patient, or inert, inoffensive behavior, without forceful, aggressive proclivities.

The *tip* of the nose must, in each individual case, be taken into account in reading character, as well as the concavity of the back of the nose. Some concave noses turn up bluntly, while others are inclined to be pointed; others still stand out from the plane of the face, and are indicative neither of rudeness nor of pertness. The latter class are seen in the faces of many excellent artistic minds, quite skillful in painting and music, yet not greatly executive, or with only very limited powers of command and self-control. This class are inclined to be matter-of-fact and plain spoken, are apt, when under the influence of anger, to be blunt, brusque, and thoughtless in speech, and are afterward sorry for the same. Of this short, concave nose Lavater remarks:—

> I have seen the purest, most capable, and noblest persons with small noses and hollow in profile, but their worth most consisted in suffering, listening, learning, and enjoying the beautiful influences of imagination; *provided*, the other parts of the form were well organized.*

* Essays on Physiognomy, Lavater, p. 391.

Noses that are depressed at the root or point of junction with the forehead are not to be classed with the concave nose, *if the rest of this feature rises well above the plane of the face.* This peculiar depression signifies relative absence of will-power, and also want of muscle. From this concavity alone one is justified in saying that the *entire body* of the subject is relatively deficient in muscle. Concavity of any part of the nose indicates feebleness of the faculty of which that part stands representative. If the tip of the nose is depressed or rises only slightly above the plane of the face, the breathing powers are relatively feeble, and the knowledge of Human Nature and of other faculties is very limited. This is also one indication of short life, owing to the small size of the lungs. If the centre of the nose is concave, the character is lacking in energy and *executiveness*, and also in nobility, high-mindedness. The depression at this point would denote a very weak stomach, and this is one sign of short life. Thus it is shown that the application of the laws of Form applied to concave outlines reveals the conditions of feebleness and absence of true beauty. As a rule, noses that are depressed in the centre, so that they scarcely rise above the plane of the face, do not rise very high above any portion thereof, and the point or blunt end, where the nostrils are situated, is also not high, but where the central concavity is only partial we often find average length and height of the end. In this case the tastes seem to run in the direction of singing, or some other form of art. Although a high, broad nose is essential to the production of the most sonorous tones and of volume in singing and in oratory, I cannot recollect the face of any eminent singer or speaker whose nose is greatly depressed in the centre, for the nose and frontal sinuses are properly a part of the organs of speech, and are developed in proportion as the voice is powerful and the enunciation perfect. The nose of Henry Ward Beecher was short in proportion to his other features, but was high its entire length and *very broad.* The noses of many, if not most, great singers are very short, round, and muscular, the bones scarcely perceptible. These noses are also soft and flexible. This is essential to the *movements* of the *nostrils*, which in singing are very frequent.

The pug-nose of the Caucasian races is quite different from the concave noses of undeveloped tribes. The Tartar is said, by travelers, to have no nose at all, but "he breathes through holes in the face." All of the races whose noses are of this type have scarcely any elevation at the tip of the nose, and one can look directly into the interior of this organ from a front view. Among Caucasians, notably in the Celtic races, do we observe several

modified forms of this peculiarity. It indicates lowness, brutality, animal passions, such as jealousy, spite, malice, vindictiveness, etc. These will all be figured and described in their order later.

Any departure from the normal standard of this form of the *nostril* is highly significant, and shows that the subject is more animal than mental, for when the nose retrogrades to the mere function of breathing, the less is it expressive of mental energy.

The concave or negative nose is *par excellence* the nose of childhood. In infants this form is normal, but when observed in adults it is always significative of *relative* mental immaturity. It is just the opposite of the convex nose, which is positive, forcible, and executive in character, the law of the arch here revealing the strongest capacities of mind. There are many varieties of the concave nose. The principal ones will now be figured and described. They are as follow: the embryotic, the infantoid, the immature, the idiotic, the snub, the pug, the *retroussèe*, and the singing nose.

The concave noses of all classes are principally cartilaginous or muscular. The straight nose is composed of nearly equal quantities of bone and muscle, the muscle slightly predominating; while the convex or positive nose shows more of bone than of any other elemental tissue.

EMBRYOTIC TYPE.

In following the order of the progressive development of the nose, it is proper that we examine this feature in its embryotic state; thence follow the course of its rise and progress through its several higher phases, as it rises up through the immature, the infantoid, and the artistic to the highest forms—the executive and scientific.

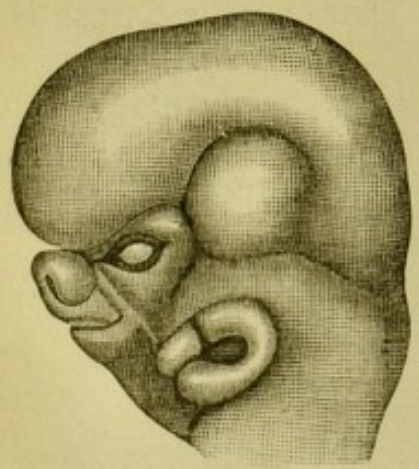


FIG. 214.—EMBRYOTIC NOSE. (After Haeckel.)

In the early stages of the embryon the nose is, as shown by evolution, merely two small pits or minute holes. Later, the nose resembles a short, thick, blunt, pug shape, which bears no resemblance to the pretty little nose of infancy, but does resemble more nearly the immature noses of some of the undeveloped races and peoples occasionally met in civilized races. Not until the full term of prenatal life is completed does the nose assume that peculiar infantoid form observed at birth. The above figure shows the nose of the embryon at about the sixth week of prenatal existence.

All of the forms of the nose within the concave class present one of the forms of the embryotic nose,—that is, shortness,—or one of the forms of the infantoid nose, viz., a depressed ridge or an upturned tip, and it is the presence of these peculiarities of structure that decides their relationship to the concave class.

INFANTOID TYPE.

(See Fig. 194, page 853.)

The noses of most infants present a concave form from the root to the point; others are concave or depressed only in the centre of the back of the nose. As age advances the depression becomes less marked, and as ossification of the bones ensues the back of the nose rises and assumes either a straight form or one in which there are several gentle inflections, or else one pronounced prominence, as seen in those noses which exhibit the sign for Executiveness large.

The noses of all newborn infants of all races present almost similar forms, but the infants of the most developed of the Caucasian race take on a more developed form quite early, generally at about one year old, while the offspring of the immature races retain a more or less concave shape throughout life. The noses of children do not assume their just and permanent proportions until the age of puberty or a little later, when perfect ossification of the bones takes place. Neither the bones of the nose nor the character has developed greatly until this process is completed.

The concave form is thus shown to be *Nature's method* of revealing undeveloped, immature, feeble, or non-mental conditions. This law will apply to all of those features whose normal form is full or rounded. Hollow cheeks, for example, betoken weak digestive powers; hollow forehead, poor reflective faculties; concavities of the sides of the nose above the wings, lack of Constructiveness; and so we may apply the law of the concave form indefinitely and never find it fail.

Observation of the progressive evolution of the nose of a child from birth to manhood is a most interesting physiognomic study. The changes observed in the forehead are perhaps the next most interesting and remarkable; the mouth and eyes less so, for the reason that they change least. The nose and forehead, being the features which are more indicative of *mental* power than the other features, naturally change with the progressive development of the intellect. They are also more *purely human* in their contour than the other features, if we except the chin; for, although this feature in its *perfection* is also *purely human*, we find that the lion has a fairly good rudimentary chin, and this feature approaches more

nearly the shape of the human chin than does the nose of the Tartar or low Ethiopian that of the perfected nose of the Caucasian.

In the form of the nose of infancy there is nothing that is repulsive or ugly, as is the case with the noses of the lower classes of Russia, Tartary, China, and Africa. There is a congruity and harmony in the features of the infant which suit the immature nasal organ, but this is not the case with those adults who exhibit immature concave noses, for in their case the pretty infantile form is lacking, and a certain resemblance to *embryotic* forms is present. Again, their other features exhibit an adult form, hence the incongruity existing between the adult features and the immature nose makes the discrepancy between them seem very great.

Infancy is the *gristly* age, and all parts of the body and mind are plastic and yielding, and this flexibility is due to the immaturity of the tissues primarily.

IDIOTIC TYPE.

Many idiots and feeble-minded beings retain through life the infantoid form of nose, and they remain mentally in an immature, undeveloped condition. And this form of nose is, in their case, only one of the many signs of mental feebleness. The walk and movements of the body, hands, feet, and head participate in the general degradation of mind. The walk of a partial idiot is characteristic, and his lack of *mental equipoise* is disclosed by his physical inability to walk and balance himself in a normal manner. There are many idiotic and feeble-minded beings who have become such by accident during prenatal life. Many of this class exhibit a normal-shaped nose, while others who have become feeble-minded after birth, through disease in infancy, present quite a well-formed nasal organ. Such a variety of causes contribute to produce idiocy which do not tend to produce the concave nose that it cannot be said rightly to be a characteristic type of idiocy unless it should be merely rudimentary, lying level with the cheeks, and with but slight apertures for nostrils. Then its form indicates the utter absence of all mental perception. Arrested development of the embryon would be almost certain to produce this form; so, also, is it likely to appear in the countenances of offspring born of parents suffering from consumption and other depleting disorders. In examining the statistics of homes for the feeble-minded and idiotic I learned that large numbers of the inmates were the offspring of



FIG. 215.
IDIOTIC NOSE AND FOREHEAD.

consumptive parents, while another large proportion were the progeny of mothers who had suffered great domestic misery while pregnant. In one case physical defects and feebleness caused idiocy; in the other, mental anguish produced it.

Some idiots exhibit very large noses. In those cases the *form* of the nose shows absence of intellect. In this state it is a huge *physical organ*. The celebrated "Aztec children," so called, who were really partial idiots, had very large noses,—so large that they formed the larger part of their faces, but were placed at such an angle with the face that their abnormal character was at once apparent. I have observed among idiots many large noses, but in some instances these subjects became idiotic by accident or disease after having been born normal. Yet those who are characterized by an uncommonly large nasal organ exhibit their lack of intelligence either by the peculiarities of its form or by the *position* it assumes in relation to the other features. These noses are exaggerations of the normal size, and all exaggerations betoken abnormal conditions. They are really *caricatures of Nature.*

SNUB TYPE.

The snub-nose, with its numerous varieties, is to be classed with the concave nose, inasmuch as it expresses *relative* immaturity, although of a higher grade than the primitive or infantoid type. The back of this nose may be straight and moderately long, yet have a blunt end turned forward or outward to the beholder, and presenting an interior view of the nostrils. There are several varieties of the snub-nose that may be analyzed. The flattened snub-nose exhibits quite different characteristics from the snub-nose that is not flattened at the centre of the back. Lavater remarked these differences, for he observes that



FIG. 216.—SNUB-NOSE. (After Lavater.)

> A hundred flat snub-noses may be met with in men of great prudence, discretion, and ability of various kinds, but when the nose is *very small* and has an inappropriate upper lip, or when it exceeds a certain degree of flatness, no other feature or lineament of the countenance can rectify it.*

* Essays on Physiognomy, J. C. Lavater, p. 473.

A snub-nose that is not depressed at the bridge, and that has average *width* its entire length, is indicative of more energy and intelligence than the flat snub-nose; yet this form is inclined to be despotic. No two snub-noses are alike, but each presents individual differences to which the character responds, yet the *general laws of form* apply to them as stated, and these laws show all classes of the snub-nose to be *relatively undeveloped;* not by any means idiotic,—far from it,—but revealing much less executive power and less logical ability than noses that are high, broad, and *long*, for length is a most important factor in the development of the nose. Very short, thick noses, no matter how high, do not reveal great logical powers, for muscle is their dominant tissue, and for logic and reason we must have a *certain amount of solid tissue*, and the dominance of the bony system tends to lengthen the nose, while muscle tends to shorten and widen this feature.

A snub-nose, with small and narrow nostrils, is the indication of feeble physical as well as of *dull mental* powers. If the nostrils are large and round with the snub-nose, there is more vigor of mind and body than with the former.

PUG TYPE.

This form of nose has many diverse meanings, depending upon the shape of the upper part in each case for their full significance. Then, too, the interpretation of character is in consonance with the peculiarities of the form, whether it be a rounded blunt



FIG. 217.—PUG-NOSE.



FIG. 218.—BLUNT PUG-NOSE.

pug or a sharpened narrow pug. In regard to its meanings, it indicates lowness, coarseness, or commonplace mentality. If it be relatively sharp the character is more acute and the subject quicker in his perceptions than where a *blunt pug* is exhibited, yet all of this class of noses have the same general meaning in absence of reasoning power, pugnacity, irritability, quarrelsomeness, and opposition. With the blunt pug a coarse, brusque temper is associated, and its possessor speaks in a short, blunt, and sometimes

brutal manner, while the sharp pug accompanies a sharp, fretful, scolding, contrary disposition.

Many of the principal pugilists of the world exhibit one or the other of these formations. Heenan, the great (?) American prize-fighter, has the blunt pug-nose, while Tom Sayers, the English champion, shows a decidedly sharp pug. For example of the several styles of the pug-nose, examine the portraits of Dan. Collins, Tom King, and James Mace, all prize-fighters of renown. These two forms of the pug are common among the Irish peasantry, and are probably the result of years of impoverishment and absence of all educational and refining influences, together with want of proper food and homes. That this is the cause of this moral and mental degradation is proven by the fact that the higher and more comfortable classes of that race exhibit more finely-shaped noses. The pug-nose classes of Irish and of other races are quarrelsome and low-minded.

Nearly all pug-noses are more or less concave in their outline. The lower the concavity, the lower the character, morally and mentally, and the weaker the stomach. This form shows an entire absence of Veneration and Executiveness,—both elevating traits.

The pug-nose is never found associated with the highest moral and intellectual character. Thus, *form* alone becomes the indicator of *grade* as well as of faculty.

The sharp pug must not be confounded with the nose termed by the French *retroussèe*. This is quite another form, and betokens quite different traits.

The blunt pug is quite common among the lower classes of England, and the characteristics of this people correspond to this form of nose. The sharp-pointed pug-nose is more commonly seen in the physiognomies of the French, Irish, and other Celtic races. I have observed many excellent artists of various departments of art with the pug-nose, the upper part of which was of an average height. Yet these noses could not properly be classed with the straight or convex nose. They are the highest variety of the concave noses, yet are rarely accompanied with a high grade of *abstract reasoning power*. The sort of analytic power such noses reveal is the sort applicable to art subjects and objects, and not the kind necessary to abstract ideas.

RETROUSSÈE TYPE.

The French word *retroussèe* means literally "turned-up," but, as this word or any other in our language fails to describe the *precise form* of this class of noses, I have no other choice but to apply this term, as do the French, to a variety of the concave nose,

which is indicative of more refinement, wit, and brightness than any others within the concave class. I place it in this class because those who possess it exhibit the inquisitiveness, vivacity, and abandon of childhood, along with a spice of arch coquetry which is not at all infantile.

In deciding as to which class a nose belongs, we must have in consideration the *form* of the tip, and the form of this part assists us to readily classify each special one under consideration.

All noses that are in any way "tip-tilted" must be assigned to the concave class, as the main characteristic and configuration of the outline will, upon close scrutiny, show them to be of the infantoid order; the *turned-up tip* being the evidence of the class to which *Nature* has assigned them.

The *nez retroussèe* is frequently observed presenting a certain degree of depression of the ridge. The depression varies from a decided *scoop* to a slight deflexion of the back of the nose, terminating in an upward curve at the tip. It is met with in many interesting characters.

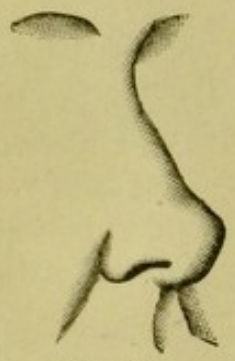


FIG. 219.
THE NEZ RETROUSSÈE.
(ELLEN TERRY.)

It is quite commonly observed among French women particularly, although we find it in the countenances of numbers of people among all the civilized races.

The characteristics accompanying it are shown by a quickness of perception and impulsive curiosity, especially in regard to Human Nature. This combination gives to its possessors an apt comprehension of motives and a facility at repartee, which in a refined woman is quite charming, piquant, cunning, witty, and altogether fascinating. With those of less refinement the wit degenerates into pertness, sauce, and impertinence. The curiosity takes on a vulgar phase, and although those in this class may be very entertaining *in their own circle*, they are far from being agreeable to persons of cultivated tastes. A *retroussèe* nose, with a fine quality of skin and hair, indicates high quality, while coarse hair and thick skins would denote relatively less fineness. The sharpness of the slightly turned-up point indicates penetration and curiosity, and if the tip of the nose stands high above the plane of the face, a fine development of the faculty of Human Nature is present.

Sharpness of any feature denotes *keenness* of the trait of which that feature is representative; for, as often observed in these pages, forms convey their own meaning if their natural significance is understood. Now the lobe or tip of the nose, when well de-

veloped, denotes high powers; if it is broad, the faculties there represented are powerful and permanent; if sharp, they are more acute and not so permanent as the former; hence sharp-pointed noses denote more acute powers, but less stable ones. It is this capacity for rapid change of subject which gives such novelty to the conversation of the owners of the *nez retroussèe*. Many comic actresses exhibit this nose, and are noted for their droll, arch, and mirth-provoking manner and speech upon the stage. Aimèè had one variety of this type. The physiognomies of Lotta and Nell Gwynne present two varieties, and many others on the mimic stage prove that this form is allied to the sharp, witty, penetrating faculty. Voltaire had a sharp-pointed nose, though not turned up, and his wit was caustic, mirthful, and penetrating to that degree that he held the superstitious theologians of Europe at bay for over fifty years by means of his pungent pen and voice.

The *nez retroussèe* is never found associated with very decidedly strong intellects, but belongs rather to the more volatile, artistic, and amusing class of minds. Solid minds have solid noses, composed of firm material; hence a bony nose announces a firm, substantial character, while the soft, gristly, cartilaginous nose tells us of art, motion, emotion, variety, changeability, etc.

SINGING TYPE.

The true singing nose, or the form best adapted to this art, is a modification of the concave, although it is not always concave; yet it belongs more to the undeveloped class *mentally* than to any other, hence I must consider it as belonging to this form in a comprehensive arrangement of the nose. A short, round nose, either straight in its outline or very slightly concave, is found in the countenance of many excellent and powerful singers. This is so general as to be almost without exception, and warrants us in applying the term "musical nose" to this form. It cannot be termed a snub-nose properly, but may in some cases be called a pug-nose, owing to the shortness, slight concavity, and width of the tip. Examine, for example, the noses of Hans von Bülow, Annie Louise Carey, Emma Abbott, Minnie Hauck, Sir Arthur Sullivan, and Sofia Scalchi, and the idea of this form will be comprehended. It may be set down as a rule that all powerful singers have relatively short noses. It could not be otherwise and give the area required for producing sonorous tones, for the *lower third* of the face

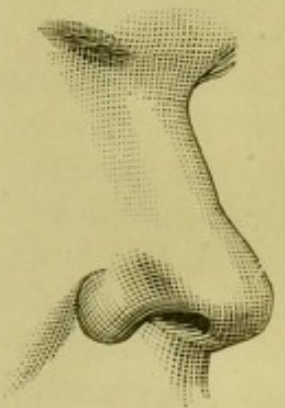


FIG. 220.
SINGING NOSE.
(ANNIE LOUISE CAREY.)

must have the *space* for this purpose; hence many first-class singers have a large endowment of the vegetative system, and it is this system *largely developed*, with the muscular system *dominant*, which gives the *length* and *width* of the lower part of the face so necessary to produce powerful tones. The uncommon length of the faces of singers from the tip of the nose to the point of the chin gives height to the roof of the mouth and fills out the cheeks; thus they have the two dimensions so essential to volume, viz., height and width of the mouth-cavity.

Another essential factor in producing softness and mellowness of tone is a sufficiency of the softer tissues, and these cannot be produced where the bony system is dominant. Bony individuals cannot bring forth as melodious and sympathetic tones as can those who combine the muscular with the vegatative system. Madame Parepa Rosa was a notable example of this combination. There are many other eminent singers who approach her form very nearly.

The muscular system must be one of the most developed systems of the body, in order to create a rich, mellow, and strong voice, and as the dominance of this system *shortens the nose*, so shortness of the nose becomes one of the signs of a musical endowment. Where the osseous system *dominates*, the bones of the nose are longer than with the preceding, and hence there is less room *below* the *nose* for producing powerful tones and less richness of quality, owing to the non-resonant nature of bone. Muscle alone has the quality of resonance and elasticity. Bone assists reverberation, as in the sinuses, and in the ear the petrous bone, as well as the three small bones, the incus, the stapes, and malleus, assist the reception of sound in a manner which will be elaborated when the ear is analyzed. I believe the reader will have no trouble to confirm all of this analysis by reference to the physiognomies of any number of good singers taken at random.

A purely singing nose does not express great mental powers, for those exhibiting large reasoning faculties must have the stable assistance of bone; yet many singers show average intellectual and some commercial ability, while many remain in a comparatively childish state of mind. Their mission is *vocal, not mental*, and the good singer is able to make thousands of people happy who can think well but who are not so constituted as to be able to entertain with their voices, as do the world-renowned song-birds. Singers, as a rule, are like children in their gayety and joyous dispositions. They are also *easily* pleased and as easily affronted. They are fond of pets and ornamental attire and surroundings. They possess domestic tastes, although often compelled by the

exigencies of their profession to wander far from home; but they always carry their pet animals along, and so set up a home with them at every hotel where they may chance to stop.

STRAIGHT CLASS—PASSIVE CHARACTER.

General Observations.—The straight nose is characterized by a perfectly straight outline of the back its entire length, from the root to the tip. It presents no undulations except at its junction with the forehead. It differs slightly from the so-called Greek nose; the latter descends in a perfectly straight line from the forehead to the tip of the nose, without the slightest incurvation at the root, and this very minute modification at this place denotes very great differences in character. The straight nose indicates refinement, sense of fitness and propriety, æsthetic tastes, art-capacities, and a certain degree of sensuousness. If the nose be long and



FIG. 221.—GREEK NOSE.



FIG. 222.—STRAIGHT NOSE.

broad, as well as straight, the mind inclines to philosophy, as well as to polite literature, the *belles-lettres*, and the art side of literature, such as poetry, essays, etc. Those with this combination are politic, polite, and inclined to voluptuousness and the enjoyment of the senses. The characters of those with the straight nose, then, will exhibit some one or more of the following tastes and proclivities: Amativeness, refinement, good taste, æstheticism, love of poetry and fine literature. They are usually mathematical, and with a good brain in combination are fond of philosophy.

If the nose be relatively short and thick, as well as straight, the tendencies are toward art or ornamental work, such as embroidery, lace-making, etc. This form of nose is *constructive* mainly. I have seen it in the physiognomies of some excellent housekeepers who exhibited great taste in house-decoration and in the ornamentation of clothing, as well as in the tasteful arrangement of table-equipage and the furniture. It is not so inclined to high art,

literature, and philosophy as the *long* and *straight* nose. The latter finds representation in the countenances of David Hume, Sir W. Herschel, Lavoisier, D'Alembert, Napoleon, Milton, Byron, Mrs. Hemans, Murillo, Voltaire, Sarah Bernhardt, Mdlle. Rachel, Madame Modjeska, Adelaide Neilson, Raphael, Louisa Alcott, T. B. Aldrich, and Björn Björnson. A small, short, and narrow straight nose denotes much less power than a *long, broad, and straight nose.*

The straight nose does not display the forcible, *aggressive character* which is exhibited by the convex nose, yet it is indicative of a great degree of *Self-will*, and those with this nose possess power for pushing forward any work which their taste prompts them to undertake.

Nearly all the members of the celebrated Beecher family possess the straight outline on the back of the nose, and they are broad as well, and this accounts for the energy with which they pushed their ideas and projects to success. Catherine Beecher, in one of her books, wrote that "if circumstances were against us we must create circumstances." Now, this might be possible to one with strong self-will, but it is not so easy for the negative character to compass. She made the mistake so common to human beings, of thinking that others can work with their individual wills.

Many singers exhibit straight noses, and some composers also. Among these may be mentioned Franz Abt, Robert Heller, Beethoven, Handel, Virginia Gabriel, Minnie Hauck, Scalchi, Emma Abbott, Sontag, Grisi, Persiani, and Gerster. The noses of the above-named singers are short, while those of the composers are relatively long.

In order to understand the significance of the straight nose one must take into consideration its length, width, and size. No matter how small the nose, if the outline describe a straight line there will be a taste for ornamentation and a certain degree of refinement, if nothing more. If it be long and broad the intellect is on a larger scale, and will exhibit literary, philosophical, mathematical, or architectural powers. Some noses reveal the presence of many of these talents, while others denote only one or two of them.

The straight line, as a basic element of Form, finds normal representation in the human face in two features, viz., in the mouth and in the so-called Greek nose, and in all of these features the *muscular* formation is the cause of this peculiarity of form; and as the straight line, wheresoever found, is indicative of truth or normalcy, so we may infer that the nose which presents a straight outline its entire length, from the root to the tip, is in a certain

sense the indicator of one form of truth, viz., the art side of truth, as illustrated in architecture, numbers, and the power to produce perfect curvation. All noses that present a straight outline upon the back denote artistic or æsthetic tastes and capacities. The forms of *other parts* of the nose and the *quality* of the subject must decide which phase of art is indicated, and the power or rank which he holds in the realm of art. Now, all classes of noses may be straight,—that is to say, set squarely in the centre of the face without turning either to one side or the other,—but at the same time all are not straight in their outline, hence cannot be classed with the straight or Greek nose. So, also, the Greek nose may be long, short, or medium. In each of these classes it combines with its art-nature the quality attributed to each of these lengths. A very *long and straight nose* will show more conservatism and foresight than either the medium or short nose with the same outline.

The title of "Greek" is given to the straight nose for the reason that this is the form almost universally observed in the classic works of the great Greek artists. It is seen in their grand statues, bas-relievi, medals, bronzes, coins, etc. On this point Lavater, quoting Winkelmann, writes thus:—

> The forehead and nose of the Greek gods and goddesses form almost a straight line. The heads of famous women on Greek coins have similar profiles, where the fancy might not be indulged in ideal beauties. Hence, we may conjecture that this form was as common to the ancient Greeks as the flat nose to the Calmuck or the small eye to the Chinese. The large eyes of Grecian heads support this theory. If only one such countenance, however, had presented itself to the genius of art, it would have been sufficient for its propagation and continuance. This is less our concern than the *significance* of such a form. The nearer the approach to the perpendicular, the less is there characteristic of the wise or graceful; the higher the character of worth and greatness, the more obliquely the lines retreat; the more straight and perpendicular the forehead is, the more does the upper part of the forehead approach a right angle, from which wisdom and beauty will fly with equally rapid steps. In the usual copies of those ancient lines of beauty I generally find the expression of meanness, and, if I dare say so, of vague insipidity; I repeat—in the copies.*

The full and straight nose, which, in classic figures, represents grandeur, can be made to represent meanness and insipidity by a slight diminution of the *fullness*.

The causes which impelled the almost universal use of this outline by the Greek artists are founded in the *very nature of their own forms and minds*, and are as cogent as they are instinctive. It is a law of human nature that each individual is best able to reproduce in his own works the principles and forms which are most strongly represented within his own organism,—within his

* Lavater's Essays, p. 312.

mind as well as within his body. Now, the ancient Greeks were a muscular race, and, as I have shown throughout these pages, the muscular system is founded on curves and elasticity (the qualities essential to art-work); and, as the straight nose is one of the signs of muscular supremacy, therefore the straight outline of nose must have been quite common among them, and it is thus the representative of art-capacities. They had, then, a double reason for reproducing it in their works of art. They used it *instinctively* and irresistibly as an *unconscious outworking of their own forms*, and they *imitated* the forms of their greatest artists, philosophers, architects, and mathematicians in their attempts to illustrate the grandeur of the human physiognomy as exhibited in the faces of their most talented men and women.

The *normal* outline of the straight nose describes a *slight incurvation* at its junction with the forehead, for, says Lavater,

> Without a slight undulation at the root *no nose* can be physiognomically *good or great.*

Now, this particular form of straight nose is observed in profiles of many of the ancient Greeks, as figured on coins and bas-relievi, while some are of other diverse forms, proving that a great *variety* of nasal forms existed among them, as is the case in all highly-developed races. The perfectly-straight line observed in the descent from the forehead to the nose, as seen in their ideal statues portraying heroes, gods, and goddesses, is an *exaggeration* of their own most customary form of this part of the physiognomy,—an unconscious attempt to create divine grandeur by exaggerating human greatness. Now, as I have shown that all exaggerated forms denote abnormal or unbalanced tendencies, so we shall find that those persons who exhibit this particular form of nose also exhibit unbridled *will*, and this argues great *stupidity*, for he who uses his selfish will excessively does so because he *lacks intelligence, benevolence, or reason ;* hence he is wanting in one or more of these faculties, and the presence of the straight line in other than its *normal place* announces at the *first glance* the absence of good sense and the presence of blind, selfish will.

The significations of form, it is thus shown, are very involved and very subtle, one signification involving another, and this a third, and this a fourth, and so on and on, until we reach the *basic* principles of the form in question, when the signification of the form thus analyzed is revealed in accordance with the supreme and unchangeable law of Form, which comes up to us through all of Nature's work, from the microscopic cell to the revolving planet.

An examination of the physiognomies of the Apollo Belvidere,

by an unknown sculptor, the Olympian Jupiter, the Minerva of Phidias, the Laocöon of Agisander, and the numerous statues of Venus by Greek artists, shows the descent of the nose from the forehead in an uninterrupted straight line. The reasons for thus portraying grand and divine character by an exaggeration is variously accounted for by different writers. Those who take the art-view merely, without knowledge of the true scientific *interior* meaning of this outline at this part of the physiognomy, of course commend it; but Lavater and one or two others criticize it from the physiognomical stand-point, hence they do not favor it as an expounder of fine character. Lavater says that "Nature in all her works abhors straight lines." Now, Lavater, having never arisen to a *scientific* knowledge of the basic principles of Form, makes this assertion without explanation—in a dogmatic manner. This assertion is true only when applied to features and members whose *normal* form is other than straight; as, for example, if the line of descent of the nose from the forehead be perfectly straight it is an abnormal development and reveals undeveloped or ill-balanced characteristics, as previously shown. The normal form of the line of closure of the mouth is characterized by a straight and horizontal line; any other form of this feature is not normal. This straightness of this line proceeds from the muscular development of the mouth, which should be so shaped as to draw *equally* in *all directions*, and when relaxed cause perfect straightness of the line or fissure. The straight outline of the nose always announces the dominance of the muscular system—or at least that it is *one* of the signs of a good development of that system. So, also, the perpendicular forehead tells the same story. All these straight lines, it is true, must have *straight bones* underneath the muscles in order to produce that perpendicularity of the forehead and nose, and this is why I said in the beginning of this analysis that the straight nose represented the *art side of truth*. With this formation of the nose and forehead a curved lower jaw-bone is always found combined. This is most decidedly apparent in the Greek physiognomies, as well as in the countenances of many modern poets, actors, and dramatic writers. It is this form of jaw to which I have given the name of the "dramatic jaw." It is observed in the physiognomies of many talented persons, and all who exhibit it possess either talent or taste for dramatic representation either in poetry, fiction, upon the stage, or in real life. Given a straight outline of the nose, and the dramatic, artistic, philosophic, mathematical, creative, or constructive capacities of the character are at once revealed in varying degrees, from a slight taste for these arts up to great genius.

The dominance of the muscular system always produces large, convex eyes, and this denotes linguistic power. Language was one of the greatest talents exhibited by the Greeks, and the fame of their orators has come down to modern times undimmed by the lapse of ages.

Although straightness of the muscular system, as represented by the straight nose, discloses the art side of truth, yet it is not so indicative of the *highest* integrity as that perfect straightness of the *bones* which is exhibited in that subject in whom the osseous system predominates. The *flexibility* of the muscles argues easy change of position not only, but easy and facile movements of the limbs, and where muscle *dominates* it creates an *inclination* to change opinions often—to shift and turn; hence, philosophy, policy, and suavity are especial attributes of those with the muscular as one of the supreme systems; therefore, the most consistent, steadfast, reliable conduct cannot be expected of this class of minds. Says Jebb:—

> The Greek idea of human perfection was a wise mind in a beautiful body; good counsel joined to noble action. Noble action is pre-eminently represented by Sylla, good counsel by Odysseus. Odysseus is brave, but he is especially the man of subtle intellect and ready resource. It was a grave fault of the Greeks that they cared too little whether that quickness of wit which they so much admired was or was not *honest*. It is not strange that the noble Homeric conception of Odysseus should have been lowered by later Greek poets, who, dwelling chiefly on his subtlety and sensitiveness, made him an unscrupulous knave, reckless of everything except personal gain.*

It is thus shown by the greatest literary work of the Greeks that their idea of morality was dominated by their sense of wisdom and beauty.

The Greeks, having been more marked in the development of muscle and brain than any other race, afford us a grand field for the analysis and knowledge of what sort of character this combination produces. The best test of character is its *outcome* or *results*. Now, the works of the ancient Greeks have come down to us in the form of philosophy, mathematics, logic, language, oratory, the drama, sculpture, architecture, and fine literature.

> Their chief types of poetry are the epic, lyric, and dramatic, while the chief types of prose are the historical, philosophical, and oratorical.†

This whole class of knowledge indicates the *creative energy* of a race in whom the muscular and brain systems are regnant, and the ascendency of these systems produces long, broad, high, and straight noses, as seen in the physiognomies of many of our

* Greek Literature, R. C. Webb, M.A., p. 25. † Jebb.

modern philosophers, poets, artists, and architects, as well as in the models of the same classes of people among the ancient Greeks. The Greeks, like all muscular people, exhibited the play of the softer emotions of love and sensuousness, as well as the stronger emotions of rage, cruelty, and revenge. Their gods were a reflex of their own minds magnified, for they represented them not only as colossal in size, but portrayed their loves and hates upon a grand scale. Greek mythology reveals this reflected character in all its descriptions of the imaginary gods, goddesses, fates, fairies, and demons with which it abounds. Now, the free play of the emotions is not conducive to morality; they require an *elastic material* for their exhibition. Morality, on the other hand, must have a more stable material to represent it; so, also, must it have a calm, reasonable condition of mind to conserve it, and the highest reason and morality are found best exhibited by those in whom the bone and brain systems are supreme; hence it is that the Greek idea of morality was not so high as that which obtains in those races which evolution has brought up to a higher state of structure. I do not mean to state that muscular people are not moral; simply they are not so "rigidly righteous" as those with more hard material in their organisms. Emotional religions best suit and hold them to moral law.

As philosophy (questioning) precedes the *discovery* of laws, so it was necessary in the evolution of the world's progress that philosophy should precede science. The present age ushers in the dawn of the scientific age—the era wherein the discovery and demonstration of natural, *positive* law is made. For this purpose another class of beings are required; not so beautiful, curvilinear, creative, imaginative, emotional, and artistic as the Greeks, but possessed of more solidity, morality, conscientiousness, and *squareness* than they; hence, we find in this age that the supremacy of the *bone* and *brain* systems gives the sort of forms essential to the discovery and comprehension of *positive law*, for natural law is founded in truth, justice, and equilibrium. Were it not so the world could not revolve and life could not continue. Examine the personality and physiognomies of the majority of modern eminent scientists and mechanicians, and we shall find the osseous and brain the supreme systems. The result of this combination is observed in the numerous and wonderful inventions, and in the discovery and application of natural laws and forces to the world's needs and for its progressive evolution. This change is shown in the human physiognomy by a different shape of the nose, for scientific noses differ not only in the *form* but in the *material* composing them. They exhibit much less muscle and relatively more

bone—*less beauty* according to art-standards, but more *solidity*, *integrity*, and *morality*. This class of noses will next demand our attention, for the transition from muscle to bone is the physiological order of development, and it should be our endeavor to always follow Nature's footsteps in our methods of investigation.

POETIC TYPE.

One of the most beautiful types of the straight nose may be justly termed the poetic, inasmuch as it is the distinguishing outline of the noses of many of the most eminent poets of all ages and all nationalities. In them it denotes that the muscular is one of the dominant systems, and in combination with a sensitive brain system it affords the requisite mechanism for poetic expression. It is often observed that many of the straight-nosed poets possess a soft, rounded, and dimpled chin, also a curved "dramatic jaw"—all indications of the presence of a fine degree of *round muscle*, the highest factor in linguistic and emotional expression. No mere brain, even of the highest quality, unaccompanied with fine muscle, could create the wonderful poetry of Byron, Shelley, Dante, or Rosetti. Let the reader examine the noses of Shakespeare, Tasso, Chaucer, Tennyson, Burns, Pope, Corneille, Cowper, Elizabeth Barrett Browning, Akenside, Dryden, and other poets, and he will become convinced that the straight outline of nose is one of the salient hieroglyphs of a poet's physiognomy. The student should not overlook the large eye and arched brow characteristic of most poets. These all announce the muscular as one of the dominant systems so necessary to this dramatic and emotional class of beings. Let it be remarked also that all of these noses are long, relatively high, wide, and well developed at the tip, where the signs for Analysis, Mental Imitation, Ideality, and Sublimity are situated; also that Constructiveness fills out the sides, and thus shows that the principle of mechanism, so necessary to creative thought as well as to material creation, is present in all great original and inventive minds.

ARTISTIC TYPE.

So many eminent artists of all ages and of all races have exhibited the straight outline of the nose that we are perfectly justified in placing them in this class of noses. How could it be otherwise, when we consider the *nature* of muscle and all that inheres in its potentiality? Art is founded on *curves*, so is muscle; hence the peculiar adaptation of the latter to the former. I use the term *art* in this description to designate painters more particularly, although in its most comprehensive sense it includes many

who use muscle as the basis of their art-works. Great painters must possess a fine quality of nerve and brain. They must be keenly alive to all external sensation, as well as highly susceptible to internal promptings, to vivid imagination, and to sublime emotions, and a color-sense that thrills and permeates the entire being. Such beings carry the signs of all these lofty traits in the nose, as well as in the eye and other parts of their physiognomies. No observant person can overlook them. The intelligent and penetrating glance of an Angelo, a Giotto, a Fra Angelico, or a Raphael, could not fail of arresting the attention of the observer. Their portraits, which have come down to us from the ages, reveal a glance at once bold, original, penetrating, observant, and sensuous —all concomitants of an artistic mind.

To come down to more modern times, and look upon the living countenances of a Doré, a Vernet, a Munkacsy, a De Neuville, a De Haas, or a Greatorex, we shall find that they are characterized not only by the straight outline of nose, but also give evidence of æsthetic taste and creative power in the eye, upper lip, and lower jaw, as well. In all great or even good countenances there is stamped Nature's unmistakable record of power. It is only necessary for us to know *how* these very remarkable evidences are shaped, and *where* situated, for children, even, to be able to point them out.



FIG. 223.—ARTISTIC NOSE. (MURILLO.)

The length of artistic noses varies considerably. The most original, the grandest of all, such as those exhibited by Michael Angelo, Rubens, Titian, and Raphael, and other great *creators*, are very long, as well as high, broad, and straight. The creative artist in any branch of art must have a broadly-expansive mind, hence we find in this class large and long noses. Copyists—those who are excellent painters without great original genius—exhibit noses relatively short; some are of the "pug" order,—short, round, thick, and constructive, somewhat like the "singing" nose; but where there is *true greatness, originality, or genius*, the nose by its size and form announces this fact, and the eye by its brightness, and the skin by its fineness, and the muscle by its development and flexibility, all combined, corroborate and accentuate the high significance of the nose. The utmost accuracy in painting is required in that class who depict the human countenance

from the living subject. One might say with truth that this is certainly the highest, as it is the most difficult, branch of the art. It certainly is the most abused, for good portraits are scarce indeed. In this department of art imagination is not so essential, but a keen eye, large Form and Size, Human Nature, accurate observation, fine color-sense, Analysis, and Conscientiousness are needed to give fidelity and thoroughness to the work; a fine mingling of the artistic elements of character being required in this department of art.

Many parts of the organism present corroborative signs of the artistic capacity. The wrists will be round and flexible; the bones hidden by muscle; the fingers inclined to taper, and the joints not conspicuous; the forehead rounding at the temples; the eyes large and full; the face inclined to the oval form; the body and limbs round and muscular; the instep arched; and the feet relatively short, broad, and thick.

LITERARY TYPE.

Among the various departments of art as exhibited by straight-nosed people are very many literary characters to be found. The class of literary taste and talent displayed by this formation is

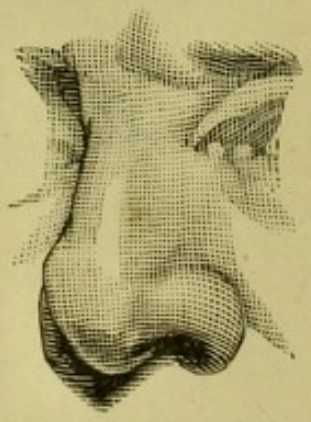


FIG. 224.—(DICKENS.)



FIG. 225.—(OUIDA.)

TWO FORMS OF THE LITERARY NOSE.

mainly dramatic, fictitious, poetic, and classic. These various types are exhibited in varying degrees of power in accordance with other indications observed in the subject.

In order to discern the peculiar class of literature for which one is best adapted, the entire form and size of the nose must be analyzed, as well as the eyes, the jaws, and other features. With the dramatic jaw in combination the mind will be turned to dramatic representation, as we see in Byron, Milton, Racine, Corneille, and Joanna Bailey. If classic tastes are present, the nose and other features will present forms similar to those of Addison, for example.

Fiction being always more or less dramatic in its nature, finds representation in many diverse types of nose, yet nearly all coming under the head of the straight nose, or some one of its many modifications. Examine, among the highly dramatic, the following among modern writers: Charles Dickens, William Black, Miss Thackeray, George MacDonald, Thomas Hardy, Walter Besant, Mrs. Trollope, and Wilkie Collins. Among writers of the modern classics the noses of Madame de Staël, Thomas Babington Macaulay, William Ellery Channing, Ruskin, and Carlyle disclose the talent and taste for fine literature, which is well illustrated in their works.

The poetic nose has been amplified elsewhere. The nose of each of the above-mentioned persons may be classed with the "straight" class, yet are of different lengths, size, and development about the bridge, sides, and tip; and all disclose varying degrees of Constructiveness, Imagination, Sublimity, Analysis, and Mental Imitation,—all essential faculties to the *littérateur*.

CRITIC'S TYPE.

In this illustration the nose represents, at its point particularly, the nose of a natural critic. It is divided at the point by an almost *invisible cleft*. The minds of those who exhibit such



FIG. 226.—CRITIC'S NOSE.
(IVAN TOURGUENIEFF.)

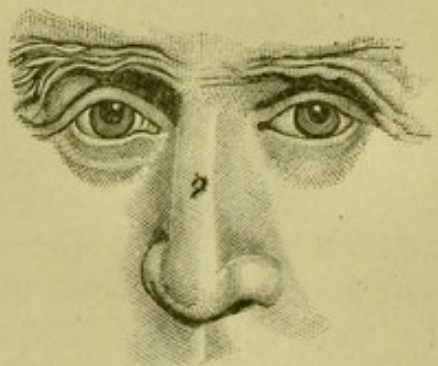


FIG. 227.—PHILOSOPHIC NOSE.
(LORD ELDON.)

a nose are critical, keen, and penetrating; they will manifest ability to criticize intelligently all subjects which their combination of traits are best adapted to comprehend.

PHILOSOPHIC TYPE.

The purely philosophic nose, when talented, is distinguished by such combination of bone and muscle as to give height, length, fullness, or a rounded form to the outlines, and with a dominance of the muscular tissue over the osseous. Such noses belong to the artistic class, for philosophy is an art, not a science, and its

best exponents are artists in thought and expression, and most largely developed upon the art side of their natures. Their writings, when tried by the rigor of scientific law and exactitude, often fail; such was the case with the theories of many of the ancient Greek philosophers, such, for example, as those of Xenophanes, Zeno, Heraclitus, Empedocles, and others of that era. That their philosophy was only an art and not founded on a scientific basis it is only necessary to mention the fact that none of their theories are now in use; they have not succeeded in holding a place in modern thought. If their philosophies had been based upon *demonstrable fact and natural law*, they would be now eminently influential. A good thinker has remarked that "a law once demonstrated is good for all time," and laws which are demonstrated by the operations of Nature will outlast all the vicissitudes and mutations of time.

Now, great philosophers are endowed with a capacity for reasoning, yet, as the muscular system usually dominates the osseous, it is not essential to them that they have *truths* to reason upon; it is with them a species of mental gymnastics, and they are ready to reason upon any premise if it happen to strike their fancy—for fancy and imagination play a great part in pure metaphysics; accordingly, we find in the philosophic nose the straight outline, and this gives the art side of truth and an ornate style of elaborating a subject.

Philosophic noses bear a strong resemblance to poetic noses and a certain type of the painter's nose, and in essence the philosophic mind partakes of both these natures and often exhibits an imaginative, speculative style that borders on the romantic, and which cannot be always proven by the facts of Nature. The busts of Plato reveal a first-class philosophic nose.

In modern times we find this form showing forth in the physiognomies of divines, lawyers, poets, and others of the artistic classes. The nose of Robert G. Ingersoll, Henry Ward Beecher, of Whittier, the poet, of Thomas Jefferson and Benjamin Franklin presents four phases of this type. The nose of Beecher and Ingersoll resemble each other somewhat, while Franklin's nose is on a broader scale than either, and this peculiarity was shown in his writings—by their greater breadth and comprehensiveness. Franklin's nose illustrates the scientific side of art by its larger bones. Thomas Jefferson's nose is more bony, and this denotes integrity, hence the justness of his conclusions and the morality and integrity of his life. David Hume's nose is a first-class specimen of the philosophic nose, and more beautiful in its outlines and proportions than any above named. Voltaire also presented a beautiful

philosophic nose in his youth, but which in old age assumed a hooked appearanc, owing probably to the loss of his teeth.

The philosophic nose, when compared with the scientific nose, is, as a rule, somewhat shorter, rounder, and with *less bone*. Some philosophic noses illustrate by their form the artistic phase of philosophy, and are speculative rather than accurate; while others exhibit the scientific aspect of philosophy, and reason from facts and laws rather than from assumptions. Some philosophers are profound like Franklin, others skim the surface like Voltaire; and all this is to be learned by reference to the nose alone. These differences are plainly discernible in the peculiarities of the nose, while they receive modifying influences from other elements in combination, such as color, quality, social development, etc.

In order that the reader may form a correct idea of the relative value of philosophy and science, I insert the following from the grand work of Lewes:—

> Philosophy has been ever in movement, but the movement has been circular; and this fact is thrown into stronger relief by contrast with the linear progress of science. Instead of perpetually finding itself after years of gigantic endeavor returned to the precise point from which it started, science finds itself year by year, and almost day by day, advancing step by step, each accumulation of power adding to the momentum of its progress; each evolution, like the evolutions of organic development, bringing with it a new functional superiority, which in its turn becomes the agent of higher developments. Not a fact is discovered but has its bearing on the whole body of doctrine; not a mechanical improvement in the construction of instruments but opens fresh sources of discovery. Onward and forever onward, mightier and forever mightier rolls this wondrous tide of discovery, and "the thoughts of men are widened by the process of the suns." While the first principles of philosophy are to this day as much a matter of dispute as they were two thousand years ago, the first principles of science are securely established.*

DRAMATIC TYPE.

Many of the most distinguished actors and actresses are characterized by a straight outline of the nose or some one of its modifications, and, as acting is a literary as well as a dramatic faculty, we should naturally expect to find the nose of some of the best exponents of the mimetic art thus shaped. A few, like Madame Ristori, disclose a *convex outline* of the back of the nose, and thus serve to illustrate the *tragic* power within; yet many of the most eminent may be classed with the straight-nosed artists, for this is the general tendency of the outline-form of their nasal feature. Examine, for examples,



FIG. 228.
DRAMATIC NOSE.
(HENRY IRVING.)

* Biographical History of Philosophy, G. H. Lewes, pp. 11, 12. New York, 1885.

the noses of the following named: Adelaide Neilson, Edwin Booth, Frederick Lemaitre, Mdlle. Barretta, M. Coquelin, Ellen Terry, Joe Jefferson, Jane Hading, Mary Anderson, Fannie Davenport, and Miss Calhoun. There are many others in this class, but space forbids mention of them.

A large class of comic actors and actresses present a modification of the concave nose. The *retroussèe* finds its illustration among many of this class. Their phase of acting does not need as much intellect and intelligence as is required to depict grand characters such as are enacted by the above-mentioned class of *creative* dramatists. A lighter, more vivacious and mirthful talent is necessary for the portrayal of comic character; hence we see in the nose of Mdlle. Aimèè, Mdlle. Croizette, Mrs. John Wood, Lotta, Lydia Thompson, Mabel Santley, and Pauline Markham, and others of this class, a tendency to concavity, as shown by the "tip-tilted" appearance of the lower extremity of the nose. Those with this form of nose are arch, vivacious, piquant, mirthful, hopeful, approbative, and with a keen sense of human nature and love of young,—all essential factors in comic acting. They bear the same relation to the dramatic art that mere singers do to the art of composition, and the noses of these two classes expound and reveal the *grade of mentality possessed by each.* Other features, of course, corroborate the presence of the dramatic instinct, talent, or genius. The eyes as well as nose are indicative of dramatic power. They must be large, full, and well colored to express linguistic and emotional capacities. The lower jaw, too, is seen to be well curved in many good tragic artists, whether actors, poets, or writers,—another proof of creative or *original* powers. The chin of many actors is dimpled, the brows arched, and the face oval or inclined to that form. Indeed, every part of the physiognomy of actors, as well as every part of the body, announces capacity for imitation and expression. The fingers are flexible, muscular, and tapering; the body round and lithe; the movements easy and graceful; and the emotional nature dominant. They are easily excited to laughter or tears, to jealousy and quarreling, and are as easily restored to calmness by most trivial circumstances. How could they be otherwise when they are called upon in the course of an evening to impersonate several diverse characters, all of the lightest calibre?

In this class of minds the muscular is a dominant system, and this is the system that assists motion and emotion; hence, eminently well adapted to imitation and frequent change of feelings. In the higher class of dramatic artists the nose is high at the sign for Self-will, for this trait is most essential to those who must con-

quer their own individuality sufficiently to put another entirely different character in the place of their own. Then, too, it requires a tremendous amount of Self-will to sustain an alien character through five long acts, as many of them do in the course of an evening while delineating the plays of Shakespeare, Racine, and other grand playwrights. Let the reader make a comparison of several of the most eminent of the creative class of actors with some of the most talented of the imitative or comic class, and he will find a very great difference in the *form* of the *noses* of these two classes.

CONSTRUCTIVE TYPE.

All noses that are included in the artistic class present more or less Constructiveness in their outlines. This trait is essential to every department of art; yet there is a class pre-eminently distinguished for constructive skill, as shown in mechanical work and invention, which I designate the constructive class. These noses are short rather than long, soft and muscular rather than bony, very thick at the signs for Constructiveness and Acquisitiveness, and the general contour round.

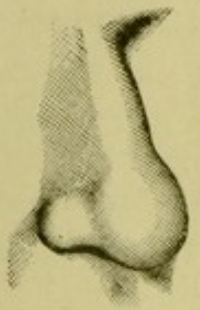


FIG. 229.
CONSTRUCTIVE NOSE.
(E. B. BIGELOW, INVENTOR.)

The nose of John A. Roebling, constructive engineer, the architect of the celebrated Brooklyn Bridge, and Captain Eads, the architect of the Missouri Bridge and the New Orleans jetties, are excellent specimens of the constructive nose. Muscle is founded on curvilinear power and motion; *running* machinery is also based on circular movements; hence the mind that is the accompaniment of a well-developed muscular system is well calculated to comprehend rotatory law. This statement can be verified by an observation of the physique of all those who are skillful in those pursuits that require circuloid motions in their exercise, and this leads us soon to the discussion of athletes, which in this age is acquiring an interest (among men at least) which its importance demands.

Constructiveness is one of the prime elements in all talented actors. See the portraits of Modjeska, Edwin Booth, Bernhardt, William Warren, and others. It is one of the *dominant* traits of literary minds also. The nose of Dickens is a most remarkable specimen of this class of nose. His mechanical talent is well shown in the skillful mechanism of the plots and characters which he invented and described. Poets, novelists, operatic singers, all find need of Constructiveness, and according as it is developed in

their nose and body, just in that degree do they manifest *ingenuity*, *originality*, and mechanical skill in the management of their several pursuits. All of the artistic classes require the use of circular or curved motions, as in gestures, piano-playing, dancing, singing (for sound is based on curves), arrangement of drapery, in drawing and painting, and in the rhythmic flow of language in poetry.

The most material and tangible use of the curve principle is shown in movements of machinery which is run by bands, pullies, and wheels, and in the manipulation of the mechanism connected therewith; but its highest manifestation is exhibited by those great inventors who have applied the principle of circular motion to machines which they have invented. An observation of their noses will disclose a muscular rather than a bony formation; broad rather than narrow; together with all the salient signs in their entire organism of the dominance of the muscular system. It is true there is a suitable brain in combination, but it is the brain of a *muscular individual*, who, without this development of the muscles, would not be competent to put the constructive principle into operation; thus showing that every system of the body is *mental*.

ATHLETIC TYPES.

Art in its most comprehensive sense includes all pursuits which in their exercise use the curve as the prime element. Under this classification we must include singers, actors, elocutionists, writers, philosophers, who think round thoughts or around a subject in the primitive manner, as distinguished from the square or cubical thought of the scientist (but this is abstruse for the general reader, yet based on natural law), as well as those who follow the athletic sports as professions, such as boxing, rowing, fencing, running, gymnastics, marksmanship, bicycling, dancing, skating, billiards, ball-playing, etc.



FIG. 230.
ATHLETIC NOSE.
(EDWARD HANLAN.)

In the noses of all these classes we shall find, of course, great diversity of shape, size, and proportion; yet there will be observed in every case certain general characteristic traits and forms. The signs for Self-will and Constructiveness are both well defined, while the sign for Weight in the forehead near Self-will is another well-developed faculty in all these classes. Most particularly is it observed in the faces of ball-players, billiardists, marksmen, and dancers, yet it is needed in varying degrees in all who follow any

of the above-named sports. The sense of *aim* and *direction* is another faculty that marksmen require, and in all of those who excel in this art it is very largely developed. Let the reader obtain the portraits of the celebrated rifle-teams and boat-crews that have competed for supremacy, and he will make a most interesting study in class-physiognomy; he will find the signs which I have indicated as dominant to be universally present in all of their physiognomies,—another proof of the muscular basis of art and artists. In all of these classes of athletes the form of the nose, together with its cartilaginous condition, will announce athletic powers; the texture or *quality* of the skin will give the grade of the subject, while the development of the form and size of the nose and nostrils will reveal the more mental aspects of the character. Analysis and the laws of Form must here work together in order to arrive at the entirety of the character under consideration.

CONVEX CLASS—OSSEOUS SYSTEM DOMINANT—POSITIVE CHARACTER.

General Observations.—The basic principles of Form are richly illustrated by the convex nose and the class of character exhibited by its possessors. It is the highest of all noses in its outline, and when it combines breadth as well as height it is the largest of human noses. It has been known for ages as the "Roman nose," and the ancient sculptors often made use of this form to depict heroic character. This probably arose from the fact that many ancient conquerors, leaders, and rulers possessed this nose or some one of its most striking modifications. The underlying bone is the foundation of its form, but all persons endowed with this nose exhibit a large share of muscle in combination, and this assists their bold, aggressive, dauntless, and courageous conduct.

Height of the nose denotes elevation; breadth announces comprehensiveness; length gives caution, far-sightedness, perspicacity. Thus, the three dimensions of height, breadth, and length, when found combined in the nose in a large degree and with a good quality, give the world the assurance of a very powerful character.

As the reader is already aware (if he has followed the course of these pages) that the signs for the great visceral organs—the heart, the stomach, the liver, and lungs—are situated in the nose, it follows that if these organs are large the nose will correspond in size, and if the bony structure be well developed the bones of the nose will be broad and high and proportionately long; thus the grandest of all noses. The most commanding types are found

in the visages of those men and women who have governed, controlled, dominated, or led the world in its wars, reforms, governments, or grand enterprises of whatsoever nature.

Those most influential in energetic movements, either as rulers, warriors, executive officers, commercial kings, superintendents, teachers, or capable parents, will in every instance be found to possess some variety or modification of the convex nose; while those lacking the power to command, control, or manage will exhibit a nose wanting in the essential outlines or proportions of this class of nose.

The dominance of bone in the organism of the executive individual endows him with that *solidity* of structure which (when combined with a due share of muscle) enables him to exhibit firmness, integrity, and unyielding power, all of which are essential factors in one who would command. The bones must be *square* as well as *long* if the highest expression of executive judgment is required, for Force must be accompanied with Conscientiousness—integrity—or law degenerates into lawlessness or despotism; and square bones give the quality of righteousness to the character as well as positiveness and decision.

The convex class of noses includes in its modifications the executive, the argumentative, the commercial, the dishonest, the scientific, and one type of the mechanical. The scientific nose is in its essential nature mechanical, for it represents character that is endowed with the principles which enable it to comprehend the mechanism of Nature, and conversely one class of natural mechanics comprehend intuitively the scientific aspect of mechanical laws and operations. Those convex noses that are the highest in the upper third have the osseous system dominant, and this gives love and appreciation for law, order, justice, and similar noble sentiments; but where the highest curve is *lower* than this a less noble and more selfish character is manifested, for *this curving* is caused by the dominance of *muscle* or cartilage, and hence shows more *predaceous tastes;* all of which harmonizes with the chief characteristics of bone and muscle in their manifestations.

A nose in which bone is the principal constituent announces a more solid character than the nose which is composed of soft, flexible muscle. Starting with the knowledge of character by the comprehension of the differences in constituent tissues, the *form* next engages our attention.

The highest or most developed of the osseous noses is shown by a convexity of the bridge or the highest point that is attained by its outline. This height is observed just where the sign for Executiveness is placed, and this facial sign represents the faculty

which is among the highest evolved by the osseous system. The capacity to *execute law* must ever be one of man's grandest attributes, for it presupposes Conscientiousness or Justice, and he who is imbued with a spirit of justice, and has the ability and desire to administer it, has certainly a superior character. Now, mental capacity, which depends upon energy to exhibit its action, can proceed primarily from none other than physical power. Accordingly, we find that those who exhibit the faculty of Executiveness in a large degree, or even in a moderate degree, possess a structure of bone and muscle suited to energetic movements. The *internal structure* of certain of the visceral organs are also found to be more developed than is the case where the nose is inferior in size and form. The heart and lungs co-operate to assist energetic motions as well as to carry to the brain a large volume of blood to supply that organ with the stimulus necessary in grand and long-continued mental operations. It is thus again proven that mind and body are one and indivisible—a material unity which God has joined and which no man ought (theoretically, even) to put asunder.

The heart is the largest muscular organ in the body; the lungs are not, strictly speaking, muscular, yet contain a good share of elastic tissue, and according as the heart is large and strong, and according as the lungs are capacious and powerful, so is the character able to express energy, promptness, and decision in both mental operations and physical movements. Hence, when the nose is convex and *broad* in its convexity the character will exhibit the highest capacity for command, such as was shown by the Duke of Wellington (the "Iron Duke," as he was termed), as well as by Admiral Sir Charles Napier, Hannibal, Julius Cæsar, and others among the world's great conquerors. Wellington's nose was like a battle-axe in shape; very superior in this respect to Napoleon's, who met in him his conqueror. Many of our generals in the late Rebellion possessed this form of nose or some one of its many modifications. It requires a good share of Benevolence to balance this trait in order to prevent its possessor from becoming tyrannical and overbearing.

The convex nose, as I have shown, argues superior physiological structure, and superior structure always discloses greater ability than an inferior construction. This is most particularly the case as regards the lungs or thoracic system. The influence of *color* in combination with this form may be taken into account with profit to the observer. As a rule, the very light color of eyes and hair are seldom or never met united with the Executive nose for the reason that bone development is caused by life under the

sun's rays mainly, and this course is calculated to color the blood; hence, bone growth and purity of blood proceed *pari passu* for generations, and from this double development of physiological forces proceeds that enormous energy that has characterized the world's greatest leaders, conquerors, and heroes. Emerson has emphasized his knowledge of this correlation of growths thus:—

The soundness of bone ultimates itself in a peach-bloom complexion.

The colors that characterize those who possess large executive noses are either the black hair and dark eyes, with olive and red complexion, or very dark-brown hair, blue eyes, and clear, decided red and white complexion, and, as color creates force, so the energy of the character is greatly enhanced by the presence of a large amount of color in the system.

It requires generations of *normal* living to develop the forces requisite to make a hero or a leader. A man who can *found a great nose* or assist in this grand work is a benefactor to the whole human race, but in order to do this he must obey natural laws and live mainly in the open air, bathe in sunlight, and live on simple, wholesome diet. *Heroes* do not possess small, weak lungs. Great men, as a rule, are not great invalids. It takes generations to produce the numerous and complex strands that go to make up such a character as a Shakespeare or a Newton. Man has so long been studied from theories and not from facts that the human race is utterly ignorant of the laws of heredity and descent. Not until the societies which have been formed for the purposes of investigating and disseminating this branch of science have imbued the community with their ideas will any accurate knowledge of the laws of life and race-building be comprehended, and all attempts to make this information practical will fail unless studied and applied in connection with the laws and principles of scientific and practical physiognomy.

The question of *nose-building* is the dominant one in race-culture, and nowhere will the observer find a better illustration of the relation between nasal development, mental ability, and visceral power than in the faces and physiques of those eminent men and women who exhibit the highest types of the Executive nose.

ARGUMENTATIVE TYPE.

One of the principal modifications of the convex nose is observed in the noses of those who are naturally logical and talented in argument and debate. The noses of those thus characterized are relatively long, high, and broad; bony rather than muscular. Many exhibit a certain degree of height where the

sign for Executiveness is situated, while others have only a gentle undulation or curve at this part of the nose. The most talented noses, however, exhibit considerable breadth of the nose at this part, as well as *general width* of the entire back, and stand quite high above the plane of the face. Flat-nosed races and people are never logical or argumentative, but rather inclined to be disputatious and loquacious, and given to believe that the assertion of personal opinion is as good as logic and perfectly conclusive. Length, height, and breadth of the nose, if good or high quality is present, denotes the thinker, and good thinkers are capable of logical ratiocination, and will manifest it by voice or pen.

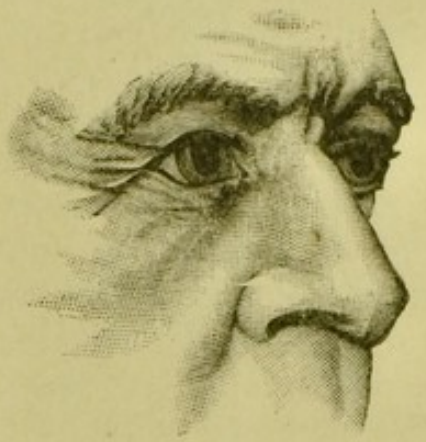


FIG. 231.
ARGUMENTATIVE NOSE.
(WILLIAM EWART GLADSTONE.)

The earnest expression of logical thought requires high bodily powers as well as a suitable brain system. A man who can think logically and well "on his feet," and can state his ideas clearly and impressively in that position, must needs possess a physiological endowment suited to such efforts, and his nose will announce that fact to all beholders.

There are, of course, many diverse forms of the argumentative nose, varying in height, width, and length to suit the bodily build of their possessors. The reader can examine with profit the nasal organ and bodily structure of the following-named persons: Lord Erskine, Charles James Fox, Wilberforce, Voltaire, John Marshall, Alexander Hamilton, Charles Sumner, Stephen A. Douglas, William M. Evarts, William E. Gladstone, Thaddeus Stevens, Goldwin Smith, Gerritt Smith, and Prof. Richard Owen. The noses of these men represent various types of the argumentative capacity; yet all were clear, logical, and impressive, each in his own peculiar line of thought. Many philosophers, literary persons, and scientists exhibit the argumentative type. These will be considered later.

COMMERCIAL TYPE.

There are two general types of the commercial nose, both of which belong to the convex class. The one most pronounced in its outlines may be termed the Jewish or Hebrew nose. It is strongly convex just *below* the sign for Executiveness, and resembles the beak of the bird of prey, and, according to the basic principles of Form, the curve of this feature at this place denotes

rapacity and the love of and capacity for overcoming. This curved form of beak, as seen among birds, is confined entirely to the class termed "raptores," or rapacious birds, and can be studied with profit in the forms and habits of the following-named birds: the lammergeyer, the condor, the turkey-buzzard, the Arabian vulture, the eagle, the falcon, the hawks, the merlin, the kestrel, the sparrow-hawk, the hen-harrier, and the several species of owl. These creatures are all carnivorous, and have the power to seize, overcome, and devour their prey. The higher classes, such as the eagles and Arabian vultures, possess considerable mental ability and keenness of vision. Their bodily build shows a wonderful development of the thorax, just as it is seen in the structure of the great commercialists among men. This peculiarity of form gives the courage, enterprize, and daring which are required in large commercial enterprizes, as well as the physical capacity to sustain the efforts consequent upon such enterprizes. Their physiognomic



FIG. 232.—COMMERCIAL.



FIG. 233.—EXECUTIVE.



FIG. 234.—COMMERCIAL.

peculiarities are similar to the class of commercialists above mentioned, viz.: round heads; long, cautious, curved beaks or noses; large, round, convex eyes; curved claws, deep chests, and very strong muscles. The several classes of eagles are domestic and entirely monogamous. In this respect they are much superior to many men.

The various modifications of this form of nose are many, yet all announce similarity of characteristics. As this is one of the most pronounced type, and as it is characteristic of large numbers of an old and perfected race, as well as of individuals of other races, it deserves more than ordinary attention. It possesses great interest for the scientific physiognomist, for here he finds the confirmation, proof, and explanation of many theories advanced in these pages.

In the first place, the Hebrew commercial nose is the result of ages of development of character in a given direction, and has been intensified by ages of intermarriage with similar type-forms.

The hygienic law of the Hebrew race, as formulated and enforced by that great law-giver, Moses, has resulted in making it the most vital, the longest-lived, and worldly-successful race in existence,—a proof of the triumph of natural law bringing its sure reward. The reader may read with profit the books of Exodus and Leviticus, in the Bible, and will there learn that Moses was an excellent physiognomist as well as hygienist. It has been by the observance of natural or hygienic measures that the Hebrew race has attained to and preserved its strong individuality and identity as a perfected race, notwithstanding the numberless and decimating persecutions to which it has been subjected for thousands of years. Another circumstance which has preserved them is their strong, or I might say talented, management of the domestic institutions,—the home and children. The success of a race rests primarily upon the skill displayed in the rearing of offspring, in the perpetuity of and justice in the marriage relations, in all of which the Hebrews excel all other peoples.

Not until the mind divests itself of religious bigotry and narrow prejudices can it do this splendid race justice. Prejudice always leads to narrowness and ignorance, and those who indulge in those petty vices cut themselves off from many rich fields of knowledge, much of which may be gleaned by investigating the habits, literature, and history of this, the oldest of civilized peoples. Those who are familiar with the writings of Moses in the Bible need not be told of the grand hygienic system which he presented to his followers, and notwithstanding that the Hebrews are burdened with the results of "breeding in and in," or, in other words, of too closely intermarrying without crossing the race, they still retain great energy, both moral, intellectual, and physical, which is not surpassed by any other civilized people. A fine lesson in heredity or the transmission of type-forms and features is afforded by the study of the so-called Hebrew nose. As a rule these people intermarry within their own race-boundaries; thus all race-peculiarities and facial features are inherited in an *intensified* form; and as religious persecutions drove them to become traders by forbidding them to own lands, the trading instinct became developed almost universally among them; although literature, art, and science have found among them many grand exponents, yet commerce has been their chief employment for centuries, and thus *acquisition* has become one of their dominant traits; and as it is one of the ruling forces of their mental structure, it is imprinted not only upon their bodily form, but also leaves its facial representative, in accordance with the basic principles of Form, upon that feature which, more than any other, illustrates the action of predaceous energy, viz., the nose.

The form or outline of this type of the commercial nose discloses to us, as in the case of the bird of prey, a large and powerful visceral structure—large lungs, heart, and feeding capacity. The highest curve of the so-called Hebrew commercial nose is made just *below* the sign for Executiveness, and is allied to it in character, for predaceous energy, such as commercialists exhibit, requires the exercise of large governing, commanding, and aggressive powers. Now, one rule to be observed in translating form into character is formulated by the basic principles of Form, and shows that height means nobility or power; its opposite appearance denotes dissimilar characteristics, viz., lowness and weakness. The highest ridge of the nose gives us the noble quality of Executiveness, and where the ridge rises highest below this we have Veneration,—a faculty which bows, submits to, or respects law; but where the curve takes its rise from the root, and presents but *one* curve to the tip, showing no marked undulation at either of these signs, it reveals *quite another character;* and as we must always refer for our interpretation to allied forms in Nature, we find that this form is similar to that of the beak of the birds of prey, and here is our interpretation: An examination of the plans, methods, and systems of commerce of all sorts proves it to be one vast system of robbery, trickery, rapine, fraud, and conscienceless extortion. This is becoming more and more apparent in these days of "trusts," "rings," "corners," and "vile monopolies." In all of these schemes the men or company who *produce nothing* stand with both hands outstretched, demanding tribute from both the producer and consumer, and if they do not comply they must starve. One class of merchants combine to ruin another class. The mercantile rulers of one nation combine against other nations, and *all* with perfect unanimity of action prey upon the producers and consumers wherever found. The men most prominent in these infamous schemes, whether in banking, railroad monopolies, wheat corners, whisky rings, or sugar trusts, as a rule, disclose one or the other of the two most decided forms of the commercial nose, *i.e.*, they exhibit either the so-called Hebrew nose, or the long, *straight, high, and thick* commercial nose. Examine for illustrations of the latter class, the noses of the so-called "railway magnates" of Wall Street, viz., those of W. H. Vanderbilt, H. J. Jewett, Sydney Dillon, Jay Gould, C. W. Field, W. A. H. Loveland, Henry Villard; also the noses of the following celebrated merchants and manufacturers: Elliot C. Cowdin, Matthew Vassar, I. Friedlander, the "wheat king" of California.

These two classes of noses indicate commercial ability, although those with the curved commercial nose show more acquisitive

powers than the other type. The methods pursued by those exhibiting these two classes of nose will be in harmony with their forms. There are many persons in all civilized races and nationalities who exhibit the so-called Jewish nose. Their methods will accord with this formation.

The leading characteristics of the straight commercial nose are breadth and length, with a rather uniform thickness, the *entire length*. The length denotes both caution and perspicacity—clearness, far-sightedness. The height at the point announces large Human Nature. Large nostrils reveal a strong heart and lungs. Height and width of the bridge of the nose are signs of a strong stomach, all of which afford the requisite vigor to sustain great mental excitement and physical fatigue. The combination of width and height at this point betokens large administrative capacity—a species of Executiveness. Nearly all disclose a large mouth and a long upper lip. The former indicates good linguistic capacity, as well as large assimilative powers; the latter announces a strong spinal column, as well as dignity, independence, and decision. A very large ear is usually found upon the heads of all great commercialists.

It is thus shown that those who hold a prominent position in vast commercial enterprises must be very capable men—*organized on a large plan*. What a pity that the masses are not imbued with sufficient intelligence and justice to formulate a more honest and just system of distributing the products of labor! Then all of this splendid talent could be utilized in relieving distress and suffering—the producers getting their just share of their productions instead of permitting them to be used to stimulate the greed and avarice of a few, and thus developing the animal-like traits of rapacity, dishonesty, avarice, and unrighteous domination. You may say that their methods are legal; true, but legality is not always the highest form of justice. It was once legal to buy and sell human beings, a system of commerce very profitable to the purchaser, but what to the purchased?

MELANCHOLY TYPE.

One peculiar variety of the convex type of nose is exhibited by those who manifest congenital melancholy, and this trait increases as age advances, and in some cases a tendency to dementia and suicide is developed. Some of the most talented poets and other writers possess this form, and their writings as well as their lives reveal the depressing influence of this sad trait. The melancholy nose may be large or small, yet its outline will assume a curve which causes it to dip downward, as if pointing toward the body.

This is a most significant formation, for those who exhibit it are prone to dwell much upon their bodily feelings, conditions, and slight ailments, and if they contract any disorder, especially if it be of a chronic sort, no matter however slight, they are apt to give way to gloomy fancies and forebodings. I have heard those with this form of nose often express themselves as having no joy in life, and wishing themselves dead, when there appeared nothing to cause such desire, except the *inherited tendency* to melancholy.



FIG. 235. MELANCHOLY NOSE. (DANTE.)

Lavater has given us his impressions of the turned-down nose. He remarks:—

> Noses which are much turned downward are never truly good, truly cheerful, or noble, or great. Their thoughts and inclinations always tend to earth; they are close, cold, heartless, incommunicative, often maliciously sarcastic, ill-humored, or extremely hypochondriac, or melancholic. When arched in the upper part, they are timid and voluptuous. *

The nose in the portrait of Edmund Spenser, poet, is long and pointed downward, showing both caution and melancholy. The upper portion is, however, straight and finely formed. The nose of Dante is of the same form also. Every minute portion of the nose expresses character, whether we regard the size, the outline, the breadth, the length, or the bones and muscles found in it. We must take all these into consideration before passing judgment; we must note its height, where it is straight, and where curved; where thick, and where thin; in what direction it points, and where it is hollow and where filled out. A word of caution is here necessary; the inexperienced observer is apt to confound the acquisitive or commercial type with the melancholy. Close observation and comparison are here required in order to avoid erroneous conclusions.

DISHONEST TYPE.

One modification of the convex class of nose is often observed among the criminal classes, and upon the countenances of many in respectable society who are tricky and dishonest, and who practice dishonorable methods in business and in other ways. This form is an abnormal or degraded variety of the commercial nose, and is exhibited by the crook or curve upon the ridge of the nose, in a position other than that which is occupied by the noblest or highest *normal* position. If the nose curve below the sign for Veneration it indicates *descending* grades of nobility and strength, in varying

* Lavater's Essays, p. 472.

proportions. It is usually slight in its curvation here, yet sufficiently so to claim the attention of the keen observer.

The nose of the Bedouin Arabs well illustrates this form, and other predaceous habits reveal its accompanying characteristics. In this class of people there is usually great breadth of the nasal organ, indicating their visceral power,—constitutional vigor, as well as large Acquisitiveness,—the dominant traits of this race. The curve in this nose is very near the tip or point, and thus shows its relatively ignoble character. The combination of breadth with this low-placed curve denotes a combative spirit, directed, of course, in the direction of gain by conquest. All outward curvations of the nose, no matter upon which part of the ridge they appear, indicate some form of the aggressive, combative, or energetic powers. Noses of this form have their attention directed more upon material things than upon abstract ideas; hence, their curiosity is attracted to material subjects and to domestic matters, within the family and social circle. This class, like those with the Jewish nose, are fond of the pleasures of the table, and love to converse upon subjects connected with the cuisine, etc.; especially is this the case where the nose is broad as well as hooked.



FIG. 236.—DISHONEST NOSE.
(LORD BACON.)

Those who exhibit the curve at this point of the nose are quick and apt at bargains, and with ability for "getting the best of a bargain" they enjoy shopping, if not in trade; and if engaged in commerce, often overreach themselves by palming off upon their customers inferior articles for a first-class price. This class of people should bear in mind that "honesty is the best policy;" also, that a policy which is an honest policy is the best business principle, and the one by which to make the most. This form indicates not only trickery and dishonesty in business, but it also imparts the same spirit to all the acts, and is apt to tincture the entire nature; at least, it will influence much of the conduct in other directions than that of trade.

The curved commercial nose is sufficiently overbearing and overreaching in its manifestations, and where the nose is large it is exhibited on a grand scale; but the curve seen in the *lower* part of the ridge does not, as a rule, belong to talented commercialists,

but rather discloses less ability or a *petty variety* of the commercial type. I have observed this form in the noses of sneak-thieves and other petty criminals, as well as upon the noses of respectable people with a taste for *close bargains*. It is not necessarily *criminal*, yet in spirit it desires the best and the most for the money, and if cultivated degenerates in the best characters into sharp practices, to say the least.

Many refined and generous people possess some slight curvature at the lower third of the nose. In such it is not an indication of criminal intent, but indicates an aptitude for commerce. The physiognomist must always take into account *quality* and other modifying influences in making up the entirety of a character. With a coarse quality, this peculiar form of nose denotes a tricky, dishonest disposition; but in combination with a refined mind, the tendency is to *trade*, and such characters will be usually successful in commercial transactions.

SCIENTIFIC TYPE.

Almost all persons possessed of eminent scientific tastes and talents exhibit noses straight rather than convex; yet, as they are composed *mainly* of bone they must be classed as positive in character; hence I place them in the convex class; then, too, almost all of this class exhibit a considerable degree of convexity, ranging from large Executiveness to a subdued type of Veneration, and nearly all good scientists possess a large share of this element in their mental make-up. *Obedience* to law is one of the attributes of a scientific mind; such minds respect or venerate natural law, until, as in the case of Charles Darwin, it constitutes their entire religious creed and worship. Again, in almost all scientific noses there is found, in combination with the slight convexity of the bridge, a considerable degree of *width* at this part and often along the entire length (the latter is the form exhibited in all who are *eminent* in science). See, for example, the noses of the Herschels, Francis Bacon, Copernicus, Sir John Lubbock, Rudolf Virchow, Robert Wilhelm Bunsen, Paul Broca, Professor Charles Thomas Jackson, Louis Pasteur, and Schleiden, and the noses of other renowned scientists present both width and height at the bridge and at other parts of the bridge and back of the nose.

The main constituent of the scientific nose is bone, and this gives height and length, also width at the bridge; while muscle or cartilage fills out the sides and tip. The length denotes caution and perspicacity; width, comprehensiveness; the height at the bridge, elevation or development. The peculiarities of the form of the sides and tip will reveal the characteristics peculiar to each

individual subject under consideration. All long, high, and bony noses denote capacity for reflection, and if they are broad as well as high, they indicate *breadth* of perception as well as logical capacity. The osseous element affords the practicality essential to the investigation of Nature's laws, while it also gives calmness, perseverance, observation, stability, and *integrity* to all mental efforts. The last-named quality is most essential to the characters of those who would seek to pierce the veil of Nature's secret arcana. The keenest observation is required in scientific and mechanical investigation, in order to insure accuracy of description. The bony system develops this trait in its highest degree. It is therefore the distinguishing mark of all good or great scientists and mechanicians.

Natural laws are based on justice, equilibrium or balance being the mathematical foundation upon which all Nature reposes; hence, in order to understand the laws of God as shown through the operations of Nature, Conscientiousness must be paramount, and this trait is evolved from a developed osseous system, made perfect primarily through the perfection of the fluid system of the body, having the kidneys for its chief agent in the purifying and constructive process. Conscience has been *naturally evolved*, and not *supernaturally imparted*. The high moral character of scientists as a class demonstrates the possession by them of a large share of Conscientiousness. In their moral natures they are exceeded by no class whatsoever.

Where the noses of scientists is observed to be rather shorter and broader than those who exhibit the longest type, they will be found to operate more upon the art side of science, rather than upon the more material phases; they will incline to experiment; as, for example, they may be expert in microscopy, photography, in experiments with light and heat, with chromatics, in operative surgery, in practical chemistry, etc. In the latter class, the nose of James Prescott Joule is an excellent illustration. Bunsen's nose is on this order, as also that of John Wesley Powell.

The noses of many eminent surgeons are relatively short, and broad at the end, proving that muscle is one of the dominant tissues; also, that Constructiveness, Mental Imitation, and Analysis are large. See, for example, the noses of John Hunter and Edward Jenner, celebrated surgeons; the latter was the first to apply inoculation as a preventive for the small-pox; the former was the discoverer of the "life of the blood" and other very important natural laws. In his Museum of Comparative Anatomy, now owned by the English government, he made more than ten thousand anatomical and physiological preparations, and founded

the finest anatomical museum ever collected and arranged by one individual. To give the reader a slight idea of his method of illustrating the functions of the human economy, I extract the following from a description of his labors. His biographer remarks:—

Dr. Hunter found it impossible to explain the functions of life by the investigation of human anatomy unaided by comparison with the simpler organization of brutes, and therefore he undertook the amazing labor of examining and preparing the simplest animals, gradually advancing from the lower to the higher, until by the process of synthesis the structure of the human body was demonstrated and explained. Let us take one small compartment in order to understand the effect of this method. Suppose it is wished to learn the importance of the stomach in the animal economy. The first object presented to us is a hydatid, an animal, as it were, all stomach, being a simple sac, with an exterior absorbing surface. Then we have the polypus, with a stomach opening by *one* orifice and with no superadded organ. Next in order is the leech, in which we see the beginning of a complexity of structure. It possesses the power of locomotion, and has brain, nerves, and muscles, but as yet the stomach is simple. Then we advance to creatures in which the stomach is complex. We find the simple, membranous digesting stomach; then the stomach with a crop attached to macerate and prepare the food for digestion; then a ruminating stomach with a succession of cavities, and with the gizzard in some animals for grinding the food and performing the office of teeth; and, finally, all the appended organs necessary in the various classes of animals, until we find that all the chylopoietic viscera group around this, as performing the primary and essential office of assimilating new matter to the animal body.*

I have inserted the above slight extract to show the reader that patience, perseverance, and order are ever the attributes of those who bless the world by their observations of Nature's operations; also to demonstrate that the synthetic methods pursued by me in tracing physiognomic features are identical with those followed by the most eminent scientists in other departments of science. The analytical and synthetic methods combined give us the ancient and modern ways of approaching the investigation of all natural objects, and it is this combination of methods which has given such an impetus to modern investigation. Reasoning from a whole to the constituent parts, and from the separate parts to the whole, affords us a central and circumferential knowledge of a subject, theory, or object. Herbert Spencer is a grand example of one talented in both these faculties, and one is at a loss which most to admire, his analytic or his synthetic modes of inquiry.

MECHANICAL TYPE.

There are two general and distinct classes of mechanicians, one of which is noted for the dominance of the muscular system,

* The Portrait Gallery, vol. iii, p. 665. (Published by the Society for the Diffusion of Useful Knowledge.)

and the other for the supremacy of the osseous system. The latter class exhibits a capacity for *angular* mechanism rather than for the round. Carpenters come under the head of angular mechanics, inasmuch as they deal with plane surfaces and angular forms; while watchmakers and wheelwrights belong to the muscular-constructive class, and are best adapted to the running of machinery, and will show themselves more skillful in this direction than in the former. The most skillful piano-players and sewing-machine operators belong to the muscular class. It is true that the bony class of mechanics make use of circular forms and of the spherical principle in their various works; yet these are not the dominant or reigning principles. The muscular classes also use the *angular* principle of form; yet the circular is the regnant principle in their works. The bodies and noses of these two classes present *two* distinct types of formation in harmony with the forms which they are most skillful in using and creating.

The angular mechanic is conspicuous by a long, high, and bony nose; in some subjects it is convex and well filled out at the sides, with *squareness* of all the bones, and an angular rather than a rounded body. The joints of the hands, fingers, and limbs are large and considered "homely" by those who do not know the beauty and significance of the square and angle. In some mechanics the nose is relatively short, thick, and broad, yet with large bones; in others longer, yet wide and thick through, just above the opening of the nostrils. Professor Morse, the electrician, is an excellent example of this sort of nose.



FIG. 237.—MECHANICAL NOSE.

I recently saw in a fashion article a recipe for making a stiff, bony wrist over into a round, plump, flexible one! This would be, if successful, a greater miracle than was ever wrought by saint or prophet. Those who recognize but *one form* of beauty, viz., the curvilinear form, need to extend their knowledge of the signification of forms in Nature, and thus broaden their capacity for enjoying those shapes that illustrate the most substantial, the most heroic and moral character.

ABNORMAL TYPE.

Many human beings come into the world freighted with the results of the bad habits of innumerable ancestors. The nose

records these lapses from normal habits as surely as it registers the hygienic conditions which have resulted in normal form of this member.

Noses disproportionately *short* announce a lack of bone, hence of caution and foresight in the subject exhibiting this form. This mental defect will inevitably lead to ill luck in all enterprises, as well as to ill health through lack of the care-taking propensity. We can, therefore, class this among the unhealthful or abnormal types.

A nose *very high and extremely thin* in combination is another abnormal form, and reveals consumptive tendencies, with but feeble longevous powers. Great weakness of the stomach is to be found associated with those noses that are greatly depressed at the centre, as well as a lack of veneration of the self-controlling, self-respecting, law-abiding element.

Very sharp-pointed noses are deficient in that general or large development of character and of physique which indicates capacity for long life, or a life that is *rich in its fullness*. It is not so much length of days that is to be considered desirable as is the *quality* of fullness of existence while on earth.



FIG. 238.
ABNORMAL NOSE.
(NATIVE TASMANIAN WOMAN.)

The gimlet-shaped nose ever announces a small degree of those ornate faculties which assist in rendering the mind creative, imaginative, artistic, and analytic; and these traits are the product in a race of a higher evolutionary grade than is possessed by those with sharp-pointed or impoverished noses. Examine some of the lower classes of the Irish, those who are the offspring of centuries of deprivation of physical comforts and social advantages, and we shall find the most striking types of this class of pointed noses. It is also seen in the faces of individuals of all races, and in them denotes poor physical conditions of their ancestors. A good nose is not the product of one generation alone; neither does a poor one come into existence suddenly. It can be traced back to some poor-nosed ancestor, or is the result of cumulative deprivation, or, as in the case of some feeble-minded subject, it proceeds from unusual modifications of the laws of form during prenatal existence.

Noses abnormally long indicate too great a degree of Cautiousness, and this gives a suspicious turn to the mind, and thus engenders disordered or morbid ideas, which may result in alienating friends, or in melancholy brooding, in insanity or suicide.

A nose very crooked or curved on the back, below the normal position for the curve, betokens avaricious or dishonest propensities. It is, in short, a caricature of strength, and as the curve is misplaced it argues a condition not normal.

The nose which is disproportionately high at the bridge will exhibit a despotic nature, unless there are modifying signs elsewhere—such, for example, as well-balanced Benevolence, large Reason, or Love of Young, or Conjugality, or Practicality.

Where the nose is high and broad between the eyes, and joins the forehead without any degree of incurvation, it denotes a character stupidly willful. If it join the forehead without a gentle undulation, and then suddenly project, it is evidence of a suspicious as well as of a willful disposition.

If the nose be abnormally short and thick, with a poor quality of texture, it is evidence of a stupid or brutal character.

Where the nostrils are wide and appear as if *facing* the observer, it is proof of low animal passions. This is one of

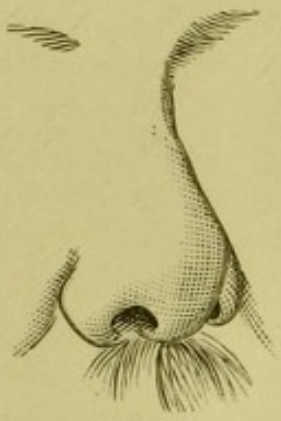


FIG. 239.
ANIMAL TYPE.



FIG. 240.
REVENGEFUL NOSTRILS.

the most striking characteristics of many animals. It is found in all simian faces, as well as among the carnivorous classes and the more peaceable domestic beasts. The ape tribes disclose this peculiarity in what may be termed its most malicious form, the nostril being at almost right angles to the eyes, and this form, when observed in the human face, indicates spite, malice, revenge, or vindictiveness, in various degrees and in diverse manifestations.

Nostrils exceedingly narrow announce poor circulatory and respiratory powers, with a decided tendency to consumption and little ambition.

Nostrils that are stiff and wanting in flexibility denote absence of sensitiveness or delicacy of sensation.

Very broad and flat nostrils indicate abnormal secretiveness, as in the negro and other undeveloped races. This appearance is

an animal peculiarity, and must be classed among the signs for comparatively undeveloped minds.

In concluding the foregoing analysis and description of the nose, it is pertinent to the subject to speak of those accidental appearances of this feature which often lead the physiognomist into error. A highly-observant physiognomist should be able to at once know if a peculiarity of this member were congenital or accidental, but, lest a wrong verdict of character should be rendered, the question should be put to the subject as to whether *accident* has imparted an unnatural form to the nose. Many noses are one-sided; others depressed at the bridge by a blow; others by accident become straightened at the bridge, which were originally convex; others are swollen by catarrh or other disorders, or by bad habits of eating and drinking; others present thickened walls and a large, thick, coarse point, which is a scrofulous indication, and does not denote Ideality or Sublimity. The quality as well as form should be remarked, for *fineness* of the texture of the skin is the sign of fineness of organization, and is seldom the accompaniment of a scrofulous diathesis.

All these circumstances should be taken into account in reading the physiognomy. Certain disorders destroy the osseous tissue of the nose; others affect the cartilage. Catarrh and syphilis both leave traces of their ravages upon this member, while polypus and inflammation change the color, size, and texture. All these circumstances must be had in consideration. When the nose is so far destroyed as to prevent our gaining a knowledge of the mentality of the subject, reference may be made to the forehead, head, and shape of the hand, the fingers, and other portions of the organism, for all are parts of one harmonious whole, and serve to enlighten the truly accurate observer.

The Eye.

In order to understand the full significance of the eye as an indicator of character, a certain degree of knowledge of its mechanical construction, as well as of its evolution, is essential. It is impossible in this work, limited as it is to the more *external aspects* of character, to give extended descriptions of the physiology and evolution of all the features; yet some accurate account must be had from competent authority in order not only to enlighten the reader, but also to sustain my own theories.

As elsewhere stated, the outer skin-covering of the body is the most primitive of the mental organs; it is in the human being the most diffused and extensive, and gives us our ideas of heat or

cold, of solid or liquid, of pressure or of resistance; in short, of the *qualities* of things independent of that knowledge of them which sight brings to us.

The tips of the fingers and the tongue are the most sensitive portions of this sense-organ. The outer skin is the most primitive of the mental organs, and evolution teaches how the eyes are evolved from this tissue. The course of their evolution has been followed with the aid of the microscope and other instrumentalities by many eminent observers, in the human as well as in animal embryos.

As it would take too much space were I to go into the *detail* of their observations, I shall therefore be obliged to content myself with quoting the result or summing up of the description by Professor Haeckel of this process. He observes:—

> The most important fact in this remarkable process of eye-development is the circumstance that the optic nerve, the retina, and the pigment-membrane originate from a part of the brain, from a protuberance of the twixt-brain, while the crystalline lens, the most important refracting medium, develops from the outer skin (epidermis). From the outer skin—the horny lamina—originates also the delicate connecting membrane (conjunctiva), which afterward envelops the outer surface of the eyeball; the tear-glands proceed as branched processes from the conjunctiva; all the other parts of the eye originate from the skin-fibrous layer; the vitreous body, and the vascular lens-capsule, from the leather plate, the choroid coat with the iris, and the protective membrane (sclerotica) with the horny membrane (cornea) from the head-plates. The outer protective organs for the eye, the eyelids, are merely simple folds of skin, which in the human embryo appear in the third month. In the fourth month the upper lid adheres to the lower, and the eye then remains covered by them till birth. The two eyelids usually again separate shortly before birth, but sometimes not till after. Our skulled ancestors had, in addition to this, a *third eyelid*, the *nictitating membrane*, which was drawn over the eye from the inner corner. Many primitive fishes (Selachii) and Amnion animals yet retain this. In apes and man it has atrophied, and only a small remnant of it exists in the inner corner of the eye, as the "crescent-shaped fold," as a useless "rudimentary organ."*

The student of evolution will call to mind that the entire brain was originally evolved from the outer skin, hence, in its most exact and vigorous sense, *all* parts of the eye have been derived from this tissue, and in this circumstance we find one of the most powerful evidences of the intimate relation existing between the texture of the skin and the brightness of the eye. It will be found upon examination that these two conditions are always in exact relationship or agreement with each other. The physiognomist feels entirely safe when by putting together these two circumstances he deduces therefrom the *quality* or *mental grade* of the subject.

*The Evolution of Man, Ernst Haeckel, vol. ii, p. 259.

And it is this knowledge that gives me confidence in asserting that fineness and clearness of the skin, brightness of the eye, and fineness of the hair are proofs of a higher grade of mentality than coarse, thick skin, coarse hair, and dull eyes. It is a long road over which the true physiognomist must travel to find his proofs. *Demonstration* is what is needed for this purpose, and no true physiognomist should be satisfied with unsupported evidence or mere assertion; besides, the interest of any feature is greatly enhanced if we can trace its *history*, for this opens our minds to much that is not apparent upon a surface presentation.

The history of the development of any organ or feature is wonderfully instructive, and enriches the mind with *facts*, which are far more satisfying than the fanciful theories of Creation, which have entertained the credulous in past ages.

The only way that we can arrive at a correct knowledge of things, is by the use of our *natural senses!* The more perfect they are, the more *exact* will be our knowledge of phenomena, and the more perfectly constructed the eye, both in its mechanism and chemical organization, the more accurate will be our knowledge of those objects which sight brings to our observation.

The *perfect mechanical* construction of the eye is rather rare, as I am informed by an eminent oculist. The imperfections of eyesight are probably as common as are the imperfections of the organs of speech, hearing, and scent. These all vary from a normal degree to the most feeble grade. Hence, it is not surprising to find that perfect articulation, accurate hearing, and keen scent, are rather rare than otherwise; this fact is known to all physicians. Some of these deficiencies are due to abnormal chemical action, whereby the fluids of the eye or the tissues are not perfectly developed, or through malformation of the muscles of the eye, or by their defective mechanical construction and action, making the eye either too long or too short sighted, or too oblique, as in strabismus, or "cross-eyes," as it is commonly termed. Again, the *coloring pigment* may be lacking to such an extent as to render the color-sense very weak, and also to so enfeeble the vision as to cause very defective or confused ideas of objects under observation. It will be observed by the last remark that deficiency of color in the eye is a direct impediment to true sight. Albinos illustrate this defect, as they are noted for their feeble eyesight, as well as for weakness of all their senses. The same feebleness of sensation is apparent in the sense-organs of others, where the color pigment is lacking. The nasal and auditory ganglia require coloring pigment, and if this be absent the senses of scent and of hearing are relatively weak. Or if there be a general absence of color, and the com-

plexion be pallid, all of the tissues are abnormally feeble, with a tendency to scrofula or consumption, and the color-sense is also wanting. Thus it will be seen that in order to have perfect vision very many things are required, and this will explain why there are so few comparatively perfectly constructed eyes.

The two principal functions of the eye are sight and motion.

The eye, like all the features of the face, is both a physical and a mental organ and feature.

It is a current belief (along with many other physiognomical heresies) that the eye expresses *more* of the *mental powers* than any other facial feature. I do not so regard it, for the reason that, when the eyes are closed, very *thorough* knowledge of mental characteristics can be had from inspection of the nose alone.

But this amount of knowledge cannot be gained by observation of the eyes solely; this is a test of the relative value of the two features as significators of mental character. That the eye is a more impressive feature than any other I will concede. The brightness and intelligence exhibited by this feature immediately arrest one's attention, and give brilliancy and an appearance of *active life* to the countenance, without which it would resemble a lifeless statue more nearly.

Dr. Cross concurs with me in this view, for he observes thus:—

> Were we at this moment to see a face for the first time, our attention would be arrested by the eye—a thing so brilliant in the midst of dullness, as if it were a little fire, or a window opening into a luminous apartment. But although the eye from its superiority, in situation, in structure, and in function, is a more engaging and a more expressive feature than the nose, yet the nose from being more central, and from being connected with the great vital organs, is a more radical feature.*

The eye is the facial register of the muscular system of the entire body, and its motions are due to the development of that system.

It is the *movement* as well as the brightness of the eyeball that makes it so attractive; not the fixed gaze, for the eyes express all emotions in turn. Although the eye in a state of repose gives us the *general* tone of the mentality, as well as the temper and morality, it does not reveal to us either the power or direction of the intellect; the nose alone is competent to disclose all these. The eye expresses the emotions rather than the purely intellectual processes, for *movement* is better adapted to feeling than to *thought*. It is this great capacity for motion which leads me to regard the eye as more indicative of the emotional nature than of the intellectual nature.

* An Attempt to Establish Physiognomy on Scientific Principles, John Cross, M.D., p. 243.

The eyes and ears have arisen out of the original nervous system, as evolution teaches us; hence they were not intended to *supersede* the functions of sensation or tactile power, but to *assist* them. One proof of this is had in the experiment of endeavoring to ascertain the qualities of articles by touch. It will surprise those who have never made this test to find how little the function of sight is essential to knowledge in this direction. Now, although qualities may be detected by touch alone, yet we can gain no adequate idea of *form and color* except by sight, and as these constitute the greater part of objects, so sight is most essential to those who would become actively useful. The eye is a mixture of animal and mental powers: animal by reason of the preponderance of its muscular construction (eleven muscles being found within its orbit); mental by virtue of its connection with the optic nerve—a nerve derived from the second pair of the cranial nerves, which are nerves of sense. This nerve ramifies upon the retina, and according as it is finely organized will be the power for *acute vision.* Accuracy of vision depends upon the mechanical arrangement of the muscles, the humors and the lenses, as well as the amount of the coloring pigment in the choroid coat.

The most primitive and most diffused mental organ is the outer skin-covering of the body, and evolution shows us that the eyes were evolved from this source, and, as the power of sensation of feeling is the most extensive and important, it follows that deprivation of surface-sensation (as in paralysis, or by burns) is more destructive to mental activity and force than deprivation of eyesight; thus proving that original or primitive functions cannot be dispensed with so easily as the later additions to our bodily equipment, although they may stand more abuse, as is the case with the stomach, which is, I believe, the most abused of all our organs, as it is the most primitive of all the viscera.

A great deal of nonsense, poetic and otherwise, has been written about the eye; some describing it as the "mirror of the soul," etc. Now, the eye, like the brain, is simply a physical organ supplied with blood-vessels, nerves, muscular fibres, and certain liquids, all purely physical substances; as well call the chin or the nose expounders of the soul; they all reveal mental or moral characteristics and proclivities, or the lack of them. I do not object to poets idealizing any portion of the face or body, but when it tends to superstition I object. The ancient writers and many modern European writers use the word soul synonymously with the word mind; science gives a more accurate meaning and teaches that mind is a physical organ. Whatever the soul may be I know not, but it is not best to confound soul and mind by using one word to

describe both. Mind, I opine to be the entire *material intelligence* of the human being.

Soul, I cannot describe, hence I confine myself to what I understand. At any rate I gain no idea of one's "soul" from the expression of the eye, but I do learn much of man's emotional nature,—his moral or immoral status, as well as his linguistic powers and general capacity for motion,—hence his aptitude for art; also his general tone or mental force by the color and brightness of the eye, but not the entire *direction* of that force; the nose and forehead alone show these.

The relation of the eye to the muscular system must be thoroughly comprehended in order to discern why and how this feature is the facial sign of the muscular system, of motion and of the emotions, viz., of love, hate, truthfulness or untruthfulness, sentiment or sensuality, and, also, of artistic capacities. For this purpose we can find no better evidence than that which Nature has furnished in so many "ready-made experiments" in the animal kingdom. This proof is had by observing the eyes and bodies of all those animals that depend mainly upon their muscles for their activity.

The eyes of the various kinds of deer, the springbok, gazelle, goat, ibex, elk, chamois, hare, and rabbit, all indicate by their size and conformation that the muscular is their predominating system. It also exhibits their capacity for continuous and rapid motion. The size of the eyes, as well as the habits and habitats of these animals, prove that they are intended to scan distances and wide expanses, and that they are not suited to the perception of the minute in Nature. Small-eyed animals exhibit faculties just the reverse of large-eyed ones, and depend more upon the knowledge of things near them and those that require more exact vision. These animals are slower in their motions, possessing more bone and adipose tissue than muscle according to their size. The elephant, tapir, rhinoceros, grizzly bear, walrus, and elephant-seal are examples of this combination. The small eye of the elephant is so easily brought to a focus that he can pick up a needle with his proboscis. The nature and habits of all these creatures demand that they shall take cognizance of small objects, as well for the purpose of gaining a supply of food as for protection, their motions being so slow that accurate and instant vision is essential to their safety.

The mental characteristics of animals possessing large, full eyes bear a strong resemblance to human beings who have similar features. They are more emotional than the small-eyed creatures, more affectionate, and more active; they receive sensations more

vividly, and lose them almost as readily as they receive them. One class of animals in which the muscular system predominates exhibits considerable mechanical, and even artistic, skill. The mole's burrow and the beaver's dam are manifestations of one form of muscular ability. In man, all the varied architectural and building powers depend mainly upon the muscular and osseous systems combined.

In endeavoring to discern the meaning of an eye there are *nine* things at least to be observed: First, the form; second, the size; third, the color; fourth, the degree of brightness; fifth, the shape of the commissure or fleshy opening caused by the parting of the upper and under lids; sixth, the effect produced by the folds, wrinkles, and brows, and proximity to the nose; seventh, the angle of inclination, or the manner in which the eye rests in its socket—its inclination forward or backward, and its position in regard to the surrounding parts; eighth, its relative position to the central line of the perpendicular; and ninth, its general expression.

There are many expressions of the eye which cannot be described in any way, apart from the living subject; just as there are many indescribable traits in persons that cannot be illustrated by brush, chisel, or pen. The personal atmosphere or magnetism is one of the things that cannot be transmitted to posterity by words or pictured representations.

The enthusiasm and inspiration of the ancient orators—Cicero and Demosthenes, for example—must have produced the most exalted and sublime effect upon their hearers; yet in reading their noble and lofty sentiments, all this is lost. Just so with the human eye. Many of its expressions cannot be reproduced. The various *colors* are most difficult to delineate on canvas. The best study of the eye must be made in the living subject. Still there are many expressions observed that can be described and their meaning understood to a certainty.

The eye being more particularly the indicator of the emotions, it is particularly well adapted to reveal the linguistic powers, as well as the passions, such as love, affection, hatred, jealousy, suspicion, anger, truthfulness and untruthfulness, sexual morality and immorality, and this it does by the peculiarities of its structure. In order to understand this feature and to be able to translate its conditions into character we must apply the laws of Form as set forth in the basic laws of Form.

The consideration of the forms of the eye will now be taken up; this will be followed by the other qualities involved in the physiognomic signification of this feature.

THE FORMS OF THE EYE.

The true sphere occurs but once in the human organism, and this appears in the shape of the eyeball. The true circle is found but once in the human face, and that is found in the retina of the eye—that particular portion of the eye which brings into the mind a knowledge of the forms and colors prevailing throughout Nature's vast domain. The form of the eye is globular, and epitomizes the world. Within the orbit of the eye and its surrounding parts and accessory appendages, we shall find all of the prime factors of Form, viz., the *globe* or sphere in the eye-ball, the *point* in the "blind spot" where the optic nerve makes its appearance in the retina, the *line* in the ciliary processes—numerous radiated fibres which assist the iris in dilating and contracting.

The *angle* is well represented by the two angles at the outer and inner corners of the commissure of the eye, the *curve* by the

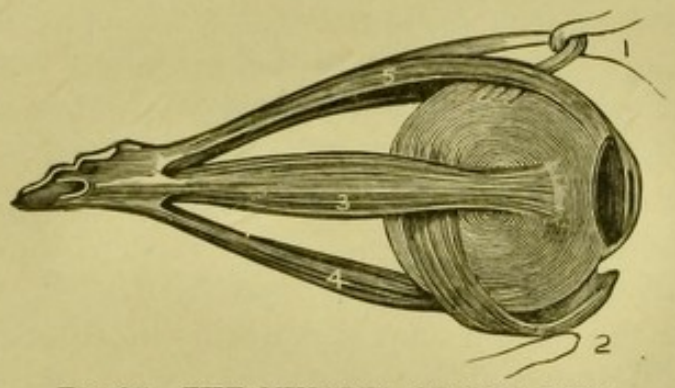


FIG. 241.—THE MUSCLES OF THE EYE.
1, superior oblique; 2, inferior oblique; 3, 4, 5, recti muscles.

sections of the eyeball, and also by the curving of the lids; hence, we find in this feature *all* the essential elements of Form. The eye is thus shown to sum up and resume all basic principles of Form, the only feature which contains them *all* in so complete a manner.

The patient student of physiognomical science will be able, by applying the basic principles of Form (as described in this work), to spell out the meaning of every part of each eye under observation, and thus learn their true significance.

The outline of the eyeball is globular; this form is necessary in order to facilitate the number and variety of movements essential to sight. The sense of sight, like that of hearing, is dependent upon circular or curved movements and circular mechanism. The rays of light are produced by vibrations of ether, which are wavy or curvilinear in their form; so, also, the sound waves that impinge upon the ear describe a segment of a circle of infinitesimal size.

The eye, both internally and externally, is round, and the mechanical appendages down to the most minute cell of the watery humors of the lenses, of the coloring pigment and of the muscular tissue, all exhibit circuloid formation.

The optic nerve, like all nerve-tissue, is endowed with elasticity, and the infinitesimal tremors that mark its activity are wave-like, and thus are able to communicate to the brain with lightning-like rapidity the stimulus received by the eye at sight of any object that falls upon the retina; here, again, we find that motion is the main cause of intelligence. All of which goes to prove that motion primarily is the source of all the knowledge which comes into the mind through the senses of hearing and seeing, and, also, that circular form and curvilinear motions are best adapted to free movements; hence are the bases of spontaneity of motion as in artistic works,—Music and Language, for example. This idea leads up to another, and it is this, that the eyes of the artistic classes are larger than those of all other classes; also, that the most active persons and animals possess the largest eyes. Upon further examination it will be found that in all these classes the muscular is the dominant or one of the dominant systems, and thus we are confronted with the logic that, as activity, spontaneity, and continuity of motion are attributes of the muscular system, so Language, being a *mode of motion*, it follows that the eye is the facial sign, both of the muscular system and of Language, and furthermore for the reason that it contains more muscles within its small orbit, and more active ones than any similar amount of space in the face or body.

Now, if this be the facial sign for Language, it follows that it should by its form, size, color, and quality reveal linguistic capacities and individual peculiarities. It does this in the most precise and subtle manner when the basic laws of Form are applied to each minute variation of every minute section of its orbit, lids, brows, etc.

The eye is also one of the facial representatives of the sex-nature and amative sentiments by virtue of its muscular relationship to the reproductive system, and as this system is the base of Amativeness it follows that the quality, power, and conditions of this system and its associated sentiment would be indicated by the structure, color, and quality of the eye; hence, in our investigation and analysis of this feature we shall treat more particularly of the faculties of Love and Language while describing the various circumstances that effect this feature, although it is indicative in a general way of all the emotions.

This analysis proves how fallacious is the notion that the

> Large size of the eye of talented linguists is the phrenological *organ* of Language, which is situate in the cerebral convolutions on the lower side of the anterior lobe of the brain at the posterior part of the supraorbital plate, pushing the eye more or less downward, or forward, or outward, according to the size of the convolution, thus giving prominence or anterior projection if the organ be large. (Story.)

What supreme nonsense is all this! Why even a child by superficial observation can see that the eyeballs of great talkers are large by virtue of their *muscular* endowment, and are not "pushed up, or down, or out" by the "convolutions" of the brain behind them. This idea of the *muscular formation* of the *eyeball* as an indicator of Language and of motion must be grasped in its entirety by the student of physiognomy in order to make an intelligent use of the science as a whole; for it is a *basic idea* and is related to the entire muscular mechanism. The eyes and formation of the deer tribes, the goat, the chamois, etc., accord with this theory of motion. They are the fleetest and the most continuous in their movements of all animals. The wandering, nomadic tribes of Arabia present very large, wide-open eyes, and in them the gift of imaginative language is pre-eminent. The artistic classes of all races reveal the same peculiarity of form of the eye, and they all depend upon the rapidity and automatism of the muscles for the skillful performance of their art, be it music, language, painting, or athletics.

The optic nerve has room for greater expansion upon the retina of a large eye than upon a small one; hence, the larger the eye the greater the power for receiving impressions and sensations, and of imitating and exhibiting emotions, as is the case with poets, actors, and others of the artistic classes. This expansion of nerve-tissue is more marked upon broad features than upon very narrow ones, and in all instances gives the most power.

Width of the point of the nose and nostrils gives greater keenness of scent than is found in those that are thin and narrow. Contrast the greyhound and bull-dog for examples of this principle. It is the same with broad, full lips *versus* thin ones, and thus of all the facial features.

THE THREE GENERAL FORMS OF THE EYE.

There are three general forms of the eye; and now I am about to describe the *form* of the eye as it appears between the slit or opening of the lid. These are: (1) large and round (Fig. 242); (2) narrow and elongated (Fig. 243); (3) oblique (Fig. 244). All other forms are modifications, blends, or compounds of these three

principal forms. Some eyes present in their contour portions of each of these forms. Exaggeration of any one of these forms is a caricature of what such individual form represents; as, for example, an eye greatly exaggerated in size denotes fluent, unreliable "gab" or talk instead of rational and eloquent language. It also denotes incapacity for receiving correct and accurate impressions; hence, is the indication of an untruthful, unreliable character. An eye too small denotes great secretiveness, another form of unreliability in regard to language and truth, while the slant-eyed, cat-eyed individual reveals still another form of abnormal development of language, being deceptive, secretive, sly, and crafty in his talk; thus, all departures from the normal standards of form are shown to be not only less reliable than those that approach these standards, but are also less beautiful. The ancient Greek writers, poets, and artists seemed to have had a very limited conception of the beautiful as expressed by the eye; their main idea of this feature seems to have been that large size of the eyeball, high arching of the lids—particularly that of the upper lid—was the *sole and only type of true beauty*. This peculiarity of form is found in most of their great masterpieces of statuary, as seen in the figures of Jupiter, Apollo, Juno, and others. The Greek idea of beauty was based entirely upon the physical or sensuous aspect of Form; the moral and scientific idea of Form had not developed in their era; hence, they knew not its meanings and could not express it in poetry or sculpture. They were a *muscular* race, and we have learned through scientific physiognomy that "we generally think according to our formation;" so the Greeks thought round, curved, artistic thoughts, which eventuated in rounded, flowing, graceful language and curved, rounded statues—curved in all their parts.



FIG. 242.—Large and Round.



FIG. 243.—Narrow and Elongated.



FIG. 244.—Oblique.

THREE GENERAL FORMS OF THE EYE.

This represented the art era, but not the moral or scientific era, such as is now advancing. One of the grand uses of this system of physiognomy is that its basic principles of Form apply to the people of all nations, races, and eras, making it unnecessary to devote great space to the description of racial types, because the laws of Form apply to each, and when thus applied reveal and express national and ethnic characteristics as well as individual peculiarities of character.

The form of the upper lid alone, could we view it apart from its surroundings, would reveal the degree of linguistic capacity in the subject. It will also give us his class of mind—whether he be artistic, scientific, mechanical, moral, or sensual. Where the inner corner of the upper lid is highly arched we have assurance that it is the eye of a luminous, artistic mind, with lofty ideals and great susceptibility to all outward sensations and expressions, as in Fig. 242.

ARTISTIC TYPE.

On the other hand, if this line is not so highly arched it announces a more reflective mind, with power for more *accurate* observation and less emotion.



FIG. 245.—ARTISTIC EYE.
(RUBENS.)



FIG. 246.—REFLECTIVE EYE.
(JAMES WATT.)

REFLECTIVE TYPE.

The shape of the hands and finger-tips even can be delineated from observation of this line alone. In the former case they will be muscular, flexible, and tapering; in the latter bony, hard, and square,—so true to nature and so far-reaching in their applications are the basic laws of Form. The law of the homogeneity of the whole organism here, as elsewhere, asserting its supremacy. The law of one part is the law of the whole. The above outlines are normal types,—one of the artistic, the other of the reflective, eye. Each indicates fluency and normal Amativeness.

A *true curve* of the upper lid at its *outer* corner denotes Agreeability.

THE AGREEABLE EYE.

The eyes of thousands of moral persons exhibit this slight downward curve. In its normal manifestation it is a moderate curve, and signifies Agreeability, and in this form it is found in the eyes of the following-named: Henry Ward Beecher, Prince Gortschakoff, General Robert E. Lee; William I, Emperor of Germany; Edward Everett, Robert Burns, Benjamin Disraeli, Jenny Lind, N. P. Willis, Pius IX, Marshal McMahon, Commodore Farragut, Dr. William B. Carpenter, Ferdinand De Lesseps, Michael Faraday, ex-Empress Eugenie, Prof. William D. Whitney; very marked in Tennyson, Thurlow Weed, Alexander Hamilton, Elizabeth Fry, and Dr. Abernethy. I could swell the list almost indefinitely of most excellent characters whose eyes present this degree of curvation. I am the more particular in calling attention to this peculiarity for the reason that it has been classed among criminal eyes by a certain writer on physiognomy. Doubtless this



FIG. 247.—AGREEABLE EYE.
(N. P. WILLIS.)



FIG. 248.—LINGUISTIC EYE.
(MRS. HEMANS.)

peculiarity is found in the physiognomy of many thieves and liars, for many of them use their native agreeability to deceive others. Many rogues possess great suavity, as well as a large share of the faculty of Human Nature, and these traits they combine with the criminal ones in order to succeed in their knavery.

THE LINGUISTIC EYE.

The linguistic eye is full, round, and quick in its movements; of various colors, but always bright.

POLITIC TYPE.

Where the "agreeable eye" is exaggerated in form and takes on a decidedly *oblique* appearance, it then becomes, like all exaggerations, abnormal (Fig. 249), and in this form denotes a desire to be agreeable often at the expense of strict truth. It is hard for those of this type to be the bearers of unpleasant truth, and if sent

upon an errand requiring severity they will soften and tone down the message before delivering it. This class often seem to be



FIG. 249.—POLITIC EYE.

deceitful, yet do not *plan* to be; their natural desire to please everybody gives this impression.

UNTRUTHFUL TYPE.

Still *further turned* downward, as is often seen in the countenances of dishonest politicians (Fig. 250) and salesmen, it exhibits the "law of *imperfect* curvation" or obliquity, by *downright agreeable lying* and planned deception, in order to further selfish schemes and be successful in trade or in society. It is this class of short-sighted philosophers who say that "policy is the best honesty," never dreaming that dishonesty is the worst policy in the world, and the most unsuccessful commercial theory.

Now let us note the departures from the normal curve or standard of form in the *upward* slant of the upper eyelid. This is the most vicious of the two phases of obliquity. When the outer corner of the eye turns slightly *upward* it indicates a slight degree



FIG. 250.—UNTRUTHFUL EYE.
(A POLITICIAN.)



FIG. 251.—DOUBLE OBLIQUITY.
(A MONGOLIAN.)

of diplomacy or tact, or policy, or secretiveness, or caution. A more decided slant denotes deception, secretiveness, treachery, and cruelty even, as with the carnivorous animals, whose eyes are thus formed.

UPWARD OBLIQUE.

Many professional criminals exhibit this form of eye It is also characteristic of the majority of numbers of the Mongolian and other low races.

DOUBLE OBLIQUITY.

Where the outlines of both the eyelids *slant* decidedly upward the character is deceptive, suspicious, and entirely untrustworthy (Fig. 251).

OBSERVING EYELID.

Particular attention is called to the *overhanging folds* of flesh and skin frequently met with in the outer corner of the upper eyelid (Fig. 252).

This peculiarity is most commonly seen in the eyes of the highest classes of accurate observers, such as mechanicians and scientists. It is most decided in old age. It is rarely met with in



FIG. 252.—OBSERVING EYELID (CHARLES DARWIN.)



FIG. 253.—LICENTIOUS AND UNPRINCIPLED EYE. (PRINCE MILAN, OF SERVIA.)

artistic faces, for the dominance of the muscular system raises the eyebrows to a high curve, and, as the eyebrows do not project much in these subjects, there is more or less space between the upper eyelid and the hairy brow; but in the more accurate classes the osseous is one of the supreme systems and the muscular subdominant; hence, the greater capacity for acute observation, the greater will be the projection of the bony superciliary ridges. As age advances the eyes of this class recede more and more, and, as the muscles and skin about the eyes become lax through long-continued use and shrunken by loss of elasticity, one or more parallel folds of flesh, skin, or fat appear, and often set far out beyond the eye, making the feature appear very small,—much smaller, indeed, than when in the youthful state. This should not be confounded with the *secretive* eye; the better *curvation* of the lids will reveal the difference. For examples of varying de-

grees of this trait, see the eyes of the following-named: Charles Darwin, Michael Faraday, Alfred Rupp, Robert Collyer, John Draper, William Cullen Bryant, John Smeaton, architect of the Eddystone Lighthouse, and James Watt, inventor.

LICENTIOUS AND UNPRINCIPLED FORM.

Another peculiar illustration of the basic principles of Form, as related to the eye, is found among the low types of beings, both in barbarous and civilized races, the apertures of whose eyes are very nearly closed by reason of the eyelids describing so slight a curve in crossing the eyeball as to show a very narrow slit of an elongated form, through which the eye seems peeping out (Fig. 253).

This form denotes a low sexual nature and untruthfulness. Now, *height* of any feature is one of the indications of *elevation* and nobility of the part of the character which is represented by such feature; yet, the "happy medium" also denotes excellencies.

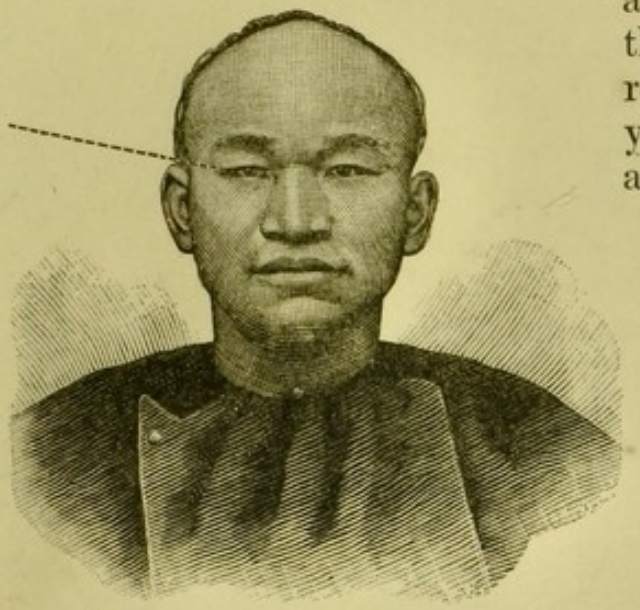


FIG. 254.—SECRETIVE EYE.



FIG. 255.—ACQUISITIVE EYE.

Straight features reveal more straightforwardness of conduct and speech than curved features. This law of *vertical measurement* applies with equal justice to the aperture or opening of the eyes as it does to other features. Where the aperture between the lids is of normal width, and the eyes straight and horizontally placed in their orbits, they indicate *normal morality* and truthfulness, but where this is greatly exaggerated, and they are much *too large* for the normal standard, they are unreliable. So, also, where the lids are *too close* together for normalcy, secretiveness, or deception, or mental inferiority of some sort is indicated, as well as undue acquisitiveness or sensuality. Now, in some subjects, one, two, or three of these traits may be present, and their presence will be corroborated by other signs in the face and body. The eyes of many noted criminals present this form; those known either for their

gross immorality, thievish propensity, inferior intellect, secretiveness, acquisitiveness, or avariciousness. The eyes of Jesse James, the notorious bandit, present both secretiveness and acquisitiveness large, while other of his features indicate other criminal or defective characteristics (Figs. 254, 255).

SECRETIVE AND ACQUISITIVE EYE.

In eyes of this class the angle at the corners is very *obtuse*, while in eyes that express the greatest degree of truth-telling capacity and the greatest degree of true or normal emotion, such as love, etc., the angles are very *acute*, forming almost a *square*, and in the eye thus constituted is found one of the most wonderful combinations of the true arch and the true curve that is to be met with in the human physiognomy (Fig. 256).

TRUTHFUL EYE.

The countenance that exhibits this noble combination of the basic elements of Form can be interpreted instantaneously by the application of the laws of Form. It is by this application alone that we are able to instantly comprehend the moral grandeur and heroism of Luther's nature. His round, wide-open eye, with its finely-arched lids and *acute angles*, announce his capacity for bold, fearless, and true sentiment. Fortunately for the verification of scientific physiognomy, his life-work attests the truth of its principles.



FIG. 256.—TRUTHFUL EYE. (MARTIN LUTHER.)

Among philosophic artists, Winckelmann, the great sculptor and art-writer, stands unrivaled; his conception of the principles of Form alone would stamp him a genius of the first grade; his analysis of the normal plan or design of the perfected face is thus concisely stated. He remarks:—

> The more oblique, for example, the eyes, as in cats, so much the more does their direction deviate from the fundamental form of the face, which is a *cross*, whereby it is divided in length and breadth, from the crown of the head downward, since the perpendicular line passes through the middle of the nose and the horizontal line through the orbits of the eyes. If the eye is placed obliquely, then the face is divided by a line, oblique to the vertical, passing through the nose. This, at least, must be the true cause of the unseemliness of an obliquely-situated mouth; for if, of two lines, one deviate from the other without reason, a disagreeable impression is produced. Such eyes, therefore, when found among us, and in Chinese, Japanese, and some Egyptian heads, in profile, are a departure from the standard. The flattened

nose of the Chinese, Calmucks, and other distant nations, is also a deviation, for it mars the unity of the form according to which the other parts of the body have been shaped.*

This artistic philosophy approaches very nearly a scientific analysis of Form, and is quite in accord (as far as it goes) with the physiognomical theories propounded by my system, and which are in accord with the basic laws of Form as exhibited by universal Nature.

NORMAL EYE.

The lower lid in a normal eye describes a true curve, not so highly arched as the normal upper lid. In all departures from a true curve in this feature we find a defect of some sort. In those in whom the bony system is dominant the lower lid is never so arched as where the muscular system is one of the supreme



FIG. 257.—NORMAL EYE.
(PRINCE NAPOLEON.)



FIG. 258.—ABNORMAL EYE.
(JESSE JAMES.)

systems. Yet if the character be moral, a *true curve* will appear (if ever so slight) in its curvation; this form denotes a relative deficiency of muscle, hence expresses much less artistic and emotional capacity than where the curving is excessive. This grade of curvature is normal in those subjects in whom the osseous system is dominant.

ABNORMAL TYPE.

An abnormal form of the lower lid is reached when it draws an almost straight line across the eyeball, forming, in connection with the upper lid, a narrow, slit-like aperture, such as is observed in those who are excessively secretive or avaricious. (Fig. 258.)

This form is also often seen in the physiognomies of misers and among avaricious races, notably among the Arabs, Turks, Hindoos, and other Orientals, as well as in many barbarous races.

This appearance is frequently met with in the eyes of congenital criminals, and in their case the curving of both the upper

* Winckelmann's "Ancient Art," vol. ii, p. 35.

and lower lids is imperfect, and in many subjects the eyeball is obliquely placed cat-wise in its socket. The signs of villainy are more apparent in the eye and mouth than in any other features, and where these deviate from normal standards of form the moral sense deviates in just the same degree from the highest standard of rectitude.

The excessive mobility of the muscles of these features makes them peculiarly susceptible, either to improvement or degradation, and as both are facial signs of the faculty of Language, so all deviations in them from normal forms betoken abnormal peculiarities of speech, as well as modifications in several other related faculties and functions.

The eye is one of the facial signs of Amativeness as well as of Language. The power and capacity for sex-love, as well as for the *sentiment* of love, is shown in the eye by its form, size, color, lustre, quality, position, movement, and humidity.



FIG. 259.—"POLYGAMIC EYE."



FIG. 260.—"MONOGAMIC EYE."

Prof. Willis' idea of the "monogamic" and "polygamic" eye applies to certain-shaped eyes with truth, but as he gives no analysis of these forms it remains for me to do so in connection with the figures that illustrate them. In this search after underlying principles we have not far to go, for the law of the angle and the curve, with an application of their *inherent* meanings, affords us all the light necessary to translate their forms into character. The "polygamic eye" (Fig. 259), so called, is in some races both narrow and oblique, as in the Chinese and Japanese, and these people practice and have practiced polygamy for ages; their eyes denote a lack of sexual ethics, which the true curved eye, with its acute angles, indicates. This latter curvation is caused by the line of the lids springing sharply upward and downward from the corners, and it is this form of roundness that characterizes the "monogamic" (Fig. 260) and the "conjugal" (Fig. 261) eyes.

Each of these eyes has its modifications and corresponding characteristics. The above figures illustrate the two extremes of

sex-love, viz., promiscuous attachment and exclusive attachment. The forms of these eyes are in harmony with the physiognomic principles of elevation and lowness, as seen in the finely-arched eye of Fig. 257 and the low character shown by the irregularly drawn line of Fig. 254.

In these examples the law of the square or angular principle is dominant in the eye that is perfectly curved, for in order to produce two fine curves there must be an *acute angle* at their intersection. This combination of the acute angle and the true curve indicates the highest degree of pure and true monogamic love. The other illustrates the law of the *obtuse* angle and imperfect curvation, and thus shows the presence of a lower grade of true and pure Amativeness.

The normally-amative eye I term the "conjugal eye," for, as the polygamic eye is the exaggeration of the normal type, the former is the mean between the two extremes. The conjugal eye is found in its highest form in those men and women who love but *once* in a life-time, and who, through the fidelity of their attachment and the peculiar structure of their emotional natures, can never again experience the same degree of affection that characterized their first love. The normal conjugal character is one which may admit successively of a second or even a third or fourth attachment, but is capable of being faithful and true to each while the attachment lasts. This class of people marry a second or third time if deprived by death of their marital partners.



FIG. 261.—CONJUGAL EYE.

There are a large number in every community who can be happy and contented only in the conjugal relation; these are pre-eminently conjugal characters, and their grade of Amativeness is quite as normal and far more practical than that of the ever-mourning husband or wife who rejects a second love, and who go through life a sort of peripatetic monument, refusing to be comforted in a sensible manner.

The polygamic eye is met with in all civilized races, and is not confined to the barbarous or semi-civilized tribes. It is more frequently met with among men than among women. Women are more naturally monogamic and more conservative than men. These two factors added together create that intensity of conjugal fidelity which holds the family and society together.

In this field woman is man's protector, for the pure-minded, faithful wife is often the power that holds the vacillating footsteps of her husband from straying after strange goddesses.

In woman the "polygamic" eye is indicative of a love of admiration, and vents itself in girlhood by "flirtations" and a craving for promiscuous admiration and attention, yet many such women make admirable wives when offered the homage of a manly heart; the finer nature of a woman modifies indications considerably; the circumstances of *quality* must always be taken into account. Some women, like many men, are polygamic in their natures, and always desire the love and attention of more than one man. Many men live polygamic lives even in Christian communities, and seem capable of giving a great deal of love to several women at the same time; these are *perversions* of the normal standard of true love and of true marriage. It is this class that demoralizes humanity and destroys the good order of society, for fidelity to the marriage vow is the foundation of health, of morality, of the family, and of the government. Many men of this class live lives of open shamelessness, and thus encourage those who are tempted by the strength of their passions to do likewise; they do not exhibit the virtues of hypocrisy even, for a hidden vice is not as demoralizing to the young as one that is constantly flaunted in their faces. Example is a most potent incentive. It has been said that "hypocrisy is the tribute that vice pays to virtue;" not always is this tribute offered, and thus open viciousness attracts the morally-weak and often destroys them.

Each eye reveals the power or weakness of the love-nature of its possessor. Very large convex eyes (if well colored) denote great sex-love and also a great deal of the *sentiment* of love, while very small, flat eyes indicate a feebler degree of the sexual propensity and its associated sentiment; a little more or a little less development of the muscular system makes all these differences. Muscle is the tissue that enables man to express the emotion of love, and all of the great visceral organs that assist reproduction are comprised in the muscular system, and are the bases of the sentiment of love and its associated physical function.

In the animal kingdom the forms of the eye indicate precisely the same traits that they do in the human family. The eagle, dove, and many other birds are monogamic in their attachments, and keep strictly to one companion and illustrate the highest type of the family institution. Several of the deer tribes and other animals exhibit in their lives this high moral condition of love, while the hog and other low breeds are as polygamous as the Turk or Chinese. The eyes of the monogamic animals are round and

wide open, presenting the acute angle and the true curve, while the polygamic animals reveal the lowest types of the law of Form, having the eyes obliquely set and narrow between the lids; this is the form of the hog and many of the small as well as many of the large carnivora. The square-boned lion is monogamic, while the round-boned cats and other similarly-constructed animals are polygamic. All this goes to prove that the knowledge of mind and character must be sought for in anatomical and physiological structure, guided by the application of physiognomic laws.

The general outline of the round-eyed monogamic individual corroborates the meaning of the eye. The most ardent lovers and prolific people are round, and this form denotes the ascendency of the muscular system, and this system is the best adapted, not only to feel and express emotion, but it is also best adapted to reproduction. This principle of roundness—of muscular supremacy as indicative of generative capacity—runs all through animated Nature. All animals which possess this form are more amative and more prolific than the square-boned beasts; this is conceded by other observers.

I have not made extensive comparisons in the vegetable kingdom, but I believe that an application of the principles of Form will reveal similar results. So universal are these basic principles that one is justified in believing that their power is everywhere dominant.

THE SIZE OF THE EYE.

There are great diversities of *size* of the eyeball in adults as well as in children, and their differences will be found to accord with the general muscular endowment of the entire organism, for as the eye and its attachments are the facial representatives of the muscular system, so the larger the eyeball and its attachments the more developed will be this system throughout; and, conversely, the smaller the eyeball the more deficient will the muscular tissue be.

Many eyes seem small that are not really so at all. The eyebrows project beyond them in such manner as to hide their real size, as is often observed in mechanics and scientists. The true development of the eyeball may be ascertained by the appearance of the flesh and muscles about the orbit, as well as by the arching of the eyebrows; the latter are always more highly arched when the ball is large. Again, if the ball be large the cheek just below the eye will be well filled out even in old age; whereas, if the ball be small this part of the cheek is somewhat sunken, and is never so firm and full as where the muscular is one of the supreme systems.

It is a law of structure that wherever there is a large muscular

organ the attached muscles are always relatively large, and that where the muscular system dominates the bony system the eyeball, as well as the muscles of the lower lid and the muscular fibres of the upper cheek, will be so well developed as to fill out the part of the orbit just beneath and around the eye; but where the bony system is *dominant*, or one of the dominant systems, the eyeball is relatively smaller than in the preceding case, and recedes under the brow considerably, while the orbit appears less full, and in advanced age the *soft* parts just beneath the eye are quite shrunken and wrinkled, and the eye appears to grow smaller and smaller, while the brow appears to project more and more. This appearance is due to the shrinking of the muscular tissues and skin about the orbit, as they lose some of their elasticity and firmness as age advances. This is particularly the case with mechanics, scientists, and naturalists. Charles Darwin's physiognomy is a good example of this peculiarity. The eyes of great observers are always smaller than those of artists, and the eye-bones of the former project more than those of the latter, and this causes the eyeball to look smaller than it is in reality. The eyes of all classes who observe closely, and who also think profoundly, are formed upon this plan. In relation to this rule Lavater observes thus:—

> The following is a sign that has never deceived me: When the bone of the eye is prominent you have the sign of a singular aptitude for mental labor—of an extraordinary sagacity for great enterprises.

The small appearance of the eye that is produced by the projection of the eye-bones must not be confounded with that smallness which is caused by the projection or fullness of the *cheek* beneath the eye. The latter appearance has quite a different meaning from the former. It denotes a common, vulgar mind, given to gluttony and sensuality. The surroundings of the eye, the bones, the hairy brows, the wrinkles, the folds of flesh or skin, the space between the eye and brow, as well as the lids and upper cheek, all add to or take from the apparent size of the eyeball. Some eyes are set very deep at the inner corner and stand out well at the outer corner, while others are the reverse of this. Some eyelids are well arched at the inner corner and less arched at the outer corners; all these variations produce different expressions and diverse characteristics, and modify the appearance of the size of the eye; hence, in order to arrive at a just idea of the real size of the eye all these circumstances must be taken into account.

Many medium- and large- sized eyeballs look small from the fact that the eyelid covers a large portion of the eyeball; this peculiarity is observed in many of the Oriental races, and also in large

numbers of the Celt and Celt-Iberian races. This is one of the facial signs for Acquisitiveness. In these cases the large, globular contour of the eyeball, half covered by the upper lid, gives a sort of dreamy expression to the eye, and as it is often observed in the eyes of many talented persons it has been regarded by some physiognomists as one sign of talent. I do not so regard it, for I observe it in the eyes of many ordinary individuals. It is, however, never found except where the muscular is one of the supreme systems; hence, it is often seen among the artistic classes. Very many talented artists have been noted for their large Acquisitiveness, and even for its perversion—avarice.



FIG. 262.—Large. (DESCARTES.)

There are three general sizes of the eyes, viz.: Large (Fig. 262); medium (Fig. 263); and small (Fig. 264). The large eye may be very convex, or it may present a more flattened appearance; each of these forms denotes specific differences. So, also, the medium-sized eye may be full and globular or flattened on the surface. These differences again argue diverse characteristics. The large, globular, convex eye is often met with in the countenances of great actors, singers, orators, and painters. This size of eye indicates the highest capacity for receiving impressions and for depicting and illustrating emotions. The eyes of David Garrick, Fechter, and Blanche Barretta, players; of Grattan, Beecher, and Summerfield, orators; of Edgar A. Poe, Robert Burns, and Whittier, poets; of Madame de Staël, novelist; of Rubens, Van Dyck, and David, painters,



FIG. 263.—Medium. (FREDERICK II.)

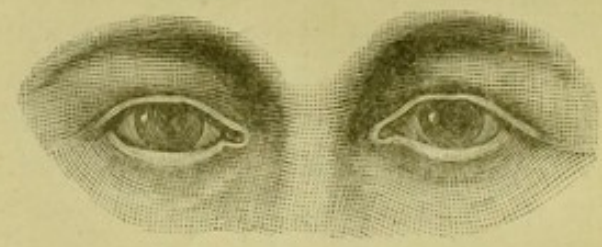


FIG. 264.—Small.

THREE GENERAL SIZES OF THE EYE.

disclose this form. Their eyes in youth all appear much larger than in portraits taken in later years. It will be noted that all their eyes recede *slightly* under the bony brow, or at least do not set *too far forward* beyond it, nor beyond the plane of the cheek; hence, they argue a degree of good sense, judgment, and accuracy.

The largest eyes among artistic productions are found in the countenances of the ancient Greek sculptors; their idea in creating such exaggeration of size and roundness was to give their subjects a majestic or divine look, as they understood these qualities; hence, the more closely the eye approaches these exaggerations the farther is it from the normal standard, for these forms reveal characteristics not in accord with the best standards of human form, as shown by scientific physiognomy. The same is true of the so-called "Greek" nose. This nose is described by a *perfectly straight line* descending from the forehead without the *slightest incurvation* at the junction with the nose, as seen in the statues of Jupiter, etc. Were we to find this line in the countenance of a human being it would be the indication of a monstrosity, far removed from nobility and characterized by unbridled will and gross selfishness.

Very large eyes denote exaggerations in the use of language. Very small ones indicate silent, secretive characters—both deviations from a normal development of that feature and faculty. The medium size indicates fluency without volubility. Other factors besides mere size must be taken into consideration in order to comprehend the linguistic capacities of each subject as well as the moral use of language. The largest-sized eyes belong to the artistic and emotional classes; the medium to the more observing and thoughtful minds, while the very small to those of weak organization, either morally, mentally, or physically. Those with very large, convex eyes are never profound, logical, and observing, but are more impulsive and emotional. The eyes are relatively large, wide, and round in youth; hence, children are more emotional and imitative than reflective.

All great orators and eloquent speakers possess large, round, and full eyes, which are humid and lustrous, and when under great inspirational excitement they become luminous and fairly blaze with earnestness and excitement. Although orators possess large, round eyes, they do not exceed a certain degree of convexity, else they would indicate fluent "gab" but not good sense and eloquence. The gabbling, ranting orator is often seen at city street-corners vending corn-plaster, hair-dyes, or "Universal Pain Killer;" his eyes will perhaps present the "bulging" appearance of a lobster, and the mouth of the "professor" will be as extensive as his lips, and they will correspond in size, besides being coarse and ugly-shaped.

There are grades of linguistic capacity ranging all the way from the grandly eloquent to the fluent, easy, graceful conversationalist down the scale to the ordinary common talker, and so on to the silent, thoughtful writer, whose language is fluent only on paper. Then follows the very secretive, monosyllabic individual, whose small and narrow eyes reveal all that his lips refuse to utter.

Medium-sized eyes, that are of normal form and well colored, are indicative of a fine degree of linguistic power, observation, and reflection, but other signs in each individual can modify and affect their appearances; therefore, the mere fact of medium size is not absolute as to leading characteristics. Medium-sized eyes in connection with a projecting, bony brow denote close and accurate observation; this combination is characteristic of mechanicians, scientists, and naturalists, for in these classes accuracy must be had in order to facilitate true and authentic accounts and correct imitations of the subjects of phenomena observed; hence, Nature in creating such individuals makes the bony system one of the dominant systems, and this causes the eyebrows to project, and this projection screens the eye and assists in shutting off the *superfluous* rays of light in order that the eye may be more easily brought to a focus. Again, the bony system is one of the most stable, firm, and true tissues in the organism, and affords all the necessary elements of character required for patient, persevering, truthful research, such as is essential to science and mechanism. The chief office of the eye-bones and eyebrows is to assist in excluding the superfluous rays of light from entering the sight; hence, the greater the projection of the bone and muscle, and the more bushy the hairy brows, the better is the eye adapted to instantaneous and accurate vision,—a quality of sight more particularly needed in those pursuits that require the greatest degree of acute observation.

EXPRESSION OF THE EYE.

The eye owes much of its beauty and expression to the lids, the lashes, the brows, the adjacent lines, folds, and wrinkles; the orbits, the cheek-bones, the size and form of the upper cheek, the lustre or lack of lustre, and the color of the iris, the lashes, and hair of the brows. The eyeball standing out naked without its fleshly environment would exhibit very little expression, and even if it were in motion would not be an agreeable sight.

The humors of the eye, as well as the colors of the iris and retina, assist in giving it expression while in a state of repose, but when the emotions are aroused to a high degree of activity the glands, humors, and nerves all conspire to produce an unusual

degree of brilliancy. The mild emotion of affection causes quite a different grade of brilliancy from that produced by the terrible gleam of diabolic passion which appears in the eye of the murderously-inclined, insane victim; so also the brightness of intellectual power is quite different from the brilliant glitter of the egotist or conceited simpleton. These several varieties of lustre are caused by chemical changes in the elements of the tissues, as well as by the mechanical movements in the constituent molecules; but, whatever be the cause, *motion* is at the base, and the eye is the facial representative of the *most active* portion of the motive apparatus of the organism—the muscles; hence, the eye defines the presence of other faculties and functions besides strength and love of movement.

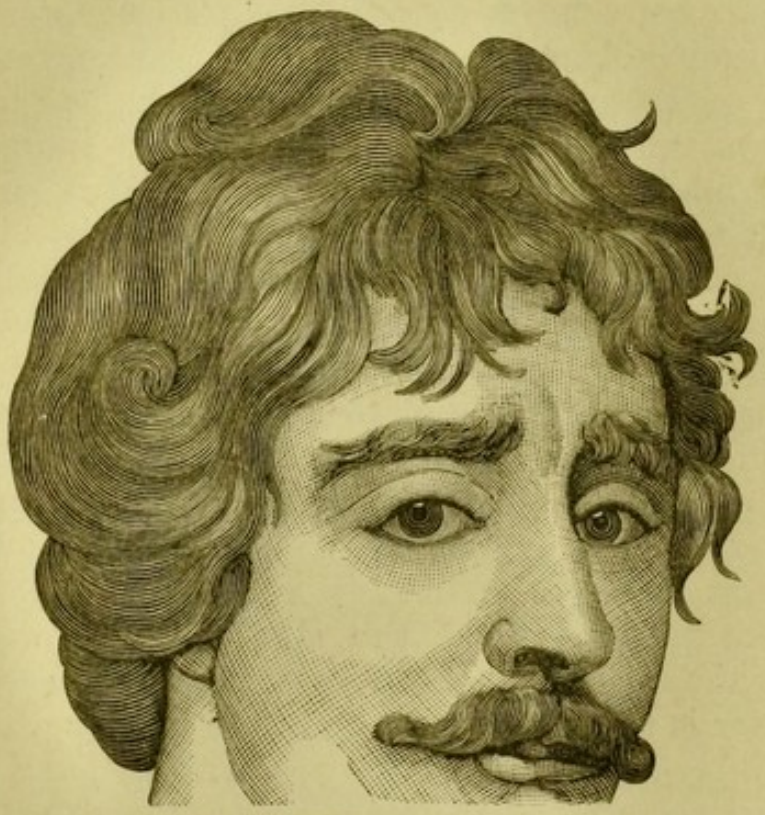


FIG. 265.—ARTISTIC EYE. (QUESNOY.)

The arching of the lids—particularly that of the upper lid—assists expression. The sharpness or obtuseness of the angles, the manner in which the eyes are placed in the orbits, the convexity or flatness of the cornea, each adds its quota of expression, and reveals positive and diverse characteristics. The eyes are modified in their expression by the form of the cheeks, the height or flatness of the cheek-bones, the color of the complexion, brows, and hair; their nearness to or distance from the nose, and the shape and size of the upper part of the nose. A great deal of ocular expression would be lost were we to inspect the eye through two apertures made to fit the eyes exactly. This experiment would demonstrate how much facial expression is derived from the eye and brow. The eye is greatly indebted to the form, size, and color of the other features for its expression. Each class of minds exhibits a similarity of structure peculiar to itself.

ARTISTIC EXPRESSION.

The artistic classes, as a rule, have large, full, sparkling, vivacious eyes, generally well colored, either black, blue, or brown,

and adorned with an evenly-arched brow placed at some distance above the eye, and exposing a wide space between the lid and eyebrow (Fig. 265). These peculiarities create an alert, wide-awake and attractive expression.



FIG. 266.—OBSERVANT EYE.
(SIR J. BANKS.)

OBSERVANT EXPRESSION.

The eyes of profound thinkers, on the contrary, are usually smaller, with less brilliancy, and slower in motion than the former, and exhibit a calm and steadfast gaze, while the hairy brow is of a horizontal or semi-horizontal form, and is brought down *near to the eye*, leaving little or no space between the eyebrow and eyelid, thus giving a thoughtful, observant expression to the eye.

MAGNETIC EXPRESSION.

The magnetic eye is very rare, and is always of deep color,—usually black or brown and large and luminous. It is associated with attractive qualities and a love for the occult and abstruse in Nature. Fig. 267 shows the eyes of Graf Reichenbach, the originator of the "odic-force" theory once popular in Germany.



FIG. 267.—MAGNETIC EYE.
(GRAF REICHENBACH.)



FIG. 268.—BRUTAL EYE.

BRUTAL EXPRESSION.

Those whose eyes are always dull in expression and slow in motion are congenitally stupid or brutal, and lacking in intelligence, force, and sensibility; these indications usually accompany a low grade of physical development. This class generally inherits a tendency to epilepsy, insanity, or scrofula, especially if the eye be *very light*, dull, and "fishy" in expression.

GLUTTONOUS EXPRESSION.

Eyes that show a considerable portion of the white *below* the iris denote gluttony, or at least a tendency to overeat, and I always suspect their owners wanting in capacity for profound thought.

SHALLOW AND PASSIONATE EXPRESSION.

If the white is seen *above* as well as below, there is certainly great shallowness of intellect. If the eye show a great deal of the white of the eye all around the pupil, the character is passionate and the mind lacking depth and balance.



FIG. 269.—GLUTTONOUS EYE.

This peculiarity gives a simple, stupid, half-foolish expression, and this expression is accentuated if the eye project beyond the eye-bones. Characters possessed of common sense and good intellect have the eye somewhat covered by the upper lid; yet if the eye cover too great a portion of the eyeball we shall find that Secretiveness or Acquisitiveness is present. Here we have a departure from the normal standard of lid-curvature, and we have learned that all departures from normal forms denote abnormal characteristics. An opinion from Dr. Cross on this point indorses my own rule, and I here apply it. He observes:—

> The eyeball taken by itself is purely predaceous. Naked eyeballs standing in open sockets convey to the imagination a picture of unbridled temper, and the less the eyeballs are covered with eyelids, the more scope is allowed to the predaceous tendency. On the contrary, the more the eyeball is covered with lids, the more are the dispositions under prudential control; and the more powerful the lids, and the better furnished with lashes, the more vigorous is the prudential system.* The eyelids, whenever they retreat so far from the pupil as to lose command over the entering rays, are guilty of a dereliction of duty detrimental to *distinct* vision; here there is a want of the prudential system. So also whenever the eyelids approach each other so much as to intercept the free admission of rays from the object to the retina, here the prudential system is in excess; here is that *over-caution* which defeats its own purpose.*

How much of sound physiognomic philosophy is contained in the preceding sentences! Not only do the peculiarities of the lids modify the function of sight, but they at the same time *reveal* mental and moral conditions, for eyes with the lids *closely* drawn

*An Attempt to Establish Physiognomy on Scientific Principles, p. 26.

together are often met with in congenital rogues, liars, sneaks, and avaricious beings, while eyes *too wide open* show not only inaccuracy of vision, but also its accompanying moral or mental defect—absence of capacity for accurate or truthful description of what is observed. Those eyelids that permit a normal portion of the eye to appear are the best indicators of normal mind and integrity, as well as of normal sight. The normal eye of the artistic classes is larger than the normal eye of the scientific or mechanical classes. The exaggeration of these two normal forms and expression, viz., those that are too large, or those that are too small, or those that show too much of the white, or those that disclose too little of the eyeball for normalcy, are to be considered as departures from a correct standard of form and expression, hence are the indicators of peculiarities of character and function not in accord with the *best examples* observed. Disease and dissipation, as well as congenital villainy, produce somewhat similar expressions. The eyelids of debauchees and drunkards become lax through a weakened condition of the related muscles and nerves, and thus they lose their natural tension, and are drawn nearer together than when in health. The lower lids of the licentious and dissipated fall away and expose the inner margin, which appears red and watery in the drunkard, and pale-bluish and wrinkled in the victims of unbridled lust. Yet the physiognomist is able to discern whether disease, dissipation, or native villainy has produced these several appearances. Overuse of the eyes, as in prolonged application in reading and writing, tends to relax the muscles of the lids, and causes the upper one to droop.

A great deal of healthy and beautiful expression arises from the natural lustre and humidity of the eye. In abnormal characters these two factors of expression vary considerably. The humidity is caused by the secretions of the glands of the eye and lids, which in healthy subjects constantly secrete a lubricating fluid, which serves several purposes. In the first place, it assists the eyeball in rotating. This fluid also serves the purpose of moistening and dissolving the particles of dust which in a dry state would cause great irritation. The lustre of the eye arises partly from its humidity and partly from the quality or fineness of the nervous mechanism. Now, moisture of the lips and eyes are evidences of healthy action in both of these features, while dry eyes and dry lips reveal unhealthful conditions; it follows that whatever appearance denotes health is more beautiful than the opposite indication. Physicians are guided in their diagnosis of disease by the dryness and moisture of these features, as well as by the dryness or moisture of other parts of the head and face; the brilliancy of the eye,

too, undergoes many pathological changes during the progress of disorders, and these varying appearances are of great service to physicians as indications of abnormal conditions, and no intelligent doctor neglects their warnings.

As the eye is one of the most important facial signs of love or Amativeness, its size, form, color, lustre, humidity, and expression would naturally reveal to the physiognomist the inherited grade of amative sentiment. It also reveals normal and abnormal conditions of the reproductive system—the functional base of the sentiment of sex-love. If the eye be bright, animated, and humid, with the lids of a normal tension and color, the reproductive system, as well as the associated sentiment of Amativeness, is normal; but if these indications are absent, functional disturbances in this system may be inferred, and if these symptoms are permanent the defects become permanent also.

The *manner of moving* the eyeball and eyelids is a source of expression rich in physiognomic meaning. There is as great divergence of movement between the wide-open, direct regard of the upright character and the furtive, sidewise glance of the narrow, oblique eye as there is in the moral and mental characters of these two diverse classes.

The eyes of children are used with great freedom of movement, and their glances fall with equal freedom upon everything that attracts their childish curiosity. This utter *abandon* shows natural innocence, simplicity, and absence of restraint. The eyes of the untrained rustic and the equally roving eye of the licentious and unrefined roll about with freedom, revealing in turn every emotion as it passes through their undisciplined brain and muscles.

Refined, disciplined, self-controlled, and intelligent characters use their eyes in a far different manner from the above-named classes; they move them in a precise and orderly way; they do not roll them in astonishment nor gaze with bold stare about them. The eye of the truthful, honest person looks straight forward without boldness and without humility. It is not true, however, that only the guilty or criminal look away when addressed by others; the very sensitive, shy, and most innocent often cast sidelong or downward glances while conversing, but their shyness is corroborated by other signs. The movement of the eyes of the artistic classes is more unrestrained, vivacious, and the expression more animated than those of the more reflective classes. The latter have an expression of thoughtful intelligence, and, although the eye of this class is nearly as bright as those of the former, the motions are not so rapid, but move slower and more in harmony with that deliber-

ation essential to accurate observation and calm reflection, thus showing the presence of reason rather than of emotion.

An excellent study in the physiognomy of the eye can be made by watching the movements of the eyes of the criminal classes. The peculiar shape of their eyes produces quite a different set of movements from those made by a normally moral eye. An oblique or crooked eye or mouth is incapable of making the kind of movements that are made by these features when straight. Their movements leave impressed upon the surrounding parts entirely different-shaped lines and wrinkles, hence we are able to classify the resultant lines and wrinkles as "moral," "immoral," "kind," "mirthful," "witty," or "ill-humored," etc. Lines and wrinkles are indisputable records of the class of thought, speech, and actions which have been *dominant* in the life of the subject, and no amount of dissimulation can erase them.

All this goes to prove that every act of the individual, if oft-repeated, becomes registered upon his countenance and adds its quota to make up what we term "the expression of the human face."

The folds and wrinkles of the eyelids and surrounding parts are highly indicative of character. The principal fold of skin observed at the inner corner of the upper lid is termed the "nictitating membrane." This is a small crescent-shaped fold of skin, which is quite large in some eyes, but very small or hardly discernible in others. It is one of those useless rudimentary remains, many of which are found in various parts of the body. Professor Haeckel tells us, in regard to this organ, that

> Our skulled ancestors had, in addition to the two eyelids, a third eyelid,—the nictitating membrane,—which was drawn over the eye from the inner corner. Many primitive fishes (*Selachii*) and amnion animals yet retain this. In apes and in man it has atrophied and only a small remnant of it exists in the inner corner of the eye, as the "crescent-shaped fold" is a useless rudimentary organ.*

This fold is a very decided agent in the expression of the eye; so also are the folds formed by age in the eyes of the most observant classes, as is noted elsewhere in the description of the forms of the eye.

NICTITATING FOLD.

The "nictitating fold is quite pronounced in the orbits of Daniel Webster, Prof. Richard Owen, Hiram Powers (sculptor), and large numbers of people of all grades of intellect.

The color or lack of color in the cheeks assists expression. A bright, rich, red color in the cheeks contrasts well with black

* Evolution of Man, Ernst Haeckel, vol. ii, p. 259.

eyes, and thus they intensify each other's color and beauty. Some inartistic and unobservant belles very erroneously put artificial color (where Nature has withheld it) high upon the cheek-bones. Now, this is a bungling attempt at imitating Nature's method. Color is rarely found high upon the cheek-bones of young people. It is usually observed in the cheeks of aged people in this situation. Youthful cheeks exhibit their color upon the lowest part of the cheek, and in some subjects it appears below the cheek under the lower jaw as well.

Blue-eyed people require both red and white to make their eyes expressive, unless they are very fair indeed, for when this class becomes sallow the eye loses much of its beauty of expression because the difference between the blue eyes and the yellow skin is not sufficiently decided to make a pleasing contrast. Sallowness is the sign of an abnormal state, hence is opposed to beauty, and thus also it becomes a physiognomic sign of a torpid liver or other disorder.

The color of the brows and lashes are effective agents in expression. The thickness or sparseness of the brows and lashes produce differences of expression. As a rule very bushy brows, especially if black or dark, denote a strong constitution, while very thin brows, if very light, indicate delicacy, either of the nervous system or of the general system.

Thus it will be noted that very many factors, in connection with the eye, assist in giving it physiognomic expression and meaning. Should the reader desire to know what constitutes *beauty* of expression I shall refer him to the theory which is found running through this entire system of physiognomy, viz., that the scientific idea of moral, intellectual, or physical power, wherever found,—in whatever feature or part of a feature it is displayed,—discloses true beauty of that feature or portion of a feature which discloses a certain sign of a capacity for morality, intellect, or usefulness of some sort.

The manner in which the eyeballs *incline*, whether forward or backward of the lower lid, produce most decided diverse physiognomic meanings, as well as of variety of expression. As a rule, eyes that are horizontal in their sockets, and which set back somewhat under the eye-bones, are normal, while those that bulge out beyond the brows and the plane of the cheek are abnormal. This peculiarity is the sign of a rude and shallow mind, while eyeballs that incline from below backward suggest timidity and organic weakness. Eyes too convex belong to noisy, wordy liars and braggarts. Thus each divergence of the eye from its normal position denotes a departure from the normal type or standard, and thus indicates the moral or immoral grade of the subject.

The Eyelashes.

The lashes of the eye, like all ciliary appendages, are primarily for purposes of protection, and as all features, however simple, are revelations of character, so the eyelashes are indicative of certain characteristics peculiar to themselves. As a rule, muscular people possess the longest and most beautiful lashes; they are also more *curved* in this class of individuals than in the bony classes, the basic laws of Form here as elsewhere asserting their influence.

The lashes may be (*a*) long or short, (*b*) straight or curved, (*c*) thick or thin, (*d*) regular or irregular, (*e*) dark or light. These are the chief peculiarities of these features. Like all external appendages, they serve more than one purpose, consequently they *reveal* more than one meaning. Their use primarily is protective, and the more perfectly they are adapted to that purpose the more perfect and beautiful they are.

I do not intend in the last sentence to convey to the reader that there is only *one form* of beauty in this feature; there are many. *Adaptation* has its forms of beauty, and, although a beautifully curved lash looks well with a large, lustrous, muscular eye, it would not be adapted to a small, receding one; hence, adaptation is a factor of true beauty. Science broadens our conception of everything, and a truly scientific knowledge of the face is bound to enlarge our ideas of beauty, which art (like all infantoid knowledge) has limited to a very narrow compass.

It is among the æsthetic and artistic classes that we find the best-developed lashes, both under and upper; for the projection of the bony brow of these subjects is so slight as to necessitate a compensating development of these features. The eyes of the osseous classes are protected by the projecting bony brow, a protective environment which can easily dispense with long, curved lashes.

Both the upper and lower lashes in all subjects are more or less curved; the upper lashes turn upward or outward, the lower lashes turn downward or outward, and always in such manner as not to entangle each other. Muscular people exhibit the principle of the curve in every part of the body, even in the curving of so minute a portion of the physiognomy as the *lower* lashes, which, in this class, are more curved than in the osseous or mental subjects.

Long, curved, fine, regular, silken lashes are seen in the countenances only of refined characters possessed of delicacy of feeling and sentiment; many artistic countenances exhibit this form, notably poetic and histrionic faces.

Straight, coarse, thick, and projecting lashes are associated with characters possessed of more bluntness and vigor than refinement, and are found with the osseous system well developed. Thin, scattered, light-colored eyelashes betoken delicacy of physique and in some subjects a consumptive tendency.

If the lashes are sparse as well as brown in color, a degree of constitutional vigor may be present, yet the nervous system may exhibit a good degree of sensitiveness.

Long lashes denote characteristics opposite from those revealed by short lashes; when long, well-curved, close, and fine, a certain degree of shyness and timidity will be exhibited. Shyness and timidity are modified forms of Secretiveness, and very long, curved lashes reveal the fact that their owner is too shy or too timid to be perfectly frank and outspoken. Short, thick lashes denote directness of speech, amounting in some instances to blunt rudeness.



FIG. 270.—BEAUTIFUL EYELASHES. (DUCHESS OF LEEDS.)

Long, well-curved lashes, if coarse, are accompanied with Secretiveness, for the lashes are used for the purpose of *concealing* the motions of the eyeball, as well as for protecting it, hence they serve to partially hide the varying expressions of the eyes.

Inasmuch as the eyes are the features which most assist the expression of the emotions, so all the appendages, however minute, reveal minute grades and shades of the emotions; hence a lash a little longer or a little thicker in one than in another discloses a different degree of the faculties of Love and Language, as above indicated, showing that in one subject outspoken bluntness will be exhibited, in another shyness or slyness, or modesty or secretiveness in words and actions. Long, drooping eyelashes are very effective agents in love-making and coquetry, and speak eloquently when they are suddenly raised and reveal a pair of eyes full of mischief or melting tenderness, and speak quite as eloquently when lowered to conceal pathos, sorrow, modesty, or other soft emotion. It is thus seen that nothing in the human physiognomy is too minute to contain or reveal a meaning; this will be better apprehended when we come to the analysis and description of lines and wrinkles in the face and body.

The color of the lashes is usually darker than the color of the hair, although in certain blond types it is much lighter, being

very light—in fact, white, in some subjects. Color of these features has the same signification that it has in all the other features, and as the subject of Color has been so exhaustively treated elsewhere it need not be elaborated here.

Specimens of very beautiful eyelashes may be seen in the portraits of Madame Recamier, and the famous Caton sisters, of Baltimore; Ex-Queen Nathalie, of Servia; Empress Josephine, and the Countess of Blessington.

The Interciliary Space.

There is one portion of the face which is very little understood, and to which very little attention has been paid, yet which



Fig. 271.—ARTISTIC INTERCILIARY SPACE. (Racine.)

is of great importance as an indicator of character. I allude to the interciliary space, *i.e.*, the area between the upper lid and the eyebrow (Fig. 271).

ARTISTIC INTERCILIARY SPACE.

In artistic faces this presents a space wider than in the mechanical, for the former have a relatively slight projection of the bony superciliary ridges and a considerable arching of the muscular and hairy processes of the brows. It is the absence of forward projection of the bony superciliary arch which produces the wide interciliary space observed in the physiognomies of artists.

SUPERSTITIOUS TYPE.

If this space is excessively widened so as to pass the bounds of normalcy, it is a certain sign of a grossly superstitious mind, incompatible with common sense and sound reason. In a modified degree it is found in the faces of many poets, divines, and painters; the eyebrows are highly arched in these subjects.

Where the interciliary spaces are very slight it will be observed that the eyebrow is very nearly horizontal, or horizontal and angular at the outer extremity.

The presence of the line and angle in this place instantly reveals the class to which the subject belongs. This one line alone shows him to be an observer, hence one is justified in deciding that his mind is more practical than imaginative. In this case the bone will be the dominant tissue, and the brows will be more projecting than in the case of the artistic classes; in them the law of the curve or arch prevails. The shape of the hairy brow determines the upper boundary of the interciliary space, while the curved outline that marks the form of the eyeball indicates the commencement of this space. Observers are urged to pay great attention to this part of the physiognomy, as promising a prolific field of physiognomic research and signification. The following-named individuals reveal a very wide interciliary space, and are all within the artistic class; observe, for example, the upper part of the face of the following named: Milton and Dante, poets; Pascal and Mirabeau, orators; Sarah Siddons and David Garrick, players; Wickliffe, Swedenborg, and Bossuet, divines; Marie Roze, Eugènie, Pappenheim, and Albani, singers.



FIG. 272.—SUPERSTITIOUS TYPE OF INTERCILIARY SPACE. (RICHARD BAXTER.)

The countenance of all persons who show a very decided talent for any form of decorative art presents an interciliary space more or less wide, and this arch, thus exhibited, determines the class to which such individuals belong.

The following-named persons belong to the more observing classes, hence the law of the straight line and angle marks the shape of their brow and limits the interciliary space to a narrow area, in some instances completely hidden under the bony projection. See, for example, the physiognomies of Thomas Jefferson, General W. T. Sherman, Charles Darwin, Sir John Herschel, and Humboldt.

The forms of the eyelids and brows are nearly related to the interciliary spaces, and we shall be obliged to observe closely these two features, especially the latter, in making an estimate of character based upon the significance of these spaces.

It will be always found that when the muscular system is dominant, or one of the dominant systems, the interciliary space will present a greater area than is the case when the bony system is supreme. This is yet another proof, added to the numerous ones already cited, of the homogeneity of structure; thus, each feature, and every minute portion of a feature, reveals and corroborates the form of the *entire structure*, as well as its dominant mental characteristics.

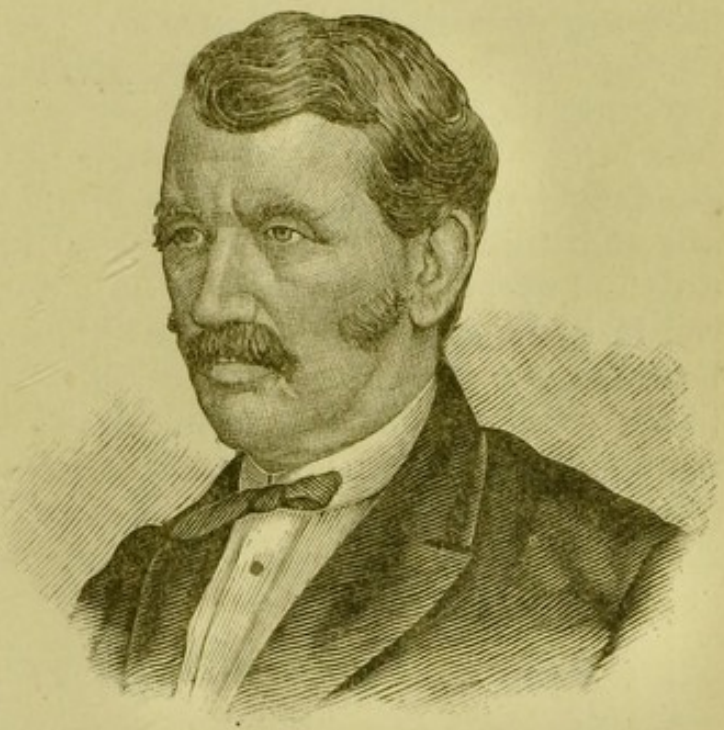


FIG. 273.—OBSERVANT TYPE OF INTERCILIARY SPACE. (DAVID LIVINGSTONE.)

The widest interciliary space I have found among the Chinese and Japanese, and these races are both artistic and very credulous, as witness their very superstitious religions and belief in charms, omens, and incantations. The Oriental races generally exhibit a broader interciliary space than is observed in the physiognomies of the Northern and more practical peoples.

In almost all cases where the interciliary space is wide the forehead is perpendicular, or nearly so, and where this space is narrow or invisible the forehead is usually more or less receding. These appearances are corroborative proofs of the supremacy of muscle and bone, for where the forehead is perpendicular, or nearly so, the muscle is regnant, and where the forehead recedes more or

less the bone is dominant; and in these co-ordinated forms of interciliary space with forehead we have a fine lesson in comparative anatomy, as well as in demonstrative physiognomy.

Physiognomic forms reveal numberless co-ordinated and complex relations of function with feature, as, for example, when the outline of the nose is straight the forehead is generally perpendicular, and the involuntary muscles as well as the muscular system are supreme, or one of the supreme systems of the organism; here muscle tends to straight lines instead of curves.

The cause lies deeper than these outlines, for they are the effects, not the causes, of their straight appearance. The supremacy of the heart and stomach over the liver and lungs conduces to form these lines, for I have observed that where the lungs and liver are excessively developed and active the outline of the nose is more or less arched, either greatly or slightly, the forehead receding, the septum of the nose projecting, and the chest arched. Now, the interciliary space depends for its form primarily upon the dominance of organs apparently quite disconnected with it. I have said that there is a long physiological history attached to every feature and every part of each feature, and I here reiterate it. We can in this instance trace this relationship farther back than has been done in the above instance, but sufficient history is here given to show the methods of scientific physiognomy and the complex relations of function with feature. A very narrow, scarcely discernible interciliary space is indicative of good powers of observation, and is found in the faces of mechanicians and scientists (Fig. 273).

The Eyebrows.

The *use* primarily of the hairy brow is to protect the eyes from descending particles of dust or moisture. Each separate feature is, as we have formerly seen, supplied with protective appendages, or placed in such position as to receive the cautionary assistance of other features, the eyes and ears, for example.

The eye, being the most delicate of all the features, is surrounded by several strong defenders, as is observed in the lachrymal glands, the lids, the projecting bony environment, the flexible superciliary muscles, the closely-placed lashes, and the hairy brows.

The *form* of the *hairy* brow (usually termed "the eyebrow") is dependent primarily upon the underlying bony development for its external shape. The corrugator supercilii and orbicularis palpebrarum muscles assist in shaping the brow.

The hairy brow is a feature of *motion* by reason of its muscular relations. The eyebrows, therefore, of the muscular

races are more elastic and more active than those of the osseous races, hence we observe in the Celtic races and artistic classes greater spontaneity and rapidity of movement of these features than in the Saxon, or Scandinavian, and other osseous peoples and mechanical classes.

The Spanish, Italian, and French use their eyebrows very expressively, and thus show that the muscular system dominates the osseous. The more northerly and osseous people rarely move the muscles of the eyebrow, unless it be the corrugator supercilii, the use of which is to approximate the eyebrows for the purpose of assisting accuracy of observation, which is the main purpose of the practical classes.

The excessively muscular formation of the brows of the ideal or artistic classes shows both the ability and desire for motion, and the form resulting from muscular movement is a curvilinear one, hence the eyebrows of this class are of a curved or semi-curved shape in their main outline. Observation of this line alone will give us the main drift of the associated intellect, whether it be artistic or mechanical, practical or imaginative.

In some subjects the brow is wide and thickly covered with dark hairs, in others it is narrow and exhibits a few straggling hairs. Between these two extremes there are many varieties, as the brows of one person would not harmonize with the features of another, for observation will show that the brow is quite as individualized as any other facial feature. Yet there are certain general rules in regard to its form, size, color, and quality by which this very important feature may be translated into character, and would reveal traits which are at present a profound mystery to onlookers. In this feature, as in all others, we have had to apply the basic laws of Form in order to discover the meaning which each individual brow reveals.

The law of the line, the angle, and the curve applies to the eyebrow, and each brow describes in its outline some one of these simple outlines, or else a more complex, composite, or modification of two or more of these elements of Form.

The law of normalcy or correct standard of *form* and *space* applies to the eyebrows and their surroundings as well as to all other features. This law must be apprehended in order to obtain a correct understanding of what is normal as well as of what constitutes a departure from the normal standard.

We observe that the principal concomitants of the brow are form, width, motion, color, position, direction, and space or distance. Each of these factors assists us in unfolding the meaning of each individual eyebrow. Among these factors space, or the

normal distance of the brows from each other, and of the brow from the lids, must be taken into account. A very wide interciliary space between the lids and the brows reveals just the opposite characteristics from that found associated with an eyebrow which is brought close down to the eye, and presenting little or no interciliary space between.

Eyebrows that are situated *far apart* indicate qualities *quite different from those that are joined in the centre*, and which form an unbroken line,—every minute variation here, as elsewhere, denoting differences which may be highly significant and important.

The general direction of the two extreme points of the brows must be noted, together with the form, outline, facility of movement, the color, the width or narrowness, whether bushy, luxuriant, or sparsely covered with hairs.

All these circumstances belong to the physiognomy of the eyebrow, and serve to reveal and corroborate the meaning of other parts and features, and point out and reveal other anatomical peculiarities of the face and body.

The first consideration of the brow will be naturally its general form, whether curved, or straight and horizontal; next, the direction of the termini. In endeavoring to understand the full significance of this feature we must note several circumstances, as follow:—

(*a*) The inner terminus, where it commences, whether close down to the eye or whether there be a medium or wide interciliary space between it and the eyelid;
(*b*) The outer extremity of the brow, whether it be high above the lid or whether it be lowered down in close proximity to the eye;
(*c*) Whether it join the opposite brow in the middle or whether there be a space between them;
(*d*) The width of the space;
(*e*) How nearly the brows resemble each other in form, direction, and hairy development (there is often great disparity in these appearances);
(*f*) Whether the general form of the brow describes a straight line or a curve;
(*g*) Whether it be long or short;
(*h*) The direction of the inner terminus, whether it be upward, downward, or horizontal;
(*i*) The direction of the outer terminus, whether it be straight or outward, or upward or downward;
(*j*) The height of the middle portion of the brow above the lid.

The general *direction* of the outline is worthy of observation.

(*k*) The line may be straight and horizontal or straight and obliquely placed, as in the Chinese, for example;
(*l*) The obliquity of the straight line may tend upward from the inner terminus of the brow, or,

(*m*) It may tend downward from the inner terminus;
(*n*) It may be straight part of its length, commencing at the inner end, and describe an angle at the exterior end;
(*o*) It may form a curve at the inner end and an angle at the outer end.

The accompanying figure exhibits the most commonly observed forms of the eyebrow. All others are composites, blends, or modifications of these several general forms. (See Fig. 274, Forms of the Eyebrow.)

In applying the laws of form to the eyebrows attention must be given to the chief constituent tissue, whether it be of bone or of muscle, also whether the bones belong to the round or to the square class. If the bones are rounding and the muscles dominant, a high arch will announce this fact, and also reveal to which class of mind the subject belongs.

It is impossible for a square-boned subject to exhibit an arch in this feature, for the law of the straight line appertains to the square bone, and the straight line indicates characteristics quite the opposite from those produced by the curve.

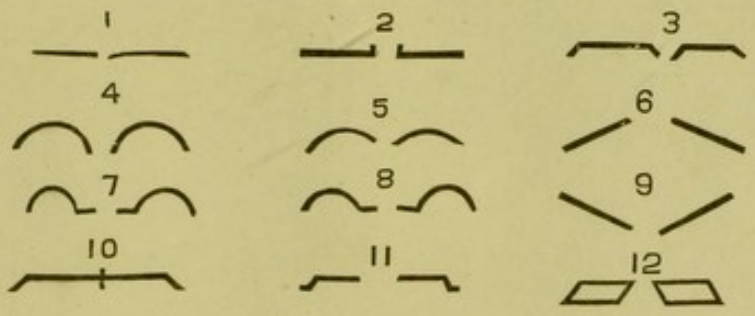


FIG. 274.—FORMS OF THE EYEBROW. (After Lavater.)

"The above are twelve forms of eyebrows, all of which *may* accompany understanding, though 10 can with difficulty; 11, less difficultly; 8, more; 6, very difficultly; 4, most; 1, 2, and 3, on the contrary, scarcely can accompany folly; 12 is form of understanding such as can scarcely be deceived."

The individual peculiarities in the combinations of bone and muscle are the cause of the many diverse forms of eyebrows observed in different individuals. Not only are the eyebrows different in form in each individual, but rarely do we find them alike, or even nearly alike, in the face of a given subject. The right and left eyebrows, like all the features in the majority of faces, are usually characterized by absence of bilateral similarity, thus proving that discrepancies occur in the form of the bones and muscles of the opposite sides of the face, as well as in the opposite sides of the head and body.

The theory brought forward by several anthropologists and physiognomists, viz., that the right side of the organism represents the father or his family, and the left side resembles the mother or her family, may account for these (in many subjects) very striking

discrepancies; how far this may be an hereditary influence cannot be, I think, exactly determined. There are many other very decided influences affecting the bilateral development of the body, viz., (*a*) the more frequent use of right hand and side than of the left hand and side, and (*b*) the law of imperfect curvation, whereby opposite sides of the several features of the face are made to differ in size, form, and position by reason of an unequal distribution of the elements of nutrition during prenatal existence, or from other causes. Which of these causes contributes most to the inequalities observed in the facial features must be determined by a skilled physiognomist in each individual case, and in these cases the skill of the examiner will be put to its *highest* test.

In endeavoring to expound the physiognomic significance of the eyebrows I shall do so by the application of the basic laws of



FIG. 275.—POSITION OF THE INNER TERMINI OF THE EYEBROWS.



FIG. 276.—CONCEITED EYEBROW.

Form, as with all the other features, and shall commence the translation of form into faculty by observation of the inner terminus of the brow, and first as to the position of the several parts of the brow.

NORMAL POSITION OF THE INNER TERMINI.

A normal development of the hairy brow discloses a space between the inner termini, and this space is proportional to the size and shape of the eyes and other features in the immediate neighborhood (Fig. 275).

THE CONCEITED BROW.

If the brows meet in the centre and form a continuous line, it is a departure from the highest standard of form of this feature. This peculiarity is always associated with a certain degree of *conceit*, more or less pronounced, according as the subject is secretive or voluble. If, with this form, the brows are thick and the hairs dark or black, it is an indication of great vital powers as well as

of conceit. I have observed this appearance in the faces of many Hebrews, yet it is to be met with in all civilized races. Lavater remarks of this peculiarity that he "could not consider it beautiful," yet he "found in it the most open, honest, and worthy countenances."

Eyebrows *extremely far apart* at the inner termini are seldom found associated with good practical sense, although other signs modify this indication; yet all departures from and exaggeration of normal standards must be regarded as in some degree indicating an abnormal condition of faculty and function. I have observed this appearance in large numbers of Mongolian faces, and the Mongolian is, as a rule, grossly superstitious.

THE OBSERVING EYEBROW.

Where the inner termini of the brows grow closely down to the eyes (Fig. 277) it is a most decided sign of an accurate ob-



FIG. 277.—OBSERVING EYEBROW. (HUMBOLDT.)



FIG. 278.—CREDULOUS EYEBROW. (CORTEZ.)

server, and accurate observation leads to a true understanding of the objects or occurrences observed; hence, practical sense is the result. Individuals thus characterized are adapted to such trades and professions as require accuracy, truth, and practical judgment, such traits as are manifested in mechanics, scientists, naturalists, etc., for the laws of physics are based on the laws of Nature, hence of truth, and he who can best comprehend truth must possess a large share of it in his own constitution; and these signs of this trait are most conspicuous in the face as well as in the body of all who possess a talented degree of truth and integrity.

My observation on this form of eyebrow is in accord with Lavater. He remarks:—

> The nearer the eyebrows are to the eyes, the more earnest, deep, and firm the character; the more remote from the eyes, the more volatile, easily moved, and less enterprising.

THE CREDULOUS EYEBROW.

If the inner terminus of the brow commences at a considerable distance above the eye (Fig. 278), causing a wide interciliary space, it is positive assurance of a credulous mind, for those with this peculiarity of structure lack the first essential of accuracy, viz., a suitable development of the eyebrows such as the practical classes possess; hence they accept upon hearsay, without examination, many improbable theories and statements. The more wonderful they are, the more readily they accept them, and the more pleasing they find them. The eyebrows of all the grossly superstitious races present this appearance.

The eyebrows of that class of writers, orators, artists, poets, and divines whose works and speech are characterized by imagination of wonderful and impossible scenes and beings exhibit modifications of this peculiarity. Examine, for example, the eyebrows of Milton, Dante, Raphael, Swedenborg, Mahomet, Loyola, Mirabeau, and Doré; in each instance there will be found varying degrees of that credencive spirit which was manifest in their life-work.

An eyebrow thus placed denotes in ordinary characters a love of fiction in art and literature, a taste for the marvelous in religion, and a relish for the sensational in neighborhood and public news.

This trait belongs to the artistic class more particularly, and is most largely developed where the muscular system is in the ascendant, as the peculiar *arching* of the brow will demonstrate.

Where the inner end of the eyebrow arises at a moderate distance above the eye, exhibiting only a medium degree of interciliary space, the character will be more keenly observant than the former, and will combine a modicum of both the mechanical and artistic capacities. Such characters are adapted to certain branches of both these departments of labor, and an average amount of practical sense will be manifested.

Position of the Middle of the Brows.

THE IMPRACTICAL BROW.

If the eyebrow presents a very wide interciliary space (Fig. 279), causing the eyebrow to form a very high arch, it denotes a half-foolish, impractical, unreasoning character. Of this eyebrow Lavater observes:—

> I never yet saw a profound thinker, or even a man of fortitude and prudence, with weak, high eyebrows, which, in some measure, divide the forehead.*

* Essays on Physiognomy, C. Lavater, p. 388.

THE ARTISTIC BROW.

Where the brow is highest at about two-thirds of the distance from its inner terminus (Fig. 280) it denotes artistic capacity, and this peculiarity is found in this locality in the countenances of most good and great artists. It is more decided as age advances, and is



FIG. 279.—IMPRACTICAL EYEBROW. (WALMESLEY.)



FIG. 280.—ARTISTIC EYEBROW. (LA BRUYÈRE.)

caused by the frequent raising of the brow in order to observe the artistic effect of the work in hand.

Having now considered the indications of interciliary space at the inner end and centre of the brow, we proceed to investigate the position of the *outer* extremity of the eyebrows.

POSITION OF THE OUTER TERMINI.

THE ARITHMETICAL BROW.

The positions which are observed at the outer end of the brow give great variety of expression to this feature. A wide space between the outer angle of the eye and the terminus of the brow (Fig. 281) is found to be widest where the muscular is one of the dominant systems, and denotes calculative ability. It is most pronounced in the countenances of astronomers, physicists, surveyors, good arithmeticians, mechanicians, architects, and inventors of machinery, and is general in those races in whom the muscular system is supreme.

The following are two of the most common modifications of the arithmetical brow: If the outer terminus turn slightly downward, and leave a moderate degree of space between it and the

corner of the eye, a medium degree of arithmetical calculation may be predicated.

Where the brow turns downward at its outer extremity, and



FIG. 281.—ARITHMETICAL EYEBROW. (DELAMBRE.)

inward toward the corner of the eye, either by a curve or angle, leaving little or no space between it and the eye, it denotes only a *very slight* amount of the calculative faculty.

THE DECEPTIVE EYEBROW.

Obliquity of outline, when very decided, denotes obliquity of action or the opposite of straightforwardness, and eyebrows with a very pronounced upward slant from the inner termini (Fig. 251), are infallible indicators of deceit, craft, and treachery, and if the eyes are very light in combination the character will be cold, malignant, unfeeling, cruel, and brutal.

There are several modifications of this brow; one form is somewhat less oblique than the former, and denotes much less talent for deceit, but is *not altogether* reliable. The character accompanying this form will exhibit a certain degree of secretiveness, and indulge in small tricky ways and resort to useless sly methods.

Another modification is shown by a scheming, calculating disposition, both worldly and arithmetical.

THE ÆSTHETIC EYEBROW.

Long, narrow, and regularly arched brows, covering well-arched eye-bones, are found in the faces of persons possessed of order and æsthetic tastes; these traits will be exhibited in a variety of ways—in elegance of personal adornments, in the artistic, tasteful, and orderly arrangement of furniture and surroundings, and by a love of art-objects, such as pictures, statues, bric-a-brac, etc. If the brow is black or dark in color the color-sense will influence the selection of dress and appointments, and these

will be of most decided and brilliant tints. If the brow present a lighter color in conjunction with this form, the preference will be for more delicate shades. If possessed of literary or histrionic



FIG. 282.—ÆSTHETIC EYEBROW.
(EX-EMPRESS EUGÈNIE.)

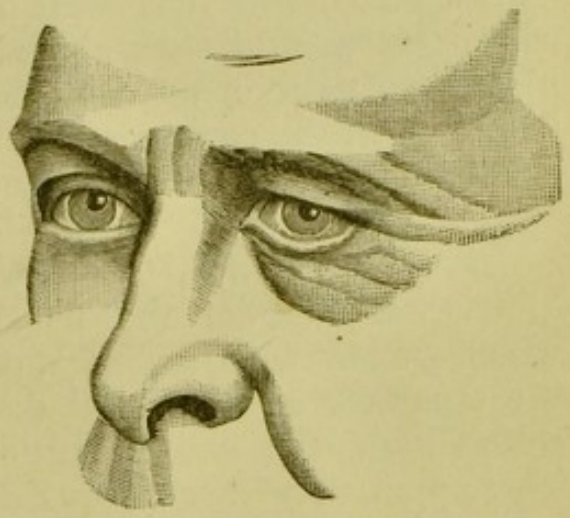


FIG. 283.—INVENTIVE EYEBROW.
(ELIAS HOWE.)

talent, elegance of style and sentiment will be the distinguishing characteristics. See the physiognomies of Buffon, Pascal, Charlotte Brontè, Addison, Shelley, Vandyck, Madame de Staël, David Garrick, and Mendelssohn.

The peculiarities of this type of eyebrow are its curvilinear form, length, color, narrowness, and regular arrangement of the hairs.

THE INVENTIVE EYEBROW.

The most conspicuous marks of what I term the inventive brow are its thickness, depth of color, length of the hairs, and bold and disorderly arrangement of the hairs, particularly at the ends (Fig. 283). The brows of Carlyle, Darwin, and S. F. B. Morse are admirable specimens of this type. The characteristics above described reveal a bold, original, inventive or creative mind in some department of mental labor. Those who exhibit this peculiar type of brow think and act outside of the conventional groove, and are given to discovery, exploration, creation of original theories and methods in art, science, philosophy, mechanism, warfare, statesmanship, or theology. To know to which of these directions the mind will be turned the student must look for other signs in combination. The following-named eminent men disclose eyebrows of this class; see, for example, the portraits of Carlyle, Charles Darwin, John Pierpont, John Knox, General Scott, Abraham Lincoln, General Napier, Lord Shaftesbury, Rufus Choate, Beethoven, Wagner, and Michael Angelo.

THE VITAL EYEBROW.

A brow that is wide, either straight or curved, of medium length, thick, and dark-colored or black, is an indication of constitutional vigor. It is often observed in its straight form in the countenances of iron-workers and other mechanics. When arched it denotes more of an æsthetic tendency. This type of brow is seen only in the countenance of vigorous, strong-willed, passionate characters, good lovers, and good haters.

THE DELICATE EYEBROW.

Observation of the physiognomies of many individuals in whom the nervous system is extremely sensitive, and also one of the dominant systems, will disclose eyebrows that are thin, light-colored, and the hairs straggling, in some cases scarcely visible. This appearance denotes qualities the opposite to those indicated



FIG. 284.—VITAL EYEBROW.
(JOHN STEPHENSON.)



FIG. 285.—DELICATE EYEBROW.
(CHARLOTTE CORDAY.)

by the vital eyebrow; those with this variety of brow are sensitive, mild, and delicate, with not much muscular development nor great vitality. If the brow be dark or black more constitutional vigor is present than with the light color.

MOVEMENTS OF THE BROWS.

The affluent muscular endowment of the hairy brow gives great facility of movement, and the movements of the brow are rich in physiognomic signification,—not only so, but the lines, folds, and wrinkles, caused by the continuous muscular movement of the brows, stamp their record of active thought and feeling upon the physiognomy.

There is a profound yet subtle meaning revealed by the surroundings of the eye, particularly in regard to the emotional nature, for *movement* is adapted to the expression of emotion, and

emotions, if often exercised, never fail of leaving their imprint behind. Love, sensuality, mirth, anger, parsimony, gluttony, and secretiveness, all alike leave traces about the eye that are easily recognized by the keen observer. The lids in particular, by their condition, give us unmistakable knowledge of both temporary and permanent condition of health, ill health, excesses—both sexual and alimentive—long continued, joy, grief, or prolonged study and close and habitual observation; all these are independent of the pathognomonic changes which disease produces; these changes belong to the *mind* of the individual, and are purely physiognomic.

Let the student place before him one dozen portraits of characters of advanced age of diverse pursuits, and make a study and comparison of the appearances, surroundings, and appendages of the eye, and he will become convinced that these phenomena are highly significant of character, and *indisputable records of life and mind.*

In order to comprehend the full physiognomic meaning of the movements of the eye we must analyze the uses of the several muscles involved in producing these movements, and also the use of the resultant movements as well. Orbicularis palpebrarum is the broad muscle that surrounds the orbit of the eye. (See Fig. 126, at the head of this chapter.)

Its *use* is to close the eyelids chiefly by depressing the superior, the levator muscle of which it directly opposes. It also serves to press the tears inward toward the punctata lachrymalia; the superior orbital fibres can depress the eyebrow and aid the corrugator supercilii in drawing it, as well as the eyelids, inward, and oppose the occipito-frontalis and shade the eye; the inferior fibres can raise the cheek, raise and draw the lower eyelid inward, and compress the lachrymal sac which they cover.

Corrugator supercilii arises fleshy and tendinous from the internal angular process of the os frontis, passes upward and outward, and is *inserted* into the middle of the eyebrow, mixing with the orbicularis and occipito-frontalis muscle; *use*, to depress and approximate the eyebrows, throwing the skin of the forehead into *vertical wrinkles*, as in the act of frowning. This pair of muscles are voluntary, but they cannot act separately; they directly oppose the occipito-frontalis and shade the eye.*

Observers will discover that the observing and thinking classes of minds use the internal portion of the orbicular muscle most, *i.e.*, that portion which enables the eyebrows to approximate as they do when the subject is employed in close observation or in deep reflection. The middle and outer portion of the eyebrows are used by the more emotional classes; hence actors engaged in portraying light characters move the centre and outer extremities of the eyebrows, but in delineating grand and thoughtful char-

* Practical Anatomy, Robert Harrison, p. 23.

acters they move the brows less frequently and the inner termini mainly. These actions are based on the natural and instinctive movements of these two diverse classes, and imitated by the skillful player in his representations of various characters; he not only imitates the voice, gesture, and movement of the brows, but paints upon his face with his cosmetic pigments the diverse lines, folds, and wrinkles which observation has taught him belong to the several distinct classes of characters.

Those persons who move the eyebrows frequently are to be suspected of a rather feeble grade of intelligence, and possessed of more emotion than thought.

There is one class of individuals who think that an appearance of hauteur is an indication of superior character; it is the class who raise the eyebrows upon meeting a stranger whose position socially they regard as inferior to their own. They are the *supercilious beings* one often meets in society, and the frequent use which they make of their eyebrows, to show (as they think) their high tone, is an infallible sign of the absence of true worth and nobility, for *assumption* of superiority is but the substitution for the genuine quality. Nobility of life and conduct are as easily discerned by our associates as are treachery and lowness, and we have only *to be* what we would wish to have others think we are in order to receive credit for the same; hence excessive movement in raising the eyebrows in this manner has led to the term "supercilious."

Those in whom the bony system is supreme rarely move the eyebrows, and then only to draw the eyebrows down at the centre in order to bring the eye to a focus. Painters raise and lower the inner end and centre of the brow, while actors run the whole gamut of ciliary movements in order to express every variety of character.

The deceitful and cruel raise the outer extremity of the brows, and show great mobility of this part of these features. Cats, whose brows are oblique, possess the same flexibility of the outer termini of the brows. Elocutionists, however, develop a marvelous degree of power in the superciliary muscles, and study to produce a degree of flexibility of these features which will enable them to produce, in conjunction with the eyelid and upper cheek, nine hundred movements.*

Of the movement of the eyebrows, Lavater remarks:—

> The motions of the eyebrows contain numerous expressions, especially of ignoble passions—pride, anger, and contempt; the supercilious man (*supercilium*, an eyebrow) despises and is despicable.

* Delsarte System of Oratory.

THE COLORS OF THE EYEBROW.

Color in the eyebrows denotes precisely what it does when found in the other features of the face. Very black brows, if narrow, long, regular, and arched, announce a nature intense, and, with æsthetic tastes, more imitative than original. Very light colored eyebrows denote characters whose emotions and passions are more superficial than the former, and the intellect generally only ordinary.

While brown eyebrows indicate a medium between these two extremes, fine reddish brows show considerable fervor and ambition, but when they are coarse it is assurance of strong animal passions.

The color of the eyebrows, taken singly, is no indication of intelligence or absence of intelligence. The underlying *form* gives us the clue to the direction of the faculties; the color of the eyebrow is a secondary indication, not a primary one. Color shows the degree of power, but, as the subject of color has been so fully discussed in former chapters, it is not necessary to elaborate it in this connection.

THE FOREHEAD.

The several forms of the forehead observed in the human face are composed of combinations of the line and curve, the square and angle. To this feature, as to all others, the basic laws of Form apply with the utmost certainty.

There are three general outlines in the profile of the forehead. These are the perpendicular, the projecting, and the receding. In the full face we observe the square and the curved or rounding forms; all other forms are modifications, compounds, or blends of these two primary shapes.

The normal, perpendicular forehead (Fig. 286) is observed most frequently in the artistic classes; among poets, painters, and æsthetic minds generally. It is usually accompanied by a straight nose; and straightness of these two outlines in combination always announce a taste and capacity for art of some sort; other signs in combination will give us the direction of this taste or talent.

The perpendicular forehead assures us of the supremacy of the muscular system, and one attribute of this system is its absence of sensitiveness; that is to say, relative absence. Muscle has not the sensitiveness of the nervous tissue, but when accompanied by a fine quality of nerve and brain it can manifest a considerable degree of mental sensibility, as well as artistic delicacy of touch, sound, etc., and results in artistic plans and methods. Those who

exhibit this form of forehead have never the warmth, fire, enthusiasm, sympathy, and sensibility which distinguishes those with the receding forehead. In the latter the lungs are large, the chest arched, and this peculiarity of bodily structure creates energy and feeling, and gives the force requisite for active sympathy, for executive ability, for warmth and fervor.

The normally-receding forehead (Fig. 287) is one that slopes backward somewhat, yet not too far backward. It is indicative of energy, balanced reasoning powers, sympathy, enterprise, practicality, mechanical ability, executiveness, and progress.



FIG. 286.—PERPENDICULAR FOREHEAD.



FIG. 287.—RECEDING FOREHEAD. (EX-GOVERNOR BUCKINGHAM.)

Many celebrated orators and actors of the highest rank exhibit this outline in their forehead. Mirabeau and Gambetta, French orators of the most fervid and intense type, present this form of forehead; the portrait of Kemble, the eminent English tragedian, also exhibits a receding forehead.

THE PRACTICAL FOREHEAD.

Among the thousands of the most practical and observing men whose foreheads exhibit an outline more or less sloping than the former, I may mention the late President Garfield, Peter Cooper, Abraham Lincoln, Captain James Cook, Richard Arkwright; William Harvey, M.D., discoverer of the circulation of the blood; the Duke of Wellington, Sir Moses Montifiore, Father Matthew; Liszt, musical composer; John Stuart Mill, David Livingstone, Richard Whately, C. H. McCormack, Sir Rowland Hill, and Presidents Washington and Jackson. I have mentioned many instances of this receding outline of forehead for the reason that popular opinion ascribes to this outline limited intelligence, based on no reason whatever, or knowledge of the facts; it is one

of those baseless physiognomical heresies that are current in the community. This form of forehead is characteristic of active, enterprising, pushing, enthusiastic natures in every department of intellect, as the above comprehensive group will show. These are taken from almost every department of mentality, and could be added to far beyond the limits of this section.

THE PROJECTING FOREHEAD.

The third type of forehead—the projecting—(Fig. 289), that is to say, the forehead which projects from below *forward*, either straight or rounding in its outline, is the forehead the

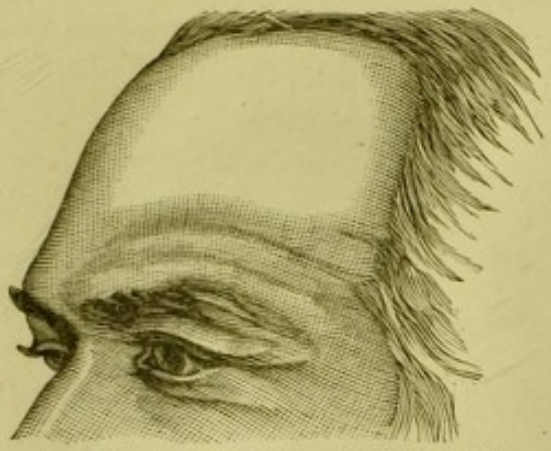


FIG. 288.—PRACTICAL FOREHEAD. (EX-PRESIDENT GARFIELD.)

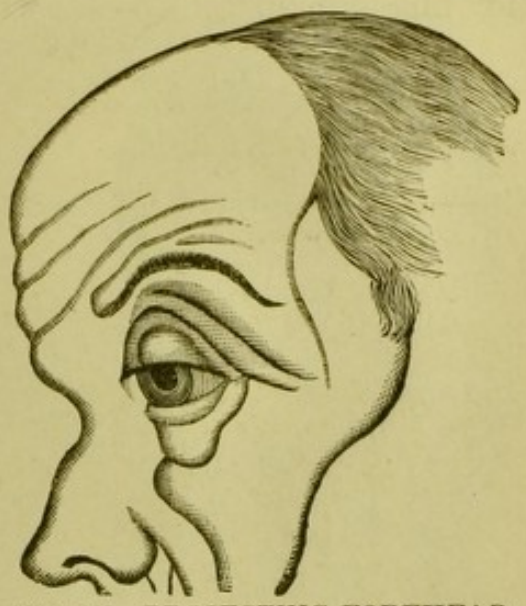


FIG. 289.—PROJECTING FOREHEAD.

least favorable to mental or manual activity. It is indicative of dullness, slowness, and impracticality, and where it exceeds a certain degree of forward projection or roundness it is certain assurance of idiocy, either partial or complete.

THE INFANTILE FOREHEAD.

One modification of this forehead is observed to round out from the junction with the nose, and presents the curve observed in all infants (Fig. 290), and in them it is normal at that stage of development. Now, the law of Nature is, that wherever a feature in an adult bears a strong resemblance to an infantile form, it indicates an infantoid or relative undevelopment of that part of the mind of which such feature stands representative. An infantoid mouth denotes absence of great thoughts and the use of small talk. An infantoid nose indicates lack of executive power; an infantoid chin, relative want of conscientiousness and firmness; and thus of all features.

Those whose foreheads bulge at the superior part are great theorizers, dreamers, impractical, and non-mechanical. If the possessors of such foreheads exhibit a good *quality* (which is seldom met with in conjunction with this appearance), they may be able to create some valuable theories, which, when adapted to practical purpose by common-sense minds, prove useful; but rarely is this the case.

THE MECHANICAL FOREHEAD.

Foreheads fullest at the brows denote the highest capacity for mechanism and practical work; foreheads fullest at the upper part show the greatest power for abstract reasoning, with ability to create and elaborate theories; they possess also great memory of events, etc.,—Humboldt, for example.



FIG. 290.—INFANTILE FOREHEAD.
(MINNIE WARREN.)



FIG. 291.—MECHANICAL FOREHEAD.
(One Type.)

THE ARTISTIC FOREHEAD.

Foreheads rounding at the sides announce capacity for artistic or original construction of some sort, usually of an artistic or æsthetic nature. Those square at the temple show ability for mechanical, scientific, or practical affairs.

THE SCIENTIFIC AND MECHANICAL FOREHEAD.

To a scientific physiognomist the outline of each forehead, both of the profile and of the sides, reveals the accompanying chest form. If the forehead is receding the lungs and liver are well developed, the thorax high and arched, the nostrils relatively large, and the septum of the nose (sign of the liver) usually well developed downward.

Where the profile outline of the forehead is perpendicular, the muscular system will be dominant, or one of the dominant systems, and the heart and stomach, both of them muscular organs, will be more powerfully developed. This outline shows the dominance of the involuntary muscles.

In this case the chest will not be so arched as in the former combination, and the nostrils not so large, but the eye will be larger and the forehead more rounded at the sides, and the jaw more curved outwardly. Thus each feature expounds and reveals the peculiarities of the structure of the trunk, as well as of the limbs, hands, and feet, and these in their turn announce to the close observer the shape of the features and the moral and mental characteristics.



FIG. 292.—ARTISTIC FOREHEAD.

Lavater has made some excellent observations upon this feature which I quote as corroborative of my own views. He remarks:—

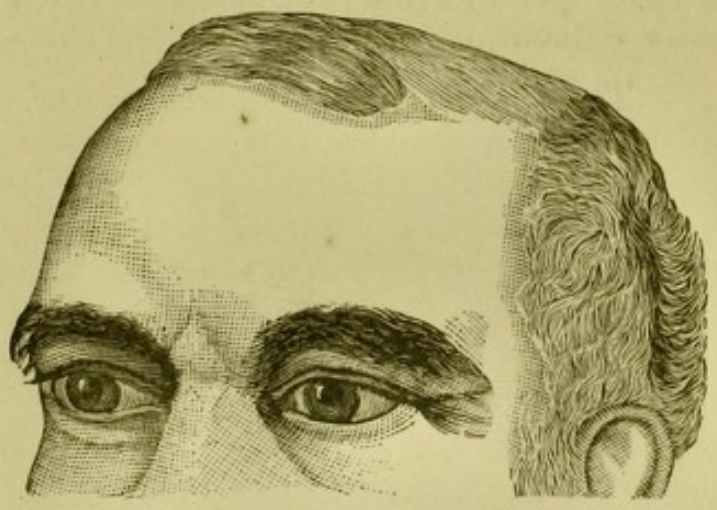


FIG. 293.—SCIENTIFIC FOREHEAD.

Foreheads viewed in profile may be reduced to three general classes: They slope backward, or are perpendicular, or are prominent. Each of these classes admits of an infinite subdivision, which is easy to distinguish by species, and of which the following are the principal: 1, straight-lined foreheads; 2, those whose lines half-straight, half-curved, run into each other; 3, foreheads with simple curved lines; 4, those with double or triple curved lines. Let us now establish some particular observations: 1. The more lengthwise the forehead is, the more destitute is the mind of energy and elasticity. 2. The closer, shorter, and more compact it is, the more concentrated, firm, and solid is the character. 3. Contours arched and without angles determine in favor of gentleness and flexibility of character. This, on the contrary, will possess firmness and inflexibility in proportion as the contours of the forehead are *straight*. 4. Complete perpendicularity

from the hair to the eyebrows is a sign of a total want of understanding. 5. A perpendicular form, gradually arched on top, announces a mind capable of much reflection, a staid and profound thinker. 6. Prominent (bulging) foreheads belong to feeble and contracted minds, and which will never attain a certain degree of maturity. 7. Sloping backward indicate in general imagination, spirit, and delicacy. 8. In order to constitute a perfect character of wisdom there must be a happy association of straight and curved lines, and besides a favorable *position* of forehead. The association of lines is favorable when they imperceptibly run into each other. 8. I rank among the most *judicious* and the most *positive* characters the *square* foreheads, whose lateral margins are still sufficiently spacious, and whose eye-bone is at the same time very solid.*

Elsewhere he remarks, quoting from Claramantine:—

A square form of forehead is the sign of superior talents and sound judgment; for it arises from the natural figure of the head. It likewise contributes to the knowledge and prudent conduct of affairs. Many illustrious persons have been distinguished by this form of head.

From Mr. de Permetty Lavater extracts the following:—

The forehead large, square, and open, announces a person of understanding and good sense; of quick comprehension and capable of advising well, for it is such as it ought to be, having the best proportioned form and the most adapted to facilitate the functions of the soul.

From Gratalones Lavater takes the following:—

Those who have a great forehead are dull; they may be compared to oxen. Square foreheads of moderate size, well proportioned to the head, show virtuous, wise, and magnanimous character; class them with lions.

There appears in the writings of all the ancient physiognomists a preference for the square form of forehead as illustrative of the highest character. Now, had they ever classified upon the "Basic Principles of Form," and learned the *inherent* meanings of the arch or curve as well as of the square and angle, they would have found the highest expression of the artistic mind revealed by the curve and oval, and the highest type of the scientific and practical by the square and angle, each of which produce two diverse types of *excellent character*, but each unsuited to fill the place of the other in their respective fields of labor.

Circular foreheads belong to the purely vegetative individual, half-curved to the artistic; but all foreheads, unless they are purely square or perfectly round, present interblendings and combinations of these several elements of Form, and must be judged accordingly in each individual case. Many modifying circumstances affect each of these forms. *Quality* is one modifying element; activity of the circulation, or the dominance of the thoracic system, another. Muscular development is yet another circumstance to be taken into

* Lavater's Essays, vol. iii, p. 324. London edition, 1787.

consideration before a *perfect* judgment of a given character can be arrived at. My advice is to postpone sentence until the evidence is *all* in; this is sound law, and will apply as well to lawful physiognomy.

The Head.

I did not intend in this work to give any attention to the cerebral part of the anatomy, although its form, size, and appendages are highly indicative of mentality, and reveal and corroborate the signs of character found in the physiognomy and body. Yet, as phrenology uses the head as the foundation and groundwork for its theories of mind, and endeavors to expound *all* characteristics by inspection and measurement of its outlines, I shall refrain from giving any extended description of the forms and meanings of this noble member. My main reason for this course is that I desire my readers to become perfectly convinced that the face reveals the *entire* mental and physical character without any reference whatever to the form or size of the head.

The entire character may be known also without any reference to the forehead, with the exception of the lower part just above the brows; yet, as the general observation is turned to inspection of the whole frontal development, I have decided to give a limited space to a description of its most general forms, although this is *not essential* to a complete and correct *physiognomical* knowledge of character.

As I stated in the theoretical part of this work, my belief that the mind is not shut up in the skull, but *diffused* throughout the entire body, and manifested only by the co-operation of *all* its parts, and as I showed that the office of the brain is limited to its own peculiar share in mental manifestation, and as the other parts of the organism are concerned in producing what are termed "mental efforts," as in art, science, mechanism, etc., and as I have demonstrated that the face reveals the *entirety* of the personality, it would be a waste of time to make any extended description and analysis of the brain or skull.

In the first place, the brain upon dissection gives no clue by its structure as to its office or purpose in the human economy, as do the visceral organs by their structure and connections.

In the second place, the general form of the exterior of the skull can be ascertained by reference to the general form of the face, the features, or by examination of the fingers even. In this manner the *dominant* powers of the individual are revealed, for a square head shows the presence of moral, scientific, and mechanical ability; the round head, the vital and artistic organism. A *full*

knowledge of the encased mind can only be had by observation of the face, the hand, the voice, the walk, the movement and gesture, aided by the light which the laws of scientific physiognomy throws upon them. Observation of the head and knowledge of its size is not *at all essential* to this result. Neither can the *weight* of the brain nor measurement of the skull before or after death give positive and thorough knowledge of the indwelling mind.

Its *form* will greatly facilitate this object, for form and quality are the supreme factors in, and of, all structures. A knowledge of the *meanings* of the forms of the fore part of the brain—the forehead—is very useful in our investigations of character, for this portion of the anatomy belongs to the face as well as to the brain. Comparisons of the form of the head and of its size in relation to the development of the lungs which accompany each individual subject are also of use, not so much in revealing character as for the purpose of disclosing *energy*. Disproportionately large heads, particularly of the fore part, denote slowness, if not dullness, of both the intellectual processes and bodily movements, while a small head allied to large lungs gives the utmost energy of both the mental forces and bodily movements. In the former case the driving power of the mind is absent, viz., large lungs and a copious and constant supply of well-oxygenated blood. A disproportionately large front brain acts slowly because it has not the assistance of a sufficient supply of normal blood to give it vivacity, while a small or undersized brain, if accompanied with large lungs, acts readily, and the limbs follow its promptings with a rapidity of movement in accordance with the *supply of the blood* and the *rate* of its *circulation*, which is much faster, of course, with large lungs and small brain, than where the forebrain is large and the lungs disproportionately small.

The reason why some large heads have exhibited great powers, as in Daniel Webster for example, is because they have been associated with a large thoracic development and a vigorous *visceral* organization and dense color, as well as an excellent muscular and osseous system. In organizations such as his, *many things besides a large brain* are essential to true greatness, for, in addition to all these grand physiological gifts, Webster inherited a fine and high *quality* both of brain and body. When all these circumstances are happily united in one individual, the world is blessed with a transcendent genius which leaves humanity in debt for his gifts, for he endows future ages with a splendid legacy that increases in value as the centuries roll by.

My theories on this subject are strengthened by observations made by the most original investigator in phrenology which

America has produced. I refer to J. S. Grimes. He connects his observations in this direction with a theory which, however original and unique, I do not indorse, for the reason that I have not given it sufficient study to do so. At the same time I say nothing in opposition to it, for to deny what one cannot disprove is unfair, to say the least; and, as I have no repugnance to his theory, and nothing to offer in opposition to it, I give it to my readers for their further investigation.

Mr. Grimes remarks thus:—

I have lately made an observation which seems to me to be of considerable importance. It is that the largest and most vigorous lungs are generally accompanied with moderately-sized heads; the form of the head in such cases is also peculiar, the upper parts of the head being less developed than the lower, the forehead being generally *retreating*. On the other hand, the very reverse is true of persons whose lungs are small; that is to say, their heads are generally larger and the upper parts more developed than the lower, being in some degree like those which we call rickety. I strongly suspect that this discovery will lead to important results when it comes to be fully explained. I will venture to suggest an explanation: The reason of small lungs being often accompanied with a large head is that the small lungs and imperfect respiration are the cause of the brain growing larger, for the brain is the organ of *motion*, and it can only produce its motions by means of oxygen, which oxygen is furnished through the lungs by combining with the food from the stomach. If the stomach and lungs do not furnish blood sufficiently charged with oxygen to enable the brain to produce the necessary motions, the motions must become less to correspond with the quality of the blood. Under these circumstances larger brain will be equivalent to larger lungs, just as in galvanic operation a weak and adulterated acid, when applied to a large surface of zinc plates, will produce as powerful effects as a more concentrated acid applied to a smaller zinc surface. Now the question is, Does not the brain tend to grow larger and to extend its surface when the blood is *weak*, *adulterated*, and *imperfect* in consequence of indigestion, badly-ventilated rooms, and imperfect respiration? Is not this the cause and explanation of rickets? It is admitted by physicians that rickets originate in indigestion and imperfect respiration, but why should this cause the brain to grow so large? Why do not the hands or feet grow large as well as the brain? I answer that the brain being the phreno-galvanic fountain of motion, and being deprived of concentrated and oxygenated blood, it extends its surface to avail itself of a large quantity of imperfect blood, and thus it is that the same causes which produce imperfect blood produce rickety-shaped heads.*

Mr. Grimes' theory of the brain as an organ of motion is unique, and I here give it as worthy of reflection, at least. He observes:—

My theory of the temperaments is very simple; it is that the office of the brain and nerves is to move the bones and muscles, and that the brain and nerves are, therefore, antagonistic to the bones and muscles, or, in legal parlance, it is bones and muscles *versus* brain and nerves. The principal

* Phreno-Geology, J. Stanley Grimes, pp. 68 *et seq.* Boston, 1851.

bones and muscles, to which I refer, are those especially which constitute the limbs and face. Now, I insist that, *ceteris paribus*, when the brain and nerves are weak and the limbs large, there cannot be as much rapidity of action as when the reverse is the fact; although there may be more strength, it will be manifested *slowly*. But what do we mean by *ceteris paribus*, or all else equal? Why is it that the largest brain, compared with the limbs, is not always accompanied with the most rapid motions? Why is it, indeed, that we sometimes see a large head and slender muscles on one who habitually moves but little, and then reluctantly and moderately? *Why is it that a brain of a given size is not always of a given power?* It ought to be if no interfering causes prevented. Phrenologists generally assume that it is so, but they are constantly met and annoyed by the fact that the same size and form of head on one manifests genius, and on another stupidity; on one it produces rapid and vigorous movements, and on another with bones and muscles no larger—perhaps even smaller—it produces slow, weak, and merely necessary movements; again, we see a small brain with large muscles producing rapid and vigorous motions and an energetic character.

Here Mr. Grimes follows with his galvanic theory and ends this branch of his argument by the following:—

> Here we have a plain and simple explanation of the matter, and the proposition now is, that *the power of the brain depends upon its size and the quality of the blood.* A small brain may, therefore, be more powerful than a large one, if the small one has the advantage in the *quality of the blood.* This is no contradiction of the proposition that the larger the brain and the slenderer the muscles, the greater the relative power of the brain, *all else equal;* on the contrary, it is but an illustration of it.

Mr. Grimes had probably not observed that the *rate* of the circulation had something to do with energetic movements and thoughts. More than *one* factor assists activity of thought and movement; hence, in estimating the power of a given subject, we must take into consideration the *form* of the forehead, the *size* and *form* of the nose and nostrils, *quality of the skin, and the color* of the complexion, hair, and eyes.

Mr. Grimes considers the medulla oblongata to be the seat of the mind, or consciousness, but thinks the brain to be the organ of voluntary motion, and, as this hypothesis has not as yet been successfully controverted, it is as trustworthy as any other. All physicians know that the forebrain in animals has been destroyed without destroying consciousness, and that the forebrain in man has been greatly injured without destroying consciousness; hence it would seem a rational belief that consciousness was located elsewhere than in the forebrain. The office of the several divisions of the brain have not (at the present stage of investigation) been definitely demonstrated. It is not essential to the comprehension of the practical part of physiognomy that this knowledge should be had. It would greatly facilitate our conceptions of mind, however, could we be enlightened as to the office of every distinct and minute portion of the

organism. Possibly this may be never known, but it is our duty to make the attempt to learn all that may be known of the human mind and body. Goethe expresses this idea thus:—

> Man is not born to solve the mystery of existence, but he must nevertheless attempt it in order that he may learn how to keep within the limits of the knowable.

There are five general forms of the head corresponding to the five superior systems of functions, viz., the vegetative, the thoracic, the muscular, the osseous, and the brain forms. Each of these forms of head is dominated by the system each individual shape reveals. The vegetative head is globular; like all primitive or infantoid structures, the thoracic head is high and angular and the forehead receding, and all the features prominent and clear-cut. The muscular head is curvilinear; not globular, but more artistically curved; while the brain form is spherical and the face pyriform; the round shape of the latter is different from either the vegetative or the muscular heads.

With this brief mention I shall close the description of the head, believing that the student of physiognomy need not pursue his investigations much farther in this channel for his knowledge of human character.

The Hair.

THE EVOLUTION OF THE HAIR.

In order to fully comprehend the physiognomic signification of the hair of the head, the beard, and the hairy covering found upon the human body, we are obliged to avail ourselves of the light which our sister science—Evolution—throws upon the use and origin of this hirsute appendage. The evolution of man proves that the nervous system and the hairy covering have a common origin, that both are evolved from the outer skin-covering or exoderm of the primitive organisms. This knowledge teaches us why the qualities of the skin, hair, nails, eyelashes, and eyebrows are indicators of mental conditions, for we find that the finer these appendages the more sensitive is the nervous system, and these correlations unfold to us the meaning of the strong relationship existing between these several hairy characters and the nerves or mental powers. In order to give the reader an adequate idea of the common origin of the hair and nerves, I shall draw upon the works of both Darwin and Haeckel for this purpose. For every physiognomic effect there is a precedent physiological or anatomical cause, hence history of the latter sort is essential to an *intelligent* comprehension of the

signs of character shown by the hair, beard, brows, and nails. Says Professor Haeckel:—

The most interesting and important appendages of the outer skin are the hairs, which, on account of their peculiar structure and mode of origin, must be regarded as very characteristic of the whole mammalian class. The hairs of man, as of all other mammals, consist simply of epidermic cells peculiarly differentiated and arranged. In their first state they appear in the embryo as solid, plug-shaped processes of the epidermis which penetrate into the underlying leather-skin (chorion) as do the sebaceous and sweat-glands. As in the latter, the simple plug consists originally of the ordinary epidermic cells. Within this a firmer cellular mass of conical shape soon forms. This increases considerably in length and detaches itself from the surrounding cellular mass, "the root-sheath," and finally makes its way to the outside, appearing above the outer surface as a hair-stem, the deepest part buried in the skin; the hair-follicle is the root of the hair and is surrounded by the root-sheath. In the human embryo the first hairs make their appearance at the end of the fifth or in the beginning of the sixth month.

During the last three or four months before birth the human embryo is usually covered by a thick coating of delicate woolly hairs. This embryonic wool-covering (lanugo) is often lost during the last weeks of embryonic life; at any rate, soon after birth; when it is replaced by the thinner, permanent hair-covering. In the human embryo, the embryonic woolly hair usually covers the entire body with the exception of the palms of the hands and soles of the feet. These parts remain bare, just as in all apes and most other mammals. Not unfrequently the woolly coat of the embryo differs considerably in color from the later permanent hairy covering. Thus, for instance, it sometimes happens in our own Indo-Germanic race, that fair-haired parents are shocked to find their children at their first appearance covered by a dark-brown or even black, woolly covering. It is only after this has been shed that the permanent fair hair, which the child inherits from its parents, makes its appearance. Occasionally, the dark hair is retained for several weeks or even months after birth. This remarkable woolly covering can only be explained as an inheritance from our primordial long-haired ancestors, the apes. It is equally worthy of note that many of the higher apes resemble man in the thin coat of hair which covers certain parts of the body. In most apes, especially in the higher catarhines, the face is nearly or even quite bare, or is covered with hairs as thin and as short as those of man. In these apes, also, just as in man, the hair on the back of the head is usually distinguished by its length, and the males often have much beard and whisker. In both cases this masculine adornment has been acquired by sexual selection. In some apes the breasts and the inner sides of the joints are very thinly covered with hair—far less abundantly than is the back and the outer sides of the joints; on the other hand, we not unfrequently see the shoulders, the back, and the outer sides of the limbs thickly covered with hair in men of Indo-Germanic or Semitic race.

The form of adaptation which has degraded the growth of hair on most parts of the human body while preserving it or even greatly developing it on certain parts was, in all probability, sexual selection. In consequence of the male anthropoid apes, in selecting a partner, preferring those females which were least hairy, and in consequence of the females preferring those suitors which were distinguished by peculiarly fine beard or head-hair, the general hirsuteness of the body was gradually degraded while the beard and the hair of the head advanced to a higher degree of perfection. Cli-

matic conditions and other circumstances unknown to us may, however, also have promoted the loss of the hairy coat.*

The evidence obtained from Darwin on the subject of hair is in direct line with that of Haeckel. He observes:—

> The absence of hair on the body is to a certain extent a secondary sexual character, for in all parts of the world women are less hairy than men; therefore we may reasonably suspect that this is a character which has been gained through sexual selection.
>
> It is rather difficult to form a judgment how the long hair on our heads became developed. Eschricht states that in the human fœtus the hair on the face during the fifth month is longer than that on the head, and this indicates that our semi-human progenitors were not furnished with long tresses, which consequently must have been a late acquisition. Many insects, birds, and animals exhibit beards, manes, and hairy appendages, as, for example, lions, horses, goats, cats, dogs, and many varieties of birds.†

THE QUALITY OR TEXTURE OF THE HAIR.

Inspection and comparison of the several qualities or grades of fineness of hair upon the heads of several individuals or races will demonstrate that there are very great diversities of this ornament. The hair of undeveloped races is coarse as compared to that found among civilized peoples, and among the latter great differences of texture are also to be found. Very coarse hair belongs to coarse, strong, stupid, or dull individuals of a low grade of mentality; often rude, boisterous, and unsympathetic; while the finer qualities show varying degrees of keener mentality, delicacy, refinement, and many diverse grades of physiological power and weakness.

Soft, pliable hair is evidence of tractable, amiable, reasonable disposition; while coarse, stiff, straight hair shows set, rigid, firm, conscientious traits, with more principle than emotion, and in some subjects it is accompanied by obstinacy.

Bears exhibit very thick, coarse, lustreless hair, and are stupid and brutal in the extreme. Other signs corroborate this; the position of the eyes, as well as the contour of the body and head and the slow gait.

The North American Indian exhibits hair very dark or black, very thick, and exceedingly coarse, straight, and strong, and the contrast between his hair and that of the African's curly and woolly hair is as striking as are the differences of the characteristics of these two races. The Indian is more noted for firmness and straightforward action than for sympathy, or at least he was before he became demoralized by contact with men calling themselves

* Evolution of Man, Ernst Haeckel, chap. xx, vol. ii, p. 205.
† The Descent of Man, Charles Darwin, chap. xx, vol. ii, p. 359 *et seq.*

"Christians." The negro, on the contrary, is a "curly" character, with very little honesty in his composition, not much firmness or heroism; unreliable, but sympathetic, generous, and sociable, with strong natural affection for offspring, great Amativeness, yet unstable in his attachments, being a natural polygamist, as evidenced by the almond-shaped commissure of the eyes, which in his face are very elongated.

If the hair be black or dark-brown and very coarse, it denotes a lower range of moral and intellectual power than coarse, light hair. Very fine, flossy, silken hair, of a light hue, is always associated with refinement, relative delicacy, and extreme sensitiveness of the nervous system. The same quality, if black or brown, denotes more constitutional refinement and more intense feeling and greater mental power.

THE QUANTITY OF THE HAIR.

A thick, long suit of hair is indicative of considerable constitutional vigor, and is one sign of longevity, great reproductive powers, and descent from a long-lived ancestry.

Thin, scattered, fine hair denotes delicacy of constitution, fine and keen perceptions, sensitive and shy nature, and nervous irritability, and is sometimes associated with brilliant mental powers, although other signs must corroborate the latter. No single sign will give the entire character of any individual.

All of those signs of character shown by the hair are to be considered with discretion and judgment; without discrimination all signs fail. The mole and hare have fine, thin, glossy, short coats of hair, and are shy, timid, sensitive, and short-lived, while the luxuriant mane of the lion points to his superior power of mind and body and great length of life.

The various deer tribes also possess fine, short, glossy coats of hair, and are keen and active, and yet many of them are strong, enduring, and long-lived. This combination is one of strength and fineness, quite in contrast with the coarse-haired, stupid, long-lived bear or Russian hog.

The difference in the physiognomical meanings of the hair of the bull-dog are well illustrated by comparison with that of the spaniel or pointer; the difference in their mental and physical powers are as great as are the differences observed in their hair.

THE VARIOUS COLORS OF THE HAIR.

The hair of the head, like all external appendages, is full of physiognomic meaning. Its most conspicuous characteristics are its color, its length, its thickness, its quality, and its lustre. Deep

colors, wherever observed, denote power, heat, force, and intensity; hence, the colors of the hair are indicative of character.

The colors most frequently met with in civilized races are black, brown, red, flaxen, golden, gray, and white, and their graduated shades. The several diverse conditions of hair may be classified as straight, lank, wavy, curly, kinky, and frizzly. The character expressed by long, luxuriant, glossy hair is quite different from that which short, thin, and lustreless hair reveals. In youth the hair possesses more lustre than in advanced life; hence, is a sign of a vigorous condition, as well as of youth and beauty. Good care of the hair, as in frequent washing and brushing, will preserve its gloss and youthful appearance, even in old age. The colors of the hair reveal meanings similar to those disclosed by the colors of the eyes and complexion. *Black hair* is usually associated with dark eyes, either black or brown, but in some members of the Celtic races we find it accompanied with blue eyes. Black hair, if coarse, thick, and devoid of lustre, belongs to coarse, animal natures with but slight mental power. If lank, thin, and lustreless, it belongs to those of ordinary intelligence and poorly organized physically. Fine, long, and glossy black hair assures us that its possessors are refined. intelligent persons, with ardent and deep feelings and enduring affections. If thick, with this combination, there is more constitutional vigor than if it be thin; the latter shows more delicacy of constitution, as well as more acute senses. If with this appearance the eyes are black and the skin clear, or if it exhibit a decided red color, the subject will show a very strong color-sense, and will be able to combine colors artistically or chemically, as in dyeing, etc.

Dark-brown hair, if fine and glossy, indicates normal power, both of mind and body, together with refined tastes and excellent color-sense. Blue eyes are oftenest associated with brown hair, either of a deep-violet hue or of a lighter blue.

All of the dark-brown shades of hair (if fine) denote a good degree of intelligence, amiability, good sense, and a certain depth of feeling without acrimony. The *light shades of brown* hair, which are sometimes found in combination with blue or gray eyes, are generally indicative of good intellect, and exhibit mental and physical powers neither very weak nor very strong. If the hair be fine it denotes delicacy of thought and feeling. With a golden tinge it betokens excitability and an exalted mind, which often eventuate in expression by pen, pencil, or brush.

Red hair, if fine and glossy, denotes intensity of feeling, ambition, and refinement. Red hair also shows quick temper, lively and intense emotions, great Agreeability and Amativeness,

and a love of outdoor life and active pursuits. The skin of red-haired people is generally very fine and clear. Now, whenever I observe a fine, clear skin, I naturally look for clearness of intellect and moral inclinations.

Coarse red hair is seen only on the heads of those possessing strong animal passions, with but ordinary intelligence.

There are many shades of *flaxen hair* which express a different meaning. Very light or almost white hair is often indicative of a feeble constitution and a scrofulous diathesis, and is never accompanied with intense emotions or capacity for strong attachments. The cause of this is physiological; for in these cases the entire organism lacks strength, both of transmitted quality and acquired vitality. *Albinos* are illustrations of this class, and they are always lacking in vigor and perfection of the senses of sight, hearing, touch, taste, and smell. Their color-sense is of the feeblest grade, while their mental powers are below the average.

Very light haired individuals are often showy, sprightly, and amusing, but I have never met a profound thinker in this class. Of the various shades of light-yellow hair, ranging from molasses-candy color to flaxen, I can only say they are not unlike all the other very light shades of hair in their significations. All these hues are generally found upon the heads of persons more entertaining than philosophic, whose emotions are transitory and manners gay and lively, with inordinate love of dress and amusement, and who exhibit a great fondness for spectacular plays, burlesques, and sensational literature. With a cultivated color-sense they are very ingenious in many kinds of ornamental work. Such persons attract by their vivacity and entertaining manners. Their affections are neither deep nor lasting, but fickle and capricious. That these shades of hair are not indicative of the most developed characters we have only to refer to infants and children of the Caucasian races, whose hair deepens in color as the body and mind strengthen and develop. We must therefore conclude that very light haired adults are relatively infantoid in their natures; that is, they are not as profound reasoners nor as strong and stable in their affections as those with deeper hues of hair.

Golden hair, if fine, gives assurance of a better color-sense than the very light yellow hues, and also denotes more constitutional vigor, for it is usually associated with blue eyes and clear red and white complexion, and this combination produces æsthetic tastes, and, if the quality be fine, artistic talents. The associated character is more imaginative than philosophic, but refined and amiable. Several eminent poets have possessed this combination of colors, and many good artists also.

Gray hair is usually the sign of age, yet many youthful persons or those in the prime of life exhibit hair more or less gray.

In youth this appearance is caused by some variation or perturbation of the nervous system—as in nervous shock—or is transmitted as a family peculiarity. The change of color produced by nervous shock is proof of the mental or nervous origin of the hair, as shown by Haeckel and Darwin in their works on evolution. As the texture of the hair and skin discloses the quality of the nervous system—therefore of the mental power—we must infer a strong relationship between them. The evolution of man proves that the outer skin-covering or exoderm in the primitive organisms assisted in forming the nervous system. This discovery in the history of the lower organisms teaches us how this relationship came about, and proves that the skin, hair, eyelashes and finger- and toe- nails were all evolved from the outer skin-covering. This knowledge affords a clue as to the cause of gray hair. The hair of many persons who have received great and sudden nervous shocks has turned gray or white in a short time, and sometimes in a single night. This is said to have been the case with Queen Marie Antoinette when she was imprisoned. The hair does not generally commence to turn gray until the nervous power has begun to decline.

REMEDY FOR GRAY HAIR.

A very safe and simple remedy for *prematurely* gray hair is found in the following decoction: Take a dozen iron nails and steep them in one quart of black tea and apply daily until the color changes. In most cases it will prove a perfect remedy and restore the hair to its natural color. Individuals of advanced age should never try to restore the hair to its youthful color, as it makes them look *much older* than they really are. Nature in her kindness and wisdom causes the hair to keep pace with the declining freshness of the face, and thus the physiognomy always looks fresher and younger when the dark hair of youth begins to be sprinkled with white. An aged face wrinkled and pallid, or one that has lost the delicate red and white of youth and become fat and coarse, are both softened and refined by gray or white hair. The cosmetic advantage of this color of hair will be apparent to any one who will make the experiment of putting a dark or black wig upon the head of a person from whose complexion the colors and freshness of youth have departed. The greatest secret of the toilet is to make the *face* seem more *youthful* than the surroundings. This cannot be done by bonnets and hats *too juvenile*, nor by the use of youthful-colored

hair. On the contrary, just the opposite effect is produced by juvenile head-gear.

Gray hair is not at all gray as its name would seem to denote, but the gray effect is produced by the intermingling of white hairs with the darker original shade of the hair, and the gray appearance is present until all or most of the hair has changed color, when it appears as pure white.

VARIOUS SORTS OF CURLY HAIR.

Besides the straight and stiff and lank varieties of hair, there are several others which convey at sight a knowledge of character. They may be classed as wavy, curly, kinky, frizzly and woolly. None of these varieties are ever found among the civilized races in whom the bony system is supreme, nor upon the heads of those wild races in whom the osseous system is regnant, for the reason that in such subjects lime in some one of its several forms is found in greater quantities in all of the fluids and juices of the body as well as in the fluid of the hair. A large proportion of this chemical constituent creates a firmness or stiffness in the hair of osseous subjects which is not present in the hair of muscular people and races. The law of the muscular being is the curve, as is observed both in animal and human beings, and in order to trace the curve to its origin, and from thence to deduce its most subtle signification, we must look even to the condition of the hair and eyelashes for corroboration of the basic principles of Form. These two appendages will be found upon examination to curve most in muscular subjects. As the curve belongs more particularly to the muscular classes, we shall find that curved or curly hair belongs exclusively to the muscular and vegetative individual.

As the curve is an attribute of muscle, we shall find curly, wavy hair upon the heads of the artistic and imitative classes, and this includes the negro races as well. Curly hair and waving manes are also observed upon the bodies of the muscular animals; the lion, among the Felidiæ, and among the dog tribes the poodle, spaniel, and Maltese varieties are illustrations of the combinations of curly hair with the muscular system predominant. The bony varieties of dogs do not exhibit curly or wavy hair. The hair of the several negro tribes presents the most extreme phases of the curvilinear form, and in these races the muscles dominate the bones, as is proven by their large, convex eyes, frizzly hair, and flexible limbs. The *circular* form here, as elsewhere, denotes superior constitutional vigor. Pure-blooded Africans, as a rule, possess great physical strength; but mulattoes are, as a rule, inferior in strength and constitutional powers to both the black and white races from which

they have descended. The hair of the negro is different in its construction from that of the Caucasian, and it is these circumstances, added to the fact that it contains less lime and more animal substance, which gives it the facility for kinking and frizzling. Of this peculiar difference in the structure of the hair of the negro, Carl Vogt tells us that

> The hair of the straight-haired human races is cylindrical; the section under the microscope appears perfectly circular and provided with a medullary canal. Not so the hair of the negro, which is flattened so that its section exhibits an elongated ellipsis in the axis of which no medullary canal is seen. It is this lateral compression which effects the peculiar frizzling of the hair owing to its not taking place exactly in the direction of the longitudinal axis of the hair, but ascending in spirals so that the hair resembles a spiral spring which always returns to its shape when drawn out.*

This extract reveals and corroborates several important principles in my theory of the basic laws of Form, as exhibited by the comparison of the hair of the straight-haired races with that of the curly-haired races. Not only is the structure of the latter inferior in development—in not possessing a medullary tube—but it is also an exhibition of imperfect curvation; that is, a departure from the *true circle*, which is characteristic of the form of the hair of the straight-haired races. In this microscopic analysis of the hair of the negro it is shown that his hair is characterized by an elliptical form, while that of the white-haired races is distinguished by a perfectly circular formation. In this minute circumstance, as well as in the larger details of the human system, the basic laws of Form, as set forth in this system of physiognomy, are fully sustained and carried out. And now for the practical exposition and application of these principles. Curly hair does not show the same high degree of stability, integrity, and moral courage which is associated with straight hair; although many curly-haired people are *strictly honest*. There are many grades of integrity between common honesty and high moral courage—between the determined perseverance and blunt and direct speech of the straight-haired individual and the agreeable, wavering, shifting, unstable methods of the wavy-haired, curly-haired being "who is all things by turn and nothing long."

STRAIGHT HAIR.

The straightest and stiffest hair is found upon the heads of the North American Indians, and in them the osseous system is dominant. Their hair is of the coarsest quality, thus showing that their *mental grade* is not so high as that of the straight-haired Caucasian races; but they possess great perseverance and an

* Lectures on Man, Carl Vogt, p. 128.

unflinching devotion to the principles of truth as laid down in their code of morals. The negro, on the contrary, is a slippery, uncertain, unreliable talker, and seems unable to fully comprehend any system of moral ethics, or to live up to the standard of morality held by the Caucasian and Indian races.

Among the Caucasian races curly hair indicates a changeable character; often brilliant, vivacious, quick-tempered; usually possessed of some form of imitative talent or ability; sometimes sunny, sometimes cloudy, like April weather. Curly hair is usually associated with considerable constitutional vigor (if the color of the skin, hair, and eyes is well defined), the circular form here, as elsewhere, denoting superior strength.

Wavy hair signifies amiability, plausibility, and politic methods. Hair that lies in waves and graceful rings is found upon the heads of gentle, agreeable persons. Many talented people have this peculiarity. It is exhibited by many poets, painters, actors, and others of the muscular artistic classes, those fond of the arts of music, painting, poetry, etc. It denotes tenderness of feeling, with more emotion than reason; hence many poets, musicians, dancers, and singers exhibit this sort of hair.

Men with wavy hair are gentle, refined, and often effeminate in their nature, and resemble their mother in their tastes and feelings.

The hair of Byron, Keats, Mrs. Browning, Thos. Moore, and Burns, poets, exhibits several varieties of wavy and curly hair; while among orators whose hair is waved or curled we find Edmund Burke, Patrick Henry, Mirabeau, and Wm. Wirt.

Many great painters exhibit several varieties of curly hair, among them the following: Vandyck, Michael Angelo, Rubens, Titian, and Poussin. There are also many other painters who exhibit soft, silken waves and ringlets.

The tighter and closer the hair curls, the more pronounced are the physiognomic meanings of the curve. The kinky frizzle of the negro discloses his tricky, "curly," unreliable character; it reveals also his strong affections and amativeness, his love of mirth, music, and ease, while the long, loose ringlets of the Caucasian indicate an easy, yielding, sentimental, emotional nature, with æsthetic taste or talent. The tight, close ringlets reveal high *temper* and changeability of moods. The curl and ringlet are secondary juvenile signs, and are suitable to youthful heads. Nothing, in my estimation, shows more vanity in woman than the wearing of long ringlets in advanced age. Waving hair is becoming to all ages, but long curls on a man's head are the signs of the very acme of vanity. I have shown in the description of Appro-

bativeness that the majority of natural hairy appendages, such as the beard and moustache, are found upon the masculine sex, are secondary signs of vanity, so long curls or ringlets, when observed upon men, are the sure tokens of inordinate vanity and conceit. When a man is not contented with all that Nature and evolution have done for him in the way of natural adornment, and with the assistance she has given him in hiding the defects of lip and chin, and he adopts the curls and ringlets which belong to the opposite sex, it may be set down as the crowning act of a vain mind desiring to centre upon himself the gaze of the multitude. Such men are always one-sided and desirous of public display. I have noticed this peculiarity in peripatetic venders of hair-dye and corn-salve, and in horse-jockeys, astrologers, and fortune-tellers. This showy mode of hair-dressing is adopted by these fellows to bolster up their already overweening self-confidence, and to call attention to their wares and nostrums.

Ringlets on the heads of babes, children, and young ladies are beautiful and appropriate to their age, and denote youth and amiability, and in the latter possibly a spice of coquetry not at all unbecoming to them. All natural external appendages, as, for example, the hair, the beard, the finger-nails, and ears, have been regarded as ornamental members, and hence foster and cultivate the several phases of Approbativeness, ranging all the way from simple satisfaction in a neat arrangement and condition of these several appendages to conceit, vanity, and an offensive and tasteless manner of dressing and displaying their peculiarities of color, quality, quantity, and condition. Civilized races are not one whit behind savage peoples in the fantastic modes of dressing the hair, while dyeing the nails and wearing them long are customs among semi-civilized races.

CAUSE AND CURE FOR BALDNESS.

Baldness is almost altogether confined to the civilized races, and to the males more especially. There are several causes contributing to this phenomenon, the most influential of which is the frequent and short cutting of the hair. All orchardists are aware that if a shrub or tree is "topped" too short and too often it soon becomes permanently dwarfed or dies outright. The reason of this is that the sap does not have a sufficient *length* for circulation or capillary attraction, and hence the decay at the root. Now, the hair has not only a liquid which circulates through tubes its whole extent, but it has also a nervous connection which is injured by cutting it too short and too often. The next most active factor in the production of baldness in men is the too common

custom of wearing the hat indoors, as is observed in workshops, offices, stores, and in other places. Men practice these two habits most conducive to baldness, and then are unable to account for such depilatory result. Were it their object to bare the head, no better means than these could be desired. As long as these practices are continued, common sense should teach that it is useless labor to endeavor to make the hair grow by means of nostrums, which only serve to increase the length of the bank-account of their manufacturers, but not the length of the hair of the user.

THE BEARD.

Like all the hairy appendages found upon the human body, the beard and its near relations, the hairs of the head, are strong physiognomical significators. As the beard appears only upon the face of man (with rare exceptions), it stands in physiognomy for a prime sexual characteristic of the male sex. It is pertinent to inquire how this peculiar hairy appendage has come to be the distinguishing sign of the male of the human species, why it sometimes appears upon the female face, and what is its use and physiognomic signification in both the male and the female countenance.

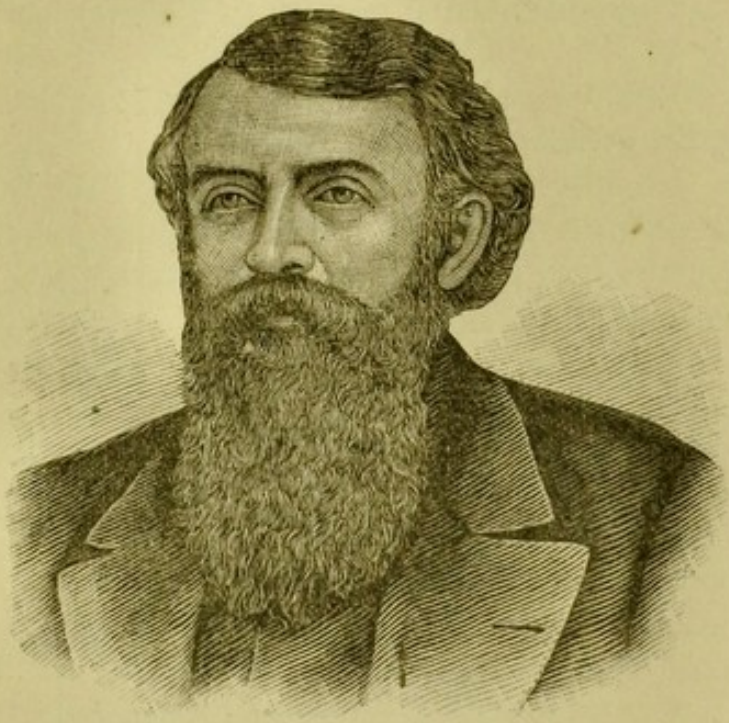


FIG. 294.—VITAL BEARD.
(DWIGHT L. MOODY.)

Fortunately for the science of physiognomy, it has in this age the assistance offered by the investigations and discoveries made by these great giant naturalists, Haeckel, Darwin, Quatrefages, Carl Vogt, and others. From these sources I am able to give my readers some valuable information upon the subject of hair generally, and of the beard in particular. Reference to the "Evolution of the Hair," in the preceding pages, will assist our comprehension of this most important branch of physiognomical knowledge. Comparisons of the hairy development of many of the lower animals with man will prove that in this respect at least man more nearly resembles these classes than does woman; also that

certain characteristics which accompany this peculiarity, viz., Will and Amativeness, are more developed in the human male than in the female. The following extract from Darwin will be of interest in this connection, and will throw some light upon the significance of the beard:—

With respect to the beard, says Darwin, if we turn to our best guide, viz., the Quadrumana, we find beards equally well developed in both sexes of many species, but in others either confined to the males or more developed in them than in the females. From this fact, and from the curious arrangement as well as the bright colors of the hair about the heads of many monkeys, it is highly probable, as before explained, that the males first acquired their beards as an ornament through sexual selection, transmitting them, in most cases, in an equal or nearly equal degree to their offspring of both sexes. We know from Eschritt that with mankind the female as well as the male fœtus is furnished with much hair on the face, especially around the mouth, and this indicates that we are descended from a progenitor of which both sexes were bearded. It appears, therefore, at first sight, probable that man has retained his beard from a very early period, while woman lost her beard at the same time, when her body became almost completely divested of hair. Even the *color* of the beard with mankind seems to have been inherited from an ape-like progenitor; for when there is any difference in tint between the hair of the head and the beard, the latter is lighter colored in all monkeys and in man.



FIG. 295.—VITAL MOUSTACHE.
(VICTOR EMMANUEL.)

The beard, which is found upon the faces of the men of nearly all races, is a feature of great physiognomic significance, and accordingly reveals characteristics which are valuable to the physiognomist. Our first query in regard to this hirsute appendage must be as to its *use;* the next as to its meaning. The physiological uses of the beard upon the chin, cheeks, neck, and upper lip are doubtless for the protection of the lungs primarily. The overhanging moustache upon the upper lip acts as a sieve or filter, in that it prevents the dust, cold air, and other noxious substances from making their way into the lungs by way of the mouth as readily as they would were the upper lip destitute of hairs.

The beard upon the chin and cheeks protects the throat from the inclemency of the weather, and where its growth is long and luxuriant it affords an *outward* defense for the throat and lungs.

Long and full dark-colored beards are signs of vigor and strong constitution, the same as are heavy, dark eyebrows. They are secondary signs of longevity as well. A thick moustache and beard are of great service in certain trades in protecting the lungs from the clouds of dust and particles of various chemicals which are employed in many trades and professions.

Now, it must be apparent that an appendage which serves so many useful purposes, and which is so pronounced a feature of the face (covering up nearly the lower third), and which is almost exclusively a masculine feature, must carry with it very great mental meaning. This meaning is not far to seek if we watch for a few moments only the habitual gestures of those whom Nature has endowed with a fine moustache or a long and luxuriant beard. The self-satisfaction expressed by the habitual and oft-repeated caressing strokes which the owners of long, handsome beards give to this appendage unfolds at once the true inwardness of this feature and gesture. The constant brushing and twisting of a fine, long moustache points in the same direction as does the patting and caressing given to the beard; both these gestures denote Approbativeness; in some men they indicate great vanity. Instinctive or natural gestures are as full of meaning as any concrete form can possibly be, and all caressing movements, whether directed to one's self or given to another, mean precisely the same thing, viz., commendation or satisfaction. We pat children on the head when we wish to show our satisfaction in them or to commend their conduct, and men with a long beard and fine moustache constantly rub, pat, fondle, smooth, and caress their hairy ornaments, and doubtless think themselves the cynosure of all the feminine eyes in their immediate neighborhood, as well as the particularly envied of their own sex.

Darwin has gone into the analysis and meaning of sexual characters in the male, extending through the entire animal species. In this endeavor he shows that the males of all the animal kingdom (with very few exceptions) possess superior external ornamental appendages, which are used for the purpose of charming the opposite sex. In this analysis is clearly proven the position I take upon the subject of external ornamental appendages, and it is this, viz., that they develop a certain degree of vanity or Approbativeness, which I hold is greater in man than in woman generally. (See page 383.) Woman, in order to attract the attention

of the opposite sex, endeavors either to improve her bodily form according to the standard of beauty held by the men of her race, or to improve her mind and disposition, or she seeks to fascinate by a masculine expedient, viz., by external ornamentation, by clothing so fashioned as to enhance her charms, and thus to attract the attention of men to her personal appearance. In this attempt on the part of woman to increase her beauty a species of vanity is developed, but, as it proceeds from ornaments which do not *grow* upon the body, the degree of this passion is much less in woman than in man, for his vanity is *radical, is inborn*, and not put on and off with his clothes, but stays "put" for all time. The supreme satisfaction with which a young man with an infant moustache regards both it and his successes with the opposite sex is proof positive of my theory on this subject. It is to be noted that his faith in his attempts at fascination increases in proportion as his moustache thickens.

Of the significance of external ornaments in the male, Darwin remarks thus:—

> Ornaments of all kinds, whether permanently or temporarily gained, are sedulously displayed by the males, and apparently seem to excite or attract or charm the females; but the males will sometimes display their ornaments when not in the presence of females, as occasionally occurs with grouse at their balz places, and, as may be noticed, with the peacock; this latter bird, however, evidently wishes for a spectator of some kind, and will show off his finery, as I have often seen, before poultry, or even pigs. All naturalists who have attended to the habits of birds, whether in a state of nature or under confinement, are unanimously of the opinion that the males delight to display their beauty.*

Let the reader pay attention to a long-bearded man standing before the glass when he is assured that he is not observed, and he will soon become convinced that the highest representative of the male sex does not require the stimulating effect even of a pig's presence to incite him to display and fondle his beard.

A full exposition of the scope and action of the faculty of Approbativeness is to be found in the preceding chapter under the head of "Approbativeness."

Along with every separate and single feature, which is either a source of youth or beauty, Nature has attached a feeling of self-satisfaction in its possession, and, as a beautiful woman exults in her loveliness of face, form, color, or mind, so a man who possesses a fine, luxuriant, richly-colored beard glories in this sign of masculine beauty and vigor. When we come to the external appendages, we enter a field of subtle meanings, and especially is this

* Descent of Man, Darwin, vol. ii, chap. xiii, p. 82.

the case when these appearances are pronounced sexual characteristics. Now, the beard has come to be almost exclusively a masculine feature, yet many females are observed with a slight moustache, and less frequently we observe a tendency to hirsute development upon the chin and cheeks of women of European extraction principally. I think this phenomenon is most frequently met with in the Celtic and Celt-Iberian races. In these subjects it is the sign of great constitutional vigor, and whenever these appendages are very greatly developed an approach to masculine traits of mind may be discovered in a decided development of Will and Amativeness.

In some notable examples a masculine intellect has been associated with this hirsute ornament. Many historical beauties have sported an incipient moustache, which has not at all detracted from their beauty. It is only when the hairy adornment is excessive and the features coarse that a slight moustache detracts from the feminine appearance of woman.

The only way we can account for the presence of the beard in woman is to refer to a common origin which Evolution shows it to have had. It became a secondary masculine character through the law of "Natural Selection," so ably elaborated by Darwin in his "Descent of Man," reference to which the reader will find in the "Evolution of the Hair" which precedes these pages.

The uses of the beard in covering up the exposed parts of man's face are not all physiological. If the beard serves to create undue vanity in man, Nature makes him a *grand compensation* for this weakness. She very kindly enables him to *hide* and *conceal* any weakness or defect in his domestic or moral nature which a weak lower third of the face would disclose were it destitute of hair.

The beard is, in short, a sort of masked battery, behind which a man of weak principles or deficient domesticity may hide, and from this covert gaze understandingly upon the open face of an unsuspecting female and bear her off upon the high sea of matrimony without her being at all aware of his true character; and herein, again, we see the manner in which Dame Nature favors the "brave" though weak male creature. Let us take a little "account of stock," and sum up the number of signs of character that are hidden from the gaze of the world by the moustache. In the first place it conceals the size of the upper lip, thus covering Self-esteem, Modesty, Amativeness, Love of Young, and Mirthfulness. The side-whiskers hide several of the signs of Digestion, Approbativeness, Hospitality, and Friendship; while the beard upon the lower cheeks and chin prevents all knowledge of the amount of

development of Firmness, Conscientiousness, Economy, Love of Home, Patriotism, Bibativeness, and Alimentiveness, and one sign of Secretiveness, viz., small size of the mouth.

With all the natural advantages for concealment which man possesses, it is a little far-fetched for him to accuse woman of being "sly" and "vain" because she takes an æsthetic pleasure in fine raiment (which, after all, is intended to please his own sensuous tastes), or because she uses her ingenuity to discover the character of this bewhiskered sphinx.

Now, I submit that it should be the prerogative of every woman to demand and have an examination of the lower third of the face of all male candidates for matrimony before giving the final answer. Nature, in being kind to man in respect to providing him with a beard, has been equally unkind to woman in giving him this perfect contrivance for concealment of that portion of the face which alone reveals the moral and domestic traits, those traits upon the normal development of which all marital happiness depends. Truly, the "ways of Providence are past finding out," but to hear the average man discuss woman's ways and characteristics one would think that this open-faced being was the most inscrutable and impenetrable of all Nature's works.

The physiognomic meanings of the several varieties of the beard are revealed by the application of the general principles of form, color, and texture governing the hair. In almost all cases the beard and moustache is lighter than is the hair. No naturalist has, so far as I am aware, accounted for this discrepancy. It is probable that there are pathological changes which produce these variations of color, but as they are not pertinent to our investigation we will proceed to the discussion of the texture of the beard. This peculiarity is common to some of the ape tribes.

THE TEXTURE OF THE BEARD.

A coarse, straight, and stiff beard is associated with a coarse, stupid, obstinate, or brutal character. If it be a dark-brown color the character is more intense than if it be lighter.

A fine and straight beard betokens more refinement than the former, and more integrity, and if it be dark and luxuriant it shows energy and vigorous physical powers. A *coarse*, red beard denotes strong animal passions, with only ordinary mental capacity, but if it be fine as well as red it indicates ardor, ambition, refinement, and physical vigor.

A *fine* beard of light-yellow or red color shows much less *mental* vigor than those which are darker of the same texture, yet indicates a refined disposition, but not so much physical power as

those that are dark and curly. A thin, straggling beard, like thin hair, denotes feeble vital powers.

A fine, thick, glossy, dark-brown, curly beard denotes a strong constitution, and is usually associated with a fine development of the muscular system; this, then, would signify propensity for art in some one of its many forms; other signs would show to which department the mind would turn.

Beards which form long curls belong to the most vigorous men. The ancient Greek sculptors carved upon some of the busts of Zeus, or Jupiter, a long and beautiful ringleted beard, showing that they regarded this style of beard as an evidence of virile power.

Large, round, flat curls also adorned the head of Zeus, of which the poet says:—

"Above his deathless head,
The Ambrosian curls flowed."

Mars, the God of War, is also represented with close-curling locks and beard. Hermes, and the Farnese Herakles, the Laokoön and Aphrodite all exhibit waves, curls, or ringlets, and all of these were in harmony with the excess of muscular power which these several characters reveal in their contours. The ancient Hebrews were noted for their longevity and virility, as well as for long beards; this appendage was held in great reverence by them, so much so that their most sacred and binding oaths were taken upon their beards, which were so long that in many instances they trailed upon the ground. Johan, a German painter, had a beard so long that it trailed upon the ground, and he was obliged to tuck it into his girdle in order to walk freely. The fashion of wearing the beard changes from age to age; sometimes it is worn by a sovereign to conceal a defective lip, chin, or cheek; it is then adopted by his courtiers and followers. At times a tax has been levied upon the beard. Peter the Great imposed one upon the Russians, and once in England a tax was levied upon this appendage.

The portraits of many men celebrated for their great age disclose a fine, long, curly beard, as well as curling hair. Thomas Parr, who died in England in the sixteenth century, aged one hundred and fifty-two years, wore a long and handsome curly moustache and beard, one of the most beautiful that I have ever seen; his hair was wavy and long, descending in rings until it met the beard. The picture painted of him by Rubens shows him as a very handsome man. Henry Jenkins, another Englishman, noted for his longevity (having attained the great age of one hun-

dred and sixty-nine years), had a long, thick, waving beard. In both these men the muscular was one of the dominant systems.

The beard does not present as many variations of color as the hair. We never see a golden beard, nor the various shades of light yellow observed upon the head. Gray beards are common, as well as pure-white beards, and these usually betoken age. A full, flowing, white beard, nicely kept, is a very great addition to the face, and serves to soften the features and give them a more youthful appearance.

The physiognomic lessons learned from an analysis of the beard are most useful, and show how certain facial features have become secondary sexual characters through the operation of the law of natural selection. It also shows the physiological use and the physiognomical significance of this masculine ornamental appendage.

Reversions to original types have been witnessed in the persons of several "bearded women" who have been exhibited in various countries; along with these beards these women have inherited certain masculine traits and masculine vigor. These instances are excellent proofs of Mr. Darwin's theories of "secondary sexual characters," proving also that faculty and function are always associated, and have always a facial representation.

The Ear.

The ear is the organ of sound, and as such it is rational to infer that its form, size, color, and texture would bear relation to its use, and reveal its individual powers and peculiarities. As it is the only organ devoted to the reception of tone, or sound, we must rely entirely upon it for our knowledge of the aural qualities of the individual.

The ear develops *pari passu* with the *general* refinement of the body, hence the ears come to be indicative of other conditions of mental progress than that of Sound merely; this will be made apparent as we proceed in our analysis and description of this very beautiful and complex organ. The external ear is of a muscular or cartilaginous nature, and the internal ear is mainly of the same soft tissues assisted by nerves, fluid, and a chain of three small bones, yet the softer tissues of muscle and fluid predominate in its construction.

The evolution of the ear is one of the most interesting processes in Nature, whether we follow its course as pursued in its development in the human embryo, or whether we trace its rise and progress from the fish up to man. To attempt either of these

methods would take up too much of my space, and I leave this most interesting branch of knowledge and proceed directly to the description of the external ear, together with its physiognomic significations.

The shape, size, and peculiarities of the ear have attracted but little attention from observers generally. While many have remarked the several features of the face, but few have paid attention to the contour of the ears; only when an ear has presented some very marked peculiarity of size or form, or has exhibited a deformity, has it attracted the close scrutiny of people generally; and even then the *meaning* of either the normal or abnormal ear has not been thought of. In short, in modern times the ear has been regarded as a feature of minor importance, hence the masses have manifested but little desire to comprehend its signification. The sciences of evolution and embryology followed its method of development, but have given no clue as to its meaning. Scientific physiognomy now, for the first time, shows its high significance as a revelator of character, and also discloses to which system of functions each of its divisions belongs.

The law of the curve is the law which governs the structure of the ear both without and within. The figure (296) of the internal ear gives the reader an idea of the influence of the curve in the formation of the internal parts of the ear. It also shows the curvilinear structure of the external ear. As the curve is the normal factor of form for the ear, all departures from this form would point to defects in the aural organization. Accordingly, angular or pointed ears would betray lack of aural power in some direction. Now, as all musical and spoken sounds are based upon the curve, it would follow logically that an ear which was angular or pointed in its outline would not receive musical or spoken sounds with the same degree of accuracy as those ears that are normally formed; this we find upon observation to be the case, for those with abnormal forms of the external ear are not so apt in the art of music nor as good linguists as those whose ears are more normal in form. This peculiarity has been noticed by Willis. I have no doubt that a comparison of the inner structure of the ear in those whose outer ear is defective in form would be found as deficient as the outer ear. Of course this could be ascertained only by dissections. As the ear is exclusively for the function of hearing, we must therefore conclude that Nature has provided it with the mechanism necessary to judge of the pitch, intensity, and quality of musical and other sounds. That this is really the case has been proven by the investigations of anatomists, who have localized the several parts of the internal ear engaged in the judgment of the

several conditions of sound. Scientific physiognomy teaches the use of the different parts of the external ear in receiving sound, and at the same time interprets the meaning of its several forms, sizes, textures, colors, etc. For much useful information on the subject of spoken and musical sounds the reader is referred to the faculty of "Music" in the preceding chapter.

To the observant physiognomist the ear reveals a world of meaning. If he understand the basic laws of Form, the shape of the ear alone will unfold to him a marvelous amount of knowledge; after he has observed this most striking detail, the size, texture, color, and elaboration of the convolutions will arrest his attention. After these have been scrutinized, the manner in which it is placed upon the head will certainly interest him, and as he reflects that this is the organ for the *reception of sound*, vocal as well as other sounds, he will naturally give great attention to the accompanying mouth, lips, nose, and cheeks, as these are the features which assist in the *production* of both spoken and musical sounds.

The basic laws of Form tell us that curvilinear form denotes the capacity for motion, and as sound is a mode of motion, and as it is transmitted in wave-like forms through the air to the ear,—itself a curved organ, both within and without,—we must hence deduce the fact that the shape of the ear is indicative of the capacity of the individual to receive and judge of sounds. The phrenological idea that the "organ" of tune is exhibited by a *bony* protuberance on the forehead is evidently fallacious, as all parts of the organism engaged in the production and reception of tone or sound are in the *muscular* or *cartilaginous* system; hence a *bony* elevation on the forehead could not reveal musical capacity. This phrenological mistake arose probably from the fact that most musical people possess *round bones* as well as round muscles, hence this part of the forehead in such subjects would naturally exhibit a rounded contour, and, as this was so general in this class of persons, the phrenologists fell into the mistake of *localizing* the *cerebral* sign of "Tune" at this point. Again, the most musical people possess a great share of Constructiveness, and, as this faculty inheres in the muscular system, it naturally curves the lateral portions of the forehead where the "organ" of Constructiveness is said by phrenologists to be situated. Their system demanded that the brain should carry the entire burden of mind, therefore they refrained from seeking for signs of character elsewhere; hence the phrenological "organ" for Tune is said by Fowler to be

> Very difficult to find except in the heads of children, in whom it is generally larger than in adults and easily and accurately observable. Tune

is located in the lateral and lower part of the forehead, over Calculation externally from Time, and three-fourths of an inch above and slightly external to Order, and when large fills out the lower frontal portions of the temples. Still, being located in a kind of a corner where large perceptions crowd it outwardly, large Constructiveness forward, large Ideality and Mirthfulness downward, and the temporal muscle passing over it, its position varies somewhat, which renders observation more difficult except in the heads of children.*

The so-called "organ of Tune," which phrenology declares to be brain-substance elevated so as to form a bump or protuberance upon the outer surface of the forehead, is caused by *rounded* bones and *rounded* muscles, which are characteristic of many great musicians and composers, and, as the foreheads of children are more rounded than later in life, the mistake of saying that this "organ" could be easier discerned in children than in adults was made by Mr. Fowler.

Physiognomy is not confined to so small and uncertain a space for signs of the musical faculty, but points to the form of *every feature* of the face, and shows that broad and rounded ears, with a large and rounded lobe, are the unfailing signs of musical or linguistic capacity, and it also proves that a round head, round body, rounding limbs and fingers, as well as arched eyebrows, round nose, oval chin, and curved jaws, are also signs of the musical mind. With all these signs to assist us in finding the signs of musical taste or talent, the physiognomist is not driven to the necessity of searching for the one little, uncertain-to-find "organ" which is located *sometimes* "three-fourths of an inch above and slightly external to Order."

THE SIGNIFICATIONS OF THE FORMS OF THE EAR.

The form of the ear is much more perfectly rounded in those in whom the muscular and vegetative systems are supreme than in those who are dominated by the osseous system, for the reason that muscle and fat always tend to curvilinear formations; hence, when we observe the very rounded ear we recognize a character in which motion as well as emotion is most decided. The curvilinear form of the ear gives us the assurance of the presence of art capacities of some sort and of domestic tastes, of Amativeness, Love of Young, Mirthfulness, and other primitive traits, and also shows (if it be of fine texture) a sympathetic and magnetic nature.

In those in whom the osseous is the dominant or one of the dominant systems, the ear (if it be rounding) may have great capacity for the *judgment* of musical and other sounds, yet it is

* Human Science, O. S. Fowler, p. 1072.

never accompanied with a bodily mechanism so well suited to singing or playing music as where the muscles dominate the bones. It never discloses as much *talent* for music as the muscular structure.

The ears of osseous individuals are never so round as are those of muscular subjects. They incline to length and relative narrowness.

The ear of each singer and orator is different from that of every other one; moreover, the ears on the two sides of the head are, in most subjects, as diverse in form, size, and elaboration as though they belonged to two entirely different characters.

Anthropologists have formulated a law to the effect that the right side of the body represents the male ancestry and the left side the female ancestral types. If this be a law, then the right ear of musical subjects would indicate that the musical inheritance came from the father or his family, and the left ear would reveal the musical capacities of the mother or her family. My own observations corroborate this proposition. By comparison of the bilateral symmetry of the face and ears students will find a large amount of ancestral and hereditary knowledge of the subjects under observation. Other physiognomists have noted this resemblance of the ears to parental and ancestral types.

In order to comprehend the full significance of the ear we must apply to it the basic laws of Form, just as we do to all other features. This necessitates an analysis of the material of which it is composed, as well as observation of its form, size, color, texture, and position. An organ which presents such elaborate structure without and such complex mechanism within must surely be of great use and carry with it *many* meanings, notwithstanding the opinions to the contrary expressed by several eminent naturalists, viz., that it is a rudimentary and an unnecessary appendage.

The ancient Greek sculptors took great pains in the molding of the ears of their statues; the perfect *individuality* of these ears, as I have observed in copies of their greatest masterpieces, is in harmony with the rest of the body upon which they are placed; and when they modeled the bust of a real character the ears were marvels of elaboration, and quite homogeneous with the head upon which they were carved. Modern sculptors and painters rarely give such precise treatment to the ears of the subjects which they imitate or create.

The ears of the highest types of the Caucasian race, compared to those of the lowest races, present many striking differences. These organs, upon close scrutiny, will be found to present as many

differences and peculiarities of structure as the facial features of these several races.

There are very many grades of the size of the ear, running from the small, delicate pink ear, resembling a sea-shell, to the great, coarse, unelaborate, flapping, pig-like ear of the coarse peasant.

Very large ears belong to persons of large frame, and if their bodies are round as well as tall the ear will denote the presence of the musical taste as well as of commercial capacity. Where the subject is tall and square-built and the ear very large, the commercial capacity will lead the musical.

The ears of all the great financiers and successful merchants, railroad magnates, etc., are very large, being both long and broad. When such ears are found upon large men who possess a good quality, they denote a spirit of comprehensive commercialism, a talent for money-making, or if—as in the case of Jay Gould—the body is relatively small, and the organism of fine quality, with a great deal of color, the commercial instinct is powerful. His ears are quite large, as are all of the so-called "Wall-Street magnates." Look, for example, at the ears of W. H. Vanderbilt, Russel Sage, and Sidney Dillon; also at those of Matthew Vassar. In all of these men many other signs of the faculty of Acquisitiveness are present, as, for example, wide jaws, broad head, capacious chest, and large abdomen. The ears are, of course, on the same large scale, thus proving the *harmony* of structure,—a circumstance of much advantage to the physiognomist in discerning signs of character.

Physiognomists who are concerned with the meanings of external features have attended more closely to the use and significance of the ear, among them Professor Willis and Dr. Cross. The latter had very extended views of the use of the external ear to man, both as to its importance as an assistant to accurate and keen audition, and as an indicator of the character and condition of the internal aural mechanism. Says Dr. Cross:—

> This curious structure may, perhaps, become a rich mine of posthumous physiognomy, by which the hidden treasures of the mind may be brought to view, when the ear shall be deaf to its own praise.

This quotation is pregnant with meaning. The ear which is round and thin is more sensitive to sound than one which is round and thick. The ears of most eminent singers and orators disclose a fine texture, showing that the skin is fine and thin; hence, sensitiveness to sound is present. The ears of thorough-bred

* An Attempt to Establish Physiognomy on Scientific Principles, J. Cross, M.D., p. 235.

horses are so finely organized that one may clearly perceive the delicate tracery of the veins through the skin, while the ears of horses of common stock do not present this appearance.

THE POSITION OF THE EAR.

The manner in which the ear is placed upon the head varies greatly in individuals. In muscular people the top of the ear is not usually as high above the outer angle of the eye as with bony people; and those with the vegetative system dominant have the ear still lower than the muscular individual.

Again, some ears are flat and placed closely against the side of the head, while others stand out slightly, and others still project far out, as is observed in many musicians, singers, physicians, and mechanicians.

In some musical subjects the larger part of the ear rises above the concha, or bell; in others it is about evenly divided, as, for example, in singers the lobe is long, and this brings the bell of the ear about midway of the entire organ.

The ear, by its position, bears relation to the general structure of the head and body, and the ear always shows individual peculiarities that are in harmony with the structure of the subject, both as regards size, form, texture, and color.

DEFECTIVE POSITIONS.

Ears which set back flat against the sides of the head are not so well adapted to catching sound, either musical or spoken, as those which stand well out and forward. The ears of good musicians and singers set well out and forward. For illustration of this look at the ears of Josef Hoffman, violinist; R. Joseffy, pianist; Theodore Thomas, orchestral conductor; P. S. Gilmore, conductor; Carl Rosa, violinist; Albani and Valleria, singers; also all musicians. Professor Willis has noted this peculiarity.

The ears of all the famous orators stand well out, as do those of the best elocutionists. Nature places the ears in a position to *assist* the vocal powers. Those who fail to catch easily the pronunciation of new or difficult words or sounds have not as great facility and flexibility of the vocal organs as have those who are better endowed in this respect. The ear and voice are nearly always in accord, although it sometimes occurs that one possesses a rich quality of voice with but little ear to guide it; but this discrepancy can be often overcome by training. Some persons have such difficulty in pronouncing long words, or words which they have not been familiar with, that they adopt all sorts of expedients to avoid the use of them. One gentleman told me that after hearing

the word "bonanza" pronounced for two years he felt a hesitancy in attempting its pronunciation. There are as great variations and differences in the speaking and singing capacity as there are in the features of individuals. This would arise from differences of structure, both of the vocal organs and of the ear. The physiognomic differences of the mouth, lips, cheeks, ear, and nose, prove this to be the case, for it is to these features we must look for our knowledge of individual powers in the direction of vocality.

Physicians and surgeons require a very delicate ear for sound in order to detect, in the beating of the heart and the movements of the lungs, any abnormal variations in these organs. Linguists must also possess a keen ear for sound, else they will fail to detect the delicate shades of language so essential to perfect pronunciation. Telegraphers, electricians, and other mechanicians require most accurate hearing, and those who have the best hearing are the best adapted to these professions. Many persons hear what is said, but are not strongly impressed with its true import, just as some persons look at objects and fail to grasp all the details of form, size, color, quality, etc. The more perfectly the ear and eye are organized, the more accurate will be their operation.

Parents often fasten back against the head the projecting ears of their children; this is an *unwarranted* interference with Nature's ordinance; this thoughtless act deprives the child of much of its aural power, and such foolish action may lead to such impairment of the sense of hearing as to place the child's life in jeopardy, or unfit him for many trades and professions which require very acute hearing. It would be far more sensible on the part of parents to set the ears of the child *outward and forward* slightly, for this is the method pursued by aged people to assist them in hearing, after their natural hearing has failed.

THE EXTERNAL AND INTERNAL EAR.

The anatomical components of both the internal and external ears are mainly of the softer tissues, although bone enters slightly into the structure of the former. The internal ear is of a most complex structure, and its mechanism very curious and elaborate. Like the outer ear, it is divided into *three* parts, viz., the tube, termed the external auditory meatus, the tympanic membrane, and the labyrinth, or internal ear. Fig. 296 shows the several parts of the *internal* mechanism, also the nature of the several constituent tissues. The amputation of the entire auricle, or ear-shell, would not destroy the power for audition, yet it would materially impair its *keenness*, as any one may prove by simply holding the ear-shell well back against the head while speaking, or while

another is speaking, or by endeavoring to catch distant sounds. In the face of this easily-acquired knowledge, I am surprised at the declarations of both Darwin and Haeckel to the effect that "amputation of the external ear would not at all affect the hearing."

I must beg leave to differ with both these eminent men, whose writings have been in the main highly beneficial to me. It only

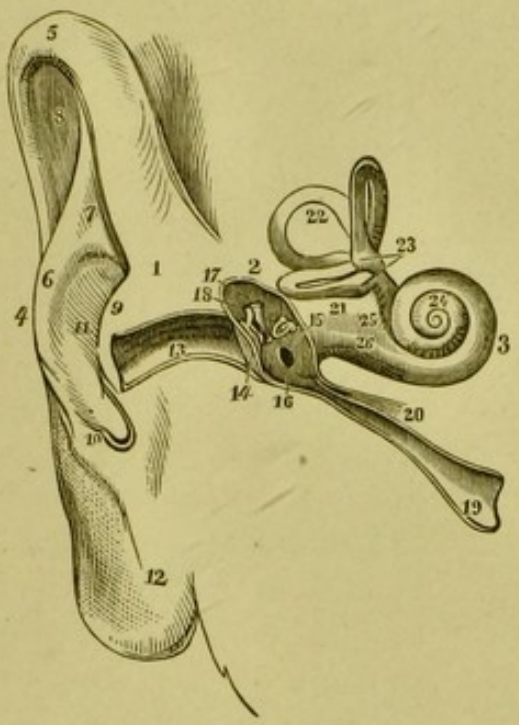


FIG. 296.—EXTERNAL AND INTERNAL EAR.

1. The external ear, including the cartilages and meatus externus.
2. The middle ear, consisting of the middle ear and its appendages.
3. The internal ear, or the labyrinth.
4. The pinna.
5. The helix.
6. The antihelix.
7. The fossa navicularis.
8. The fossa innominata.
9. The tragus.
10. The antitragus.
11. The concha.
12. The lobe.
13. The meatus auditorius externus.
14. The tympanic membrane.
15. The promontory.
16. The foramen rotundum.
17. The posterior wall of the tympanum.
18. The ossicula auditus, four small bones within the cavity of the tympanum, namely, the incus, malleus, or orbiculare, and the stapes.
19. The Eustachian tube.
20. A narrow canal, containing the tensor tympani muscle.
21. The vestibule.
22. The three semicircular canals, viz., the superior, posterior, and horizontal.
23. The ampullæ.
24. The cochlea.
25. The prominence caused by the scala vestibuli.
26. The scala tympani.

shows that to this circumstance they had not given the attention necessary to prove the truth of their statement. Says Professor Haeckel:—

> Men with the ears cut off can hear as well as they did before. The conveyance of sound is not affected by the loss of the ear-shell.

This statement can be disproved by holding the ears flat against the head while conversing.

THE THREE DIVISIONS OF THE EAR.

Physiognomically I divide the ear into three parts: (1) the lobule; (2) the concha, or bell; (3) the helix, or rounded top. Each of these divisions represents one of the three primitive systems of the organism, viz., the Vegetative, the Thoracic, and the Muscular. The *lower third* is indicative of, and belongs to, and reveals the development of the *Vegetative system;* the *middle portion*, or bell, to the *Thoracic system;* and the *rounded upper portion* to the *Muscular system.* The convolutions are indicative of general mental development and refinement. The proof of the correctness of the character of these three divisions is found in the correspondence which each of these parts of the ear bears to the related systems of the body. The pendent lobule at the lower extremity of the ear is most developed in those singers who possess the largest amount of the vegetative system, as is observed in the ears of Madame Parepa Rosa, Miss Annie Louise Cary, Albani, Mad. Sainton-Dolby, Mdlle. Aimèè, and Marie Geistinger, while it is much smaller in size in those in whom the vegetative system is less developed. The middle portion of the ear, which includes the concha, or bell, is broadest as well as deepest in those who possess the best thoracic development, while the upper portion is best developed as to roundness and width where the *round* muscles are best defined. The *convolutions* of the ear are more complex, more numerous, and more delicately traced when the character is well developed in directions other than vocal or musical; hence, it follows that an ear well developed in all its departments is indicative of fine character of several sorts. The *depth* of the *concha*, or bell of the ear, is a great assistant in judging of the quality of musical or vocal tones. When this is superficial, the hearing of such tones is not as distinct and the judgment of sounds of all sorts is not as accurate as when it presents great depth and width.

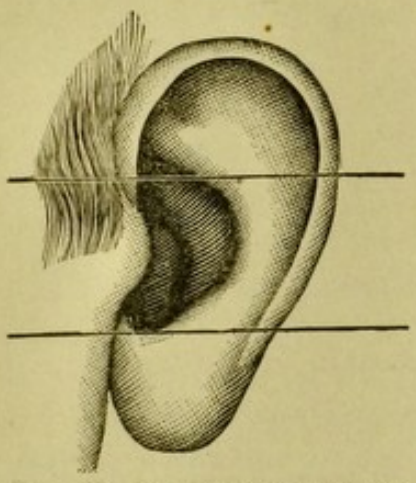


FIG. 297.—THREE DIVISIONS OF THE EAR.

The concha, or bell, should present vertical depth, horizontal width, and perpendicular breadth to have it of the highest efficiency in judging of musical sounds. The ear-bell of Master Solomon (Fig. 304) is one of the best illustrations of musical judgment that I have ever seen. This lad is a phenomenal singer, a composer, and an excellent instrumentalist as well. Nature never

created such an ear without associating with it a *suitable vocal apparatus* for the expression of musical sounds. The ears of many great orators and actors exhibit a bell both broad and deep; look, for example, at the ears of Robert G. Ingersoll, Wendell Phillips, Gambetta, Henry Irving, Theodore Thomas, Edwin Booth, and Mdlle. Modjeska, and they will be found to exhibit a large development of the concha, as well as of other parts of the ear essential to the judgment of vocal sounds. The width and roundness of the upper part of the ear are also great aids in judging of musical sounds, for when this portion is widely expanded and well set out from the head, and well rounded, and the helix well curved inward, forming an unbroken rim, the judgment of musical and spoken sounds is of the best, provided that the quality is fine (Willis). The size and thickness of the lobe seem not to have any special influence upon sound. I regard it as being simply the indicator of the presence of a large degree of the vegetative system, and thus largely developed in accordance with that law of homogeneity which makes *every organ, every part, and every feature indicative in some degree of the whole system.* The external ear is composed of nerves, veins, muscle, cartilage, and adipose tissue, and the lobule, "which is composed mainly of the soft fold of integument, contains only cellular and adipose tissue, possesses but little organization." *

The *anatomical structure* thus shows the lobule to be the indicator of the vegetative system. The presence of a large degree of this system, combined with a fine quality of muscle, in a singer gives softness, mellowness, and a sympathetic magnetism to the tones of the voice, as the musical performances of the beforementioned singers and actors will testify.

THE COLOR OF THE EAR.

Very great differences of color of the ear are observed. Some ears are bright red, and the blood seems ready to burst through; while others are white and transparent and almost bloodless; others, again, are of a delicate pinkish hue.

All of these several grades of color present distinct meanings. The very red shows an active degree of the aural capacity; the very white and thin indicate that the hearing is not as powerful nor as acute in its quality as the ear that is well filled with blood, for a fine circulation of normal-colored blood in any part denotes activity of that part, while a bloodless condition betokens an enfeebled state. The subject of color, in connection with the ear,

* Practical Anatomy, R. Harrison, M.D., p. 539.

must be considered as having the same relation to this feature as to all others—giving strength, tone, and beauty.

THE FORMS OF THE EAR.

The general forms of the ear disclose not only the aural, musical, and linguistic capacities, but they also point to other characteristics.

The ear may be divided into several classes; of these the musical, the unmusical, the linguistic, the oratorical, the commercial, the refined, the coarse or unrefined, the timid, and the courageous are the principal types. The ears of these several classes are easily known after their peculiarities of structure are once observed.

THE MUSICAL EAR.

This ear has been well described in the preceding chapter, in the section devoted to the faculty of "Music." It has been described by several physiognomists. Lavater gives the least precise description of the ear, although he speaks of the "musical ear," while Willis describes its peculiarities as follows:—

> The rounded, well-formed ear, that sets forward and outward, instead of being flat on the side of the head, is a pretty good sign of musical taste if not of talent. The peculiarity of the musical ear is the thin rim which is hollowed out at the edge like the rim of a saucer.*

The rim of the ear of musicians is a remarkable object; if the student will observe any number of them he will find that all have this "rim" perfect in its outline around the top, and continuing in an unbroken line to the lobe, or very near to it. The rounding form and unbroken rim are not all the factors required in order to constitute a musical ear; there must be *quality* of a high order, the skin must be *thin and fine*, and the *bell deep and broad*, and possess great *vertical depth*. Delicacy of structure is another supreme factor in a musical ear, for a thin muscular ear is more sensitive than a thick one. Says Dr. Cross:—

> The more the external ear is cartilaginous and elastic, the better are the auditory rays conducted to the tympanum and the keener are the sentimental feelings.

It is not at all essential that there should be very great elaboration of the fossa innominata and the fossa navicularis in order to constitute a good musical ear. The elaboration or fluting of this part of the ear denotes a *general* development of the mind, and is not essential to the reception of musical

* Illustrated Physiognomy, E. A. Willis, p. 27.

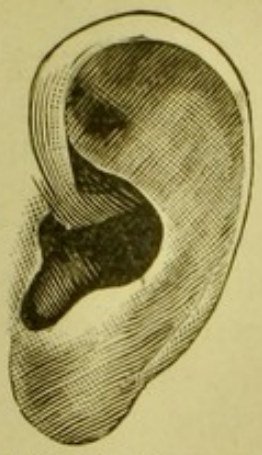


FIG. 298.—PATTI.



FIG. 299.—GERSTER.



FIG. 300.—LUCCA.



FIG. 301.—SEMBRICK.



FIG. 302.—CAPOUL.



FIG. 303.—ANNIE LOUISE CARY.



FIG. 304.—MASTER SOLOMON.



FIG. 305.—PASSMORE.



FIG. 306.—MASTER GIBSON.



FIG. 307.—CAMPANINI.

SEVERAL FORMS OF MUSICAL EARS.

tone and do not assist it, as is proven by the ear of Patti, which presents a perfectly unelaborate surface of the fossæ (Fig. 298). Patti's ear shows that she is more musical than mental, and this accounts for her phenomenal voice and its long-continued power, no other singer having ever retained her wonderful vocal powers to such advanced age. To sum up the peculiarities of a musical ear we find that rounding form, fine quality, a deep bell, and a perfectly formed rim are its essential concomitants, and to this may be added the fact that the ears of all active singers and musicians exhibit a good pink or red color, thus showing a good distribution of blood to the ear; this gives vigor to this organ and thus assists its aural capacity.

THE UNMUSICAL EAR.

According to Professor Willis this ear is "pointed or angular in its outline," and, as musical sounds are curvilinear in their passage through the air, we can readily see why an angular ear would not be the best adapted to the reception of curvilinear sounds; they would necessarily become broken into *noises* upon striking the jagged points or angles of such an ear. This explains why those with unmusical ears often remark that music is nothing but "noise"; to them it is really a mass of confused, unmelodious sound, for it is logical to infer that the *internal* mechanism of the ear of those who exhibit angular ears is as defective in structure as the *external physiognomical indicator*—the *external* ear. By the same process of reasoning we determine that those animals whose ears are long and pointed do not distinguish nor enjoy musical sounds as well as those whose ears are rounding. Experiments have been made by investigators upon animals in the Zoological Gardens of London in regard to their capacity for discriminating musical sounds. It was found that the zebra and other animals with pointed ears disliked the playing of musical instruments, while the apes and certain of the round-eared carnivora enjoyed the music, which they showed by lying down quietly and listening when it was played, and by becoming uneasy and restless when it ceased.

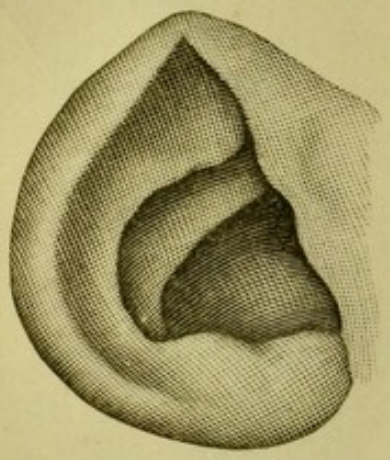


FIG. 308.—UNMUSICAL EAR.

I have seen several singing mice, and these creatures possess a prettily rounded ear. On several occasions when playing the violin I received a visit from a wee specimen of the mouse family

that remained as long as I played and departed when the music ceased.

Some birds have round ear-openings and round throats and heads, and the circular formation of these organs is highly conducive to the giving forth and reception of musical tones; to prove that their judgment of musical sounds is well-nigh perfect one has only to chirp musically to a canary and see how quickly it adjusts its voice to the pitch given, while the mocking-bird imitates the tone, pitch, melody, and intensity of the air rendered by a human voice in its presence. All song-birds possess round and short beaks. See, for example, the linnet, bull-finch, magpie, thrush, sky-lark, and mino bird; and for speech, the raven and parrot. The faculty of Time is well developed in horses and other animals, which can be easily trained to keep time in music by marching and evolutions.

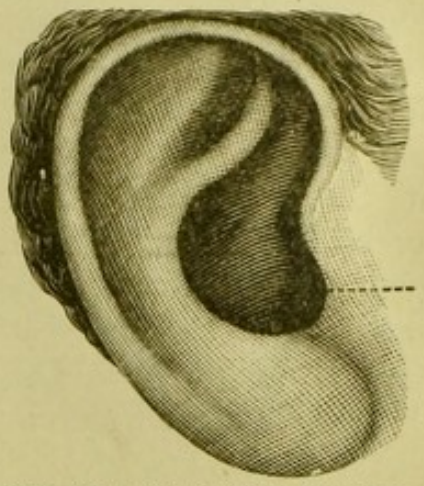


FIG. 309.—ORATORICAL EAR. (GAMBETTA.)

THE ORATORICAL EAR.

The ears of all great orators and speakers are rounding in the outline, and have the bell deep and broad and wide perpendicularly. See the ears of Henry Clay, Edward Everett, Gambetta, and Rev. John Parrish Thompson.



FIG. 310.—COMMERCIAL EAR. (ROSWELL P. FLOWER.)

THE COMMERCIAL EAR.

The ears of this class are long and broad, and in some instances appear elephantine in form and flexibility.

They are the largest of all classes of ears. As a rule they are associated with broad heads, large noses, wide jaws, and broad shoulders. Many commercial ears are found to be musical as well, for the round, musical body is one of the indications of commercial capacity. In these subjects the ear has all the characteristics of the musical ear and possesses large size, thus showing the commercial tendency of its possessor. For specimens of the commercial ear examine the ears of all bankers, financiers, and successful merchants, among whom I may mention W. H. Vanderbilt, Jay Gould, William E. Dodge, Roswell P. Flower, Henry Villard, and Perier, French financier.

GENEROUS VERSUS STINGY EARS.

There is an opinion current that the ear by its size denotes the presence either of generosity or parsimony.

It is held that small ears are stingy and large ears are indicative of generous instincts. I regard these two ideas as *equally erroneous.* I have known many small-eared persons to be very sympathetic, and also many large-eared persons to be very generous, and I have seen many persons with both large and small ears to be penurious and pinching. I should not rely upon the form or size of the ear to determine the presence of either of these faculties.

THE COURAGEOUS EAR.

The ear which is large and stands well out from the head, and is possessed of a good red color, denotes physical courage. It is usually associated with good muscular form.

THE TIMID EAR.

The greatest excess of timidity is found with those who have narrow, long, thin, bloodless ears, set closely against the side of the head. This type of ear is associated with delicately-formed individuals with long, thin faces, generally of a nervous or consumptive diathesis. This type of ear is similar in form to the ears of those timid animals, the hare and deer, and reveals some similar characteristics, viz., timidity and delicacy of structure.

THE LINGUISTIC EAR.

The ear of all who excel in verbal language is similar in form, quality, and color to the oratorical and musical ears, for the same

powers which enables one to receive and reproduce verbal language are just those which are required to imitate musical tones. Speech is musical to a degree; not as rhythmical as music, but certainly civilized language in its intonations, inflections, pauses, pitch, force, and intensity is a species of music, and those with good musical ears acquire foreign languages with great readiness and use them with facility. See, for example, the ears of all good linguists and public speakers.

THE REFINED EAR.

This type of ear may be large and well-shaped or small and well-shaped. The *texture* is the most important physiognomical factor in the construction of this ear. If the skin be fine and clear and the ear thin, the color white, pink, or red, and exhibiting a number of flutings or convolutions, the character will show delicacy of feeling and refinement of manner.

THE UNREFINED EAR.

The form of this ear may be large and thick or small and thick. The large ear of this class is coarse in texture, of a thick, muddy complexion, broad and flapping in appearance, and destitute of those delicate convolutions which distinguish the ear of refinement. The small ear of this class is conspicuous by the thickness of the shell and the lack of fine elaborate structure; the rim is thick and uneven, and the shell destitute of clear and delicate coloring and vein tracery.

THE ABNORMAL EAR.

There are many malformations of the external ear; also many departures from a normal standard, such as pointed, angular, and chaotic or irregular shapes. It is logical to infer that the internal structure bears some relation to the outer, for I hold that all external forms are indicative of internal structure, and reveal power or weakness. The ear must be understood as bearing relation to the vocal organs and oral formation. I base this idea upon the law of homogeneity.

The ears of congenital idiots are often as malformed as their other features; so also the features of congenital criminals often present departures from the law of *perfect curvation*, and hence are of great physiognomic value, and are corroborative signs of character.

According to statistics there are more congenital defects of the aural apparatus in the male than in the female.

A larger percentage of inherited defects of the organs of sight and speech in the masculine sex is noted than in the female

sex in medical works and reports of institutions for the defective classes.

There is probably less change in the form of the ears than in that of any facial feature; hence, the ear as a means of personal identification would be far more decisive than the face, which undergoes many changes within a few years even. The Chinese use, as a means of identification, an imprint of the *thumb*. The ear, being less liable to injury, is better adapted for this purpose than any other single feature or member..

The Human Face.

THE LINES OF THE FACE.

Says Lavater: "There is nothing more indicative of character than lines, unless it be the absence of them." The lines of the face are distinct from the wrinkles in the countenance, from the fact that they are present at birth, or soon after, while wrinkles do not make their appearance until after thought and emotion have left their impress upon the countenance. One of the principal lines, and one which is exhibited in every face, is that which leads from the nostrils downward to the vicinity of the corners of the mouth. This line is highly indicative of character, and reveals by its length, direction, and vertical depth many important characteristics. As mountains by their height create valleys, so the height and fullness of the upper cheek (where are located the signs of Friendship) make this line conspicuous by its depth, for, the fuller this part of the cheek, the more marked will this line appear.

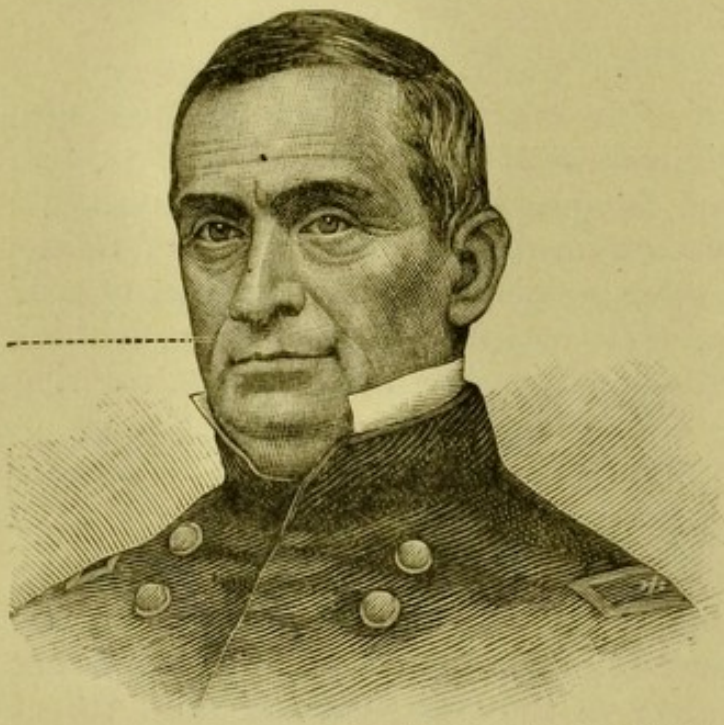


FIG. 311.—NORMAL DIRECTION OF PRIMITIVE LINE. (GENERAL ANDERSON.)

Its depth and width, then, denote Friendship—a secondary or accessory sign; if exceedingly deep it is caused by fat cheeks, hence denotes a great eater; if it assume a certain direction it will add to the beauty of the face by interblending with the wrinkles

and dimples, which are the signs of Mirthfulness, and which are situated on the cheek at the corners of the mouth. Lavater lays great stress upon the *direction* of this line, and I am prepared from experience to indorse fully all that he says of this peculiarity of the countenance. Of this he observes:—

> The trait or lineament extending from the sides of the nostrils toward the end of the nose is one of the most significant; on its obliquity, its length, its proximity to or distance from the mouth, depends the evidence of the whole character.
>
> If it is curved without gradation or undulation it is a certain sign of stupidity; it is the same when its extremity joins, without an interval, to the corners of the lips; the same when it is a good distance from the corners of the lips.*

Each of these appearances denotes diversity of character—all of them greatly defective; when the curve is without undulations there is a certain degree of dullness and want of apprehension; when the line joins the corners of the mouth without an interval, a great fund of foolish mirth is present; when the line ends at a great distance from the corners of the mouth, absence of reasoning power and common sense are indicated; when normal this line terminates just outwardly from the signs of Mirthfulness. This is a primitive line, and is situated in the vegetative division of the face. It appears in childhood, and by its vertical depth marks the strength of the faculty of Friendship, the sign for which is situated in the upper cheek; it also indicates by its depth the strength of the intestinal system, as well as the function of digestion.

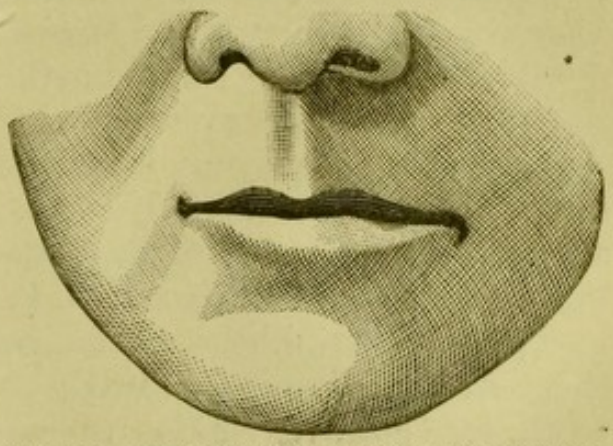


FIG. 312.—PRIMITIVE LINE IN UPPER LIP. (WM. ELLERY CHANNING.)

The next most prominent line of the face is the little line running perpendicularly down the centre of the upper lip, from the septum of the nose to the sign for Amativeness in the centre of the upper lip. This line denotes modesty; the deeper this line is vertically, the stronger does this trait manifest itself; this line is also a primitive feature, and is seen (when present at all) at birth or soon after.

There is a delicately-traced line or depression just opposite this, observed in some subjects in the *lower lip*, dividing it in half; this is a sign of wit, and shows often in early childhood. (See

* Lavater's Essays, page 474.

Fig. 164.) The lower lip of Prince Gortchakoff, Emile de Giradin, Jules Favre, Dollie Madison, Joseph Jefferson, Voltaire, and Phœbe Cary present varying degrees of this line or depression. These are all congenital lines of the face, and, being primitive, are highly significant of character. Lavater observes, of the lines of the face, that

> Nature forms neither contours nor lines whose progression is not possible, coherent, natural, and homogeneous.*

THE WRINKLES OF THE FACE.

There are few persons born with wrinkles upon the face. When this phenomenon is observed its cause is found usually in some accidental modifications during prenatal life, unless the wrinkles appear upon the forehead and remain; in this case they denote inherited peculiarities of some sort, either of weakness or of strength, depending upon their depth and direction. As a rule, young persons never exhibit wrinkles upon any part of the countenance, unless they are possessed of much capacity for emotion or for reflection. Wrinkles make their appearance first usually at the corners of the eyes outwardly, at the signs for Mirth and Agreeability. It is only later in life, after thought and experience have ripened the mental and social powers, that other wrinkles appear. Writers on art have done much to mislead the public upon the subject of wrinkles, they having always advanced the idea that *all* wrinkles were indicative of old or advanced age, and, therefore, not signs of beauty. Nothing can be farther from the truth, for certain wrinkles reveal many beauties of mind and disposition. I hold that their forms are indications of beauty quite as much as a regular outline of the nose or an oval form of the cheek, while certain others disclose malicious, dishonest, knavish propensities and practices.

It is true it takes *time* to form wrinkles, whether good or bad, but youth, it should be understood, is not the only season of beauty; a scientific knowledge of the face will *enlarge* our conceptions as to what constitutes true beauty, and will not contract our understanding of it to the shortest and most immature portion of life. On the contrary, it will teach us that as experience, learning, and the exercise of the most beautiful traits of character set these signs of their action in the face in the form of wrinkles, these are indications of greater beauty than the smooth and comparatively expressionless cheek of infancy or youth.

The smooth, shining, unwrinkled face of the adult resembles

* Lavater on Physiognomy, vol. ii, p. 238.

that of an infant, and often is accompanied by relatively infantile characteristics; for thought and feeling will leave their impress upon the visage of every one who possesses these qualities. An unwrinkled adult face is indicative of absence of reflection, intelligence, or feeling. Now, a smooth skin may compensate vain persons for absence of all these fine powers, but it is a very poor substitute later in life for all these qualities which make the character beautiful and the mind intelligent. Without thought or reflection, and when old age comes on, a smooth skin merely is a very poor compensation. When I observe a person past thirty years of age who has not formed some creditable wrinkles, I infer either a very shallow, selfish, unreasoning character, or a very deceptive, hypocritical one. There is an old saying that "gray hairs are honorable;" we might say with more accuracy that wrinkles are honorable, provided they are in the right place and are the shape which denotes goodness or talent.

A smooth, shining, round face, without any wrinkles, belongs to a character suave, plausible, flattering, dishonest, and unprincipled; one who is "all things to all men." Such characters make good speculators and politicians, and are well calculated to get a living without working for it.

As a general rule, deep wrinkles indicate a mind that has been immersed in profound study.

Those persons with the thoracic system dominant do not exhibit as many nor as deep wrinkles as those with other formations, for, although they may have good and pure tastes and literary aptitudes, yet they are not as profound scholars as are some, nor are their emotions as lasting; the buoyancy of their spirits prevents long-continued mental labor and long-sustained emotion, hence they retain in age a more youthful manner and a smoother face than those with other symptoms dominant.

Each feature has its own peculiar wrinkles; not only so, but each of the five systems of functions produces characteristic wrinkles.

The dominance of muscle causes one sort, the dominance of fat another, the supremacy of bone yet another variety; while round bones cause wrinkles to assume a form quite different from those produced by square bones; hence it is evident that wrinkles are highly significant of character and wonderful adjuncts to a complete understanding of the human face.

The general laws of Form apply with as much force to the meaning of the forms of wrinkles as to the meaning of the forms of the bones or muscles. Straight and square wrinkles reveal straightforward and honorable qualities, while oblique wrinkles

belong to those persons who are the reverse of straight, square, and upright.

Curved wrinkles show emotion, for emotion is the handmaid of art, and emotions are exhibited in the face by movements of the muscles and by the fullness of the softer tissues. If the bones be straight and the action of the muscle normal, the true-curved wrinkle is the result; but if the underlying bones be crooked or uneven and the muscles not normally developed, the wrinkles will be oblique and will testify to oblique, sophistical, or dishonest propensities or mental weakness.

Wrinkles appear about the chin, the cheeks, the lips, the sides, and root of the nose, between the eyebrows, and upon the forehead. Each of these will be explained and figured.

WRINKLES IN THE CHIN.

The wrinkles which form under the chin are curved, and are sometimes observed in infants as well as in adults; they are caused by a deposition of adipose tissue, and show that good digestion

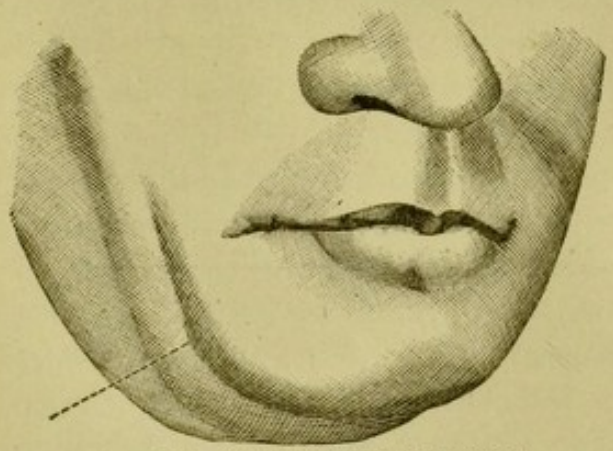


FIG. 313.—TALKER'S WRINKLE.

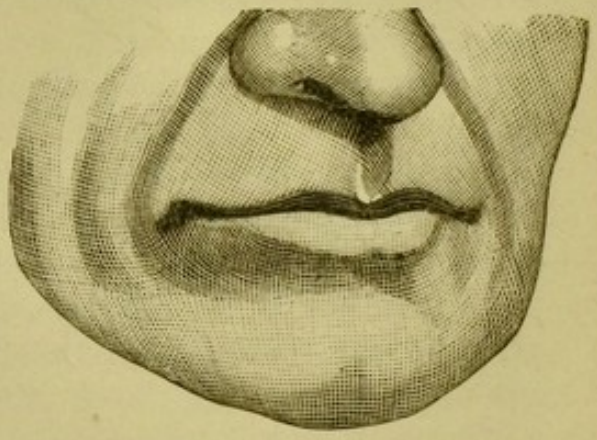


FIG. 314.—APPROBATIVE WRINKLE.

has done its work thoroughly. In some adults will be observed two and sometimes three of these wrinkles, and a roll of fat filling out the space between each. Where this peculiarity appears gluttony is usually the cause, or increasing age.

These wrinkles around the chin must not be confounded with the single, long-curved wrinkle which is exhibited by those who talk a good deal, often professionally.

The Talker's Wrinkle.—This wrinkle commences in or near the signs for Approbativeness in the lower cheek, and runs down under the chin from side to side. It is not so much curved as the former; it is observed in the faces of many priests, ministers, lawyers, actors, orators, auctioneers, gossips, and clowns. It is caused by using the muscles of this part of the face so constantly

that they form a permanent wrinkle, and are a sure indication of a constant talker, or one who uses the voice professionally in a loud tone; this wrinkle is usually deeper in the countenance of professional talkers than in the faces of those in private life; the reason of this is that the former classes use more *sonorous* tones than the latter. It is more frequently observed in those with the muscular system dominant.

In old age many deep wrinkles form upon the chin, but the aged appearance of the possessor indicates their origin; these are caused by the loss of the elasticity of the skin.

WRINKLES IN THE LOWER CHEEKS.

The Approbative Wrinkle.—There are two sorts of wrinkles that form in the lower cheeks; these are the approbative wrinkles and the mirthful wrinkles; the longer of these two is almost perpendicular, and is caused by the exercise of the faculty of Approbativeness, as in smiling. These wrinkles are often intersected with dimples, either round or cleft, and these are all reliable indices of that suave agreeability which is the distinguishing characteristic of an approbative disposition. These wrinkles form very early in life in those subjects who possess large agreeability, and are situated on the lower cheeks about one and a half inches outward from the mouth; these add greatly to the beauty of the cheek.

Mirthful Wrinkles.—These little tell-tales also form early in life, and are built up from their predecessors, the infantile dimples. The earliest pleasant emotion of the babe is shown by smiling and laughter, and these emotions oft-repeated leave an indelible record upon the cheeks near the corners of the mouth; these wrinkles are also mingled with dimples, according as the subject is fat or lean; they create beauty of expression, especially when in animated conversation and in smiling. It is a very grim, joyless face, indeed, that does not exhibit either mirthful or approbative wrinkles.

Of the indications of foolishness in wrinkles, Lavater says:—

> Whenever in laughter three parallel, circular lines are formed in the cheeks, there is a fund of folly in the character of the person.*

Clowns "make up" their cheeks to resemble this picture, and most of them have the "talker's wrinkle" very deep.

WRINKLES OF THE LOWER LIP.

Miserly Wrinkles.—The lower lip rarely exhibits wrinkles until late in life; these are caused by the natural shrinkage of the skin. If the lower lip discloses many perpendicular wrinkles early

* Lavater's Essays, p. 474.

in life, it is usually the token of a miserly disposition, or of ill health. In such characters there is deficient glandular development, hence the lower lip—the facial sign for that system—is correspondingly deficient.

If the lower lip becomes suddenly wrinkled after having been smooth and full, it has been caused by sickness; but other signs in the face will tell us whether this be the cause.

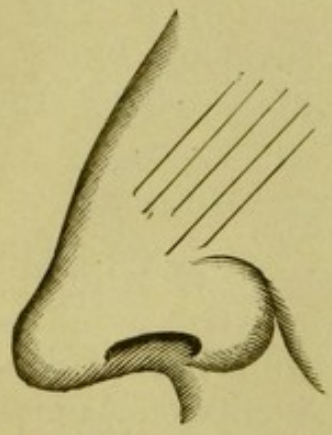


FIG. 315.—MALICIOUS WRINKLES. (After Lavater.)

There are other mirthful wrinkles in the face which will be described elsewhere.

Wrinkles in the Upper Lip.—Very rarely do we find wrinkles in the upper lip until late in life; some of these (nearly perpendicular) are caused by long-continued efforts in endeavoring to suppress the feelings and to refrain from expressing the thoughts, hence are secondary signs of Secretiveness. These occur in the *white portion* of the upper lip.

Amative Wrinkles.—In some subjects in whom the sign for Amativeness is uncommonly large, several *transverse wrinkles* across the red portion of the upper lip will be observed while in conversation or in laughing; they arise from an excessive development of the facial sign for Amativeness, and this is so large as to produce this horizontal wrinkling of the lip.



FIG. 316.—EXECUTIVE WRINKLES. (COUNT VON MOLTKE.)



FIG. 317.—CONSCIENTIOUS WRINKLES. (GENERAL JACKSON.)

Wrinkles on the Nose.—Firm, long noses belong to the most reliable moral characters, hence the play of the emotions is not so marked as in muscular characters. Accordingly, we rarely find wrinkles on the sides of the nose in the former; these are found in soft, cartilaginous noses.

Malicious or Knavish Wrinkles.—Where several fine, oblique wrinkles are observed upon the sides of the nose they indicate either a petty nature or a malicious or knavish disposition.

Executive Wrinkles.—The wrinkles lying horizontally across the nose at its root, upon the sign for Self-will, denote ability for command, and show that this faculty has been continuously exercised. They are seen in all great executive characters, such as generals, statesmen, superintendents, teachers, and all those who control and command others. (See Fig. 316.)

Conscientious Wrinkles.—There are several sorts of character indicated by the wrinkles which lie between the eyebrows, just above the root of the nose; these wrinkles are caused primarily by the shape of the underlying bone and muscle; secondly, by the exercise of various faculties. Square-boned persons form *one perpendicular wrinkle* between the eyebrows; this is, therefore, a secondary or accessory sign both of Order and Conscientiousness.

Mirthful Wrinkles.—Signs of the capacity for mirth, fun, wit, and dramatic imitation are found in many localities in the organism where the muscular is one of the supreme systems, hence we shall find two parallel wrinkles between the eyebrows in the faces of many actors, as well as in the countenances of writers for children, and sportive, fun-making characters generally. These wrinkles are caused usually by small, round bones allied to round muscles; they reveal the entire structure as well as the ruling propensities.



FIG. 318.—PERSEVERING WRINKLES. (WILLIAM CULLEN BRYANT.)

Persevering Wrinkles.—These wrinkles are usually found upon those who possess a good share of bone, along with good muscle, for bone gives steadfastness and muscle a love of motion. Persevering wrinkles are found between the eyebrows, and sometimes form three or four perpendicular lines at this locality. They disclose a plodding, persevering disposition, and those who possess them would seek to polish refined gold and paint the lily white in their efforts to finish up everything which they undertake.

The cat exhibits three deep wrinkles between the eyes, and all know its character for attentive watchfulness when in pursuit of prey. Lavater has noticed this characteristic in the cat, and styles it "watchful and rapacious."

WRINKLES ABOUT THE EYES.

Observing Wrinkles.—Wrinkles about the eyes are found above, below, and at the outer corners; each has a distinct meaning; those which run parallel on the upper eyelid appear late in life, and proceed from habits of industry and *patient observation;* these wrinkles *develop folds of flesh* as well as wrinkles, which in those who are first-class observers *fall over the eyeball at its outer angle.* There are two causes for this appearance: In the first place, the bone is one of the dominant systems; hence the eye-bone projects greatly beyond the eyeball, and this is a sign of an aptitude for protracted observation. Secondly, excessive use of the eye, as in patient observation, develops the skin and muscular tissue about these parts; this appearance is found in various grades in the faces of the following-named observers: Charles Darwin, Dr. Abernethy, Dr. John Draper, John Smeaton, James Watt, Rev.



FIG. 319.—MIRTHFUL WRINKLES.

Robert Collyer, and William Cullen Bryant. I am the more particular in giving the names of these well-known characters, for the reason that a certain physiognomist has given this appearance as one sign of a roguish disposition. This shows, I think, want of keen observation, extended generalization, and logical analysis, at least; such formation may have been found in the faces of rogues, but I have observed it in the countenance of scores of the most moral characters and persistent observers.

MIRTHFUL WRINKLES AT THE OUTER CORNERS OF THE EYES.

When a number of fine wrinkles are observed extending obliquely outward and downward from the outer angle of the eyes they are indubitable tokens of a mirthful disposition; they show that the subject has been for years very much engaged in laughing. These wrinkles are of great assistance to fortune-tellers, for by them they can tell what the individual has been doing, and they can also foretell what he will do to the end of the chapter, viz., "laugh and make merry."

WRINKLES UNDER THE EYES.

There is a great diversity of meaning in the wrinkles which form *under* the eyes. Those which are fine, and appear in a circular form under the eyes in adults advanced in life, are signs of having used the faculty of Language in public speaking, and this exercise causes the flesh below the eye to bulge out. Deeply-formed wrinkles under the eyes *in youth* are very strongly to be suspected as from dissipation and sensual indulgence.

WRINKLES ON THE FOREHEAD.

From the father of physiognomy, Lavater, we have many excellent observations upon the meaning of wrinkles in the forehead. From his work I extract the following:—

Oblique wrinkles in the forehead, especially when they are nearly parallel, or appear so, are certainly a sign of a poor, oblique, suspicious mind; parallel, regular, not too deep wrinkles, wrinkles of the forehead, or parallel interrupted are seldom found except in very intelligent, wise, rational, and justly-thinking persons. A forehead the upper part of which is intersected with conspicuous, circularly-arched wrinkles, while the lower half is smooth and wrinkled, is certainly dull, and almost incapable of any instruction. Wrinkles of the forehead which on the slightest motion of the skin sink deeply downward are much to be suspected of weakness; if the lines are stationary, deeply indented, and sink very deeply downward, entertain no doubt of weakness of mind or stupidity, combined with avarice and a lack of sensibility. But let it be remembered at the same time that genius most luxuriant in abilities usually has a line which curves remarkably downward in the middle under three almost horizontal parallel wrinkles. Perplexed, deeply-indented wrinkles of the forehead in opposition to each other are always a certain sign of a harsh, perplexed, and difficult-to-manage character.*

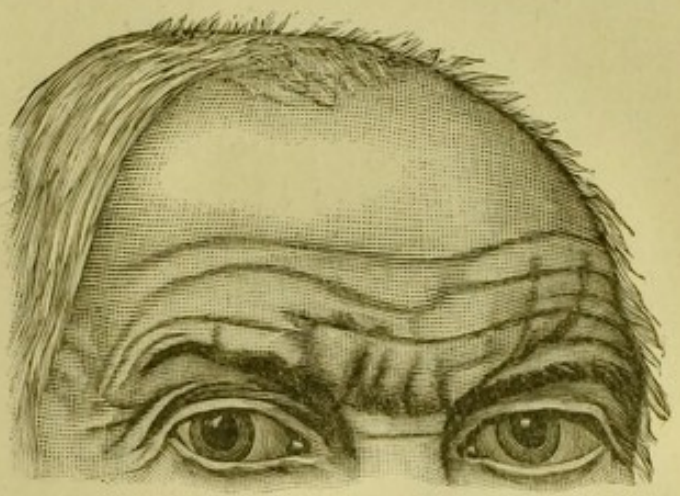


FIG. 320.—TALENTED WRINKLES.

The forms of the wrinkles on the forehead depend upon the form of the underlying bones and muscles. How significant of character, then, must each variety of wrinkle be to the student of physiognomy! A straight and square bone causes the formation of a different-shaped wrinkle from that produced by an unevenly-developed bone. An oblique wrinkle comes from a very differently shaped bone from that which is the product of a square and

* Lavater's Essays, p. 465

straight forehead. The wrinkles simply repeat the form of the underlying bone and muscle, and are therefore accessory signs of character.

WRINKLES OF THE NECK.

Deep, circular wrinkles around and under the chin are indications of too much fatty tissue; they belong to slow, easy-going people, not given to much thought, except when the brain is large and of high quality; in this case this combination creates character of great mental vigor, and capable of profound and protracted mental labor; it indicates a combination of the mental with the vegetative system. The portraits of Dumas, the novelist; Gibbon, the historian; Johnson, the philologist; Arkwright, the inventor, and many eminent jurists exhibit this combination.

Wrinkles running obliquely just behind the ear, on the neck, show that age is creeping on. Deep wrinkles at the sides and back of the neck, lying in every direction, are signs of advanced age, or exposure to the fierceness of the elements.

GENERAL WRINKLES.

Numerous and very fine wrinkles all over the face, lying in every direction, indicate a life passed in petty cares and petty savings; also, a querulous disposition. The same kind of wrinkles, when they are deep, reveal the miserly habits of a life-time.

Dimples.

THE SIGNIFICATION OF DIMPLES.

How are dimples caused, and what do they mean? They are caused, first, by a collection of adipose tissue; second, by a peculiar formation of certain muscles and bones at the joints and elsewhere. Dimples generally form around joints, as well as on parts where the soft, fat tissue has accumulated; these are found only on fat or plump persons; they indicate ease-loving, mirthful, and affectionate natures. Dimpled babes are always mirthful and happy; the great store of vital material, as shown by the dimples, gives ease and enjoyment. They not only exhibit dimples upon various parts of the body, but also upon the wrists, knuckles, cheeks, and chin.

"I was going to kiss the dimples from out the little cheeks,
Where they ripple and they dance every time she laughs or speaks;
She said I shouldn't do it, but I held her fast and tight,
And kissed and kissed the very little face with all my might.

And then a pair of eyes twinkled very gravely out,
And a pair of little lips gathered up a doleful pout;
With little drooping corners,—no wonder, you will say,
To see such bonny, bonny dimples stolen away.

I thought I should have kept them for just a little while;
But little teeth were soon peeping through a little smile;
And then a laugh like sunshine was over all her face,
And every dimple I had stolen was back again in place."

DIMPLES IN THE CHIN.

The dimples in the point of the chin are of two general forms,—the round and deep and the straight or cleft; they are very deep in some, less so in other, faces.

The round dimple in the chin is a permanent feature, and does not depend upon the amount of adipose tissue. It is caused by, first, the presence of round bones; second, by a peculiar formation of round muscles. This combination causes the levator menti muscle to dimple; this dimple is never present when the bony system predominates, but only when the muscular system is supreme. This sort of dimple is observed frequently among the literary and artistic classes; the meaning of this dimple is love of the beautiful in the opposite sex. It is found in the chins of poets, writers of fiction, painters, actors, singers, composers, and also in many who have a taste for the works of all these classes.

Among those who exhibit a beautiful dimple in the chin are the following: Lord Byron, Dean Swift, Sheridan, Mozart, Molière, Horace Vernet, Racine, Christine Nillson, Boccaccio, Aimée, Campanini, Saintly, Theodore Thomas, Lavater, Liszt, Schumann, Schubert, Jos. Jefferson, Henry Irving, Mdlle. Croizette, Mdlle. Baretta, Doré, Miss Harriet Hosmer, Robert G. Ingersoll, and Wendell Phillips.

A love of the beautiful in the opposite sex is one factor in creative talent; it assists the sculptor, artist, actor, poet, and composer in forming their ideals, and if this trait did not reside in their organisms on a large scale they could not exhibit the beautiful poems, statues, and melodies which they bring forth.

The dimple in the chin is often one sign of a voluptuous and pleasure-loving person, generally good-natured and inclined to be generous. Louis XV possessed a dimpled chin, and was noted for his love of beautiful women; he was also a great prodigal. Dimples in either cheek or chin are associated with large, full eyes, and these tell us of the shape of other remote features and members of the body, as well as the accompanying traits and talents.

DIMPLES IN THE CHEEKS.

The dimples observed in the cheeks usually occupy two distinct localities. The approbative dimples are situated at the outer sides of the cheeks, and the mirthful dimples are at the corners of the mouth.

Approbative Dimples.—These dimples form part of the sign for Approbativeness, and are accompanied by an agreeable disposition; they are often deep and round; in some they are long and lose themselves in the "approbative wrinkles." The round dimple in the cheek is associated with large, full eyes, and proceeds from the dominance of the muscular system; it is characteristic of many artists, and all who possess it are agreeable, flattering, mirthful, and formed for sociability. It is a great beauty, and many who possess these dimples are not content that they appear while the face is animated, as in talking and smiling, but they very foolishly bite the lips and stretch the mouth in order that the dimples may be apparent at all times. This movement argues great vanity. A coquettish disposition is usually associated with these dimples.

The long, cleft dimple in the cheeks is indicative of Approbativeness and Mirth, not so pronounced as the round one; it also is a mark of beauty, and points to a genial, social disposition. Approbative dimples in the cheek do not show so early in life as do the purely mirthful dimples at the corners of the mouth; the former appear along with the exercise of the faculty of Agreeability, while the mirthful dimple is shown by the exercise of spontaneous mirth on the part of the infant, which is of the nature of instinct.

Mirthful Dimples.—Mirthfulness is a primitive function and faculty, and inheres in the glandular system mainly, although it asks the assistance of the muscles to carry out its interests, as in games, wit, singing, acting, etc. These dimples are situated at the corners of the mouth, and, in some very merry subjects and in many infants, appear in little clusters of two or three cunning little depressions; they add greatly to the variety and beauty of expression of the face, and indicate a fun-loving, mirthful, sportive, or witty disposition. In some these dimples are round, in others they are cleft or lose themselves in mirthful wrinkles at this part of the cheek. Nell Gwynne, an actress and one of the celebrated court beauties of England, exhibited dimples on chin, cheeks, hands, arms, and shoulders; she was an arch, droll, vivacious, and humorous actress. Her dimples added a great charm to her piquant beauty.

"Within a nest of roses,
Half hidden from the sight,
Until a smile discloses
Its loveliness aright.
Behold the work of Cupid,
Who wrought it in a freak,
The witching little dimple,
The dimple on her cheek."

The dimples on the knuckles, wrists, shoulders, and other parts of the body are caused by muscular formation and adipose tissue, and denote good health, good nature, and an amative or affectionate disposition.

THE TEETH.

THE PHYSIOGNOMICAL SIGNIFICANCE OF THE TEETH.

Very little attention has been paid to the meanings of the teeth by modern writers on physiognomy, yet they are not only highly significant of mental characteristics, but of physiological peculiarities as well. It must be apparent to the thoughtful that features which are composed of such solid material—which are so important to the human economy, and which are situated in such a prominent position—are of great value as physiognomical indicators. Although these features are not external facial features, they are assuredly strong physiognomical indices of character, and as such are properly a part of this science. The entrances to many of the great internal organs are situated in the human face. The rounded contour or the shrunken appearance of the cheeks and nose announce definitely the form and condition of several of the internal organs, and these are dependent primarily upon the motion or activity of the fluids (as in the circulation of the blood, the juices, and secretions) for their shape.

The teeth guarding the entrance to the digestive tract stand representative of its physiological condition, as well as of the mentality and morality which have been created largely by physiological activities. The resultant forms of the jaw and teeth, then, open up an immense field of physiognomical knowledge.

The form, size, color, texture, and relative position of the teeth present distinct meanings, and one might fill a large volume with descriptions and illustrations of these useful and beautiful features, but as I am limited in space I can present only a few. I have conversed with many skillful dentists upon the physiognomical meanings of the jaws and teeth, and I have not found one who had formed any definite idea of them in relation to character. I predict that many excellent dental observations will be made after a study of this volume.

The teeth are arranged in form after the pattern of the jaw into which they are inserted; hence are the reflex in their collective form of the signification of the jaw, as, for example, a very narrow circle of the jaws gives narrow, crowded, or overlapping teeth. Each of these conditions presents a secondary characteristic sign. A broad circle of the alveolar arch shows that the bony system is on a *broad* scale, and that peculiarity indicates characteristics quite different from the former. In the section devoted to the lower jaw in this chapter will be found descriptions of the most usual forms of these features; taken in connection with this section they will afford a great deal of physiognomical knowledge not to be obtained from any other source.

The "gums," as the alveolar processes are commonly termed, are also highly significant of character; their color, size, form, and relative position are all most positive indices of physical, mental, and moral power or weakness. The teeth and gums, taken in connection with the associated lips, jaws, and mouth, afford a wide field for physiognomical research. They not only reveal the present condition of the subject, but also disclose the alimentive conditions of his ancestors, for the form of an alveolar arch and a set of teeth are not created in one generation, but are the outcome of many generations, and betray their dietetic habits as well as associated moral powers.

The teeth of an adult are thirty-two in number; there are eight front teeth, termed "incisors," or cutting teeth, four in each jaw. The canine teeth come next, two in each jaw. The molars, or grinding teeth, are twenty in number, ten in each jaw. The general idea in regard to teeth is that they are bones; this is erroneous. A close analysis of their constituents, aided by the sciences of evolution and embryology, proves them to be the product of the outer skin, and it is from this primitive base that the alimentary canal also arises.

Says Professor Haeckel:—

> The teeth originate from the outer skin-covering, which covers the jaws; for as the formation of the whole mouth-cavity takes place from the outer germ-layer, the teeth must of course also have developed originally from the skin-layer. This can be actually proved by close microscopic examination of the most delicate structural features of the teeth. The scales of fishes, especially of sharks, are in this respect exactly similar to their teeth. Thus, the human teeth in their earliest origin are modified fish-scales.*

Additional evidence of their origin and structure is derived from anatomy. Dr. Robinson Harrison makes the following statement in regard to their constituents:—

* The Evolution of Man, Ernst Haeckel, vol. ii, p. 331.

As the teeth are intimately attached to the maxillary bones, and apparently are allied to the osseous more than to any other structure, their general anatomy may now be examined. They are not, however, to be considered as part of the skeleton, as they have not appeared in the very young, and are frequently absent in the very old; neither, critically, do they constitute a part of the osseous system, but rather appertain to the digestive apparatus, being the mechanical instruments employed in the prehension, separation, and mastication of the food, the incisors cutting and dividing it, the canines tearing it, and the molars bruising and grinding it. In zoological science the teeth serve as an important element in the classification of the animal kingdom; their peculiar form and structure indicate the nature of the food on which the animal is to subsist; and as the digestive organs must be so modified as to convert the numerous varieties into chyle, and as the limbs must be adapted for its prehension, so the teeth must bear an intimate relation to the entire organization as well as to the habits of the animal.*

From the foregoing statements we may take it for granted that the teeth are very important physiognomic significators.

The Form of the Lower Alveolar Arch.—The alveolar process is that part of the jaws into which the teeth are inserted, and in connection with the entire jaw-bone defines the form which the arch or circle of the teeth exhibits in different subjects; in some this circle is very narrow and the teeth crowded and overlapping, revealing an abnormal development of the jaw-bone; in others it is proportionately broad and the teeth even and regular.

The *normal* size of the jaw-bones is such as to allow space for the teeth to enlarge to their proper form, and present a regular row of perfectly-formed teeth. All departures from this condition may be considered as variations from a normal standard. The regularity of the teeth, then, it will be seen, depend primarily upon the form of the jaw-bones, and an exterior inspection of the size of the jaws will often reveal the condition of the teeth. The projection of one row of teeth beyond the other is shown exteriorly by the protrusion of the lips, and when this is very great it produces "prognathism," and, as this condition is normal in animals and in some savages, we must regard all *excessive* prognathism as indicative of inferiority of some part of the mental or moral make-up. A physiognomical analysis will in every subject demonstrate this to be the case. From the foregoing we may deduce the fact that evenly-set, regular teeth denote a more-even disposition and a better-developed mind than where the opposite condition exists.

As before stated, the forms of the circle of the teeth will naturally repeat the form of the jaw-bone; hence, those with an oval lower jaw will present a circuloid arrangement of teeth, while those with a square lower jaw will exhibit a squared or rectangular

* Harrison's Anatomy, p. 596.

appearance of the features. Those with a sharp-pointed lower jaw will present teeth rather crowded or overlapping.

Breadth of the circle argues a broad mind, as compared to those with a very narrow circle; and if this circle be inclined to the rectangular form, that is, when a decided angle is formed at the canine teeth, there exists the inherent principle of the angle, viz., conscientiousness, fidelity, order, perseverance, morality, and, if the angle be extremely marked, severity also. Washington's lower jaw is a good illustration of breadth and angularity. This must not be confounded with the contrary angular jaw, which has its angle farther back upon the lower jaw; the angle in the former case is in its normal place.

Narrowness of the circle, when extreme, is accompanied by crowding and irregularity of the teeth. This form is indicative of a narrow mind and weak moral nature, and if the front teeth overlap each other, as in the rodent, it is an infallible sign of an acquisitive or miserly nature.

The *curving* of the teeth, either inward or outward, tell a story. If they curve from the gum inward there is a certain degree of feebleness of digestion, accompanied with rather ordinary mental powers; that is, where the curve is excessive.

The outward curving or projection of the upper teeth, if it be excessive, so that the teeth project forward and fall upon the lower lip, denotes a certain degree of generosity and kindness, which is the compensation for some mental or moral deficiency. So glaring a departure from the normal or highest standard of position argues a corresponding defect somewhere in the mind; a physiognomical reading of the face will reveal it, but as it differs in different subjects its meaning must be sought for in each individual face.

The outward projection of the lower teeth, if *excessive*, is indicative of stupid, brutal, or other undeveloped conditions. (See section on the "Lower Lip," in this chapter.)

Form and Size of the Teeth.—The teeth may be divided generally into broad and narrow and long and short, with the combinations resulting from these qualities. As a rule, teeth which are both broad and short indicate strong vital powers, allied to the carnivora in the taste; that is to say, a taste for flesh diet.

Long and narrow teeth belong to weak people. Consumptives often exhibit this form. These belong to the granivorous,—fruit and grain eaters.

Medium-sized teeth, if regular, even, and normally placed, denote a good constitution and even temper, provided they are white or slightly yellowish-white.

A regular and even set of teeth announce a normal develop-

ment of the bones of the upper and lower jaws; hence, signify evenness of disposition and a normal construction of the digestive tract.

Irregular teeth, if large, show a commonplace mind, or abnormal condition of mind. Irregularities of the teeth and jaw are most frequently met with in those who have inherited weakly or abnormally developed minds and bodies. The following I quote from a reliable source as strengthening my position upon this point. Tusks, or tushes, are caused by the abnormal development of the canine teeth, and are a reversion to carnivorous types. Wherever found they reveal a modicum of cruelty or malignancy:—

> By examining the mouths of 1977 idiots, there were found to be 159 with protrusion of the superior maxilla and 92 with protrusion of the inferior maxilla. These deformities do not exist to such an extent among healthy individuals.*

Very white teeth of a pearly whiteness are found associated with black eyes and hair and a brunette complexion.

Yellowish-white teeth appertain to the blonde and chatain type. As a general principle, the more the teeth and gums are displayed in conversation, the less profound the mind.

Children, negroes, and other undeveloped races show a great proportion of the teeth in conversation. The teeth of the upper and lower jaws of most even-tempered and thoughtful persons meet exactly or nearly so; those whose upper or under teeth project greatly the one beyond the other are uneven in temper and not so much developed in intellect as in the passions and emotions.

The only physiognomical observations by a dentist which I have been able to find on the physiognomical meaning of the teeth are the following:—

> In studying the disposition and general physical make-up of man, in connection with his teeth with regard to artificial dentures, I find six general outlines as indicative of certain characteristics theoretically subject only to modifications in gestation, education, and culture with heredity.
>
> First, those teeth that naturally curve from the gum-margin in toward the mouth represent the penurious disposition. Second, those that protrude toward the lips and cheeks, the inquisitive disposition. [He might have added the generous also.] Third, those that are vertical or having a slightly outward slant represent the even tempered. [Very good indeed.] Fourth, those having a horseshoe curve from molar to molar around the grinding and cutting surfaces denote the fleshy and jolly. Fifth, those teeth nearly in a straight line from cuspid to cuspid, and thence to last molar having the cuspids prominent, indicate angularity of disposition and features, and a slender body and face. Sixth, an easy oval, between the round and angular, indicates full habit and evenly-balanced organization.†

* American System of Dentistry, Litch, 1887.
† Dental Independent, p. 122, April, 1883, J. M. Hurlt, Peoria.

All this is excellent, and if more dentists were to use their powers of observation and comparison in this direction they could supply a rich fund of dental physiognomy. Emerson, a close observer of facial characteristics, observes: "What power and what limitations the teeth betray!" And Lavater, with his keen observation, says:—

> Whoever leaves his teeth foul, and does not attempt to clean them, certainly betrays much of the negligence of his character, which does him no honor; as are the teeth of man, that is to say, their form, position, and cleanliness (so far as the latter depends upon himself), so is his taste.
>
> Much, indeed, might be written on the meanings of the teeth; to be convinced of this, were we but to observe the teeth of an individual during a single day, or contemplate with reference to this particular an apartment crowded with fools, we should not then for a moment deny that the teeth in conjunction with the lips are very characteristic, or that physiognomy has gained another token, which triumphs over all the arts of dissimulation.*

ANIMAL TYPES OF TEETH.

The beaver and squirrel exhibit teeth which are indicative of the acquisitive and saving faculties; the bear shows destructiveness and malignancy in the form of its teeth, while the tusks of the wild boar and rhinoceros reveal ferocity. The rattlesnake exhibits long, *inward*-curved fangs, denoting both weakness of mind and brutal disposition. Even in the animal world the form and size of the teeth reveal mental, moral, and physiological peculiarities, as comparison of the carnivorous with the granivorous animals will prove.

The Gums.

That portion of the alveolar process in which the teeth are encased is commonly termed the "gums;" this part of the mouth is of great importance as a significator of character, for it not only reveals the mental status, but it also discloses congenital physiological conditions of the alimentary tract. These appearances announce not only the inherited alimentary status of the subject, but also disclose the dietetic habits of his ancestors.

In a normal condition of the mouth the gums should not show at all in conversation. When the gums show to a great extent when the mouth is in repose, or while engaged in conversation, it is indicative of either a scrofulous or consumptive tendency; this peculiarity arises from a deteriorated condition of the system, transmitted from ancestors who have for generations been subject to very poor or insufficient diet and deprivation of social and mental advantages, as is well illustrated by the lowest classes

* Lavater's Essays, p. 396.

of the Irish, for example, among whom good, nourishing food has been wanting for generations, as well as social and educational facilities. This long-continued deprivation has caused physical degeneracy to that extent as to produce a face formed quite different from the normal standards, and nowhere does this degeneracy appear as conspicuous as in the formation of the gums, lips, teeth, and jaw-bones. Emerson, in his "English Traits," remarks thus:—

> In Irish districts men deteriorated in size and shape. The nose sunk, the gums were exposed, and brain diminished.*

It does not follow that there has been in all cases great poverty in the ancestors of such scrofulous subjects as expose their gums; on the contrary, many persons who are blessed with plenty of nourishing food habitually make use of the least nourishing diet, either from a depraved taste, or from utter ignorance of sound dietetic principles. The ignorance of many otherwise intelligent mothers on the subject of diet is perfectly amazing. I have observed a mother feeding a young child at evening with a dinner of roast veal, with perfect unconcern, who was quite sure that a dish of blackberries would be very unwholesome for the child. So long as such ignorance prevails in regard to food, we shall find plenty of individuals who expose the ignorance of their parents by their display of gums. Another curious case of dietetic sinning came under my observation; in this instance an entire family subsisted mainly on bread and butter, pie, cake, and tea, rarely eating meat and vegetables; this course had been pursued for several generations, but in this case vanity was the motive which prompted this course. In the first place, they sought to avoid labor and expense by this method of living, and thus saved money with which to buy fine clothing; another motive involved was the idea that such food gave them a thin, delicate, and "aristocratic" appearance, according to their mode of thinking; but this "aristocratic" look is, to the eyes of the physiognomist, a sign of degeneracy—of impoverished minds and bodies.

I have seen many fairly well endowed subjects who, upon opening the mouth, exposed a certain part of the gums, both upper and lower, but I have never yet seen a genius or person of surpassing talent who exhibited this peculiarity. Those who expose a great portion of the gums, together with a mouth which never quite closes, are wanting in mental power, and are not possessed of great constitutional vigor, for this peculiarity is indicative of physical degeneracy; that is, a reversion to embryonic types.

* Emerson's English Traits, p. 209.

I have met this peculiarity among the poorly-developed of all races. It is quite common among all the undeveloped races of the world, and points in all cases primarily to long-continued deprivation of nourishing food.

Those mouths which entirely conceal the gums while in conversation or in singing belong to the better-bred (I use this term in a physiological and scientific sense), and often to the thorough-bred, the signs of which I will give later.

Those mouths that exhibit very little of the gums in conversation do not indicate so great a degree of degeneracy of body and mind as where an inch or more is exposed.

The color of the gums is another significator of character. If they are dark red, they denote an unhealthy condition of the blood. If of a beautiful, clear, pinkish hue, they are indicative of pure blood. If they are very pale, or of a whitish hue, they show an anæmic condition, and this is associated with great impoverishment of the entire system.

The Tongue.

The tongue is pre-eminently an organ of motion; as such it is adapted to a great variety of uses, all of which require rapidity of movement and delicacy of sensation. The tongue, although not an external feature, is yet of sufficient physiognomic importance to justify some description of its structure and signification.

It is a muscular member, free on all sides except at its root, which is connected with the os hyoides (a small bone) by muscles and ligaments. It is an organ of touch and taste, as well as of language. In infants it aids suction, and man uses it sometimes in prehension, as do the lower animals.

Its primitive use is for taste, and this function is best developed in the top, sides, and the posterior parts of the upper surface. The central portion possesses less delicacy of taste than the other parts. The following description of the function of the tongue is most complete and instructive:—

> Placed at the entrance of the alimentary apparatus, the great object of the tongue and of its special endowment is the choice of food—to reject what is nauseous and noxious, and select and retain what is grateful and nutritious, and it may be affirmed as a general law (though with some few striking exceptions) "that what is good to the taste will prove nutritive to the system." The tongue also in most animals is an active agent in suction, prehension of food, mastication, insalivation, and deglutition; and in man it is the great instrument for speech. In the animal series it presents great variety in form and structure, which are always in accordance with the functions it is to execute, and with its endowments and limitations. To fulfill its several functions, the tongue must possess a very complex struc-

ture; it is accordingly highly organized; six cerebral nerves are distributed to it; it is freely supplied with blood-vessels. It is covered by a sentient and very sensitive papillary surface, and is essentially composed of muscular and very irritable fibre, which form an intricate interlacement, not unlike the wall of the left ventricle of the heart. This muscular structure can change the form and consistence of the organ with wonderful rapidity; can move it in every direction, so as to bring and retain its sentient papillæ in contact with foreign matter; can strike its point with agility against the lips and teeth, to produce the articulate sounds of speech; can press and bruise the food against the palate, gums, and teeth; can with great dexterity collect the particles together, pick them out of every recess, and compress them into one mass, and then force the whole backward through the fauces.

The tongue is described as of various forms—triangular, oval, irregularly square; from the nature of its structure, however, it cannot present any uniform shape.*

The tongue, as well as the teeth, the lips, and mouth, reveal internal states and conditions of the digestive tract. Its form, size, and flexibility vary greatly in different individuals. It is one of the chief indicators of the pathological condition of the stomach, bowels, and liver, and of the general system; and is relied upon by physicians for knowledge of many abnormal conditions of the body.

As the tongue is one of the principal organs of speech, we naturally infer that its peculiarities of structure would reveal moral and mental conditions. The normal structure shows more capacity for truthfulness than where it is abnormal; the latter shows less integrity than the former, as in tongue-tied subjects, while relatively inferior intellect or weak morality is disclosed by lisping, stuttering, etc. Other peculiar methods of speaking, as though the mouth were full of saliva, for example, point to some defect of the mental organization. Those who lisp betray a relatively childish condition of the intellect, and are to be suspected (if the lisp is very pronounced) of want of strict veracity, or, at least, of childish judgment.

In some subjects the tongue is broad, thick, and short. This form is associated with a wide mouth, and usually with a short, stocky, muscular frame.

A long, narrow, thin, flexible tongue is associated with a tall, thin, sinewy body; often lithe, agile, and graceful.

As the tongue is the chief agent in vocal expression, its normal or abnormal structure would point to mental and moral peculiarities, as well as reveal a sound or unsound physical condition of this member. The mind and body being a unity are so closely interwoven that it is impossible to separate function from faculty; hence, whichever part of the organism reveals abnormal

*Practical Anatomy, R. Harrison, M.D., p. 492.

structure reveals at the same time some defect of the mental or moral power, and nowhere is this better proven than in the peculiarities of the organs of speech.

Physiognomy of Smiles and Laughter.

Smiles and laughter are parts of one act, the one passive, the other active. Smiling expresses a great deal, yet not so much as laughter, for in smiling the muscles of the lips, cheeks, and eyes only are concerned; in laughing the muscles of the lips, mouth, cheeks, eyelids, as well as those of the diaphragm and the respiratory organs, are involved.

Laughter is not always the expression of simple pleasure and amusement, although that is its primitive motive, as in the innocent, mirthful smiles of the infant.

Laughter may be sarcastic, sardonic, malignant, scornful, demoniacal, maniacal, hypocritical, brutal, coarse, idiotic, silly, sensual, amative, sensuous, loving, joyful, affectionate, approbative, or mirthful. In endeavoring to express such a variety of emotions and sentiments, it is to be supposed that all of the features of the face are brought into use, as well as many of the glands, muscles, and organs of the body; hence, smiles and laughter are most potent indices of character, and to the physiognomist reveal much of the character. The intonations alone of each individual carry with them great knowledge of his mental, moral, and physical status, and this aside from the mere expression of the face. Smiles and laughter are as individualized and characteristic as are the eyes, nose, or mouth; how can it be otherwise when we see that each diversely shaped mouth and cheeks produce movements in accordance with their own peculiar form, and each voice produces audible sounds in harmony with its own peculiar pitch and development of internal organs?

Laughter may be exhibited by a snicker, giggle, or chuckle, by musical tones, or by a rude haw-haw-haw, or by a hearty and spontaneous ha-ha-ha, coming right from the depths of the diaphragm, and expressing honest, frank, good-natured fun and mirth. Each of these methods conveys a distinct meaning. So, too, smiling may be shown by a smirk or simper, or by a scornful, sarcastic look; or it may express approval, or quiet, suppressed mirth, or the passive simplicity and innocence of infancy. Each of these announces different meanings and motives. A man smiles quite differently to a female than to one of his own sex; he moves different muscles for this purpose—some, at least—and puts into his eyes quite a different expression than when he is address-

ing another man. A woman, too, looks up into the face of a man with quite a different smile from that with which she greets her sister-woman. Says one of Whittier's lovers:—

"You tempt me with your laughing eyes,
Your cheek of sundown's blushes."

The muscles which surround the mouth and eyes, and which promote laughter, are purely human; no animal has a similar muscular development.

The muscle which surrounds the eye—the orbicularis (see figure at the head of this chapter)—is for the purpose of protecting the eyes in laughing, crying, and in the exercise of other functions; hence its development conveys physiognomical meaning. Its uses are well defined by Sir Charles Bell. He observes thus:—

The orbicularis muscle of the eyelids acts powerfully in certain kinds of expression. In laughing and crying, the outer circle of this muscle, as it contracts, gathers up the skin about the eye, and at the same time it compresses the eyeball. A new interest is given to the subject when we inquire into the subject of that compression; it has a distinct relation to the *circulation of the blood within the eye.* During every violent act of expiration, whether in hearty laughter, weeping, coughing, or sneezing, the eyeball is firmly compressed by the fibres of the orbicularis, and this is a provision for supporting and defending the muscular system of the interior of the eye from a retrograde impulse communicated to the blood in the veins at that time. When we contract the chest and expel the air there is a retardation of the blood in the veins of the neck and head; and in the more powerful acts of expulsion the blood not only distends the vessels, but is even regurgitated into the minute branches. Were the eye not properly compressed at that time irreparable injury might be inflicted on the delicate texture on the interior of the eye. Hence we see a reason for the closed state of the eyelids and wrinkling of the surrounding skin and twinkling of the eye in hearty laughter.*

It is the active and habitual exercise of this muscle which causes the puffy and wrinkled appearance of the sensualist; this appearance tells in language unmistakable that sensuality is one of his dominant vices. It is found in the faces of both young and old, but is most noticeable in the faces of males.

An individual who is observed to have always a smile, simper, or smirk on his face evidences an overweening degree of approbativeness and desire to be approved of others, and this argues a want of independence of character—one who relies more on the opinion of the world than on his own conduct for satisfaction. Such characters are never great and broad, but show small capacity, and, by endeavoring to please every one, divert attention from their real character,—or, rather, want of character,—and so get judgment in their favor. So superficial is the estimate of the world that foam,

* Anatomy of Expression, Sir Charles Bell, p. 89.

froth, and nonentity often excite more commendation than the most substantial traits of characters which do not present quite so attractive and startling an exterior.

A loud, boisterous laugh belongs to a rude, unrefined person. A clear, mellow, ringing laugh, not too loud, announces a clear-minded, harmonious character. The chuckling or suppressed laugh tells us that we have a secretive nature to deal with. Laughter which is spontaneous and full of merry tones, "like the jingling of sweet bells," discloses a frank, merry person, not yet spoiled by the world and the greed of mammon. A rude, short, loud "horse-laugh" tells us of a most disgusting, rude, unfeeling brute. The hollow, affected laugh discloses an empty skull and a hollow heart; its exhibitor will do neither good nor harm to any one. A sharp, shrill laugh is evidence of a thin physique and an excitable temper, with an unbalanced and commonplace mind.

The laugh, like the tone of the voice used in speaking, is an unmistakable signification of sexual conditions and powers, as well as the exponent of other functional states. This fact assists still further in the proof before stated in this chapter, viz., that "all those parts of the organism which depend upon the same organ system for their power exhibit unity of action and similar results." The proof of the above-stated principles are, perhaps, better understood by the majority of the people than many other physiological laws, because all persons have observed what is called the "change of voice," which is very marked in boys approaching the age of puberty. A change also takes place at this time in the voice of females, but is not so perceptible. This change of voice is correlated with a marked change and development in the reproductive system. Now, all the organs involved in reproduction are mainly muscular and fibroid, as are also the organs involved in the use of the voice.

Those persons who are the most gifted in vocal expression, in song and oratory, such as our first-class opera-singers, prima donnas, tenors, and basses, and the great orators and elocutionists of the world, must possess sound and powerful reproductive systems. I believe that the record of their lives will bear me out in this statement, as well as the principle that creative art derives assistance from the procreative function. It is shown, in the "Evolution of Man," by Haeckel, and others, that intelligence in the animal species did not progress greatly until after a marked development of the reproductive system took place; and that from that time on until man was evolved the intelligence of the animal kingdom progressed in the ratio that the reproductive system developed. We cannot separate the mind from the body, nor mental

faculties from physical functions; they are bound together by the God of Nature, and what God has joined together *no man* can put asunder.

There is another physiological fact known generally, and that is, that as the sexual powers decline the voice also loses its vigor and richness.

From these observations I think we are justified in considering the voice one indication of sexual conditions and powers, and the laugh, by its tones, enlightens us on this point just as well as does the voice in speaking and singing. Still another proof of the connection between the remote parts of the muscular and fibroid system is had in the voices of eunuchs, and in the soprano voices of the male singers in the Pope's choir. Emasculation in both cases has produced great and radical changes in the voices of these two classes of males. Any unprejudiced person can trace out these connections and correlations in the human organism—these which are so apparent to the senses. Most of the laws and principles laid down in this system of physiognomy are so susceptible to demonstration to the senses alone, that one is hardly called upon, as Tyndall remarks:—

> To picture with the eyes of the mind those operations which entirely elude the eyes of the body.

Observation and reflection, added to a love of truth and a candid mind, are all that are needed for this study.

The Neck.

The physiognomical language of the neck is one very great aid toward the comprehension of character. The neck of each human being, and of each animal and species, is a revelation of the entire organism. As each leaf, twig, and branch are indices of the tree upon which they grow, and the leaf in many instances repeats the form or outline of the tree, so the neck of man or beast is highly significant both of the head and body which it connects; not only is it an expounder of the physical structure of man, but it most conspicuously reveals his mental and moral conditions and qualities.

The neck is a member of motion, and is used in nearly every act of the individual; it is capable of great diversity as well as great rapidity of movement.

The physiognomical importance of the neck must be apparent when we come to consider its *position* and its *office*. It connects the head with the trunk, and within its area it holds the organs of the *voice;* it assists in conveying air to and from the lungs, and

the food from the mouth to the stomach; it is also the member that incloses the muscles of veins, arteries, and nerves which furnish the brain with power to act. These air-passages and a food-tube, which are situated in the neck, connect directly with the two principal facial features, viz., the mouth and nose; hence, the neck must, by its size, form, and length, stand in direct relation, not only to the alimentary and respiratory powers, but it must also be characteristic of the face and entire body and mind.

The nearer the organs of alimentation and respiration are to the brain, the more rapidly is that organ supplied with nourishing blood. And as the thick, short neck is associated with a relatively *broad body*, this combination would produce a large supply of blood; now, a large quantity of blood moving rapidly to the brain would give the greatest power for the mental process, and if, with such formation, there be a brain of *high quality*, we shall find the most sagacious and profound minds. Napoleon I is an excellent example of this construction; his body was barrel-shaped, his brain was large, of high quality, and his neck was so short that his head seemed resting on his shoulders; his legs were short, and this gave him the appearance of being short, and gained for him from his soldiers the title of the "little Corporal."

The elephant among animals is the most able reasoner; its head sits Napoleon-like on its shoulders; it is so sagacious that it has no need of either long legs or long neck to protect itself.

The length of the neck is a most significant indicator of character. Long, thin necks are associated with narrow, sloping shoulders, and usually with a flat chest and angular, high head. The character of such form is either timidity, or sensitiveness, or both. The greyhound, deer, and giraffe among animals illustrate these qualities. Now, timidity is not the accompaniment of great mental power; Nature, therefore, endeavors to compensate her long-necked children by either excessive caution, which makes them watchful and alert, or she gives them length and leanness to make them fleet in their movements. To some she gives *sensitiveness*, which is a great protection, as it enables them to see, hear, feel, and intuitively perceive dangers which might overpower them were their senses dull; in their case, sensitiveness of the senses is a great compensation for deep and profound thought or slow movements.

The following analysis, by Dr. Cross, of the significance of the long neck is most admirable, and in this connection quite apt. He remarks thus:—

> The length of the neck is principally subservient to the ears, the sentinels appointed to watch over personal safety. Accordingly, those animals

which are exposed to danger from their stronger neighbors have elevated ears and long necks, and all animals, when under apprehension of danger, stretch the neck for the purpose of elevating the ears. The strength of the neck, on the other hand, is devoted to the service of the mouth as a grasper. The prompt, predaceous eye can dispense with elevation for the sake of strength; accordingly, strong, courageous animals are endowed with short, thick necks, and in making an onset actually contract the neck so that they may be able to impel their teeth against the prey. In the endowment of weak, timid animals with long, mobile necks, and of strong, courageous animals with short, thick necks, may be seen a slight specimen of divine wisdom and beneficence. Where strength is largely bestowed rapidity of movement and of discernment is withheld, and where strength is withheld compensation is almost made by rapidity of movement and of discernment, whereby that danger which cannot be withstood may be for a time eluded. Accordingly, the short neck is generally the muscular neck, as the rough and well-marked processes and ridges at the base of the skull testify, and is also generally accompanied by the large head and the energetic intellect.*

Many of the most profound scholars, able generals and commanders, astute statesmen, and far-sighted merchants exhibit the short, thick, muscular neck.

The principal traits revealed by the size, form, color, texture, motion, and position of the neck are as follow:—

Will,	Sagacity,	Avarice,
Amativeness,	Timidity,	Veneration,
Sensuality,	Gracefulness,	Youth,
Self-esteem,	Coquetry,	Old age.
Attention,	Hypocrisy,	

THE WILLFUL NECK.

The willful neck is short and thick, and is indicative of a large endowment of the muscular system, hence is associated with broad shoulders, deep chest, large abdomen, and round head; this build gives large force and resistance. With a good quality of *brain* in combination we have the intellect of a Napoleon, a Luther, a Bismarck, or a Cleveland. Those with this form of neck partake somewhat of the nature of the bull and the bull-dog, and are capable of great resistance and aggression as well; they are the kind of men that "carry the war into Africa" when necessary. This trait is essential in executive positions, also in sea-captains, engineers, etc., and many of the latter are of this short, stocky, sturdy build; it requires a good short neck for these positions. Henry the VIII's portrait is a most striking illustration of Self-will; to this trait he added large Amativeness, and under the influence of these two mighty passions he threw off the yoke of the

* An Attempt to Establish Physiognomy on Scientific Principles, John Cross, M.D., p. 144.

Roman hierarchy; his tremendous will enabled him to successfully cope with that then powerful institution. Martin Luther illustrates another sort of will, a will allied to large moral force, and he, too, was successful. Bismarck, the great German statesman, has shown what will allied to statecraft can do. Grover Cleveland has made a striking exhibition of will, associated with executive power, and has been able to resist the onslaughts of all the "cross-road" politicians in their endeavors to "run" the government for him. This neck is indicative of apoplectic tendencies.



FIG. 321.—THE WILLFUL NECK. (HENRY VIII, KING OF ENGLAND.)

Born 1441. This portrait illustrates in a remarkable manner the presence of Self-will. This is shown not alone by the structure of the neck, but also by the entire organism. The combination of the facial signs reveals a selfish, despotic will and unbridled Amativeness, which, backed by such a tremendous will, made his character detestable. He possessed a good degree of learning for his time. It was said of him that "he never spared man in his anger nor woman in his lust." He was an able statesman, bold and defiant. He opposed successfully the powerful Roman hierarchy and assumed control of the Church of England, which has since been held by all succeeding sovereigns.

The Amative Neck.—Amativeness is another attribute disclosed by the short, thick, muscular neck, for those in whom the muscular is one of the superior systems are the most amative and passionate. The amative neck in females is often very beautiful, soft, and white; it is never long and thin, but has considerable adipose tissue in combination with the muscular development.

The vegetative neck is not to be confounded with the muscular neck; the vegetative neck is composed mainly of soft, fat tissue, with numerous deep folds; it denotes the glutton, also negative character, neither active, artistic, nor mental, except in a most limited degree.

Sensualists' necks partake somewhat of the muscular and the vegetative; they are relatively short, somewhat wrinkled, and red.

The Neck of Self-esteem.—Self-esteem is shown more by the manner of carrying the head than by the shape of the neck; when this trait is large the head is carried in an erect and lofty manner, firm, rather long than short, and on a line with the backbone.



FIG. 322.—THE AMATIVE NECK. (MARCHIONESS DE POMPADOUR, OF FRANCE.)

Born 1715. A handsome and talented woman, and favorite of King Louis XV. This lady was skilled in statecraft, and exerted a controlling influence over the king until her death. The head is slightly turned aside, thus showing the affable approbation of the woman of the world and of society. The Marchioness was noted for her tact, graceful manners, and astuteness. It is said by historians that she took a leading part in bringing about the war of 1756.

If it be excessive the head will incline slightly backward, exhibiting a pompous, egotistic attitude; a glance at these ceremonious "turvy-drops" will show that the facial sign for Self-esteem (length of the upper lip) is very marked.

The Attentive Neck.—The power for close and prolonged observation is one attribute of a very good intellect, and is the

characteristic of all really intelligent persons. Indeed, so highly is this trait ranked by the greatest minds, that Lord Bacon has remarked of this faculty, that "genius is only protracted patience," and Lord Chesterfield observes: "The power of applying the attention steadily and undissipatedly to a single subject is the sure mark of a superior genius."

The physiognomical language of attention is shown by a forward and slightly sidewise direction of the neck and head. The portraits of Watt the inventor exhibit this position; also the

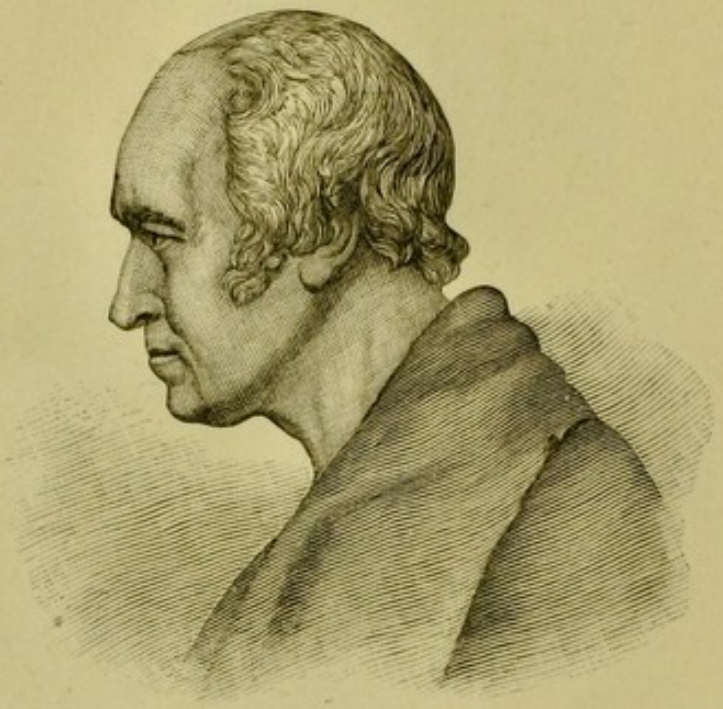


FIG. 323.—THE ATTENTIVE NECK. (JAMES WATT, INVENTOR AND AUTHOR.)

Born in England, 1769. The long-continued thought and close observation which the subject of this sketch practiced have left their impress upon every feature and line of the face. The head, bent forward in the pursuit of knowledge, is quite different in its aspect from that of the miser, Elwes, in pursuit of gold. James Watt was one of the world's benefactors, for his discoveries have enriched posterity by labor-saving principles. He will live in the memory of man as long as great and useful minds are appreciated.

portraits of Captain Cook, Sir Joseph Banks, Dr. Jenner, and Thomas Alva Edison. Dr. Cross has made most just observation of this peculiarity, for of it he remarks thus:—

As the neck is the stalk upon which the senses are held up to take their survey of the necessaries and comforts of life, so the posture or attitude of the neck must mark the earnestness of the character in the pursuit after these necessaries and comforts. The earnestness of the animal is indicated by the *direction* of the neck; the more the neck is bent forward, the more are the senses bent upon these objects.*

The heads of careless, thoughtless persons never present this forward inclination.

* An Attempt to Establish Physiognomy on Scientific Principles, John Cross, M.D., p. 146.

The Sagacious Neck.—The most sagacious men and animals exhibit muscular necks of large size, but so short as to make the head appear connected with the shoulders.

The elephant is a good illustration among animals of this peculiarity and its associated sagacity.

The Timid Neck.—Those animals which exhibit long and thin necks are characterized by extreme timidity and sensitiveness, as witness the deer tribes, the greyhound, and the giraffe.

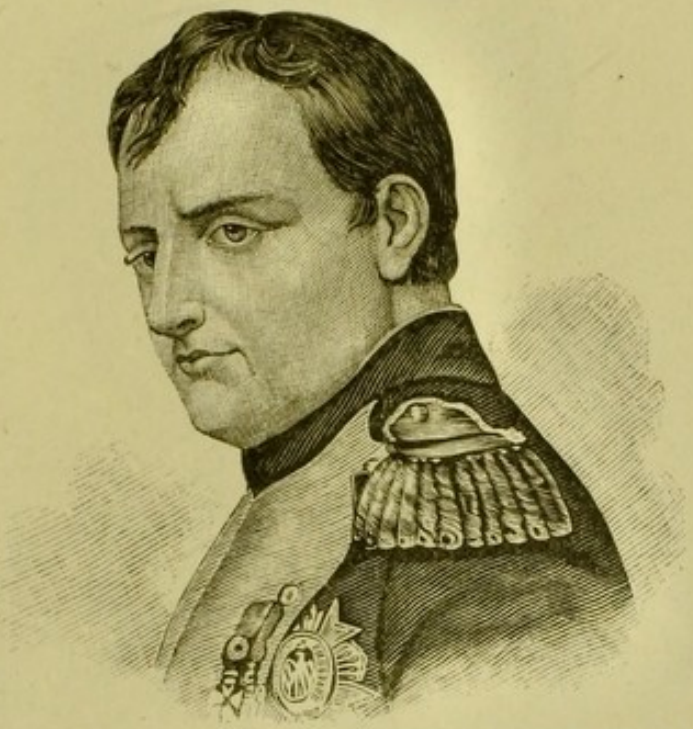


FIG. 324.—THE SAGACIOUS NECK. (NAPOLEON BONAPARTE, EMPEROR OF FRANCE.)

Born in Ajaccio, Corsica, 1769. Bonaparte was an able military commander and rose to the highest positions from the humblest ranks. This subject is one of the most fascinating characters in history. His life has been written by many authors, and, however they differ on minor points, all award him the palm for sagacity, breadth, and astuteness of intellect. The nearness of the vital organs—the heart and lungs—to the broad and high head gave a great quantity of well-oxygenated blood to that organ, and caused him to be both prompt and profound in his mental operations. He possessed what I term a "chess" head; that is, a brain suited to making grand combinations with ease. The physiognomical as well as physiological signification of the form of his neck, and the manner in which it is set upon his shoulders, are quite apparent to the physiognomist, for they disclose enormous Will and Amativeness, as well as Sagacity. The moral sense of Napoleon was sadly deficient. Of him Emerson wrote: "He is a boundless liar; he has not the merit of common truth and honesty." His treatment of women, particularly of Madame de Staël, can only be explained on the ground of jealousy of her superior mental endowment. With all his ability, he did not know how to attach this great woman to him and use her talents for the nation's good and glory. Napoleon's vigorous intellect was inherited from his mother, who possessed uncommon strength of character.

The long and thin neck in the human being denotes timidity, and if the inherited quality be of a high grade extreme sensitiveness will be exhibited as well. This type is apt to be a prey to consumption or dyspepsia; the giraffe is often afflicted with dyspepsia even in a state of nature.

The Graceful Neck.—The graceful neck is not to be confounded with the *long* and *thin neck*. The graceful neck must,

indeed, be rather long, yet one element of its gracefulness is found in its *correct proportion;* it must harmonize with the shoulders and bust as well as with the head. This neck is a mark of an affable disposition. The portraits of the Princess of Wales, Ex-Empress Eugènie, Mrs. Langtry, Lady Blessington, the Duchess of Leinster, Pauline Bonaparte, the Empress Josephine, and Mary Anderson



FIG. 325.—THE GRACEFUL NECK. (JOSEPHINE, EX-EMPRESS OF FRANCE.)

Born at the Island of Martinique, 1763. Wife of the Emperor Napoleon Bonaparte. This subject was one of the most beautiful women who ever graced a throne. She was noted for her graceful manners, her affable and ingenuous disposition, and her generosity. She was one of the best sovereigns of France, and retained until her death the high esteem and respect of all who knew her.

exhibit graceful, white, and rounded necks. The graceful neck may be long or short, but it must be proportioned to the shoulders and body which it connects; it must be molded in a circular form, of a clear white or clear olive or black color, smooth and polished in texture, and intelligent and graceful in motion. These necks are not rare, but the present fashions give little opportunity for their dis-

play—which is to be regretted, as practical observation of the most beautiful parts of the human frame tends to create a high ideal of beauty; for this reason natural beauties should be *constantly* before our eyes. The customary freedom in dress, as practiced by the Greeks, gave to them a universal conception of the beauty of the human form, and this cultivated taste evolved those immortal



FIG. 326.—THE NECK OF COQUETRY. (MARGUERITE, COUNTESS OF BLESSINGTON; AUTHOR AND SOCIETY LEADER.)

Born in Ireland, 1789. The lively face which accompanies this sketch is that of one of the most charming of society women. Her talents, beauty, and agreeable manners and conversation drew to her residence, Gere Home, London, the most eminent men and women of her day. She was witty and droll in conversation, to which she added an arch and agreeable coquetry, which well became her style. The carriage of the head and position of the neck are rich in physiognomic meaning.

masterpieces of the ancient Greek sculptors which are found in the galleries of Europe, and which are the models of artists and the admiration of the ages.

The Language of Coquetry.—The coquette reveals her disposition by tossing and nodding the head sidewise and forward while in conversation with the opposite sex, and by holding her head sidewise while in conversation.

The Language of Hypocrisy.—This is shown by an appearance of deference and humility, by a too conspicuous bending of the neck forward, and the casting down the eyes with a sort of "Uriah Heep" expression in the face.

The Avaricious Neck.—*Avarice* stretches the long, shriveled neck far forward with all the eagerness of a hound in pursuit of its prey.

The Language of Veneration.—Veneration bends the head downward toward the breast in a devout attitude.

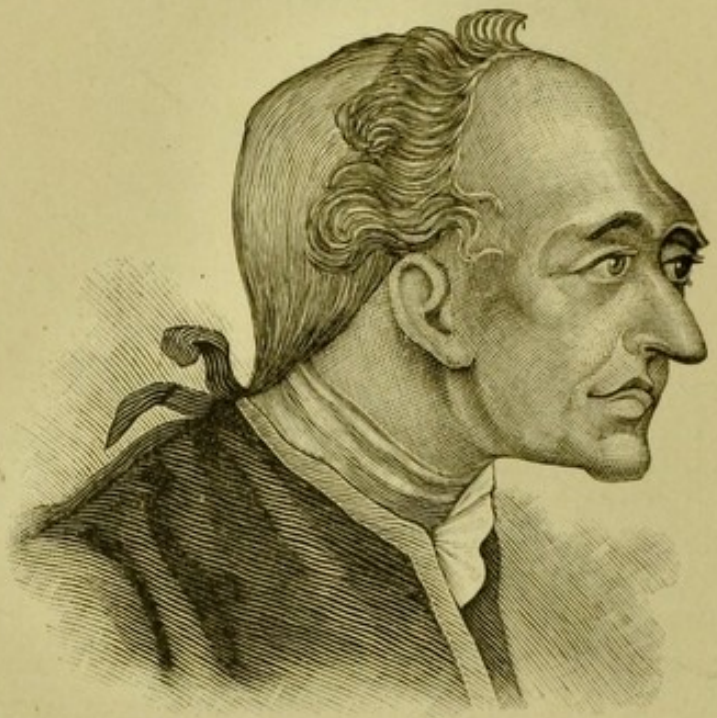


FIG. 327.—THE AVARICIOUS NECK. (JOHN ELWES, M.P., OF ENGLAND.)

This subject was not only a most avaricious character, but was also a great miser. These traits he inherited from both his maternal and paternal ancestry, hence he received a large and most intensified degree of both traits. A comparison of his neck with that of Watt will disclose very diverse characteristics; both reach forward, but it is easy to divine that they reach for very different objects. This gentleman was a great gambler, but so saving was he that after sitting up a whole night to play for thousands of pounds he would walk seventeen miles to one of his estates rather than pay for riding. Mr. Elwes was a wealthy man and had the manners of a gentleman, but lived in filth and penury. His entire living cost but fifty pounds per year. He left to his two natural sons eight hundred thousand pounds sterling. His face wears a very sharp, keen, alert expression, but all his quickness of apprehension was turned to gaining.

The Youthful Neck.—Youth moves the neck with animal-like freedom in order to constantly bring the surroundings into view. The white, smooth, rounded neck of a healthy child or infant is a beautiful object, yet it only expresses youth and has no other meaning.

The Gluttonous Neck.—Two or three deep wrinkles running completely around the neck of an adult bespeak a large degree of the vegetative system and gluttonous tendencies.

The Aged Neck.—Old age droops the neck forward until at last the chin rests upon the breast.

The Hand.

A work on physiognomy would be incomplete without a description of the physiognomical meanings of the several fundamental sorts of hands. The hand has been with truth termed "the second face," for it not only corroborates what the face indicates, but it also reveals some things which the face does not; and whenever I am perplexed or in doubt as to certain indications in the face, a reference to its associated hand clears away the mystery. The hand is the most wonderful member of the human body; the language expressed by its movements, aside from its size, form, color, and texture, is marvelously clear, explicit, and eloquent. Says Montaigne:—

> With the hand we demand, we promise, we call, dismiss, threaten, entreat, supplicate, deny, refer, interrogate, admire, reckon, confess, repent, express, feel, express shame, express doubt, we instruct, command, write, encourage, swear, testify, accuse, condemn, acquit, insult, despise, defy, disdain, flatter, applaud, bless, adore, ridicule, reconcile, recommend, exalt, recall, gladden, complain, afflict, discomfort, discourage, astonish, exclaim, indicate silence, and what not with a variety and multiplication that keep pace with the tongue.

The human hand is unique; no member of the animal kingdom has a grasper which is at all comparable to the human hand and its opposable thumb; even the members of the ape tribe, which are the nearest to man in structure, have a hand entirely devoid of the subtle powers which characterize the human hand. One might fill a large volume with descriptions of the hand and its characteristics, and then not enumerate the half of its powers.

In form every hand is at once the indicator and epitome of the body and brain to which it belongs. The face and brain of an artist have associated with them an artist's flexible, muscular hand. The natural mechanic has, with his square-boned hand, the bony body, the square forehead, and the rectangular face, which indicate his dominant capacity; for "Nature never made a man with the form of one person and the character of another." The first phalanx, that is, the end joint of the finger, ought, to a good physiognomist, to reveal the shape of the body, the head, the face, and features, as well as the *dominant traits* of character. If the tip be tapering the muscular system dominates, and the subject is governed by the law of the circle or curve. If the tip be square the mind tends to mechanism or science, and exemplifies the law of the straight line and angle. So exactly do the basic principles of Form apply to the hand, finger, and finger-nail, that any observing

person, after having mastered these principles, ought to be able to describe the main characteristics of any subject under observation, as well as the shape of his face, his bones, his jaws, his chin, and his nose, by inspection of the first phalanx and the nail of a single finger.

A great deal of compilation and translation has been made within the past few years on the subject of "The Science of the Hand," in which many truths have been elaborated as to the *meanings* of the *forms* of the hand and fingers, but without the *sound scientific basis* afforded by the basic principles of Form and comparative anatomy and comparative physiognomy. My observation on this subject will afford the reader the scientific bases which the works of D'Arpentigny and Desbarolless lack, albeit their works contain a fund of excellent information, but present the subject in its infantoid phase as an *art* and not as a science, and mingled with a vast amount of mediæval superstition.

The spirit of patient research, close comparison, and accurate observation of these two eminent writers on the Hand is most admirable, but, when they assert that certain forms of the hands are the results of the influence of an "occult astral fluid," it reminds one of the many fanciful and exploded theories of the mediæval age. The practical, common-sense age in which we live demands a demonstrable basis upon which to build a science of the hand as well as of the face of man. In this harmonious and orderly system of physiognomy this common base is elaborated, as I believe, in a practical and scientific manner. In my treatment of the physiognomy of the hand I shall use the basic principles of Form for my guide, as developed in Chapter II, Part I, for the explanation of the meanings of the several fundamental types of hand. The basic elements of Form, viz., the line, the angle, the square, and curve, apply to the hands, the fingers, and nails, in the translation of their forms into character, just as they do to the forms of the features and body.

The *color* and *texture* of the skin of the hands and of the nails are subject to the same general interpretation as are the same qualities found on other parts of the organism.

In reading character by the hand, it will be found to be in harmony with the face, and they will mutually interpret and corroborate each other; where the bone is the dominant tissue in the hand, and it be a square bone, the observer may be sure that the law of the straight line, the square, and angle governs the shape of the face, and this informs him that the ruling powers of the mind will be turned in the direction of science or mechanism, and that the strongest traits will be a love of order, thoroughness, and

observation, and that morality and conscientiousness will be the most conspicuous principles in the character.

Should muscle be the superior tissue in the hand, and the muscles be of the round class, a taste for music, sport, and domestic life will be present, as well as commercial and artistic powers. The same laws which reveal character in the face also rule in the delineation of character by the hand. Every minute appearance in the hand is as significant as when observed in the face, and close observation is essential to obtain the full import of these variations. Desbarolles says:—

> Hands may *resemble* one another, but Nature never repeats herself, and in objects apparently the most similar she places, sometimes by an imperceptible touch, a complete diversity of instincts.*

Every combination which can be made by the mingling of round muscle with square bones, or by the blending of round muscle with round bones, or by the joining of square bones with flat muscles, reveals a different character, and their anatomical diversities are just as potent in disclosing character by the hand as by the face or body. The form, size, color, and quality are not the only factors to be taken into account in reading the hand. We must observe the habitual movement, gesture, repose, proportions, hardness, softness, elasticity, extension, tension, curvation, and squareness of the several points and phalanges, and of the hand as a whole. Hard labor and certain kinds of labor often change very materially the hand and shape of the fingers, but it cannot change *all* of the natural characteristics so as to completely transform the appearance and produce the form of another distinct type; hard labor may thicken and widen the palm, it may enlarge the joints, but it cannot flatten the nail, nor make an oval nail square, nor make spatulate the square tip, nor make a round muscle flat, nor a square bone round. It cannot destroy the proportion of the phalanges; in short, it cannot so far modify the type-characteristics as to prevent the physiognomist from comprehending the accompanying character.

THE CONSTRUCTION AND DIVISIONS OF THE HAND.

The hand is divided primarily into three parts, viz., the carpus, metacarpus, and fingers. The fingers are divided into fourteen phalanges or joints, the thumb having but two phalanges. The joint which joins the hand is termed the first phalanx, the succeeding one the second phalanx, and the end joint the tip. The palm has two surfaces,—the back, or outside, and the inside, commonly

* The Mysteries of the Hand, A. Desbarolles, p. 176.

termed the "palm." The finger-tips are provided with abundance of fine and sensitive papillæ, or organs of touch, which give such exquisite tactile sense to the tips of the fingers; this sensitiveness has led to the expression that the tips are the "eyes of the hand."

The latter will be fine and sensitive, or coarse and insensitive, according as the skin is fine and thin, or coarse and thick; the texture of the hand coincides with that of the rest of the body, and in this manner the physiognomist decides upon the mental grade of the subject.

The hand may be soft and muscular, or soft and fat; the former indicates strength and artistic sense, the latter a dull, negative, vegetative nature. Warm hands denote good circulation, hence active mental powers, lively emotions, and sympathy; cool hands belong to those whose circulation is not rapid, hence they are not so quick mentally nor so strongly sympathetic as the former. Most hands, except in warm weather, announce pathognomonic disturbances, and indicate an abnormal condition. I have felt in one day the hands of a number of insane persons, and without exception I have found them cold and clammy, with a disagreeable moisture on them, thus showing disordered physical conditions.

The form of the hand always agrees with the form of the body or brain; that is to say, a long, thin hand will accompany a tall, thin body, and a short, thick hand belongs to a short and thick person; a short, fat, "dumpy" hand goes with the vegetative body.

There is no such thing as an "aristocratic" hand. Aristocracy is a human institution, while the shape of hands are a mark of Nature. Beautiful hands are not confined to any particular rank of life. True, the idle aristocrat can spend his time with the manicure, polishing his nails, and thus improve their looks; while the poor plebeian, born, perhaps, with the mind of an artist, or a metaphysician, may not devote as much time as the former to the cultivation of his finger-nails, yet exhibit a more beautiful hand. Hands which betray only superstition and imagination are often designated "aristocratic" by the ignorant, simply because they are white and soft, of small size, and of pleasing form; in this small, characterless hand the "aristocracy" is shown by less mentality or morality than is disclosed by more highly developed hands. I cannot imagine a more characterless hand than that of a Chinese woman, yet her hands are of the useless type termed "aristocratic" by those who know nothing of the *inherent meanings* of the forms of Nature.

The palm of the hand and the lowest phalanx of the thumb resemble the form of the trunk, or body, while the tips of the

fingers and thumb are indicative of the shape of the brain, and by their form and texture announce *its quality* and *powers*. A small, tapering thumb on a large or medium-sized hand denotes instinct, sentiment, passion, and a lack of strong reasoning powers, while a large, square-boned tip of the thumb indicates order, logic, and considerable firmness and perseverance.

THE POSITION OF THE HAND.

The habitual mode of holding the hand is a strong indicator of character. Avaricious people carry the hand with the fingers slightly curved, as if ready to clutch something; hence the term "close-fisted." The very secretive close the hand, or nearly so; while the heedless have the hands dangling loosely at their sides. Generous, frank, and open characters carry the hand wide open, and turn the palm or face of the hand outward toward the spectators; whence the term "open-handed."

THE LINES OF THE HAND.

The palm and the back of the hand present two diverse aspects of the character. The back is mainly bony, the palm is muscular or fat. Some of the lines of the palm of the hand appear at birth, others are caused by the development of the muscle or fat thereon. These lines are quite different in every individual, and the lines of the two hands of each individual are in most instances as diverse in appearance as are the two ears on the head of a given subject.

To a good physiognomist these lines (at least some of them) reveal much of the structure of the body, but whether they reveal one's *destiny*, as is claimed by palmistry, I am not able to say. It would not seem to me at all improbable, but it must have taken hundreds of observers and ages of research and comparison to have developed a practical system of this science. Some of the lines—those around the base of the thumb and on the inside of the knuckle-joints—are caused by the movements of the thumb and fingers; whether they have another and more occult meaning I know not. In fat hands these wrinkles would be deeper than in bony ones, and thus reveal physiognomical meanings. The hand seems to me a marvelously complex and subtle member, and pregnant with meaning in its numerous developments of form, size, color, texture, and motion, second only to the face as a physiognomical indicator, and often disclosing what the face does not reveal.

The primary or fundamental forms of the hand are four, and accord with the vegetative, the muscular, the osseous, and the

brain and nerve systems. All other forms are composites or blends of these four primitive types.

THE VEGETATIVE OR INFANTOID HAND.

The hand of a healthy infant is soft, fat, and almost destitute of any expression of character; it is in this stage only a picture of innocent, peaceful beauty, yet withal a symbol of undevelopment, like its associated forehead and mouth.

The hand of the vegetative adult is short, rather than long; thick, soft, and fat; the palm short and thick, the fingers fat and wrinkled, the knuckles dimpled, and with scarcely any more expression than the hand of the infant, yet lacking the beauty of the

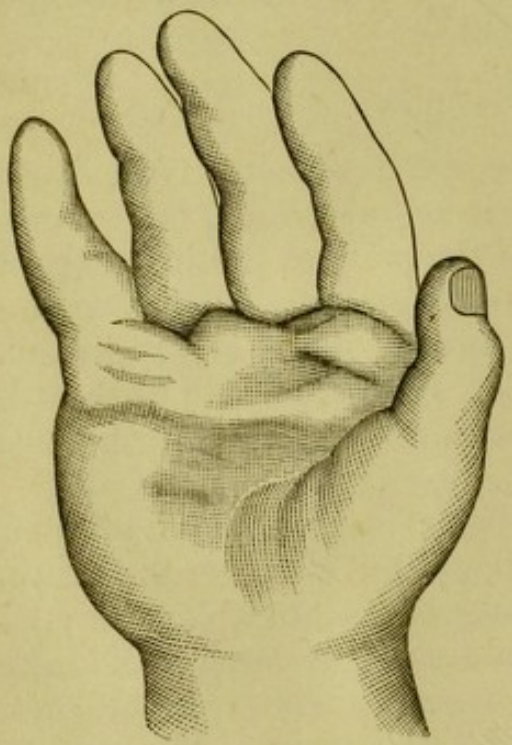


FIG. 328.—VEGETATIVE HAND.

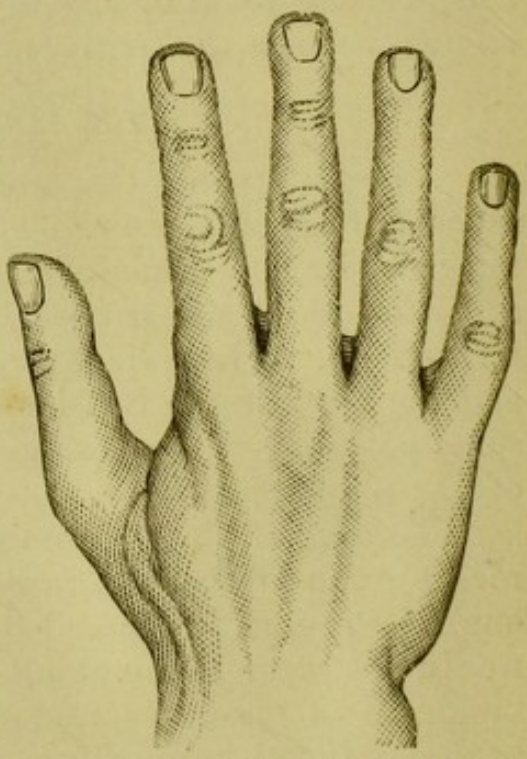


FIG. 329.—SPATULATE HAND.

babe. This form of hand discloses absence of force and activity, and the signs of both negative and positive character are as apparent in the hand as in the face.

The vegetative hand announces love of ease and repose, together with fondness for eating, and particularly for liquid diet; also love of amusements (if others make the effort), together with scant moral and intellectual powers, small self-control, and an ever-changing, fickle disposition, contented and good-natured until opposed, and then as wrathful as a rhinoceros in its rage. Domestic tastes (of a negative sort) are disclosed by this type of hand.

MUSCULAR CLASS OF HANDS.

Spatulate Type.—The main peculiarity of this type is found in the tips of the fingers, and the manner in which the nails are placed upon them. The word "spatulate," from which the term "spatulated" is derived, is used to designate the implement which the apothecary uses in mixing his compounds. It has been applied to those fingers which in a manner resemble that implement, which makes an excellent description of them. (See Fig. 329.)

The spatulate hand belongs to the muscular class, because, as is observed, the joints are not prominent, but straight at the sides, and hidden by muscle. There are several varieties of this type of hand, some of which have the thumb large, while others are small. The complexities and subtleties of the various combinations of form, as seen in diverse varieties of the same class of hand, are manifold. I have not space to delineate all of them, and can only give the associated characteristics of the primitive types.

The spatulate hand is the *useful* or practical hand within the muscular class. It shows by its flattened-out tip that the brain system is not one of the supreme systems of the associated organism. This form of hand is one which loves labor—hard, patient, manual labor—and enjoys comfort rather than luxury; its possessors present the most practical phase of the muscular classes; they exhibit an every-day, common-sense spirit, and enjoy the logic of facts rather than poetry; they are a combination of the mechanico-scientism of the square-boned subjects, with a slight degree of the artistic powers of the muscular hand, of *an ordinary quality.* Among them, therefore, we may look for good calculators, arithmeticians, and builders, those who are willing to do the real work of architecture, as well as able to superintend it; many carpenters and architects are found in this class.

They do not possess ardor and enthusiasm, but rather a cool, plodding, patient, and obstinate disposition, faithful to love and home, enjoying the liberty that others have created for them, and assisting to conserve and maintain a liberal government, yet lacking the push and enterprise to found such a one; hence, we do not find this form of hand among religious fanatics, governmental reformers, pioneers, and discoverers.

Commercial Type.—There are two distinct forms of hand included in the muscular class; one is short and thick, with fingers and thumb short and thick, and the joints smooth and concealed by the muscles, the fingers inclined to taper without being small at the tip, and the nails moderately broad and oval; this description shows that the round muscles are present.

The character which accompanies such a hand is commercial, amative, social, sportive, musical, and domestic, with a great deal of vitality, will, force, courage, vigor, and magnetism. W. H. Vanderbilt's and Roswell P. Flower's hands belong to this class.

Executive Type.—One of the varieties of this class is caused by a combination of the round muscles and square bones; with a large brain of high quality this modification shows capacity for politics and government, and exhibits ambition to fill executive positions. Many distinguished statesmen disclose this form of hand; Grover Cleveland's hands and those of the late Ex-President Thiers, of France, are examples of this class. This type of hand has a short, thick palm, with moderately short, thick fingers, of *fine texture* and color, a rather thick thumb, the joints of about equal length, and a wide, squarish nail. The dominant traits are Will, Force, Executiveness, Logic, and Ambition, with a subdominance of domestic tastes. This hand has a powerful grip, and is characterized by a quality neither very hard nor very soft.

Artistic Type (*Round Muscles*).—Another variety of the artistic hand is caused by a combination of round muscles with round bones and a subdominance of the vegetative system; this blend produces the best form for artistic efforts, for it gives strength and flexibility, with capacity for rapidity of movement; the qualities are essential to artists, singers, painters, instrumentalists, poets, and athletes. The palm exhibited by this structure is moderately thick, soft, and flexible, the knuckles often dimpled, the fingers of moderate size and length, and the joints entirely hidden; the fingers taper from the knuckles to the tips, which are conical. Many of the most eminent singers, poets, and painters possess this form of hand,—with individual differences, of course. With this hand is associated a character possessed of more emotion and affection than reason or logic; it discloses inspiration and magnetism, considerable Approbativeness, domestic tastes, particularly love of the young and love of the opposite sex.

Superstitious Type (*Round Muscles*).—Metaphysics is an art, not a science; sophists, idealists, and fanatics illustrate this type, for they deal in theories, both secular and religious, which are unsupported by facts. They can easily swing around the circle of faiths if only they be sufficiently fanciful, sentimental, and impractical, and tinctured with a mystically-religious spirit. This class of persons exhibit a small, thin hand, of fine texture, with long, slim, and flexible, tapering fingers, *pointed* at the *tip;* a slim, medium-sized thumb, also tapering; and a narrow, longish, oval nail, of an elegant appearance. This type of hand is found

mainly among tropical races,—in Asia, India, and among the Celts of Continental Europe. The religions of these people are founded on miracle and mysticism; their doctrines are of a dreamy, listless, negative nature; they possess emotion and affection rather than reason, justice, or morality. This form of hand is rare in northern countries, where practical common sense and reason abound. It illustrates the law of the curve rather than the law of the straight line and square, and thus reveals an artistic, sensuous nature.

The Hand of Deceit and Dishonesty.—Fingers very slim and very flexible, if pointed, indicate error, falsehood, sophistry, trickery,

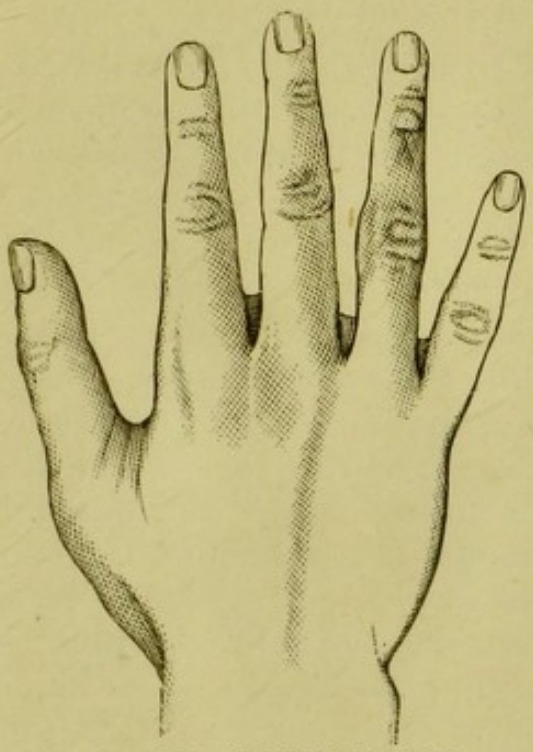


FIG. 330.—ARTISTIC HAND.

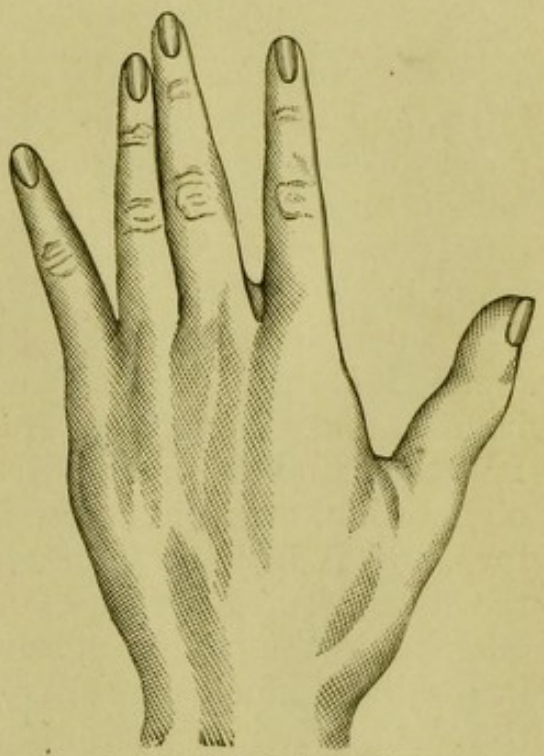


FIG. 331.—SUPERSTITIOUS HAND.

and deceit. The hands and fingers of many sneak-thieves are a modification of this type. I have observed many Chinese men and women in California with the superstitious hand; also a few of Anglo-Saxon descent. If the stature is tall the hand will be long in proportion.

MUSCULAR CLASS, NO. II (ROUND MUSCLES).

Artistic Type.—This type of the muscular hand is longer and thinner than the preceding, with longer fingers, the tips of which are hidden by the muscle; the fingers very slim, flexible, and ending in a conical tip, and a longish, oval nail; the thumb long and thin. The character associated with this hand is intuitional,—much given to romance and music; to religion of an occult and

superstitious nature; to poetry; to sentimental love and friendship. The eyes associated with this hand are large, flat, and round, but *not convex;* the neck, waist, and limbs are rather long. Ole Bull, the celebrated violinist, possessed hands of this type. Paganini, another wonderful violinist, had a most exaggerated form of this type; his hand had a weird, wizard-like expression, and harmonized with his face, which was of an almost unearthly appearance. Both of these artists were very tall, thin, and elastic, and resembled the bow of the instrument from which they drew strains of seraphic melody. Many poets exhibit this type of hand; also skillful jugglers, prestidigitateurs, and clowns.

THE OSSEOUS CLASS (SQUARE BONES).

Mechanical Type.—This class of hands exhibits three diverse types, and is revealed by the square-boned hand and square, flat nail; the second by the round-boned hand; the third by the square-boned fingers, knotty joints, with the tip not so square as the purely mechanical hand, and the nail curved outward instead of being flat, and with more of an oval form than the first mentioned. The square-boned hand of the mechanic has the bone predominant. It is characterized by a long palm; fingers with large, square bones, knotty joints, and square tips, and rather broad, flat nails. It is the hand of practical common sense, and is associated with observation, order, and morality, with faithful rather than ardent love, and is inclined to logical reason and religion founded upon the demonstrable rather than upon the miraculous. This hand is adapted to the heavier mechanical pursuits, to iron-work, plumbing, ship-building, carpentry, blacksmithing, etc. With this hand the bony system is slightly in excess of the muscular, with the muscle second in development; where there is a good brain and nerve system in combination the subject is capable of superintending mechanical works and of buying and selling mechanical implements.

Mechanical Type.—The second variety of the osseous hand is shown where the bones are round rather than square; this form of hand reveals the *artisan* rather than the *artist* or mechanic. It is a hand which has in a certain degree the power of both artist and mechanic. This type discloses a short and rather broad and strong palm, with short, round-boned, flexible fingers, and nails inclined to the oval; also a delicacy of touch suited to the finer works of mechanism, such as pattern-making, wood-carving, upholstery, type-writing, piano-playing, photography, millinery, and decorative art. With a good brain system in combination, ability for surgery will be often manifested, as surgery requires a small, strong, flexible, constructive, muscular hand.

Scientific Type.—The character which shows a decided taste or talent for the natural sciences has a hand more bony than muscular; the palm not so thick as the muscular hand, but long and bony; bony knuckles; large, square-boned thumb, with the two phalanges equal in length, or nearly so; longish, square-boned fingers with knotty joints, the tips more square than pointed, and the nails more oval than square and curving outward from side to side, instead of being flat and square, like the mechanical hand. The characteristics which accompany this hand are a love of truth and the facts and laws of Nature, and an insatiable desire to investigate them; a logical, rational mind; an even temper and



FIG. 332.—SCIENTIFIC HAND.

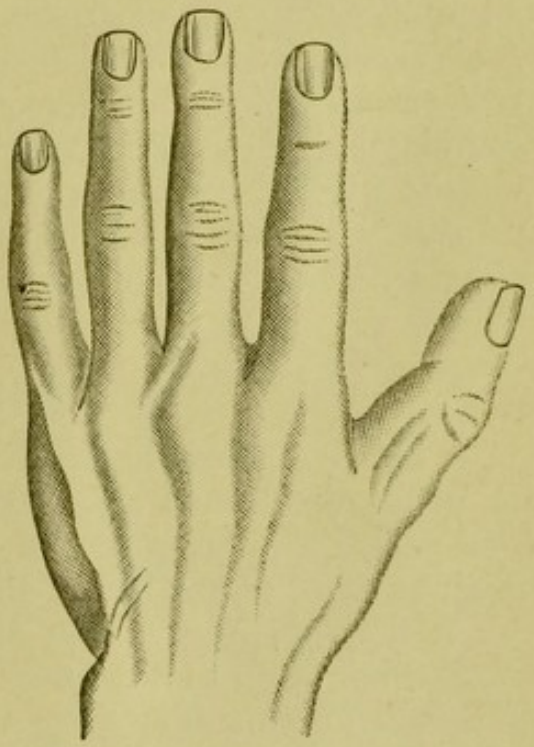


FIG. 333.—PHILOSOPHIC HAND.

the emotions well under control; the affections more tender than violent, and faithful rather than capricious. Those of this type desire reform, progress, elevation, learning, and liberty; they enter cordially into plans tending to advance these principles, and are original in opinion, firm, amenable to law and order, and independent in thought.

Philosophic Type.—Philosophy is one of the branches of science, and its expounders are characterized by hands which contain a good deal of bone, with perhaps an almost equal amount of muscle; this gives the *art* side of science.

The palms of these hands are noted for their thickness and smoothness; the joints well marked, but hidden beneath the muscle; the fingers incline *slightly* to taper from the knuckle-joint, and the

tips are a compromise between the square and oval; the nails are of the same compound form. The mental powers associated with this hand are of the logical order, and manifest themselves by a study of political economy and the fundamental principles of mind and matter; they evince a taste for realities rather than for ideals.

BRAIN CLASS.

Mental Type.—Those in whom the brain system is dominant disclose relatively small, thin hands, with a thin and rather feeble palm; very slim, tapering fingers, with the tips pointed and the nails small and oval; joints scarcely perceptible, and which seem as though composed of gristle rather than bone. The peculiarities of this class are manifested by power for protracted thought, and by great sensitiveness and delicacy of the emotions; the affections are platonic or sentimental rather than sensuous. If the form of the bones of the fingers be round the mind will incline to metaphysics and the *belles-lettres*, and if they be square the mind will turn to the study of the laws of Nature—of science and mechanism.

MIXED HANDS.

There are many hands which cannot be classed with any of the before-mentioned primitive types; they are the mixed hands, those which are not purely of one or the other of these types, but which partake somewhat of the nature of more than one.

It is impossible, within my present limits, to enter into a detailed description of this mixed multitude; I shall leave to the student an opportunity to exercise his comparison upon them; it will afford a fine field for physiognomic study, and an exercise of comparative anatomy as well.

There is one hand of the mixed varieties, however, which it is well to describe, inasmuch as it is often found in this country, but not so much among natives as among immigrants from Europe. These hands are seen mostly among the Russians, Hungarians, Poles, and the natives of other countries who have been working like "dumb-driven cattle" for ages. This hand is about evenly made up of bone and muscle of *coarse quality*. The palm is thick, hard, and broad, and spreads out as it nears the thumb in a rude outline; the fingers are long and thick, not flexible, with a *slight* inclination to taper; the joints are large, but not knotty; the nails are short and broad and of a rounding form; the thumb is not large in proportion to the fingers, and in its habitual position it curves outward.

The Useful Type.—The mind associated with this hand is obtuse, wanting in sensitiveness and imagination; the possessors of such are born drudges of the most common type; they are lacking in enterprise, progress, or artistic appreciation, and are indifferent to everything beyond their own material interests, and their ambition is satisfied with enough for the present. They care nothing for fame, reputation, nor religion, except one which exempts them from thinking, and are never zealous or enthusiastic in this direction; in short, it is the hand of stupidity, of drudgery, of dullness, and negative morality. This class of persons are very useful in all civilized communities as hewers of wood and drawers

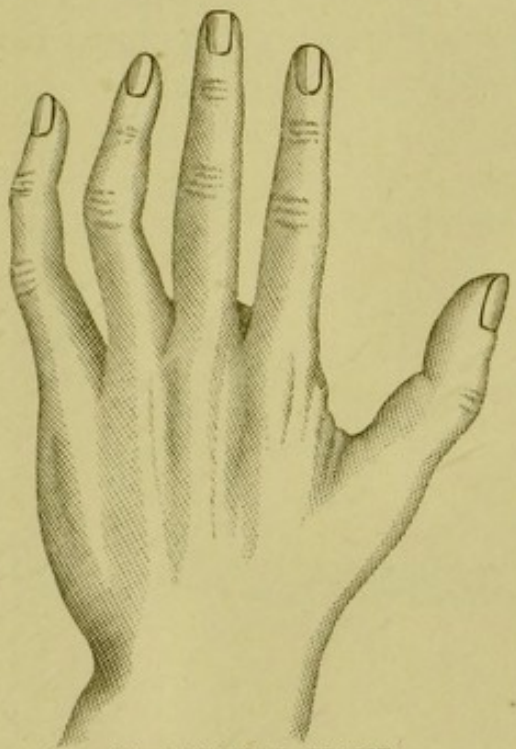


FIG. 334.—MENTAL HAND.

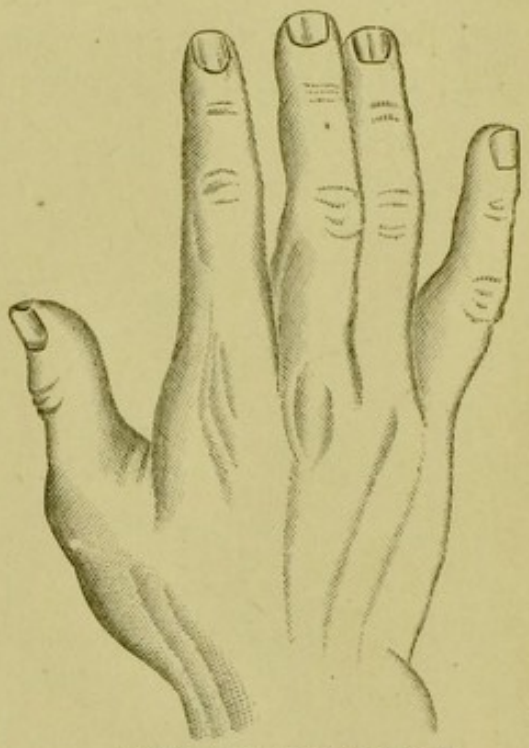


FIG. 335.—USEFUL HAND.

of water for those more finely organized; they fill the most lowly positions, and such as require little thought and judgment, such as wood-choppers, canal and railroad laborers, miners, scavengers, hostlers, etc. Should fortune favor them, as it often does in this country, and they obtain wealth and luxuries, they make a most unintelligent use of them, and are the laughing-stock of all, on account of the ignorant and tasteless manner which they exhibit in the use of them.

BEAUTIFUL HANDS.

Types of beautiful hands may be found within all of the fundamental classes, viz., among the vegetative, the muscular, the osseous, and the brain classes. A bony hand, if not too bony or scrawny, discloses one kind of beauty, a muscular hand another

sort, and thus of each class of hands. A study of physiognomy will enlarge our understanding of beauty, and teach us that there are beauties to be found in hands other than those that are merely small, soft, and white, for *beauty of character* is often revealed by hands that are not small, soft, and white. A hand with the osseous system predominant, if associated with high quality, *i.e.*, with a fine skin and a healthy color, is certainly a beautiful hand, or appears so to one who has enlarged his understanding of beauty by a study of the *inherent meanings* of Form.

The hand of an adult which is soft, white, and dimpled, without much decided form, is almost as devoid of character as an infant's; any person who could consider this more beautiful than a bony hand, which reveals fine and noble characteristics, must certainly be wanting in physiognomical sense.

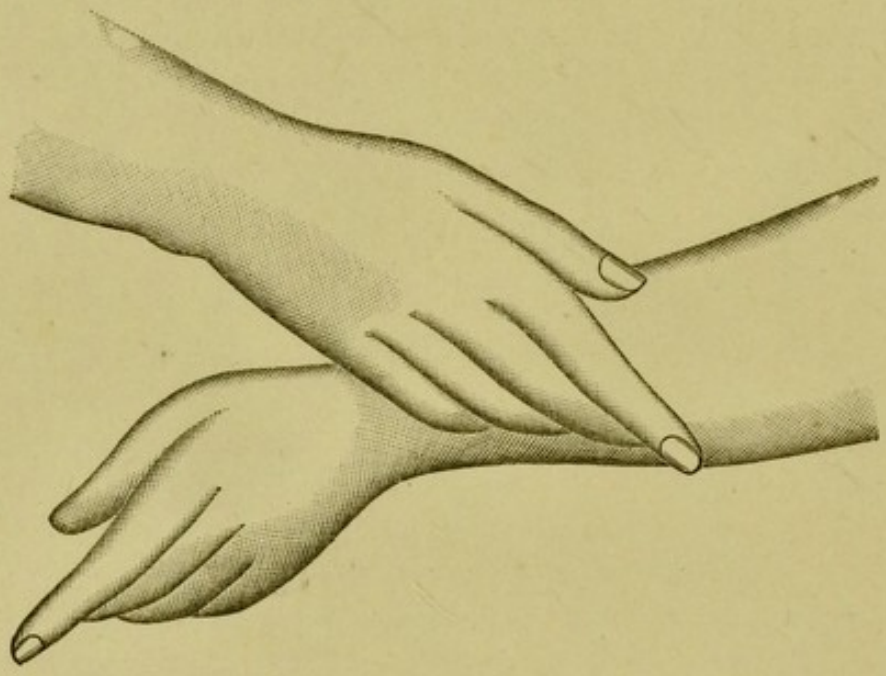


FIG. 336.—BEAUTIFUL HANDS. (EMPRESS OF RUSSIA.)

Various Types.—Hands in which the bones and nerves predominate arouse in me the utmost enthusiasm, inasmuch as they reveal the height of moral grandeur and heroism; such hands must have belonged to Andrew Jackson, and, slightly modified, to Abraham Lincoln and William Ewart Gladstone.

Hands seem to me to be beautiful that express capacity, either of a moral, mental, artistic, or useful nature.

I cannot consider a hand beautiful that is *disproportionately small.* When seen on a man it gives one an unpleasant feeling, and we *instinctively* feel that there is some littleness or a dwarfed condition of the associated character; a physiognomical investigation will show this to be the case.

Harmony of proportion in this, as in all features, constitutes real beauty. A hand or foot disproportionately small is no more a sign of beauty than is an undeveloped nose, mouth, or chin.

A well-proportioned hand is one which harmonizes not only in its several parts, but also with the arm and body to which it is attached.

In my estimation, large hands or feet on a man are signs of *manly character*, for such members express *power* of some sort; men whose hands and feet are large do nothing *on a small scale.*

The most beautiful object in this world, next to the human face, is a baby's hand; it is the embodiment of grace, innocence, and beauty.

Small wonder that the Palmers of old gazed into the hand in order to foretell the future. It is a wonderful and interesting object, and the next most striking feature to the human face, which I regard as the most marvelous object in existence; it is the epitome or sum of all things in the universe.

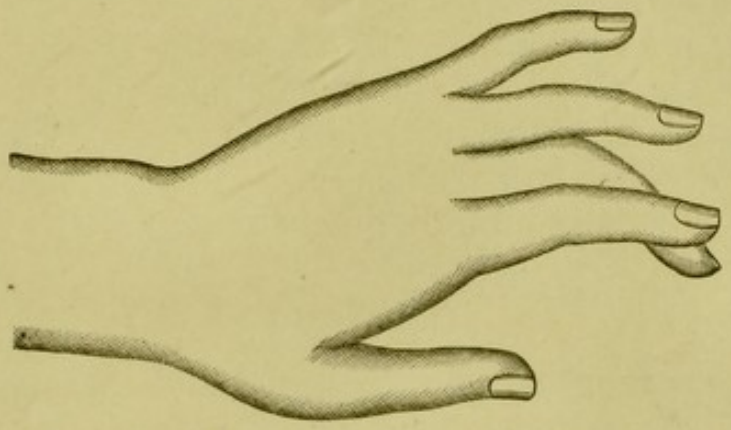


FIG. 337.—BEAUTIFUL HAND. (TAGLIONI.)

THE TEXTURE OF THE HAND.

A great deal of knowledge both of the mental and physical nature of individuals may be ascertained by the texture of the skin covering the hand. If it be fine-grained and thin, with the pores invisible to the naked eye, the mental powers are very keen, acute, and sensitive, the physical functions active, and the emotions intense by reason of the high organization of the brain and nervous system. If the pores are large and the skin thick, a common order of intellect is present and the functions and emotions are much less active than in the former subject. An excellent plan to ascertain the real condition of the skin is to inspect the under part of the wrist and arm, for this part is protected and usually retains its natural color and texture when labor and exposure have changed the texture and color of the skin of the hand.

A fine, brilliant color of the outer portion of the palm is a great beauty. This is seen only in the hands that express considerable intelligence; it is caused by a fine, thin skin and a healthy quality of blood.

The under part of the finger-tips should be a pink or of a healthy red color to come up to the normal standard.

THE COLOR OF THE HAND.

In a normal hand the skin should be white and clear, or brown and clear, and a roseate hue should be seen under the nails, the tips of the fingers, at the outer sides of the palm, and on the tip of the thumb. Hands that are well colored are warm, and this shows a good circulation and indicates great vitality, warm and active feelings, and strong sympathies.

Very thin, colorless hands denote a fragile, sensitive mind and body, not long for this world, because the stock of inherited vitality is not sufficient to continue life to an extended period.

Some hands are olive-colored, as we observe among the Spanish, Italian, and French. If the skin of these hands be clear in appearance and fine in texture, it is indicative of a high grade of quality and of mentality. If, on the contrary, they are thick and muddy in color and coarse in texture, it denotes a much coarser grade of feeling and inferior mental powers.

The Nails.

There are very great differences of form, size, color, and quality in the nails of the fingers; these diversities are as rich in physiognomic meaning as are the same qualities in the face.

The forms and sizes of the nails have been described along with their associated classes of hands and fingers. The texture of the nails discloses character. Nails of fine, thin, smooth appearance belong to the fine and refined, to the mental rather than to the unrefined and stupid; while nails thick and coarse in texture belong to the coarse, strong, and unrefined, with more capacity for manual than for mental labor. There are various grades between these two extremes which only careful observation and comparison of each subject can reveal; the nails will agree with the quality of the skin, and will indicate the mental status of its possessor.

Nails that present a flat appearance indicate dyspeptic and consumptive tendencies, or at least congenital weakness of the nutritive system. Nails that are highly arched from *side to side* disclose not only good assimilative powers, but also large lungs and an arched chest.

THE COLOR OF THE NAILS.

The *color of the nails* reveals internal powers, both physiological and mental. Colorless nails, if congenital, denote a feeble condition of the circulation—hence absence of strong, ardent sympathies—and a brain incapable of profound and protracted labor. If flat as well as colorless, they denote consumption or dyspepsia, and foretell an early decline.

A bright, pinkish color of the nails denotes a good quality of the blood, hence warm feelings and capacity for activity. If flat, with good color, the disposition is not as aspiring and energetic as when well-colored and arched from side to side; the latter belongs to the most energetic and ambitious minds, capable of profound thought-of executive powers, and desirious of leadership.

This combination of form and color shows that the thoracic and nutritive systems are well developed, hence the *arched nail*, combined with a healthy color, denotes just what the arch does wherever found, viz., power, vigor, activity, health, and longevity.

It is by these minute appearances that character is determined, for they rest on the basic laws of Form, and are governed by the laws of homogeneity and harmony, by the action of which one such minute portion of the body as the finger-nail is able to reveal the structure of the interior organs, the mode of action of the mind and feelings, and in many cases the probable duration of life.

Nails that are sallow in color disclose biliary weakness or jaundiced conditions.

Those that are dark in color announce imperfect aëration of the blood, hence imperfect action of the heart may be inferred.

Nails that bend over the tops of the fingers denote feebleness of the lungs or organs of digestion, or both.

The nails in some races, notably among the Chinese, are cultivated in lengths and are considered signs of high breeding, as showing that those who exhibit them are not obliged to do manual labor. I have seen many Chinese merchants with several of the finger-nails three or four inches in length, and I once met a man who trimmed the nail of his little finger to a point and wrote with it in place of a quill.

A nail arched and rosy, whether square or oval, is a sign of health and normal development; hence is a mark of beauty. The nails can be improved in shape, smoothness, and brilliancy by polishing and careful cultivation with brush and scissors.

"Hang-nails," as the loose bits of skin are termed which appear about the rim of the nails, should be removed, as they detract both from comfort and beauty.

Biting the nails is a habit which in children should be corrected; this can be done by making an application of myrrh or quassia to them. Ulceration of the stomach has resulted through swallowing the fragments of nails bitten off.

The preceding description of the several facial features and physiognomic indications gives most valuable knowledge of the human face, not only in regard to the *significations* of the form and color of the features, but also in regard to the subjects of *beauty*, morality, and intellect. I shall be rewarded if my ideas are understood and practically applied in the daily life of my readers.

CHAPTER IV.

Signs of Health and Disease, Strength and Weakness, Beauty and Ugliness in the Human Face and Body.

IT would seem, at first mention of the subject, almost a work of supererogation to point out the signs of health and disease, strength and weakness, beauty and ugliness in the face and body of man, but I find quite as great a lack of this knowledge in the minds of the masses as I do of physiognomical indications. I shall therefore devote a space to the discussion of these subjects.

Without a knowledge of scientific physiognomy and the basic principles of Form it is impossible to know what appearances in the face reveal either health, beauty, or feebleness, unless they are very decided, and even in this case there are many who could not state decisively what these indications were. The densest ignorance in regard to beauty is so prevalent that it is small wonder that its corresponding signs of health are as little understood, for strength, health, and beauty are synonymous.

The majority of people regard as beautiful only those faces and forms in which the *curve* abounds. Some do not have as high a standard of beauty as this, even, and regard as beautiful those features in which the *concave* outline is present.

Now, we have learned in the preceding chapters that the concave outline in any feature or member ever denotes relatively enfeebled conditions; hence, the concave nose, cheeks, or chest cannot rightly be considered beautiful because they are *departures* from the *normal standard* of Form, and denote relative weakness. In order, therefore, to have a *correct* idea of beauty, health, strength, or weakness, we must apply the laws of Form to every feature of the face and to every part of the body. In this way our comprehension of beauty, health, etc., will be much enlarged, and our knowledge of the powers of the human mind and body be greatly increased. Had we no *standards* of form by which to test our forms and powers, personal opinion would be the only criterion as to what constitutes beauty and health. The fact that one *likes* or *prefers* a certain formation or a certain face does not make that

form or face beautiful, any more than disliking a face makes it ugly. The *application of the laws* of Form alone will reveal *true beauty*, as well as good health, strength, feebleness, or ugliness of features.

That face is healthful and beautiful which denotes a balanced condition of the several visceral organs and other systems of the body, *provided* the organism be of a normal quality and in a normal condition. A balanced state of the visceral organs is shown in the face by *general* development of *all* the *features*, together with a bright eye and a clear skin, a healthy color of the complexion, and well-colored eyes and hair, a good-sized nose, large nostrils, full cheeks, a well-proportioned chin, curving lower jaw, a forehead broad and wide (rather than narrow and high) and developed at the sides and front, well-shaped cheek-bones, a well-proportioned upper lip, gums not visible, regular teeth, broad (rather than long and narrow) and red, moist lips. These indications are all signs of beauty, whether observed separately or associated in the same physiognomy.

An unbalanced or weak organism is shown in the face by relatively small or imperfectly-constructed features, as, for example, a chin very short and narrow, hollow cheeks, perpendicular jaws, a mouth too small or misshapen, exposed gums, irregular teeth, or teeth long and narrow; thin, bloodless lips; a very short upper lip; nose very thin or extremely short or concave in its outline, or turned too far downward at the tip, or narrow nostrils; upper cheeks very flat; eyes extremely small and sunken or excessively large and bulging, or exhibiting a very narrow commissure or opening between the lids; hollows in the forehead at the temples or in the front of the forehead.

A thick, leaden-colored skin, or one that is colorless, or one too florid or purplish in hue, or covered with pimples and discolored spots; eyes and hair very light; narrow, high, spherical forehead; dull eyes, or those in which the sclerotic or "white" of the eye has turned yellow or is bloodshot,—all of the above-mentioned signs of weakness are all signs of ugliness or lack of beauty, of talent and mental ability.

SIGNS OF STRENGTH.

Great strength is not always the attribute of the largest bodies and faces, any more than the largest heads are the indicators of the greatest minds. As a rule, *very large* persons are not so strong and capable of endurance as those of medium size. One of the best indications of strength of body is breadth, not only of the

shoulders, but of the head and features. A broad, compactly-built man, of medium height, who possesses a good, healthy skin and complexion, and well-colored eyes and hair, is more apt to be strong



FIG. 338.—THE FARNESIAN HERCULES.

This grand statue, now in the Museum at Naples, was executed by Glycon, an Athenian, with the exception of the right hand, which is modern. The artist must have made a long and comprehensive study of both anatomy and physiognomy, for the face corroborates and repeats the body. It is a specimen of ancient art, and was discovered in the Baths of Caracalla. It is a model of manly strength and beauty, and embodies Lavater's signs of strength given in following pages. Were all mothers to follow the laws of Nature, such manly figures might be living realities, instead of being seen only in a marble statue.

than a very large man with pallid skin, very light eyes, flabby flesh, and muscles loosely put together.

The circumstance of color greatly influences the muscular

power and capacity for endurance. Color gives strength and integrity to the tissues, and a good complexion is one indication of good arterial circulation.

There is a wide difference between mere muscular strength and the ability to *endure* long-sustained labor or deprivation of food and sleep. A good muscular development is required for great efforts in lifting, etc., but for endurance one must have a good digestion, normal nerves, strong and square bones, pure blood, and good lungs, as well as a fair endowment of muscle, and *all of high quality*. Form and Quality are the two most important factors in detecting signs of strength and weakness. Lavater has given so good a description of these indications that I here reproduce them, with his remarks thereon, for the benefit of my readers. He remarks thus:—

What we call *strength of body* is that natural faculty of man in virtue of which he acts powerfully and without effort upon another body, without easily yielding himself to a foreign impulsion. The more a man operates immediately, and the more difficult it is to move him, the stronger he is; the less he is able to operate, and the less resistance he can make to the shock of another body, the more weak he is.

Strength may be divided into two sorts,—the one, *calm*, the essence of which consists in immobility; the other, *lively*, which has motion for its essence; that is, it produces motion without yielding to it.

The latter may be exemplified by the elasticity of the spring; the former, by the firmness of the rock.

I put in the first class of strong persons those whom you may denominate *Herculeses*, in whom everything announces the most robust constitution; they are all bone and nerve; their stature is lofty, their flesh is firm and compact; they are pillars which cannot be moved.

Those of the second class are of a complexion which has not the same firmness nor the same density; they are less corpulent and massy than the preceding, but their power unfolds itself in proportion to the obstacles which oppose them. If you struggle against them, if you attempt to repress their activity, they stand the shock with a vigor and repel it with an elastic force of which persons the most nervous would hardly be capable.

Solid and calm strength manifests itself by a well-proportioned stature, (rather too short than too tall), a thick nape, broad shoulders, a face rather bony than fleshy, even in a state of perfect health.

I add some other signs which announce this species of strength:—

A forehead short, compact, and even knotted; frontal sinuses well-marked, not too prominent, and which are entirely smooth in the middle, or with deep incisions, but whose cavity ought not to be limited to a simple flattening of the surface; eyebrows bushy and close, placed horizontally, and which approach near the eyes; sunken eyes, and a determined look; a nose broad, firm, bony near the root; contours straight and angular; the hair of the head and that of the beard short, curled, and thick; small teeth, somewhat broad and well set; close lips, and the under one jutting out, rather than drawn in; a broad, prominent chin; the occipital bone knotty and projecting; a bass voice; a firm step.

The signs of weakness given by Lavater are as follow:—

The following indications are those of weakness: A tall stature without *proportion;* much flesh and little bone; tension of the muscles; a timid countenance; a flabby skin; the contours of the forehead and of the nose rounded, blunted, and, above all, *hollowed;* a little nose and small nostrils; a short and retreating chin; a long, cylindrical neck; a motion either very rapid or very slow, but, in either case, no *firmness* of step; a gloomy look; depressed eyelids; an open mouth; long, yellowish or greenish teeth; a long jaw, with a joint close to the ear; the flesh white; fair, tender, and long hair; a shrill voice.*

My own observation indorses all of these signs.

Signs of weakness in the face are related to and point out defects of *bodily organization*, as, for example, a small nose and pinched nostrils show that poor ventilation and compression of the waist, continued through several generations, are the cause of these facial appearances.

Pimples and blotches on the face are the result of dietetic sins of the one exhibiting them, or of his ancestors, or both himself and those preceding him. One of the most prolific causes of a defectively-organized liver and small, weak lungs is compression of the waist; and this compression, no matter how moderate, if habitual and practiced by one generation after another, as observed in all so-called civilized communities, will in time result in facial ugliness, and its effects are shown by a small nose, pinched nostrils; sallow, or leaden, or pallid complexion; dull eyes, hollow cheeks, perpendicular jaws; pimpled, blotched, and discolored skin, and other facial abnormalities.

These defects appear in both sexes, although compression of the waist is practiced almost entirely by the female sex. The sons as well as the daughters born of a long line of females who have practiced this terrible habit show both in their face and physique the direful effects of a custom which leaves its unmistakable signs upon the body and face. Its influence upon the mind and moral sense are equally apparent, for, as I have shown that mind and body are a unity, and that physical function and mental and moral faculties are closely related, and that the signs of these functions and faculties are registered in the face and upon the body, so it must be apparent to the thoughtful that in order to have true beauty, true goodness, real strength of mind, of morals, and of body, attention must be paid to making every organ and function of the body as nearly perfect as possible.

The exterior of the body is *dependent for its form* upon the size, shape, and activity of the *interior organs mainly;* hence, it will be seen that, in order to have a beautiful exterior,—in order to

* Lavater on Physiognomy, edition 1877, London, vol. iv, p. 131 *et seq.*

have a handsome face and a fine bodily organization,—due attention must be given to the condition of the internal organs.

Exercise in a gymnasium may develop the muscles to a degree, but, unless proper attention is given to diet and rest, to ventilation, etc., real, enduring strength will not result. The *power* comes from *within*.

COMPRESSION OF THE FEMALE WAIST.

Many women entertain the idea that *moderate* compression of the waist is not at all hurtful.

Now, *moderate compression is what produces all these deformities*, for, according to accounts, no woman ever laces tightly;

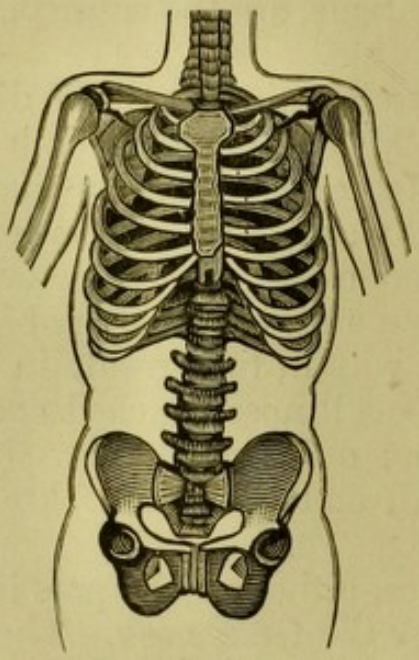


FIG. 339.—NORMAL FEMALE WAIST.

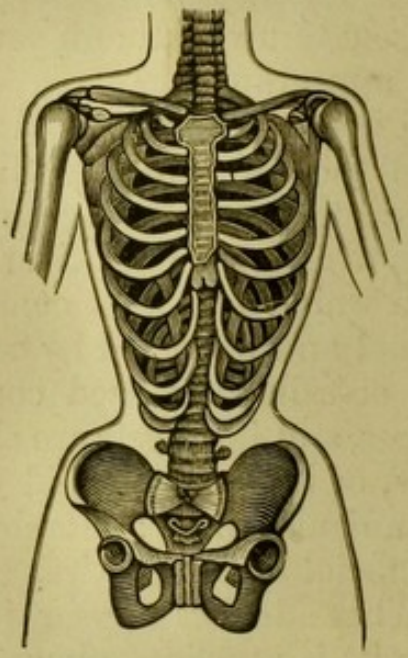


FIG. 340.—ABNORMAL FEMALE WAIST.

and thin, weak, ugly figures and faces are quite numerous in every *civilized* community.

This species of deformity has never been attempted by savage races; indeed, no barbarous race has ever exhibited a variety of deformity at all comparable to this in its disastrous effects upon mind and morals. The compression of the brain by the Flat Head Indians, it is said, does not at all injure the intellect, while we know that lacing the waist not only injures the intellect, but it also produces immorality, disease, and ugliness. Could we have one generation of *mothers* whose waists were not at all deformed, I am convinced we should have a generation of children that would be a wonderful improvement upon the present one, although I think it would require *several* generations of uncorsetted mothers to undo the dreadful effects of their predecessors.

Moderate lacing, as well as tight lacing, induces the following disorders: Liver complaint, dyspepsia, uterine disorders, rush of blood to the head, weakness of the lungs, shortness of breath, and



FIG. 341.—THE VENUS DE MEDICI.

This transcendently beautiful statue was executed by Cleomenes, who lived over three hundred years B.C. It is on view at the Uffizi Gallery, Florence. Copies of this statue are to be found in all the academies of art throughout the world, where it is made the basis of design. The fine development of the waist enlightens us greatly as to the *normal* contour and muscular development of the female form. It will be observed that the measurement of the waist is nearly as great as that of the shoulders. A few generations of mothers with such bodily outlines would usher in a race of wonderful beings, far surpassing any known to history; for the high development of the mind and morals depends upon the normal condition of every organ and function. The mind and body are a unity.



FIG. 342.—EGERIA.

Egeria, one of the goddesses of ancient Rome, discloses a bodily development which is a marvel of strength and beauty. It would be well if our modern goddesses possessed such a development of the waist, body, and limbs. Under a correct regimen there might be large numbers of women thus beautifully developed. In her countenance, attitude, and contours the qualities of female beauty, strength, and loveliness are observed. An analysis and comparison of the several parts of the body will prove a grand lesson in the correct proportion of the female form. Comparison of the girth of the thorax above the bust with that of the waist line just below the hip-joint will give a just idea of the relative size of these two parts; the waist size will prove to be the larger.

other disorders. It makes the face sallow, ashen-colored, pimply, and pallid; makes the end of the nose red or purple; creates small nostrils, a concave nose, and shows in the walk and voice, which latter it eventually reduces to a thin, piping, shrill, or nasal tone. A constant pressure upon the interior organs causes them to become more and more constricted in their action, and, as there is not sufficient room in the cavity of the body at the waist for them to act, they press some of the organs downward, and this displacement of organs in woman gives rise to congested conditions, which in turn lead to hysteria and other immoral states. Obstructed circulation prevents the blood from being properly purified in the liver and oxygenated in the lungs, and these two circumstances combined prevent the brain from receiving its share of nutriment, and brain exhaustion, feeble-mindedness, and loss of memory follow. Not only does the subject of this dire practice suffer in her own person all of these terrible consequences, but she transmits all sorts of enfeebled conditions to her offspring, and all these evils ensue from "moderate lacing."

SIGNS OF BEAUTY IN WOMAN.

The illustrations (Figs. 339 and 340) of the normal and abnormal waist of the female figure show to what extent this deformity has gone, while the beautiful illustration of the Venus de Medici shows to what degree of beauty and strength the female figure may attain under right conditions.

Of all the indications of beauty in the female, I rank, first, a proportionate waist; that it to say, a waist of from twenty-four to twenty-six inches for average-sized women in youth: smaller sizes for slight, thin women. The second greatest beauty of woman is a clear and fine skin and a brilliant complexion; the third, a handsome mouth; the fourth, a well-shaped nose; the fifth, bright, well-colored eyes.

If a woman possess a large waist, and does not compress it artificially, she is quite likely to have a fine complexion, as well as a form normally developed. Many other beauties of face, body, mind, and sentiment are sure to follow the development of the physical powers, for the normally-constructed woman will evolve a normal condition of emotion, sentiment, and intellect; hence, I recommend all women who wish to enhance *all their charms* of mind, body, and affection to avoid compressing the waist even *moderately*. A woman who develops her physical powers up to their highest degree, evolves a magnetic power which no wasp-waisted belle can acquire, and which has also the good quality of *permanency*.

HEALTH HINTS.

There's a skin without and a skin within,
A covering skin and a lining skin;
But the skin within is the skin without,
Doubled inward and carried completely throughout.

The palate, the nostrils, the windpipe and throat,
Are all of them lined with this inner coat,
Which through every part is made to extend,
Lungs, liver, and bowels from end to end.

The outside skin is a marvelous plan
For exuding the dregs of the flesh of man;
While the inner extracts from the food and the air
What is needed the waste of the flesh to repair.

Too much brandy, whisky, or gin
Is apt to disorder the skin within;
While, if dirty and dry, the skin without
Refuses to let the sweat come out.

Good people all, have a care of your skin,
Both that without and that within;
To the first give plenty of water and soap,
To the last, little else but water, we hope.

But always be very particular where
You get your water, your food, and your air;
For if these be tainted or rendered impure,
It will have its effect on the blood, be sure.

The food which will ever for you be the best
Is that you like most, and can soonest digest.
All unripe fruit and decaying flesh
Beware of, and fish that is not very fresh.

But of all things the most I would have you beware
Of breathing the poison of once-breathed air.
When in bed, whether out or at home you may be,
Always open the windows and let it go free.

With clothing and exercise keep yourselves warm,
And change your clothes quickly if caught in a storm,
For a cold caught by chilling the outside skin
Flies at once to the delicate lining within.

All you who thus kindly take care of your skin,
And attend to its wants without and within,
Need never of cholera feel any fears,
And your skin may last you a hundred years.

JOSEPH POWER.

THE FACIAL FEATURES AS REVELATORS OF STRENGTH AND BEAUTY.

The practical value of scientific physiognomy is nowhere more apparent than in the exposition it makes of the construction and conditions of the internal organization of the human body. By the face alone we are able (if we read it scientifically) to distinguish differences in the form, power, and ability of the several visceral organs and systems. Physicians have long understood the value of the pulse as an indicator of health and disease; the

tongue, also, discloses both healthy and diseased conditions of the various organs, tissues, and systems hidden from the sight and touch of man; the face, too, has been relied upon to some extent in diagnosing the changes and conditions incident to disease. Yet the face, as an exponent of the form, size, and natural power of the different organs and systems of functions which constitute the organism as a whole, has never been understood until this system presented it. This knowledge, added to an understanding of the facial signs of health and disease, will be of incalculable advantage, particularly to physicians and mothers, and, indeed, to all who are desirous of understanding and conserving their mental and physical powers. I design, in this chapter, to give a few of the prominent signs by which diseased and healthful organs and conditions can be ascertained.

To a thoughtful and observant person the face will seem naturally to be the exponent of the entire organism. It has evolved just in the same way that the various organ systems have developed. From the expressionless faces of the lower animals, the human face has gradually assumed its present degree of perfection of form; as the evolution of the race continues, it is probable that there will be additions and changes of the physiognomy to suit the altered mental and physical conditions which evolution will entail. There has been a constant change and addition of expressions in connection with the evolution of the physical and mental powers. The physiognomies of the most advanced peoples are much *more expressive* than those of the lowest races; the physical powers of the former are more *highly specialized* than those of the latter; in fact, we find that the mental powers keep pace with physiological development all along the line of progressive growth.

The forehead, chin, and defined nose are the latest acquisitions to human physiognomy; none of the lower animals possess either, neither have they the same degree of reason, conscientiousness, and mechanical ability as the developed man; and the signs for these faculties are found in the forehead, chin, and nose.

THE NOSE.

The nose, as has been shown elsewhere, is an indicator of both lungs and heart; and, as man depends upon his breathing and circulatory power for his ability to perform almost all of the useful and great acts of life, the importance of the high development of the nose in regard to size and form must be apparent to the reader; therefore, any peculiarity in this feature which would indicate a deficiency in the action of either the lungs or the heart

would necessarily afford the clue to the grade of mentality of the possessor of such peculiarity.

When we wish to discover the natural construction of the lungs and heart and the power and vigor of the circulation, as well as the ability of the lungs to oxygenate the blood, we must look to the size and shape of the nostrils and nose. If the nostrils be small, the lungs will be small also; and the heart, not receiving a large supply of well-oxygenated blood, will not, of course, be as powerful as where the supply is greater. The natural or inherited quality of the individual is useful in estimating the strength or weakness of the internal organs and the power of their functions; this, too, must be taken into account in forming an opinion in regard to their action. The texture, color, and clearness of the skin and eyes, as remarked elsewhere, will assist in arriving at the *quality* of the physiology of the individual.

These characteristics of the natural physiological conditions give us an understanding of the mental powers, for mind is only a question of physiology. Although we have been taught that it is something superior to the body, we know that it cannot exist apart from it, and cannot be regarded as an entity. Now, when we observe a person whose nose lies flat, or nearly so, against his face, we know directly that his mental construction is of a very low order, from lack of the physical assistance which a developed state of the lungs, heart, and stomach renders. A low, flat nose denotes a low grade of intellect—low, because there is not the proper apparatus for assimilating enough of the constituents of the atmosphere to give noble aspirations and lofty and vigorous thought. A hollow or "scooped" nose—that is to say, a nose which is very low at the centre and lies nearly level with the plane of the face—is always accompanied by a weak stomach, or a tendency to such weakness. Hollow, retreating eyes and depression of the orbits or surrounding parts disclose a deficiency of power in the muscular system. If the bones of the forehead do not project well out over the eyes, the bony system is comparatively small; that is to say, it is small in proportion to the other systems in the body. If the sign for Weight be small, the individual will not be able to balance himself so well in walking, climbing, dancing, etc., as where it is found largely developed. But as my design in this chapter is to treat particularly of the facial signs and indications of health and disease, both natural and acquired, as well as of beauty and ugliness, I shall pass by the meanings of mental significations in the countenance, and confine myself to the purely physiological or pathognomonic aspect of the physiognomy.

If the nostrils are narrow and long, the lungs will correspond

in formation. The strength of the lungs will depend upon their inherited quality, *regardless of size*, although the large round lungs are usually the stronger. The strength and power of the lungs may be known by a healthful color of the skin, as well as by a healthful brightness and clearness of the eyes.

In deciding upon possibilities of lung-power, the condition of the digestive system must be taken into account. Where assimilation is easily performed, the lungs will be well supplied with good blood; but if the nostrils are narrow, the skin pale or blue, and the cheeks thin or hollow, great care must be taken to provide the stomach with the most nourishing food, else that dread scourge, consumption, will make its appearance. Persons with weak digestion set little value on food, and often neglect themselves in this respect, and in this way the lungs become impoverished and soon decay. Such persons should make a *business of eating* and *cultivate the appetite* by eating all that the taste calls for. Appetite can be cultivated, just as any other defective function or faculty. Poor feeders do not have so strong a hold upon life, nor are they as capable of friendship, as those who nourish the body well. Consumption can be cured in its first stages by pure air and a dietary suited to the individual. *Medicine cannot cure it.* It may sometimes mitigate the severity of the cough, but medicine cannot supply good, rich blood in the right proportions. Nothing but good food made into blood, and this blood oxygenated by the purest atmosphere, can replace the diseased and worn-out tissues. Medicine never created either blood or tissue; food and air alone perform this miracle.

Narrow or pinched nostrils are evidence of weak lungs. This formation also shows a sluggish arterial circulation. Weakness of the lungs gives other indications of their inability to perform their office properly; a pale, bluish cast of the skin, with blue or pale lips and nails, arching of the nails over the fingers, sighing and yawning frequently, shortened respiration, narrow and drooping shoulders, and a flat chest, are all symptoms of an imperfect thoracic system.

The thoracic or lung system is dependent upon the normal action of the intestinal system to provide nutrition,—to supply the lungs with a sufficient quantity of blood of a suitable quality to keep them in normal action. If the bowels fail to perform their share of work,—fail to provide suitable materials for the manufacture of blood,—the lungs become impoverished and decay; and the hectic flush denotes an abnormal condition of the intestinal system, and show that the lungs have not received their right proportion of good blood to supply their necessities.

THE CHIN, CHEEKS, AND LIPS.

Physicians in all ages have understood many signs of disease and health as shown by the various expressions and changes of the human face. Hippocrates and Galen, the most ancient medical writers, have left us some opinions in regard to signs of diseases which they had observed. Hippocrates tells us that it is a bad symptom

> When the eyes of the patient shun the light, when they begin to squint, when one appears smaller than the other, when the white begins to redden, the arteries to grow black, to swell, or to disappear in an extraordinary manner;

And, he adds:—

> The more the posture of the patient approaches that which was habitual to him in a state of health, the less the danger.

The natural predisposition to many diseases can be known by the peculiarities of facial construction. With this knowledge once gained, the individual will be able to ward off disease by using such precautionary measures as hygienic law dictates. All *hollows* in the countenance denote weakness. If these hollows are natural, the defect is constitutional; if temporary, then they are acquired, and may be easily remedied. A small, narrow, retreating chin, or one which hollows inward near the under lip, discloses constitutional weakness of the kidneys. Hollow cheeks in the lower part show weak digestion, or poor assimilative capacity. Hollow places in front of the ear-opening, where the parotid gland is situated, also exhibit less of assimilative power than where this portion of the face is full. I have observed this gland so emaciated as to form deep wrinkles all over it. This appearance shows that the salivary glands are inactive and small; hence, they cannot secrete and supply as much saliva as is necessary for the perfect insalivation of the food received. A thin, pale, and dry upper lip bears testimony to a weakness in the reproductive system; extreme shortness of the upper lip signifies a tendency to weakness of the spine. Shortness of the septum of the nose, so that it is level with the alæ, or wings, or where it is observed to be shorter than the sides, evinces a predisposition to bilious disorders. Disease of the heart is indicated by a blue skin, fatty cornea of the eye, and red and white spots on the face. I have observed, in severe cases of heart disease, the lips and gums nearly black and the skin as dark as if smeared with ink. Another sign of weak lungs is shown by the hectic flush on the upper part of the cheek, just over the malar bones; this flush is an indication of an abnormal condition of the

intestinal system, and is observed just where one sign for the intestinal system is situated.

A weak or defective state of the nutritive system prevents a suitable quantity and proper quality of the blood from being manufactured and sent to the lungs and brain; hence it is that those whose nutritive system is feeble are not only feeble breathers, but they are also feeble thinkers. These two conditions are shown not only by the pallor of the cheeks, or at other times by a flushed condition of them, but the nostrils, in many subjects, are narrow; thus, one defect induces another, and are all registered unmistakably upon the face.

THE COMPLEXION.

The complexion and color of the skin, eyes, and hair have a moral as well as intellectual and physical signification. Where the organism is deficient in the coloring pigment (as I have explained elsewhere) a weakness of the glandular system is usually indicated. This deficiency is shown by milk-white or very light eyes, weak hair, and skin of a pallid hue. This appearance is often accompanied by imperfect vision, deafness, tubercles, a scrofulous diathesis, chlorosis, white swellings, and many other diseased conditions of the glands in various parts of the body.

Now, if the sight or hearing is imperfect, the individual cannot gain correct knowledge of material objects, nor of speech and ideas. Persons with defective senses fail to apprehend the perfect and entire import of what occurs about them; hence, they are liable to take in erroneous or partial understandings of things as they appear. They are, also, by reason of such defective senses, less able to perceive and avoid dangers, and, by reason of their weakness, less able to resist the attacks of disease and more liable to be affected by immoral temptations.

The glandular system being both absorbent and secretory in its nature, assisting by absorption the function of digestion, would fail, in case of defective action, to absorb and convey the materials essential to supply the coloring pigment which the foods extract from the minerals contained in the earth upon which they are grown. The glands would also fail in the chemical action necessary to furnish new tissues and animal heat to the organism. Unless all these operations are perfect, Friendship, for example, cannot exist in its highest state. If the secreting glands—the lymphatics—are too weak to properly perform their office, and fail to absorb the impurities of the system, the body becomes charged with waste matter, and a condition of moral impurity will be the result. Can it be doubted, by any observant or logical person, that a sound and

pure body is more capable of morality and integrity than one which is weak, diseased, and impure? There must be equilibrium in the several functions of body and faculties of mind in order to produce harmonious conditions of the moral and mental faculties. The more I investigate the human organism, the more I am convinced that the moral nature is dependent for its purity and strength upon physical conditions, and not upon theories, beliefs, or dogmas, although *cultivation of the moral sense* is necessary for the progress and preservation of the race.

There are many other ways in which the moral and mental faculties are made to suffer by absence of coloring matter. Its deficiency causes people to be suspicious. Lacking the warmth essential for great friendship, they are ever ready to suspect their friends. Ask any very light-eyed person if this is not one of his characteristics. A candid answer will prove this statement. On the other hand, too much coloring pigment induces another class of diseases, and evidences other moral and mental peculiarities and defects. Persons with very dark skin, hair, and eyes are liable to disorders of the biliary system, to fevers, and inflammations. As with great depth of color intense heat is always found, so we must infer that the passions and emotions of very dark races, such as love, jealousy, hatred, revenge, and the like, are more violent, intense, and heated than those of the white races. This fact is well illustrated in the Negro and Indian, as well as in the Spanish, Portuguese, and Celtic races generally, and in the inhabitants of the tropics as well. Sufficient color is a necessity and a preservative of life and health. It also gives tone and strength to the moral and mental faculties. Too little coloring pigment, as I have shown, renders the individual weak morally, mentally, and physically, and induces shortness of life. The knowledge of these facts should be an incentive to the study of hygiene, and the application of its laws to the human organism. Diet suited to each individual, proper exercise and clothing, with sunlight, pure air and water, should be considered as first in the scale of human necessities, and the effort to procure them the first and highest of *religious duties.*

A hollow in the centre of the forehead announces a weakness of that part of the memory which is devoted to the memory of events, facts, incidents, and biography. Memory has as many parts as there are faculties. One may possess an uncommonly good memory for names and not for dates, or a memory for colors and not for forms, a memory for tune and not for figures or time, or a memory for faces and not for names. Many forms of nervous diseases weaken the general memory. Nervous shocks will sometimes impair the memory for names of things, for nouns and not

for adjectives and other parts of speech, thus proving that memory has almost infinitesimal subdivisions.

Memory is far more complex and minute in its operations than is generally understood. The learned and ingenious Hooke is said, in his speculations, to have estimated "that the mind is capable of containing three thousand one hundred and fifty-five million seven hundred and sixty thousand ideas." Each of these ideas has its own memory, as a matter of course. I think this estimate underrates rather than overrates the divisions and capacity of memory.

The prevalent custom of the almost universal use of tobacco and alcoholic drinks is not only demoralizing the present generation, but is laying the foundation for a large increase of criminal and defective men and women in the next. Wherever we find the renal or kidney system constitutionally defective we shall be sure to find the moral nature correspondingly weak. The children born of drunkards have often very narrow, retreating chins,—the first stage toward idiocy. Many, if not most, idiots show similar formation, and this indicates enfeebled moral perception and power. The reports of the superintendents for several Homes for Inebriates have fallen under my observation; on comparing them, I find that they are unanimously of the opinion expressed by one of them, Dr. Haynes, of San Francisco, viz., that

> In chronic cases of alcoholism there is a general impairment of all the so-called *moral faculties*, and a corresponding increase of the animal instincts and nature.

He also adds:—

> From our own observation, as a general rule, there seems to be a *change* in the very *morale* of the mind. All continuous mental effort soon becomes difficult or impossible; not only are the perceptions blunted, but the intellectual faculties and reasoning powers are impaired. This tendency, which plays a very important part in the production of premature mental decay, has been attributed chiefly to three causes, viz., hypertrophy of the left ventricle, chronic disease of the kidney, and degeneration of the coats of the cerebral arteries.

Some parts of the memory are affected and weakened by long-continued catarrh; other divisions by nervous shocks. Thus we see the importance of keeping the several parts of the body in repair if we would be mentally qualified to use our highest powers. The general memory, as I have shown, may be strengthened, impaired, or wholly obliterated by certain physical conditions. It may be strengthened by a judicious use of it in the following manner: First, by a slow and deliberate perusal of whatever subject one desires to retain; afterward, by a careful review each night of the events of the day, week, or month. A few moments devoted to

this exercise will produce a decided increase in the memorizing capacity. It may also be strengthened by the use of proper foods and the non-use of stimulants in any form. Alcohol and malt liquors, tea, coffee, pepper, and too much animal food all tend to stimulate the mind; but all exalted and stimulated conditions are sure to bring reaction, and this reaction will produce exhaustion of the nerve-forces. Hence, it is apparent that this process called Memory, which, above and beyond all others, has been considered a purely mental function, is dependent for its power and sustenance upon dietetic and stomachic conditions. Another proof of this dependence is given us in the fact that a deficiency of color in the physiognomy—in the skin, hair, and eyes—is evidence of a weak memory. Now, if the stomach were supplied with suitable materials from which the right proportions of color could be extracted, and if the chemical action of the systems of the body which assist the process of digestion and nutrition were normal, and if the body received sufficient sunlight, the memory would be strengthened, and this "mental" process would be correspondingly improved. The habitual use of tobacco assists not only in changing the color of the complexion, but sometimes almost entirely obliterates the memory of colors, as well as other departments of Memory; and this defect is intensified where this habit is hereditary,—where grandfather, father, and son have been habituated to the constant use of this terrible poison. Not only is the color-sense defective and sometimes obliterated, but other physical functions and mental faculties lose their normal power and vigor. The functions of secretion and absorption are obstructed by the presence of nicotine (an active principle in tobacco); hence, the tissues are neither purified of their waste particles nor are they properly rebuilt, in consequence of the lymphatics failing to perform their office. These glands are affected in such manner by the active poison of tobacco that normal action is impossible. The proof of this position will be better understood when it is shown that the color-sense, or memory of colors, is very defective in men,—far more so than in women. This arises principally from the fact that men are generally consumers of tobacco, while women seldom make use of it. The percentage of color-blindness in men, as compared with the same defect in women, is astonishing, and almost surpasses belief. Had we not the statistics of eminent and reputable physicians and scientists on this point it would be incredible.

Now, upon the integrity of the memory of color the lives of thousands of human beings daily depend, as, for example, in comprehending colored signals and lights on steam-ships and railroad trains; and, as these positions are filled exclusively by men, it is

apparent that the safety of the traveling community is jeopardized by the use of a narcotic which destroys this most important department of Memory. The *facial signs* of this defect are shown in the livid faces and the colorless, lustreless, and yellow hue of the eyes of those who are under the effect of the poison of tobacco. It impedes respiration, and thus decreases lung and arterial circulation; it weakens the digestion; it impairs the reasoning faculties; it *unmans* the individual, producing a weakness of the moral sense the same as alcohol, and gives rise to timidity and irresolution in principles and practice; and all these defective conditions, when transmitted to posterity, are intensified and increased many degrees. It is one of the greatest obstacles to the march of civilization, inasmuch as society countenances the perpetuation of the race by those who are degraded and vitiated by the use of narcotics. If drunkards and tobacco-consumers were prevented from transmitting their defective organisms the advance of civilization would be most rapid. An enlightened self-interest on the part of governments would seek to prevent such abnormal beings from inflicting their perverted conditions upon the unborn, for I claim that they have rights which justice should accord; but, as I have elsewhere remarked, men stupefied and besotted are not masters of *themselves*, and should be coerced into regarding the rights of others by the strong arm of the law until such time as they become reasoning beings.

USE OF STIMULANTS.

The facial signs of the diseased conditions induced by the use of stimulants are almost too well known to need notice here, but, as they are strong and convincing proof that all bodily or functional conditions are registered in the face, I will state some of them. The reader will have no difficulty in verifying these signs, for they are to be seen in every grade and phase of society. Bloodshot eyes, the white of the eyes turned yellow; full, puffed, and swollen cheeks, particularly of the lower part, near the mouth; puffed appearance under the eyes; sunken eyes; inflamed condition of the entire countenance, but particularly of the cheeks, where the signs for digestion and the intestinal system are located, thus disclosing the inflamed and abnormal condition of the digestive apparatus; swollen and purplish-colored nose, exhibiting the perversion and blunting of all those fine qualities, the signs for which are located at the end of the nose. Human Nature, Ideality, Sublimity, Hope, Analysis, Constructiveness, are all vitiated and sometimes wholly obliterated, as we see by the conduct of the drunkard, from long-continued use of alcoholic beverages. In the

face of these facts, can any one doubt the reliability of physiognomy as a recorder of bodily conditions? The signs here described show also diseased liver, lungs, heart, kidneys, nerves, and brain, and entire digestive apparatus.

DISEASE OF THE EYES.

The eye shows many pathognomonic changes. If blood-shot, as is often seen in those who are habitual drunkards, it denotes cerebral and intestinal congestion. Where the whites of the eyes are very yellow, long-continued biliary disturbance is indicated. Puffed appearance under the eyes tells of diseased kidneys. A mixed and mottled eye, where spots and specks of yellow, brown, black, and green are found intermingled, invariably denotes scrofulous tendencies, generally pertaining to the reproductive system or the kidneys; usually, both systems are affected where this appearance is observed. Where a large portion of the white of the eye is very perceptible under the retina, while the eye is in its natural position and not cast upward, gluttony or inordinate lust is indicated. A sunken appearance of the orbit of the eye announces a deficient muscular system, as does also a very small eye.

THE FOREHEAD.

The facial sign of healthy and diseased conditions of every feature of the physiognomy has been treated of in this chapter, with the exception of the upper part of the forehead. This part of the face requires no particular investigation as to health and disease. The upper part of the forehead has no movable or soft parts, and it is in those parts where expressions can be observed that diseased conditions are most apparent. The *natural* formation of the forehead, however, denotes tendencies to healthful thought or to sluggish and stupid action, not only of the brain, but of the *functions of the viscera*. A forehead the upper part of which shows a not too abrupt line of inclination from the eyebrows backward discloses a common-sense, mechanical, and rather quick-motioned person. This formation accompanies the osseous and muscular systems and an active liver, hence its practical and mechanical ability. This combination of systems indicates quick, active persons, both in their mental and physical powers, and this quickness results from an active arterial circulation and strong lungs. In this way we get the clue to the construction of the internal viscera simply by the outline of the forehead. Comparative anatomy is infallible in deciding character by form alone, and in this instance, as well as in all the indications in regard to character, we must rely upon comparisons made and proved.

A forehead the upper part of which is very full, and which projects forward and outward from the eyebrows, is evidence of a dreamer, a theorist, a slow, impractical person,—one who must be helped by others or do with little of this world's goods. This formation of the skull belongs, of course, to a body which corresponds in its build to the brain; that is to say, the secretions will all be slow in forming, the lungs relatively small, the arterial circulation consequently not vigorous, and every movement of the body will necessarily be slow and deliberate.

All these differences, and many others, can be predicated by observing just this portion of the face alone, even if the entire body and the rest of the face were shrouded from view. When physiology and anatomy are taught thoroughly in our schools and colleges, the amount of useful knowledge they will render to the public will not be equaled by any other department of science. These studies, added to scientific physiognomy, practically applied, would, in two generations, go farther toward regenerating the world than any system of ethics of which I have knowledge. I hope that those mothers into whose hands this book may fall will commence to teach their children the meanings of the forms, colors, and features of those about them and those with whom they associate; the localizing part of the science and the forms, colors, etc., can be taught to children as easily as geography. The localizing of signs in the face is somewhat similar to descriptive geography and far more interesting. The philosophical or theoretical part is for more mature minds.

If time permits I shall endeavor to write a primary work for school-children. I have been encouraged in this project by the solicitations of many eminent educators. In the meantime parents and teachers can draw the attention of children to the subject by asking them what they think is the meaning of certain forms of the nose, for example; and so on, of other features; and then proceed to explain the meaning of natural formations, such as the arch representing superior power and strength wherever found; the beak of the birds of prey,—the vulture, the condor, etc.,—representing rapacity, love, and power for overcoming, desire to acquire the resources of others, etc. Then take up the meanings of other formations of the nose—the scooped or flat nose, representing weakness; then proceed to the indications and meanings of other features and colors. The majority of children can be thus taught by special effort on the part of parents. My own children have learned a great deal of physiognomy from hearing me discuss the science, without any attempt on my part to teach them, and, when quite young, could select suitable associates and companions by this knowledge.

If physiognomy were taught as a part of our educational curriculum, our children would be able, when they became of marriageable age, to select suitable companions for marriage, both as regards physical powers and mental and moral characteristics, and thus be spared the great unhappiness which falls to the lot of many—I might say of most—married couples. This is the result, mainly, of being unsuitably mated; this unsuitableness, in most instances, is caused by ignorance of the disposition and of the mental and moral character of each other.

The interests of morality, true religion, and true civilization would be enhanced by the practical application of scientific principles to the reproduction of the race. Persons suitably mated—that is to say, harmoniously united in regard to the right combinations of forms and traits—would insure greater perfection in their children than if the whole matter of reproduction were left to chance and ignorance or inharmonious conditions. I cannot conceive of a nobler ambition in a woman than the desire to be the mother of superior or perfected offspring, but the mother alone cannot achieve this result; the father, as well as the mother, must make himself amenable to righteous law—to hygienic law—if this result would be attained. I believe this ambition will be woman's some time in the future, and, by bearing less children and better ones, true progress will ensue. By this method humanity and civilization will advance—the real, genuine civilization; not this wretched, barbarous, unjust, immoral condition of society, which is with such supreme satisfaction denominated "civilization," but a higher, more just, moral, and truly religious grade of development will evolve in the order which the law of evolution or progressive growth dictates. This law can be assisted in its operation by the co-operation of man,—by the exercise of his reason and moral sense; or, it can be retarded by the ignorant and superstitious. The law of evolution can be traced by any observant person who will take time to consider the growth of organized beings, and the progress of tribes, races, nations, and peoples, as recorded in animated nature and historical record.

My idea of civilization would be shown in that condition of humanity which seeks to make the laws of God the great aim of life. By this I mean that the laws of Nature should be practically applied in every department of life,—to the domestic and social relations, to marriage, to hygienic living, and the reproduction of the race, and in all ways that natural law can be applied to elevate the human family. The term "civilization," applied to the semi-barbarous condition from which we are slowly, yet surely, emerging, seems like a grim satire, and would be ludicrous did it not

reveal an age of superstition, ignorance, immorality, injustice, and irreligion, from which a knowledge and application of the laws of science can alone free us.

Beautiful faces are those that wear—
It matters little if dark or fair—
Whole-souled honesty printed there.

Beautiful eyes are those that show,
Like crystal panes where heart-fires glow,
Beautiful thoughts that burn below.

Beautiful lips are those whose words
Leap from the earth like songs of birds,
Yet whose utterance prudence girds.

Beautiful hands are those that do
Work that is earnest, and brave, and true,
Moment by moment the long day through.

Beautiful feet are those that go
On kindly ministries to and fro—
Down lowliest ways, if God wills it so.

Beautiful shoulders are those that bear
Ceaseless burdens of homely care
With patient grace and daily prayer.

Beautiful lives are those that bless—
Silent rivers of happiness,
Whose hidden fountains few may guess.

UNKNOWN.

BILATERAL SYMMETRY OF THE FACE.

The variations in the symmetry of the two opposite sides of the human face, as well as in the two sides of all the features, is so constant a factor in physiognomy as to call for special mention in this connection. I do not know whether there exists one human countenance which exhibits *perfect* bilateral symmetry. I have never seen one that did, although I have observed a few that very nearly approximated to that condition.

Neither is it usual for both sides of the nose, the nostrils, the mouth, the eyes, the eyebrows, the chin, the cheeks, the lips, the forehead, the head, or the ears to be alike in form on both sides.

I find that the mouth has usually less variableness in the two sides than the nostrils, while it is most rare to find the two eyes of a given person of the same form or size; the most decided variations seem to occur in the *ears*. These features appear in the majority of cases to be so unlike as to warrant one in placing implicit belief in the statement of many anthropologists, viz., "that the right side resembles the father or his race, and the left side the mother or her relatives or ancestors."

I have paid great attention to the examination of ears, and have observed very closely those of singers and orators most especially, as well as those devoid of these powers. The ears of Patti are very nearly alike in size and form; so also are those of Gerster, but, as a rule, *close observation* will show great *dissimilarity*, not only in the size and outline, but also in the various parts in the pinna, the helix, the antihelix, the concha, the lobe, the tragus, and antitragus. This dissimilarity of the ears is universal, and can be verified by the examination of the ears on any human head. Whether these dissimilarities extend to the ears of animals I do not know, not having taken time for this investigation.

The influences that mold the two sides differently in shape are various; the first arises from *heredity* or the transmission of the ancestral male and female principles of form; another difference proceeds from the diverse manner of using the right and left sides of the body and limbs. Facial irregularities are often caused by masticating with one jaw more than with the other, by habitual squinting of one eye, by raising one brow the most, by peculiar movements of the mouth and lips in conversation, whereby one side of the mouth becomes permanently different from the other; this is a habit often practiced by those with very flexible muscles.

The variations in the congenital form of the two sides of the head are perhaps the most remarkable of all bilateral dissimilarity. A visit to a manufacturing hatter's establishment will well repay the physiognomical investigator, for in the shapes of the patterns of the hats of his customers there will be found a most singular proof of the absence of bilateral symmetry of the *skull*. A certain degree of this diversity is due no doubt to the greater use of one side of the body than of the other, for, as I have shown that all functions and faculties are represented in the brain, it follows logically that the excessive use of one side of the body would result in variations of the side of the brain which corresponded with the side of the body thus used.

Investigation of the relation of body to brain reveals the fact that the *nervous mechanism* of the right side of the body is represented in the *left* side of the brain, and that the left side of the body is represented in the right side of the brain. I have not pursued the investigation of bilateral symmetry with the view of tracing all the ramification of form with function in this direction, but I am convinced that a most fruitful field of physiognomic and physiologic knowledge could be derived from this source.

The careful student of physiognomy should pay great attention to bilateral dissimilarities of the facial features, and endeavor to ascertain the cause in each individual case.

THE THOROUGH-BRED.

The conventional marks of a thorough-bred person are not at all those which Nature records as such. Although to be gentle is one indication of the naturally thorough-bred individual as well as of he who is conventionally such, yet there are certain physiological and anatomical peculiarities of structure and of the physiognomy which the student must comprehend in order to know who is and who is not congenitally thoroughly bred or naturally noble.

Society considers as well-bred the person who understands and practices all the forms and ceremonies appertaining to its functions; who says certain things at certain times in a certain manner; who observes the decrees of fashion, and generally comports himself in a formal manner, in consonance with a written and an unwritten code of what is termed "good society." This species of the thorough-bred does not require much intellect, morality, physical development or perfection for its manifestation. On the contrary, it seeks to eliminate all originality and to reduce its votaries to a "sheepish" condition who are willing to follow a self-appointed "leader." The qualifications of said leader, be it understood, are simply plenty of coin and "cheek;" neither mind, morals, manliness or beauty are required for this position.

The sort of being that Nature stamps as thorough-bred must possess many high traits and a large degree of physical perfection. The face read scientifically will reveal these conditions.

WHAT ARE THE INDICATIONS OF A THOROUH-BRED PERSON?

A congenitally thorough-bred person will exhibit a fine, clear skin; *fine* hair, of either a light brown, a dark brown, a black, a red, or an auburn hue. He should have a bright, clear eye. These factors indicate fine quality. There should, in this class of persons, be an equilibrated development of the five superior systems, viz., the vegetative, the thoracic, the muscular, the osseous, and the brain and nerve systems. This condition of equilibrium produces harmony and a well-proportioned body, and this again shows in the face. A thorough-bred individual may be short or tall, yet not excessively fat nor excessively lean. The facial signs of thorough-breeding are, as before stated, a fine, clear skin; good complexion; bright eyes, neither very large nor excessively small; fine hair, regular teeth, a well-proportioned nose, and large nostrils; well-curved jaws; full, red, and moist lips; a proportionate chin and rounded cheeks; well-rounded ears; a smooth or rich and full

voice. A thorough-bred person may belong to the artistic, mechanical, or scientific classes, either appreciatively or executively; he must exhibit both gentleness and spirit, as occasion requires; he must be governed by the law of justice; he must make the comfort of his associates his concern, and do what is *right* in order to enhance their happiness.

The facial indications of those who are not thorough-bred, speaking physiologically, are as follow: A coarse, thick skin; a "muddy" complexion, or one permanently blotched, pimpled, or discolored; dull eyes, very small or very large and bulging; coarse hair, or that which is very light or colorless,—that is to say, of no *decided* hue. I regard very light colored, pallid people as morbid varieties; also those with irregular teeth, a very small or ill-shapen nose, small nostrils, perpendicular jaws, exposed gums, open mouth, receding chin, or one that projects greatly forward, ending in a point; thin, pallid, dry lips; hollow cheeks, flat upper cheeks, ugly or ill-shapen ears; a voice weak, thin, hoarse, shrill or nasal; a long, cylindrical neck; a high, narrow forehead.

The undue development of certain organs and systems of the body induces abnormal conditions, as, for example, an excessive disposition of fatty tissue. When the appetite is voracious, or the nutritive system uncommonly active, too much of the carbonaceous elements of the food are eliminated, or, as it often occurs, too much carbonaceous food, such as white bread, potatoes, etc., is consumed for the needs of the body; the consequence is an excess of fat, which, in many subjects, impedes respiration, prevents activity, and gives a generally uncomfortable feeling. For this condition a spare diet is often prescribed, but as this is felt to be a hardship, and as few who attempt it succeed in continuing it long enough to produce satisfactory results, it is pronounced a failure.

For this class of people there is a very agreeable and sure method of reducing the bulk without reducing strength and without compelling too great a sacrifice of the appetite.

HOW TO REDUCE THE SIZE WITHOUT LOSING STRENGTH.

A diet which will attain this result is easily obtained, and of it the subject can use a quantity sufficient to allay the craving for food.

This diet consists of absolutely *raw* foods, nothing cooked being allowed. This diet, of course, must consist mainly of fruits, nuts, grains, milk, and, when flesh-meat is desired, a Hamburg beefsteak may be partaken of; this steak is raw beef chopped fine and seasoned with onion, salt, pepper, or other condiments; to this may be added raw oysters and clams. Every kind of fruit

except apples is allowed; also melons, salads, and vegetables. A small quantity of freshly-cracked grain, about a tablespoonful at a meal, is very strengthening and very delicious after one becomes accustomed to it.

The principle upon which this diet reduces size without decreasing the strength rests upon the fact that the use of water and fire, as in cooking, eliminates the vitality of the food to a great degree; thus a greater quantity of cooked food is desired. It is a well-known fact that when a farmer wishes to fatten his poultry *quickly* he *cooks* their food, and thus they are enabled to consume a greater quantity of the fat-making carbonaceous elements.

This regimen pursued for one year will produce astonishing results. It is a most delicious diet, as I can testify from personal experience.

CHAPTER V.

Choice of Vocations.

THE COMBINATIONS OF FACULTIES FOR TRADES AND PROFESSIONS.

"Know thyself! This is the source of all wisdom, said the great thinkers of the past, and the sentence was written in golden letters on the temple of the gods. To know himself, Linnæus declared to be the essential indisputable distinction of man above all other creatures. I know, indeed, in study nothing more worthy of free and thoughtful man than the study of himself. For if we look for the purpose of our existence we cannot find it outside ourselves; we are here for our own sake."—Karl Ernst Baer.

"We generally think according to our formation."—Winklemann.

WHEN a mechanician desires an instrument for a certain purpose, he experiments with the materials at hand and puts in operation the principles of physics which he has learned, and thus the required machine is produced. The mechanism which would move a house is quite unsuited to run a train of cars. On the other hand, a sewing-machine suitable for hemming a piece of muslin would not weave a web, and no intelligent mechanic would attempt the use of these several machines for other than their own purposes.

Since mechanical principles were first understood they have been applied to perfect instruments for the various uses which man requires. In this matter, as well as in many other details of life, man exhibits his observation, judgment, and reason, but here it would seem that his powers came to a stand-still. Where there arises a necessity for selecting a *human machine* for a stated purpose or position, man has no guide which enables him to judge by the form or looks of an individual whether he combine the faculties and capacities which are needed for any particular sort of work. If it be merely a matter of digging the soil or of bearing heavy burdens, any man is competent who has the normal use of his limbs and the requisite muscular development; beyond this men cannot judge, by their looks alone, of the fitness of others for any given position.

It is true that some persons possess large intuitional powers, and can tell by the countenance whether one be honest or capable. Others depend upon their innate sense of feeling, or "instinct;" in

other words, they are affected by the attraction or repulsion produced by the magnetism of those near them. This class of persons are generally correct in their estimate of character; that is, in general; but this sense does not include exact details of the character, it *senses* only the general tone, or whether it be harmonious or uncongenial to them. This class *feel*, but do not *see*. They say, with the poet:—

"I do not like you, Doctor Fell,
The reason why I cannot tell."

This is the sense which young children and the higher animals use in their intercourse with those about them. In dogs and horses this "instinct," as it is termed, is wonderfully accurate, but of course only extends to the knowledge of the disposition of individuals.

As we emerge from childhood many cares and a variety of studies are put upon us, and reason and perception strengthen; hence they crowd out and take the place of this natural instinct, and then it is that we begin to depend more upon later acquisitions for protection and for our knowledge of character, and we use our *experience* in a larger degree when dealing with our fellows. In this manner natural intuition becomes weakened by disuse; and if no really *scientific knowledge* of character replaces the natural and instinctive comprehension of human nature, the masses of mankind *grope* through life victims to very confused and unintelligent ideas in regard to the looks and characters of their fellows; and as they have no *positive laws* to guide them, they endeavor to put into use venerable saws and sayings,—the offspring of ignorance and superstition,—which have descended from ages of ignorance and superstition, from ages of moral and mental darkness, which we have inherited along with many other ideas equally venerable and equally erroneous.

Now, dogs retain and increase their natural and instinctive comprehension of character, because their powers are not weakened by studies which *draw away* their attention from their particular line of observation and feeling, and extended experience and close and intimate companionship with man intensifies their knowledge of man's character, disposition, and intentions, as every person can testify who has owned and associated with an intelligent animal.

It often occurs that illiterate people comprehend human nature better than those more learned, for the reason that they rely *entirely* upon their observation and experience of people, and, their minds not being crammed with book-learning, they pay more attention to the investigation of the words, manner, and actions of their fellows. Of course only the naturally bright, keen, and curious arrive at exact and conclusive results in their study of human nature. I

have been often surprised at the sagacity and knowledge of human nature displayed by some unlettered persons, as well as by some young children.

A knowledge of *scientific physiognomy* is the *only means* in the world which will enable one to gauge one's capacities and qualifications at sight, and estimate one's fitness for the several departments of labor. It is the only science which will aid men and women to wisely select partners in marriage or partners in business. This science well understood will do this, and this fact shows that it should be included in the education of every individual. It is of far more *practical value* than any other science, or a score of merely ornamental studies which consume much valuable time without producing the valuable and important results which proceed from a study of physiognomy.

In order to ascertain to which particular department of labor, whether of art, science, politics, mechanism, or literature, one is best adapted, it is necessary to have some knowledge of the systems of functions and the *combinations* of faculties required for each of these several spheres of action.

If one possess a combination of faculties so decided in their direction as to show in early life as a talent for any given pursuit, *that one* should by all means be pursued. Cengenital taste and inclination is Nature's method of indicating the fitness of the individual for a given department of study or labor, and natural taste should be cultivated and developed, and in this work Nature always assists. But it frequently occurs that many do not possess traits which *exactly* and *strongly* indicate the direction or branch of labor to which one is best adapted.

Again, many persons possess a combination of faculties suited to *more than one line of industry*. There arises then in the mind of the subject, and of his parents, an *uncertainty* as to which department of activity he shall be assigned. In this case, as in the former, recourse must be had to a professional physiognomist, unless some friend has become qualified, through the study of this system of physiognomy, to assist the doubting mind. Most persons after studying this system should be able to give *valuable information* on this science—if such individual possess good judgment and observation.

A volume might be written upon every feature and yet much remain untold.

Each face which we meet discloses a combination of faculties different from every other face, hence it is that we must study each face, each feature, and each faculty in the light of its own form and distinct meaning; but we must also pay attention to its

influence upon and relation to all the other faculties in combination.

Given two faces alike with the exception of a slight difference in the length of the upper lip, the possessor of the longer one (as it denotes Self-esteem) will be self-reliant, dignified, and independent. The owner of the shorter one will be wanting in self-confidence, or sometimes undignified and subject to sudden outbursts of temper,—soon vexed and as soon over it, then profuse in apologies. The difference in this *one feature alone* will make these two otherwise similar faces express an entirely different character.

Again, given two very similar faces (if such thing were possible) the one with large Conscientiousness, the other lacking somewhat this faculty, the former would exhibit in every act of life the presence of Conscientiousness. The work of the former would be more thoroughly done ; a true value would be set upon friendship, a just estimate upon the resources and advantages of life; in fact, an appreciation of the *value of all things* would be exhibited, and a consequent practice of justice and manifestation of gratitude for favors received.

The latter, while desirous of enjoying all the good things of this life, would show *no true appreciation of their value*, and hence would make friends without comprehending their merit, and by abusing the privilege of friendship lose them. Such characters cannot value or estimate properly the worth of knowledge, property, honor, love, or friendship, nor rate anything at its true worth, because the fundamental principles of justice, of Conscientiousness, are wanting.

THE METHOD TO PURSUE IN READING CHARACTER.

In commencing to read a character we must first decide upon the *quality*, then the size and form of the features must be considered. *Quality, size, and form* are the principles to be first considered, next comes the subject of health as showing power, then proportion and color. The largest features dominate and control the smaller, for large features express strong faculties. One error the student must guard against is in computing power by the *size regardless* of the *quality*. If the subject under investigation possess fine quality and large features, then we can predicate a commanding intellect, such, for example, as that of Julius Cæsar, whose portrait is shown in the succeeding chapter. The following from Addison aptly describes this class :—

> Men of the greatest abilities are most fired with ambition, and, on the contrary, mean and narrow minds are the least actuated by it.

We might paraphrase this quotation thus:—

Men of the greatest features are most fired with ambition, and, on the contrary, mean and narrow features disclose the least of it.

It will be thus seen that to endow offspring with a large nose and other features to correspond is to provide them with abilities which in their results benefit the world.

After a due consideration of the dominant factors of character, viz., quality, size, form, proportion, color, and health, an analysis of the several features of the face and of the other various signs of character, such as the voice, the walk, the gesture, the position of the shoulders and feet, the color, size, and form of the hands, fingers, and finger-nails, should be entered upon.

With these directions any observant person who has read the preceding chapters should be able to give a fair delineation of character from the living subject. An attempt to do so from photographs is risky, inasmuch as they rarely present sufficiently *sharp* outlines, or, in some instances, the main points of character are worked out by "retouching" the negative, the lines are very faintly shown, and the wrinkles so decisive of character are usually completely worked out; hence little reliance can be placed upon a photograph unless it be so taken as to give sharp outlines and a truthful delineation of all the minor signs of character.

In order to facilitate the delineation of character I have prepared the following list of the combinations of traits essential in several trades and professions:—

THE COMBINATION OF SYSTEMS AND FACULTIES SUITABLE FOR A HOTEL OR BOARDING-HOUSE KEEPER.

The muscular and brain systems should be supreme, and the vegetative largely represented. The social qualities should be dominant, hence Friendship, Benevolence, Approbativeness, Alimentiveness, Hospitality, Love of Young, and Mirthfulness should all be strongly defined.

The mental powers essential are Executiveness, Force, Hope, Acquisitiveness, Memory of Events, Form, Size, Language, Order, Time, and Calculation.

A man or woman intending to pursue either of these two branches of industry should possess a high sense of hospitality and its duties. The care of the sick, of children, and of helpless women often fall upon them, and all the laws of honor and of humanity demand consideration from those under whose roof circumstances have placed them; hence a kindly, sympathetic nature is one of the strong factors in the character of a hotel or boarding-house keeper.

Yet benevolence should not be so excessive as to override caution, else frauds and impostors will prevent success.

Individuals with the bony and muscular systems regnant and the brain and vegetative systems well defined also make good hotel-keepers, if the quality be good. Yet the first described are the best adapted by nature to this pursuit.

THE COMBINATION OF SYSTEMS AND FACULTIES REQUIRED FOR A MECHANIC.

This class should exhibit a square, bony form, with a good admixture of the muscular and brain systems, and sufficient of the vegetative powers to give vitality. They should cultivate Economy, Love of Home, Mirthfulness, and Sanativeness. They should possess Force, Form, Size, Weight, Locality, Order, Time, Observation, Calculation, Constructiveness, Imitation, and Acquisitiveness.

The artistic mechanic or artisan requires almost the same combination, with the addition of relatively *more muscle*, and a finer quality of muscle, with larger Ideality, in order to impart taste, beauty, and finish to his work; and, if engaged in the sale as well as the manufacture of his works, large Acquisition would be needed.

Artistic mechanism includes those pursuits which are partly mechanical and partly artistic, such as jewelry, dentistry, telegraphy, photography, etc.

THE COMBINATION OF SYSTEMS AND FACULTIES REQUIRED FOR A PRINTER.

Those who possess the bone and brain systems in excess, also those who exhibit the muscular and brain systems dominant, can make good printers if of fine or average quality. Of course a due admixture of the vegetative system is essential in order to give health and vitality.

Printers should have large Form, Size, Order, Locality, Constructiveness, Calculation, Observation, and a certain degree of Ideality to give neatness and beauty to the ornamental branches; also large Perseverance or Will to hold steadily to their work until completed.

The colors best adapted to this art are the darker, as, for example, black hair and eyes, or dark-blue eyes and brown hair, and a well-colored complexion. Printers should practice gymnastics and get as much fresh air as possible in order to develop health and strength, inasmuch as their business is confining and often pursued in ill-ventilated and unsuitable rooms.

THE SYSTEMS AND FACULTIES ESSENTIAL TO A DRESSMAKER OR DESIGNER OF WOMEN'S FASHIONS.

The woman who would become an expert dressmaker or designer of fashions should have the muscular and brain systems in excess, or the bony and muscular systems dominant, with a good share of the brain and vegetative powers. If with either of these combinations a fine and high quality of the brain and nervous system is present, talent of the "Worth" stamp will be exhibited.

The dress of woman ranks with the fine arts; hence, a good dress-fitter and designer of fashions is an artist. She therefore requires both the mechanical principles of mathematical measurement and ability for artistic draping and coloring; this combines the mechanic and artist.

In order to succeed in this avocation one must have large Form, Size, Color, Ideality, Constructiveness, Calculation, Imitation, and good health.

The *modiste* who employs assistants must possess Executiveness, Self-will, Self-esteem, Approbativeness, Human Nature, Time, Order, and Memory of Events.

THE SYSTEMS AND FACULTIES REQUIRED BY A COOK.

A good, natural cook is a benefactor to the human race. I rank cooking among the highest and finest arts and noblest sciences, for in its highest aspects it is both an art and a science. Every woman and man should understand something about cookery.

Good cooking is the foundation of health, wealth, morality, and domestic happiness and comfort. An art and science of such importance should command the respect of all.

Food well prepared will sometimes overcome a tendency to drink intoxicating liquors, for an ill-prepared meal, or one into which too much salt, pepper, or spice has entered, creates an abnormal thirst, and then it is the poor victim flies to the dram-shop with the view of getting the comfort which his food has denied him. Bad cooking sets up an irritation in the digestive organs, and its poor, ignorant victims fly to stimulants to enable them to get rid of the indigestible mass.

A cook should have a large degree of the vegetative, thoracic, and muscular systems, with sufficient of the brain system to enable them to plan, arrange, and execute large orders for banquets and great occasions. A fine *quality* of the organism gives delicacy of taste and scents. Yet many *apparently* coarse-grained negroes

are good cooks. It will be found, upon examination, that such cooks are fine-grained in *their order;* then, too, size counts for a good deal in the domestic signs of character, and negroes have large lips (organs of taste); but among the Caucasian races size and quality are the factors which reveal the good cook. I have known among the latter many delicate-looking women who were excellent cooks, but in these the lips were full, red, and moist, the nose and nostrils relatively large, and the brain and nervous system of a high quality.

A cook should have large Alimentiveness, Bibativeness, Economy, Pneumativeness, Color, Sanativeness, Hospitality, Mirthfulness, Force, Order, Time, Calculation, Approbativeness; and, if he or she combine catering with cooking, Executiveness, Imitation, Ideality, Self-will, Conscience, Locality, and Self-esteem are required.

A cook needs a good deal of time in the preparation of food; hence, if housekeepers expect good cooking they should not put too many burdens upon the cook. Again, good cooks require good materials in order to produce appetizing dishes. It is true that an excellent cook will make plain food taste better than can a poor cook; but nice dishes require the best materials.

When we Republican Americans are willing to place cooking upon the same elevated plane with other fine arts and sciences, and accord to its possessors the same honors that we pay to professors of other arts, we shall find many first-class men and women enter its ranks.

Not until this important class of artists receive in pay, recognition, and appreciation their just dues, shall we have plenty of real good hygienic and scientific artists in our kitchens.

Cooking should be taught in all our public schools, to boys as well as to girls, for this talent is not the exclusive property of either sex, and can be developed to a high degree in those members of both sexes whom Nature has endowed with gustatory talents.

THE COMBINATION OF SYSTEMS AND FACULTIES REQUIRED FOR A FARMER.

Farmers should have a good combination of the bony, muscular, and brain systems, with sufficient of the vegetative to nourish the rest.

They should possess Economy; Love of Young, in order to enjoy the care and rearing of children and animals; good Alimentiveness, Hospitality, Pneumativeness, Sanativeness, Force, Hope, Acquisitiveness; also fair Constructiveness, Self-will, Form, Size, Locality, Time, Order, Calculation, and Reason.

THE COMBINATION OF SYSTEMS AND FACULTIES REQUIRED FOR AN ENGINEER.

Engineers require either the bony, muscular, and brain systems regnant, or the muscular and brain systems dominant, with a good degree of the thoracic and vegetative powers to give vitality. They should possess Conscience, Alimentiveness, Pneumativeness, Color, Sanativeness, Force, Resistance, average Caution, Constructiveness, Executiveness, Self-will, Form, Size, Calculation, Weight, Locality, Time, Order, and Constructiveness, with sufficient Causality and Comparison to understand mechanical principles and their application. Many steam-ship engineers are short, broad, stocky, and very cool and resolute. This muscular and brain build is an excellent one for this position.

THE SYSTEM AND FACULTIES ESSENTIAL TO MERCHANTS.

Men of various combinations and forms may succeed as merchants if possessed of the faculties and powers suited to the particular branch of commerce undertaken.

A merchant may have the muscular and brain systems dominant, or the bone, brain, and muscular powers supreme, with a good degree of the thoracic to give vigor and enterprise; also, with sufficient of the vegetative to strengthen all the powers.

For large commercial enterprises a fine quality and large size of the brain is necessary, together with such assistance from the thoracic, digestive, and muscular systems as will sustain great and prolonged mental efforts. Large size of the features and relative width of the face are usually found associated in the physiognomies of great merchants, who must possess large Alimentiveness, Conscientiousness, Friendship, Economy, Pneumativeness, Self-esteem, Force, Hope, Sublimity, Human Nature, Ideality, Acquisition, Caution, Constructiveness, Executiveness, Self-will, Size, Form, Observation, Memory of Events, Locality, Time, Order, Calculation, and large reasoning powers.

In giving the following delineations of character I am obliged to be guided by the engraving. I have obtained the best to be had of each subject. The description might be different in some respects could I read from the original.

The face of Daniel Appleton (Fig. 343), the founder of the great publishing-house of D. Appleton & Co., New York, is a fine illustration of the best class of merchants. Fig. 344 is the portrait of John Wanamaker, eminent merchant of Philadelphia and Postmaster-General of the United States.

THE SYSTEMS AND FACULTIES REQUIRED FOR A SPECULATOR.

The speculator may possess the muscular as the dominant, or one of the superior systems. This enables him to change and shift with care and facility, for steadfastness is not a trait by which the speculator succeeds; he requires a keen, penetrating mind, and a strong commercial instinct. Hence, *circularly* built men are best adapted to this department of commerce, and it will be found upon examination that this peculiar formation has succeeded in specu-



FIG. 343.—DANIEL APPLETON. (MERCHANT AND PUBLISHER.)

The physiognomy of Daniel Appleton shows the brain and bony systems dominant, with the muscular and thoracic systems subdominant; a fine degree of the vegetative powers is also evident. The outline of the nose alone would decide in favor of high Quality, for such a shaped nose is the evolutionary outcome of high organization. In the chin we see Conscientiousness and Firmness most decided. Love of Home, Patriotism, and Benevolence are large. The signs for other domestic and social faculties are prominent, such as Love of Young, Mirth, Approbation, Alimentiveness, Hospitality, Friendship, and Sanativeness. Self-esteem is only average; Modesty, conspicuous. Color is normal. The nose is long, showing Caution; broad and high, denoting Pneumativeness [he was a profound *breather*]; the width shows breadth of mind; the point is very elaborate. The ear is large. The signs in the nose for Analysis, Mental Imitation, Sublimity, Ideality, Human Nature, Acquisition, Construction, Veneration, Executiveness, and Self-will are all large. Observation and Locality are well developed; Credenciveness, small; Calculation, excellent; Form, Size, and Language, most decided; Time and Order, large; Memory of Events, Reason, and Intuition are pre-eminent. Altogether, the physiognomy of a high-minded, able man and successful merchant.

lative schemes. Many of this class are characterized by curly hair, which is yet another indication of the circuloid-muscular-commercial individual. The speculator does not require large Conscientiousness or Firmness, but does need Alimentiveness, Mirthfulness, Approbativeness; a fair share of Friendship and Amativeness; small Self-esteem and Modesty; large Force and Secretiveness; a good share of Hope; a very large degree of Agreeability, Human Nature, and Acquisitiveness; considerable Credenciveness, to enable him to believe in and promote wonderful

schemes and plans, and enable him to show *others* the "millions that are in it," and that are to be had by just investing a "paltry few hundred dollars." The speculator requires considerable Executiveness, Self-will, Observation, Memory of Events, Calculation, Language, and Reason; altogether, a combination which produces an agreeable, pliant, versatile, sociable, quick-witted disposition. The portrait of P. T. Barnum illustrates the character of one of the most successful speculative commercialists of this age.

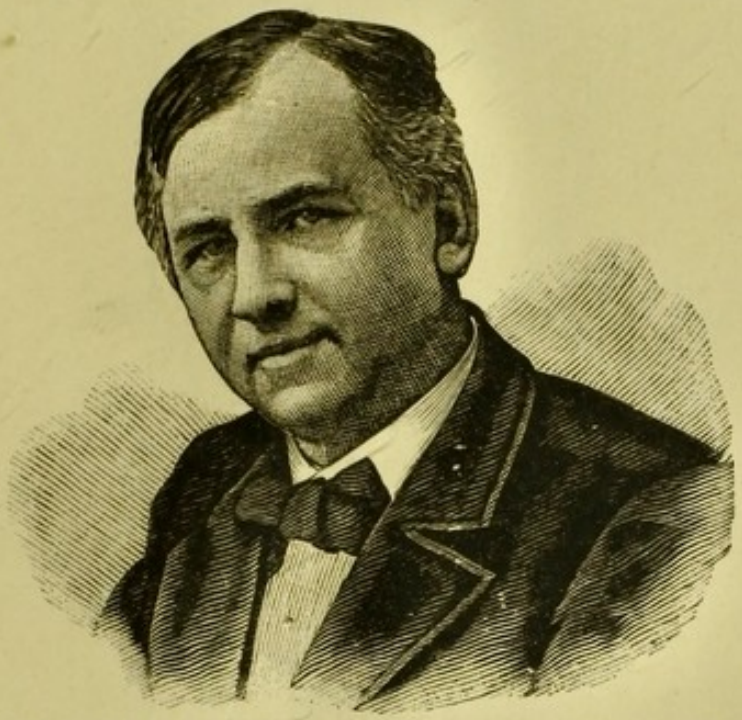


FIG. 344.—JOHN WANAMAKER. (MERCHANT AND STATESMAN.)

The Quality of this subject is of a high grade,—the brain high above the ears and proportionately broad, the nose long and broad, the whole expression kindly, sympathetic, and genial. The brain system dominates; the bony system stands second, the thoracic third, while the muscular and vegetative are about equally developed. In the chin the signs for Firmness and Conscience are well defined, while Love of Home, Patriotism, Mirth, Approbation, Hospitality, Friendship, Love of Young, and Amativeness are well represented. Pneumativeness is large and Color excellent. The signs in the nose are nearly all well defined: observe Sublimity, Ideality, Human Nature, Construction, Acquisition, Veneration, Executiveness, Reason, and Self-will. The forms of the eye and eyebrow are noticeable: the form of the eye shows Agreeability, while the inner terminus of the brow denotes large Observation and small Credenciveness; while Prescience is only average. Language is fluent and Calculation very pronounced. Form, Size, Mental Order, Time, and Memory of Events are excellent. Intuition is supreme. The ear, like that of all great commercialists, is large. The hair shows order and neatness without boldness. Mr. Wanamaker is a reformer, to some extent, in business methods.

The chin and the wrinkles upon it, and the hair of this portrait, are corroborative signs of this versatile pursuit.

THE SYSTEMS AND FACULTIES ESSENTIAL FOR A PAINTER.

Among painters who have excelled we find a variety of combinations and diverse forms. Yet most of them possessed—and it is requisite to high art that they should exhibit—the muscular and brain or brain and muscular systems supreme in the order named, —both of high quality. A large endowment of the thoracic

system is indispensable, together with sufficient of the bony system to afford the mechanical elements of the art.

The faculties required for a great artist are many, and must be well developed; for a grand artist must be a grand man,—a rounded man,—and able to fill high positions outside of the realm of painting. Such a one was Michael Angelo, whose portrait is here displayed. He was great as a painter, sculptor, and architect, and displayed much literary and poetic skill. Among his greatest works are the frescoes in the Sistine Chapel, "The Last Judgment," and the cupola of St. Peter's, at Rome.

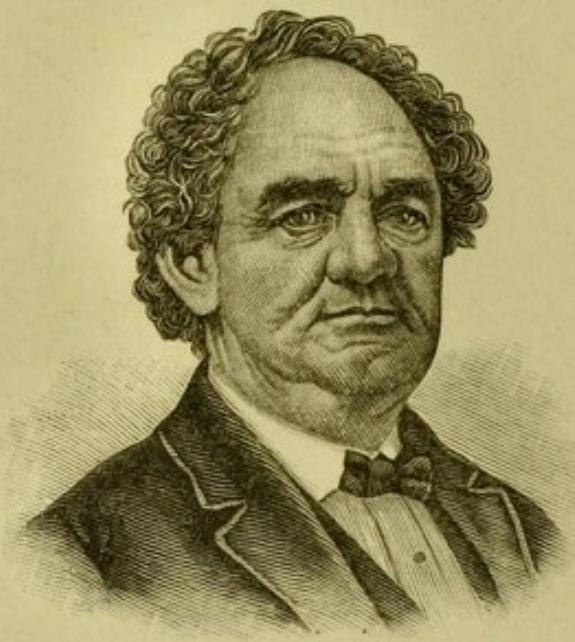


FIG. 345.—PHINEAS T. BARNUM. (SPECULATOR.)

The subject of this sketch is an illustration of the most successful commercial speculator of the age. His physiognomy shows the brain and muscular systems in the ascendant, while the bony system ranks third, and the thoracic and vegetative follow in about equal degrees of development. The hair is curly, showing versatility and imitative ability; the ear, very large and very commercial. The chin does not disclose severe Firmness, yet its width indicates a certain degree of Conscientiousness, which is marred by the oblique wrinkles and imperfectly-curved dimple, thus showing that he is not one of the "rigid righteous." The signs for Love of Home and Patriotism are evident, while Approbativeness, Benevolence, Mirth, Language, Alimentiveness, Hospitality, Friendship, Love of Young, and Sanativeness are all large. Force and Resistance show the will and courage which have enabled him to carry forward his great enterprises. Self-esteem and Modesty are well developed. In the nose, which is broad and relatively short, we see that the signs for Pneumativeness [another deep breather], Sublimity, Ideality, Human Nature, Construction, Acquisition, Veneration, Executiveness, and Self-will are all pronounced. The signs for Form, Size, Weight, Locality, Observation, and Calculation are manifest, while Memory of Events and Practical Reason are excellent.

The painter must possess largely the following faculties: Love of Home, of Young, and of Country; large Alimentiveness, Amativeness, Friendship, Mirth, Approbation, Pneumativeness, Color, Sanativeness; a good degree of Force; large Hope, Mental Imitation, Human Nature, Sublimity, Ideality, Acquisitiveness, Constructiveness; average Executiveness and Veneration; strong Self-will; a fair degree of Credenciveness and Prescience; large Form, Size, Observation, Locality, Weight, Time, Order, Calculation, Intuition, and Reason.

There are large numbers of so-called artists who are mere copyists. This class have not the originality and fertility of the great masters of the art; neither have they their boldness of execution, their wonderful color-sense, and their grand conceptions. Art-copyists do not possess as high a *quality* of organization nor exhibit as grand features as do the original artists.

The physiognomies of the following great modern painters

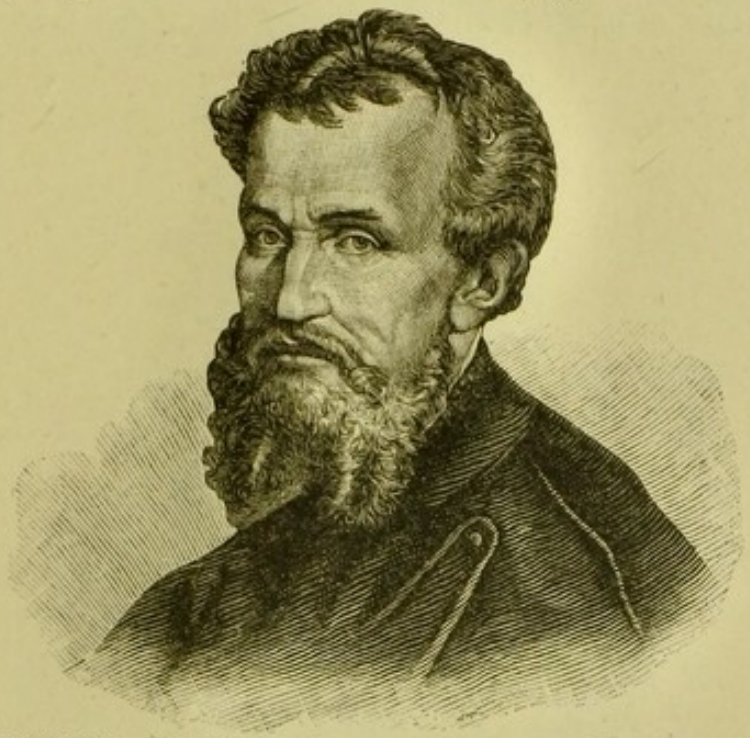


FIG. 346.—MICHAEL ANGELO. (PAINTER, SCULPTOR, WRITER, ARCHITECT.)

To attempt the delineation of so sublime a countenance fills the physiognomist with both awe and wonder. A view of the living countenance of this subject must have been elevating and inspiring, as suggesting the *possibilities* of the race. The Quality is of the highest, showing its supremacy in every feature and outline, as well as by the skin. The brain dominates; it is high, broad, and constructive in form. It presents the principles of both the square and curve in an equal degree. The nose is a wonderful feature. The tip alone would decide the grandeur of his mind. The bridge is broad, but whether broadened by a blow, which broke it, cannot be known. It must originally have been broad to coincide with the other features and the forehead, as well as the character. The ear is very large, the concha, or bell, deep and wide; the beard curly and long, showing great virility; the hair waving and original in appearance. Everything in this portrait announces originality—genius. The chin is hidden, but such a superstructure must possess a foundation of domestic and social powers. The bony formation shows that Conscience and Firmness are large. The lips disclose Benevolence, Wit, Language, Amativeness, and Love of Young. The signs for Alimentiveness, Bibativeness, Sanativeness, and Color are conspicuous. The nose is long, broad, bony, muscular, and high above the plane of the face, thus disclosing the presence of both the scientific and artistic elements of Mind. The point of the nose discloses large Sublimity, Ideality, and Human Nature, while, above, large Constructiveness and Acquisitiveness fill out the sides. Veneration, Executiveness, and Self-will indicate great powers of command. Form, Size, Weight, Locality, Observation, and Calculation are of the highest grade of development. Language is well developed. Time and Mental Order are decided, while Causality, Comparison, Memory of Events, and Intuition reach the highest development.

can be studied with profit: Sir Joshua Reynolds, Gainsborough, Greuze, Gerard, Boucher, de Neuville, Corot, Delaroche, Millet, Munkacsy, Millais. The reader has been referred to the physiognomies of the "old masters" in the section devoted to Color.

The portraits of Michael Angelo and Raphael Sanzio, given herewith, illustrate grand characters. All the signs of superior artistic talent and genius are plainly discernible.

THE SYSTEMS AND FACULTIES ESSENTIAL TO A POET.

Great poets are the most rare of all the artistic minds, and, as only one really grand poet is *needed* in a generation, the supply seems always to equal the demand. Poets require a most peculiar and sensitive quality of the brain and nervous system, and also a fine endowment of the muscular system, in order to feel and express emotion and to construct rhythmically, for these two powers inhere

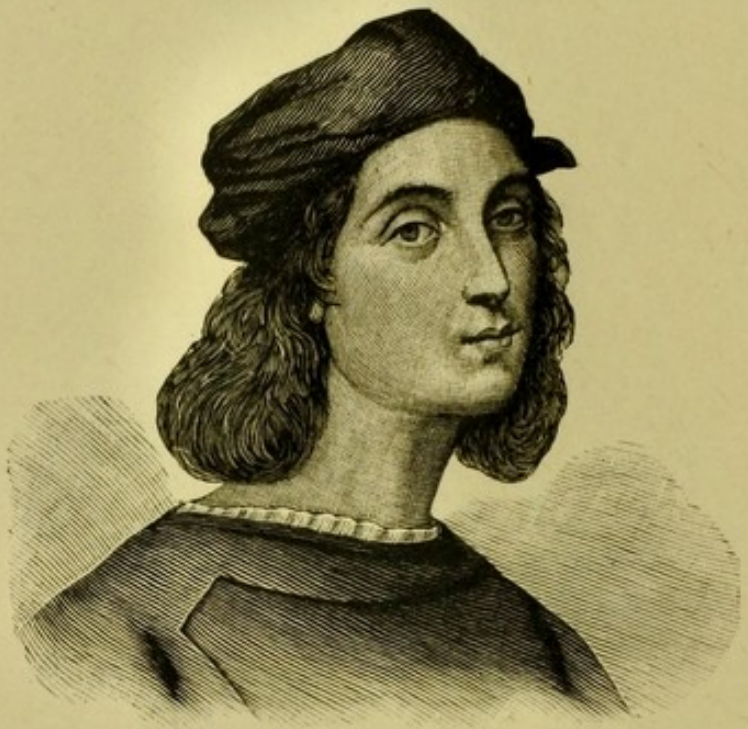


FIG. 347.—RAPHAEL SANZIO. (PAINTER.)

This face, taken in youth, is that of a typical artist. Here are found all the signs of character that show art-capacity of a high order. The curvilinear principle of structure everywhere asserts itself. To a high Quality he adds a rich endowment of *Color*, and his canvases are to be seen to-day in many European galleries gorgeous in their coloring. In this department of art he has, perhaps, never been excelled. The brain and muscular systems are supreme and of a high grade. The curving outline of the jaw indicates dramatic ability, and this power is exhibited in numbers of his pictures, particularly in that of "A Vision of a Knight," now in the National Gallery at London. The chin is artistic and delicate, and discloses the signs for Love of Country and of Home, Conscientiousness, and considerable Firmness. Amativeness, Love of Young, Mirth, and Modesty are quite decided. Friendship, Hospitality, Alimentiveness, Sanativeness, and Pneumativeness are conspicuous. In the nose, which is straight and high, are seen the signs for Ideality, Sublimity, Construction, Acquisition, Veneration, Executiveness, and Self-will quite decided. Form and Size are remarkably developed. Language, most copious and eloquent, is indicated, and Credenciveness and Prescience are conspicuous. Calculation is very large, while Locality, Memory of Events, Intuition, and Artistic Reason make up the physiognomy of an elegant and original artist.

in the muscular system; they must possess a great susceptibility to all sensations and an eye which sweeps the entire compass of natural phenomena. Like the great painters, they must be many-sided, not angular, nor of one idea. They must be in sympathy with every phase of human nature, and intuitively and instinctively divine and feel the joys and sorrows of humanity. They require a fine endowment of the color-sense to give ardor and enthusiasm to

their natures, and to enable them to paint their scenes in gorgeous and glowing colors.

Poets should possess proportion and beauty, and many of them in their youth have exhibited a remarkable beauty of face and form; see, for example, the portraits of Milton, Shakespeare, Tasso, Schiller, Goethe, Burns, Byron, Shelley, Victor Hugo, Mrs. Hemans, L. E. Landon, Lydia Sigourney, Thomas Moore, and other poets of the first rank. A comparison of their faces with their poetry will convince the observer that symmetry, harmony,

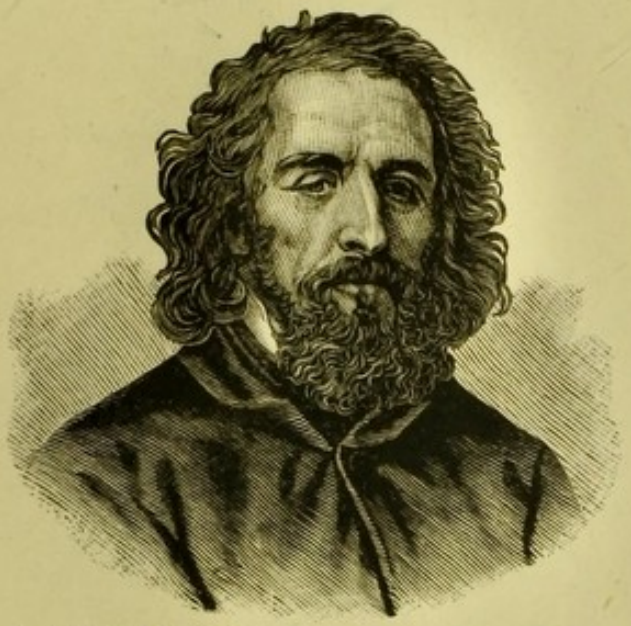


FIG. 348.—ALFRED TENNYSON. (POET-LAUREATE OF ENGLAND.)

In this countenance the two factors of quality and intensity are most apparent. The hair and beard alone would indicate rhythm and originality. The domestic traits are decided, for, although we cannot see their signs on account of the beard, we know that such a superstructure has a rich foundation in the reality of being—the vegetative powers. The brain system is supreme, the bony and muscular systems about equal, while the thoracic comes next. The entire face shows descent from a long line of cultured ancestry. This organism is an art-product purely; every feature announces the care taken by ancestors in the development of refined traits. The chin shows Patriotism and considerable Firmness. Benevolence is apparent, while Self-esteem is not large. The lower lip indicates Wit and fluency; the cheeks reveal Friendship and Hospitality. The nose presents the signs for Hope, Analysis, Mental Imitation, Ideality, Sublimity, Human Nature, Constructiveness, Veneration, Executiveness, and Self-will very large. The eyes show great agreeability and a politic tendency. Locality, Weight, Form, Size, Order, Time, and Calculation are all pronounced, while Memory of Events and Intuition are decided. The intense color of eyes, hair, and complexion gives force, fervor, and vividness to his descriptions. The use of the color-terms in his poems show the presence of a large degree of the color-sense.

and proportion of the face and body result in like qualities in their mental offspring.

Where there exist very peculiar or morbid states of mind it is invariably mirrored in the face, as witness the physiognomy of Dante, with his drooping, melancholy nose and credencive and gloomy expression; these qualities affect (one might say "afflict") his entire works, and thus of all the poets. Burns, with his naturalness, spontaneity, and sympathy, wins all hearts, for his poetry possesses that "touch of Nature which makes the whole world

kin." A man who could write "A man 's a man for a' that." and "The Cotter's Saturday Night" shows himself not only one with humanity, but possessed of true Parnassian fire. A poet should possess a strong domestic nature as a foundation for his emotions, sympathies, and sentiments. He must exhibit the signs for Love of Home, Patriotism, Benevolence, Amativeness, Love of Young, Friendship, Color, Hope, Analysis, and Mental Imitation large. He must possess Sublimity to give vastness and grandeur to his descriptions; Ideality to assist imagination; Human Nature



FIG. 349.—TORQUATO TASSO. (EPIC POET OF ITALY.)

The subject herewith presented is that of a man of strong passions and emotions. The muscular and brain systems are dominant,—both of high quality. The color is dense and gave power to the mental processes. The beard is luxuriant and covers an oval chin. The sign of Benevolence is conspicuous, while the upper lip shows the sign for Amativeness well defined, and the eyes corroborate the sensuous aspect of his character. The long, straight, muscular nose denotes the artistic type, for this genius was an artist with his pen, as his great work of "Jerusalem Delivered" testifies. The signs for Mental Imitation, Ideality, Sublimity, Constructiveness, Hman Nature, Acquisitiveness, Veneration, and Self-will are excessive, while Form, Size, Language, Prescience, Calculation, and Locality are strongly delineated. Memory of Events and Intuition are most decided. The face is that of one who would be swayed by the violence of passion and emotion rather than by justice or reason. His biography corroborates this estimate of his dominant powers.

to comprehend and portray character; Constructiveness to assist in the shaping of his verse and for aiding in the plot or plan; Credenciveness to give faith in the mysterious; Prescience to connect him with the future; Form and Size to aid in visualizing and mentally depicting the forms and appearances of all objects; Language most copious and vivid must be his, while Music and Time must be present in such power as to give rhythm and melody to his measures. Above all he must possess large Intuition, so that he may divine or spontaneously sense qualities, conditions, and the characters of all phenomena.

The portraits of two most eminent poets of ancient and modern times are herewith presented, the mediæval poet, Torquato Tasso, an Italian, and Charles Tennyson, a modern English writer; these faces are admirable studies in poetic physiognomy.

THE SYSTEMS AND FACULTIES ESSENTIAL TO A PLAYER.

Among players, as among poets and painters, there exists great diversity of form as well as a great variety of combinations

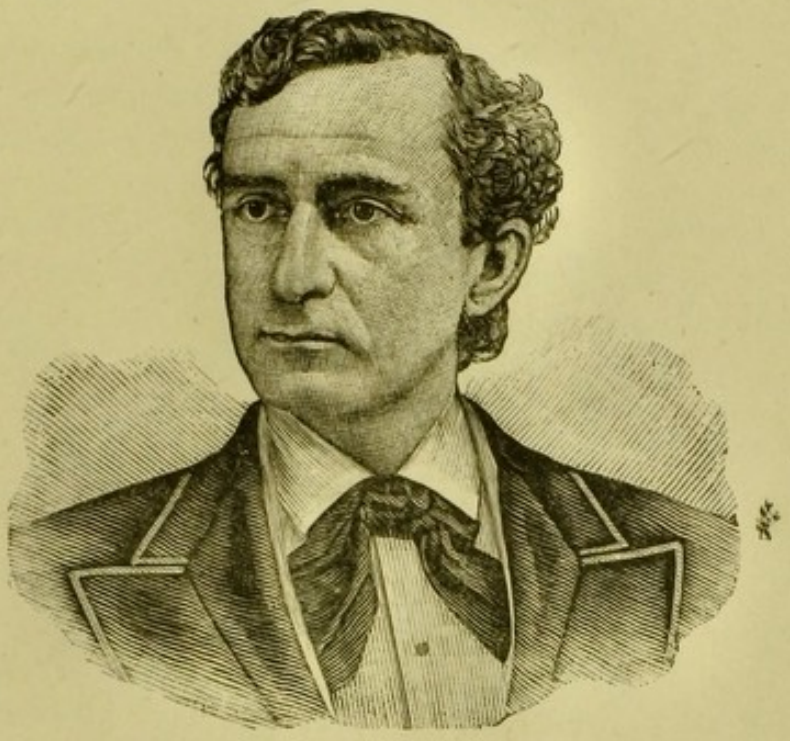


FIG. 350.—EDWIN BOOTH. (AMERICAN TRAGEDIAN.)

I find associated in this subject the brain and muscular systems,—both of high quality and of equal degrees. The color is well defined, the features well proportioned, and the nose expressive of force of character and mental energy. The jaw has the "dramatic curve," the chin is rounded, the eyes full and convex; all these are indications of artistic capacity. Conscientiousness and Firmness are large. The signs for Love of Home, Patriotism, Benevolence, Caution, Alimentiveness, Pneumativeness, Love of Young, Force, Mirth, Approbation, and Self-esteem are in excess. Amativeness is well marked, but showing more in the *eyes* than in the *mouth*, thus revealing that the *sentimental phase* of love dominates the sensual. Friendship is only average. The nose is a noble feature; upon it we see the signs for Ideality, Sublimity, Mental Imitation, Human Nature, Construction, Acquisition, Veneration, Executiveness, Reason, and Self-will all very strongly outlined,—a truly regal feature. Form, Size, Language, Calculation, Observation, Prescience, Locality, Weight, Time, Order, Music, Memory (of all sorts), Reason, and Intuition are all large. The hair is wavy, showing artistic powers and agreeability. Altogether, the face of a great-minded man and actor.

of faculties. To be *truly great* in any of these professions a great intellect is essential. The men and women who have excelled in the higher branches of the drama possess large natures and exhibit high powers in other directions, as in literature, painting, sculpture, science, etc. Many of the most distinguished players of both sexes have given proof of excellent literary, musical, and constructive capacities. The biographies of the leaders in this profession reveal these facts, and their faces, read scientifically, corroborate them.

There are several classes of the dramatic profession. Some are suited only to one department of the mimic art, while others, of more versatile genius, possess several varieties.

For convenience we may divide players into three general classes, viz., tragedians, comedians, and comic actors; each of these classes is susceptible of subdivisions, especially the two latter, who may be either creative or imitative, or a mixture of both. The mental equipment of a tragedian must be quite different from



FIG. 351.—ADELAIDE RISTORI. (ITALIAN TRAGEDIENNE.)

The physiognomist, in reading character from photographs, is subject to great disadvantage. The accompanying portrait, taken from a photograph, does scant justice to the splendid physiognomy of Madame Ristori, for one who has met her face to face cannot easily forget the nobility of her expression and the grandeur of her bearing. In this face we find the brain, muscular, and thoracic systems largely developed and of high quality. The osseous system, too, asserts its powers, giving stability to all her acts. The nose is a grand feature; the mouth large, disclosing linguistic power; the eyes full, and the jaws greatly curved; the color dense. The ear is large, and gives evidence of great auditory ability; the bell, or concha, is worthy of notice, and the outline and elaboration as well. In the chin the signs for Firmness, Conscientiousness, Love of Home, and of Country are strongly delineated. In the lips are the signs for Benevolence, Amativeness, Love of Young, and Mirthfulness. The signs for Alimentiveness, Bibativeness, Sanativeness, Pneumativeness, Hospitality, Friendship, Modesty, and Self-esteem are all manifest. In the nose the signs for Hope, Analysis, Mental Imitation, Human Nature, Ideality, Sublimity, Construction, Acquisition, Veneration, Executiveness, and Self-will are conspicuous; while Form, Size, Observation, Time, Order, Prescience, Language, and Locality are pre-eminent. The forehead is receding, denoting fervor and enthusiasm, as well as progressive tendencies; upon it the signs for Memory of Events, Reason, and Intuition are manifest.

that of the comic player. These two classes bear the same relation to each other as the singer and composer. The tragedian of the highest class must possess a high organization of both body and mind, hence it is that we observe in the *personnel* of Ristori Salvini, Booth, Modjeska, and other great tragic artists a body endowed with all the elements of power, strength, and symmetry,

and a face expressive of great beauty, mobility, and noble features. Reference to the face and form of the above-named artists will verify this statement, while their life-work will bear witness also.

The talent for acting has been bestowed by the Creator along with other talents for *use*. Its object should be twofold, viz., amusement and instruction. It *should*, above all, be true to its *highest* capability, and assist in the *elevation* of humanity. This it *can do* if *rightly exhibited*.

Many of the grand impersonations of the great players just mentioned are both instructive and entertaining; and surely, among comedies, what more pure and wholesome pictures of life were ever presented than in the "Old Homestead," by Denman Thompson!

The stage ranks second to the pulpit in its influence, and I hope to live to see it rise to its *highest* powers, and become what it should, a moral and intellectual power. It is its *abuse* that has brought the drama into disrepute with moral people, for at one time in the history of the Church it fostered dramatic representations, as in the ancient "Passion Plays," now revived at Oberammergau.

THE FACULTIES NECESSARY TO A TRAGEDIAN.

This class of artists should possess a fine and large brain system, together with a fine quality of muscle to give flexibility and other qualities, large thoracic powers, and an excellent vegetative system, not only for the purpose of affording the strength and vitality for the arduous duties which appertain to this art, but also for the sake of the *domestic sentiments* which lie at the foundation of all great characters; and the domestic functions inhere in the vegetative system, mainly, assisted by the muscular powers.

The faculties, then, for the tragic player to possess are a fair degree of Conscientiousness, in order to impart thoroughness in depicting noble characteristics; also, Firmness, to hold him perseveringly up to his duties; large Patriotism, Benevolence, Alimentiveness, Amativeness, Love of Young, Mirthfulness, Approbativeness, Friendship, Pneumativeness, Color, Sanativeness, Self-esteem, and Force; a good share of Secretiveness; large Hope, Analysis, Mental Imitation, Sublimity, Ideality, Human Nature, Acquisition, Construction, Veneration, and Executiveness; strong Self-will, Credenciveness, Form, Size, Observation; Memory of all sorts; Locality and Weight; Language, most fluent with verbal memory; a fair sense of Music and Rhythm; and Time, Order, Reason, and large Intuition. It will be seen by the above how

well developed and how highly organized must be the mind of a great tragedian or tragedienne.

I give herewith the delineations of the physiognomies of Mad. Adelaide Ristori and Edwin Booth, two of the greatest tragic players.

THE SYSTEMS AND FACULTIES ESSENTIAL TO A COMEDIAN.

A comedian of the first rank must possess high artistic qualities and a many-sided nature. He must be adaptable and keenly appre-



FIG. 352.—BLANCHE BARRETTA. (COMEDIENNE, MEMBER OF THE COMEDIE FRANÇAISE, PARIS.)

The graver's art cannot do justice to the beautiful and talented face of Mdlle. Barretta. Not until we have trained physiognomical artists shall we be able to present the readers of physiognomy with a real "counterfeit presentment" of any living being. In this portrait we see the supremacy of the muscular and brain systems. A prevalence of the *curve* in all the features denotes artistic powers. The chin is dramatically oval, the eyes convex, the brows curved, the nose straight in its outline, the ear rounded, the hair wavy. In the chin are the signs for Conscience, Firmness, Patriotism, and Love of Home, quite apparent; Benevolence, Amativeness, Love of Young, Mirth, and Language, in the lips and mouth. Imitation is shown by the shortness and outward curving of the upper lip; Approbativeness and Friendship, in the cheeks. In the nose the signs for Hope, Analysis, Mental Imitation, Ideality, Sublimity, Constructiveness, Acquisition, Veneration, and Self-will are all conspicuous. Form, Size, and Observation are large, while Prescience is marked. The nose indicates what the forehead would reveal were it not covered by hair. We read there Memory of Events and Artistic Reason. In the bright, wide-open eyes we observe fluency of Language, Verbal Memory, Intuition, and a highly emotional capacity. The color of the eyes, hair, and complexion tells us that the color-sense is highly developed; hence, ardor and enthusiasm are manifested in all her actions and emotions. The mouth denotes Wit of a mirthful nature. The entire expression is that of amiability and intelligence.

hensive. He requires a very sensitive brain and a nervous system of fine quality, together with a large endowment and fine degree of muscle, an excellent thoracic development, and a good share of the vegetative system, to give power to the domestic and social sentiments and to afford the nutrition essential to his arduous labors.

A fine endowment of the domestic faculties is highly important, for it is through these traits that he is enabled to exhibit the

softer emotions, such as Amativeness, Love of Young, Mirthfulness, Approbativeness, Friendship, Patriotism, and Hospitality. The better endowed he is with these traits, the better able is he to express them in the characters which he attempts to portray.

The color-sense should be a ruling power, for it is from this quality that he derives earnestness and enthusiasm; he needs it as well in costuming and in the facial "make-up" for the stage. Self-esteem should not be large, and it is seldom large in comedians. Force is requisite; also a large share of Secretiveness, to enable

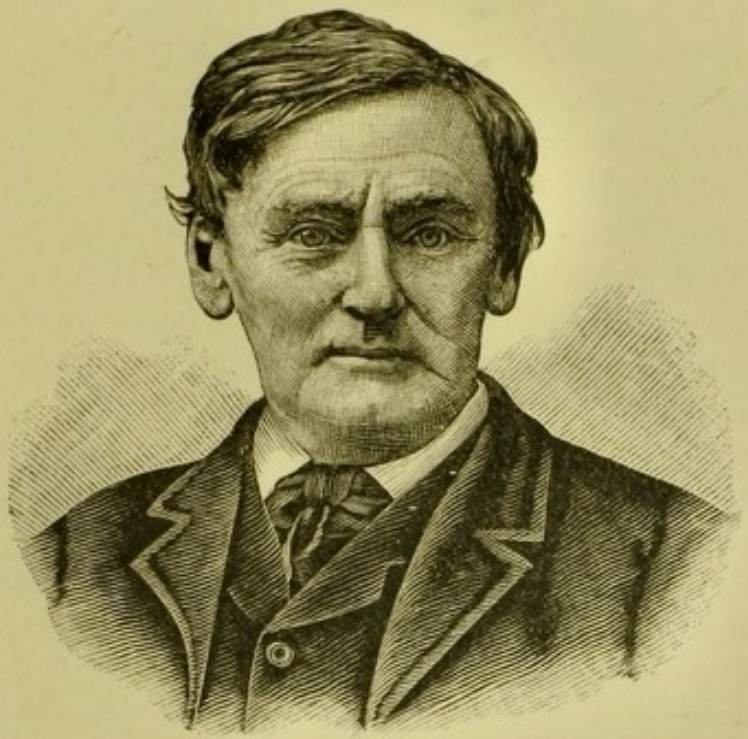


FIG. 353.—JOSEPH JEFFERSON. (COMEDIAN.)

It is a genuine pleasure to a physiognomist to delineate a face so full of talent and power as that of the subject of this sketch. In this individual the brain and nervous system is supreme and of fine quality. The muscular system comes second in the order of development, while the thoracic and osseous are about equal, and the vegetative assists by its powers in sustaining all of the others in combination. The color is well defined in the eyes, hair, and complexion. One scarcely knows which most to admire,—the development of the domestic, the social, or the mental powers. The lower jaw is wonderfully curved, thus disclosing dramatic talent. The chin is dimpled,—an accessory art-sign; it is also broad and long, thus revealing Conscientiousness and indicating Firmness. The signs for Love of Home and of Patriotism are manifest. Benevolence in the lower lip and Language in the mouth are noticeable. Amativeness, Love of Young, Mirthfulness, Modesty, and Imitation are conspicuous in the upper lip. In the lower cheeks Approbation, Alimentiveness, Bibativeness, and Hospitality are well defined. Friendship is large and Sanativeness a ruling quality. The nose is a noble feature, and has all the requirements for talent, viz., Quality, Form, and Size. In the tip we find the indications of Ideality, Sublimity, Analysis, Human Nature, Construction, Acquisition, Veneration, Executiveness, and Self-will. The width between the eyes is phenomenal, showing Form and Size to be supreme; the eyes wide, disclosing Language and emotional capacity; the face very wide across the eyes, giving evidence not only of Sanativeness but of Executiveness, force of character, and breadth of mind, which latter is accentuated by the phenomenal width between the eyes. Locality, Weight, and Calculation are manifest, while Time, Order, Music, Memory of Events, Intuition, and Reason are all exceedingly well developed. The endowment of Wit and Mirth is remarkable, and well expressed in Mr. Jefferson's impersonation of his marvelously fine creation of "Rip Van Winkle." I offer to his genius the homage of an appreciative physiognomist.

him to hide his own individuality while personating a character quite foreign to his own. Hope should be well represented in order to give sprightliness and vivacity to his efforts, while Analysis

should be largely developed that he may have the power to comprehend all that goes to make up his impersonations. Mental Imitation and Human Nature are required in order that he may comprehend the motives and characteristics of various sorts of persons, and then be able to imitate their language, dress, manners, and gestures. Ideality or Imagination is necessary, also a certain degree of Sublimity. Constructiveness is also most essential, for upon it the actor must depend for many of his ideas in regard to the *plan* and scope of a play, as well as to assist him in costuming, etc. A great deal of Self-will must be had in order to *hold* a character *strongly* through the long acts of a play, and also to assist the spontaneous outbursts of passion which many plays require. A fair amount of Credenciveness is needed to comprehend and interpret the awful and wonderful aspects of human nature. Form and Size assist in many ways: they aid verbal memory, also the memory of gestures, attitudes, and the draping and arrangement of the costume, the hair, etc. Locality is a prime necessity; Weight, also, to assist in the pitch of the voice and the force of the intonations and expression.

Language, most copious, is a talent of high importance to the player. Music and Time must be had, while Artistic Judgment and Intuition must be well developed to enable him to "divine" and express the fullness and entirety of those diverse characters which he is called upon to impersonate.

This analysis shows how many talents are requisite to the mental and bodily make-up of a first-class comedian or comedienne. Many comedians exhibit talents of a high order outside of the dramatic profession, as in the several arts, literature, sculpture, and even in science. Joseph Jefferson, whose portrait is herewith given, possesses literary ability of a high order. Henry Edwards, another noted comedian, has achieved success as a naturalist and author. Many of the talents useful to a player are the same that are required for literary pursuits, such, for example, as Ideality, Analysis, Mental Imitation, Human Nature, Constructiveness, Form, Size, Verbal Memory, Language, and Intuition. Most of these are the faculties which the sculptor and painter exhibit in their vocations.

Fine manners, wit, and all sorts of accomplishments are useful to the player, and he will do wisely and add greatly to his success if he pursue the study of them industriously. He must study music, dancing, elocution, fencing, the use and nature of cosmetics, and the arts of dress, with a knowledge of historic costuming, if he would excel. All these graces, added to a natural qualification for this branch of art, should bring wealth and fame.

THE SYSTEMS AND FACULTIES ESSENTIAL TO A SOCIETY BELLE.

Beauty is not always one of the requirements of a popular society lady, but she must possess tact, charming manners, certain accomplishments, amiability (or its counterfeit, vivacity), and style in dress, manners, and bearing. She must be *au fait* with the existing customs of the society in which she mingles. If to these qualities or a part of them she add beauty, she will become a celebrity. In this rank we may place the celebrated Lady Sidney Morgan, Madame de Pompadour, the Countess of Blessington, Madame de Staël, and Madame Recamier, all of whom are renowned for their success as leaders of the most brilliant society of their era.

The art of conversation of the kind suited to the general mind must be one of the talents of a society belle; she must know how to avoid subjects likely to wound or offend; she must be able to talk of matters light and pleasing or original and interesting; she must have the capacity for remembering the names, faces, and position or rank of persons and where she has met them; she must exhibit a kindly interest in the affairs and welfare of her associates, and must exercise great discrimination in the mingling of her guests.

She should be kind to the needy and charitable in overlooking the foibles of her associates; she should cultivate tact and all accomplishments; she should possess a fund of general information upon art, literature, music, the opera, history, and the drama; she should be a patroness of charities and busy in church affairs; she should seek the acquaintance of all eminent in literature and influential in politics and in society; she should cultivate a memory for faces, names of persons, and the localities from whence they came, and remember where she has met them.

The elegant figure of Madame Recamier, one of the most amiable and beautiful women of the Imperial Court of France, is a specimen of a most brilliant and successful society belle.

THE SYSTEMS AND FACULTIES NECESSARY FOR AN OPERA-SINGER.

Opera-singers, both male and female, require, first, great good health; second, a strong and symmetrical physique. The muscular and nervous systems should be supreme, with sufficient of the brain system to aid the intelligent rendering of character. The thoracic system should be one of the superior systems, and the abdominal powers strongly developed; particularly should the diaphragm be powerful. Among the great opera-singers we find no wasp-waisted subjects; hence Nature has free play, and these

song-birds are able to give forth the most spontaneous, sonorous, mellifluous, and prolonged efforts. The greatest of lyric artists,



FIG. 354.—MADAME RECAMIER. (A BELLE OF THE IMPERIAL COURT OF FRANCE.)

This engraving is taken from the lovely painting by David, which now adorns the Gallery of the Louvre at Paris. It is a representation of one of the most beautiful women of modern times. Her beauty was equaled by her elegant manners, kindness of heart, and equable disposition. Could Michael Angelo have seen this charming creature he would have dedicated his celebrated line to her,—"The might of one fair face sublimes my love." In this subject the brain and nervous system is supreme; the muscular powers rank next and are of the finest quality. The lovely oval of the jaw and chin and the rounded contours of the arms and joints reveal the presence of the muscular system. The face has an expression of amiability, vivacity, and elegance. The entire countenance proves the supremacy of the æsthetic mind. The signs for Conscience and Firmness are normal. Benevolence, Hospitality, Approbation, Friendship, Love of Young, and Amativeness are well defined. The upper lip is short and curved outwardly,—another artistic indication. The nose is long and straight, the tip developed at the signs for Ideality, Sublimity, Mental Imitation, and Constructiveness. Veneration and Self-will are well represented; so, also, are Form, Size, Observation, Language, and Color. The forehead discloses Memory and Artistic Reason and Judgment. The eyes are curved and express Agreeability. The attitude is expressive of the grace, freedom, simplicity, and *abandon* of childhood, and the countenance is sparkling and intelligent.

such as Grisi, Persiani, Patti, Nillson, Gerster, Frau Materna, and others have a beautifully developed muscular physique, expressive

face, large bright eyes, arched brows, curved jaw, and other muscular signs.



FIG. 355.—GIULIA GRISI. (OPERA-SINGER.)

The noble figure and beautiful face of Grisi fills the mind of the physiognomist with enthusiasm. Not only does the beauty of the face arouse one's feelings, but the sight of so grand a bodily development in a woman affords the highest satisfaction. The attitude of the body, the form of the arms and shape of the hands, the development of the thorax and shoulders, the poise of the head, all tell us of a regal woman. The rounded outlines and presence of curves everywhere stamp it as an artistic mind. Quality, color, proportion, and harmonious development all conspire in this glorious organism to produce perfection. The chin and lower jaw are curved, disclosing dramatic powers. The lips are beautifully molded and indicate vocal capacity; the upper lip announces Amativeness, Modesty, Love of Young, Dignity, and Independence. The nose is straight and high, and has all the signs of artistic originality; the signs for Analysis, Mental Imitation, Human Nature, Ideality, Sublimity, Construction, Veneration, Executiveness, and Self-will are conspicuous. The eyes are dark and express fluency. The interciliary space is artistic; the brows are finely curved and disclose æsthetic tastes. The signs for Form, Size, Observation, Memory of Events, and Artistic Reason are all displayed. The length from the tip of the nose to the point of the chin is quite marked; the cheeks and lips are full and altogether indicate musical talent. The color of the hair is black, thus affording the fervor and intensity of feeling necessary for the expression of the grand dramatic characters which she portrayed so magnificently upon the lyric stage. The whole expression is one of kindliness, sympathy, and artistic genius.

The vegetative system must have a good representation in this class, for the domestic sentiments assist emotion, and emotion is what the true artist must portray. Many of them become very fat,—Alboni and Parepa Rosa, for example.

They make loving wives and mothers and warm friends. In disposition they are social and domestic, and have all of the artistic love of color, form, display, and sensation, and exhibit the most sensuous tastes. They must possess large vocal ability, Hope, Mental Imitation, Ideality, Sublimity (for the tragic rôles), Human Nature, Constructiveness, Self-will, Form, Size, Music, Time, and Intuition.

Herewith I present the magnificent figure of Giulia Grisi, one of the most gifted and beautiful of lyric artists.

THE SYSTEMS AND FACULTIES REQUISITE FOR A MUSICAL COMPOSER.

Musical composers are of many diverse combinations of systems and faculties. It is this diversity of traits which produces such great variety of style in music. The combination of faculties which could produce the solemn and magnificent "Stabat Mater," of Rossini, for example, would be quite unlike that which would compose the lightsome strains of the "Orphee aux Enfers," or "La Belle Helene," of Offenbach. Thus we see that as great variety and diversity of character and mental and bodily endowments are required for the several sorts of musical composers as are needed to express the varied kinds of literature or art. So true it is that man is competent only to express in his works those principles which are the ruling ones in his own organism.

The musical reader will recognize these distinctions in the individuality of musical composers by the entire dissimilarity of their productions; and those who are skilled in music recognize the particular "style" of each composer as it is played or sung. Although he may never have heard the composition in question, he recognizes it as he does the personal appearance of the several composers, viz., by the peculiarities of their facial features; by their voice, their walk, their attitude and gestures; for the music of each individual is as markedly diverse as are their bodily and mental structures.

Let the student place before him the portraits of a number of musical *maestros* who are very differently constituted, and then, after making a physiognomical delineation of their character, let him listen to their several compositions, and he will become convinced that man is best capable of reproducing in his works the principles which are the more strongly represented within him.

If one will place side by side the portraits of Handel and von Weber, then those of Rossini and Schubert, also those of Wagner and Beethoven, he will certainly find that the facial characteristics of each are representative of their peculiar style in compositions.

The musical composer must possess a large and rounded



FIG. 356.—FRANZ SCHUBERT. (MUSICAL COMPOSER.)

The face of Schubert offers a most striking contrast to that of Wagner. In this countenance we observe the combination of round bones with round muscles, which expresses beauty, talent, and sensuousness. The wavy hair, curvilinear features, and dimpled chin announce quite another type of character than that of Wagner. There is much less of the bold and severe, but more of the softer traits, discernible in this face, yet it is none the less original in its expression. The entire structure, including the hair, is built upon a system of curves. The brain is dominant and of very fine quality; the muscular system ranks second, the thoracic third, and the *rounded* osseous system follows in the order of development. The chin is most completely expressive of the artist: the *round dimples* give a clue to the *entire* man. A love of the beautiful in the opposite sex, voluptuousness, creative or dramatic talent, and generosity are the characteristics revealed by the rounded, curved jaw and deep, round dimple. In the lower lip the signs for Love of Home, Patriotism, and Benevolence are very apparent. In the upper lip Amativeness, Love of Young, and Mirthfulness have set their seal. The mouth tells stories; it is a sensuous and linguistic feature, and speaks of love and social enjoyments,—of "wine, women, and song." In the cheeks Alimentiveness, Bibativeness, Hospitality, Friendship, Sanativeness, and Approbativeness are conspicuous. The color-sense is very decided, as seen in the hair and eyes. The upper lip is an artistic feature, *curving* outwardly, thus indicating Physical Imitation. The nose is broad and muscular, high and broad at the tip. The signs for Ideality, Sublimity, Analysis, Hope, Mental Imitation, Human Nature, Constructiveness, Acquisition, Veneration, and Self-will are all well defined. The superciliary region near the eyes and nose is noteworthy, showing great width between the eyes and depth of the inner angles, indicating both Form, Size, and Prescience in a large degree. The mouth denotes fluent vocality, both of language and melody. Calculation, as in all composers, is most decided, while Weight, Locality, Memory of Events, Time, Music, Order, and Intuition, with Musical Judgment and Reason, make up the physiognomy of one of the great composers of the world. A comparison of his compositions with those of Wagner will give the student all the corroboration of their physiognomic dissimilarity that he desires.

nature. He must be a many-sided being in order to express true greatness in rhythm. A fine brain and nervous system, together with an excellent muscular development, is requisite for certain styles of music, such as Mozart's and Schubert's, for example; while, for a bolder, grander, and more severe style, mere love is necessary, as we observe in the faces of Wagner and Beethoven;

or, as we observe in Handel, a large endowment of the vegetative system, along with a fine brain and nervous system, and sufficient admixture of the muscles to afford the sense of rhythm and melody so essential.

The faculties which are necessary are, first, a good share of the domestic and social functions and sentiments, along with which there must be the following mental powers, which can be discovered in the nose of most composers, viz., Analysis, Mental Imitation, Ideality or Imagination, Sublimity, Human Nature, Construct-



FIG. 357.—RICHARD WAGNER. (MUSICAL COMPOSER.)

This bold and aggressive face announces an original and independent genius, with all the force and power requisite to create a revolution in his own department of art. The brain system is dominant; the bony system takes next place, while the muscular powers follow: all of these are of high quality. The chin shows remarkable Firmness and Conscientiousness of the most severe type, while its extreme forward projection indicates an economical disposition. Love of Home and Patriotism are manifest. Benevolence is not large. Love of Young and Amativeness are well defined. Alimentiveness and Bibativeness are normal. Approbation and Friendship are medium. Self-esteem is only of average development. The nose is a wonderful feature, both in size and outline; it announces great Force, Courage, Resistance, Human Nature, Executiveness, and Pneumativeness. The boldness and originality of his musical compositions required all these traits,—first, to enable him to conceive, and then to force upon the public his singularly novel methods of execution. The color-sense is strongly defined and assists the mental powers. Constructiveness, Sublimity, and Acquisition are prime elements in this character; so, also, are Observation, Weight, Locality, Form, Size, Language, Memory of Events, Music, Time, Order, Calculation, Intuition, and Reason. Altogether, the face of a remarkably strong and individualized man.

iveness, Acquisition, Veneration, and Self-will. The signs for Form, Size, Weight, Music, Time, Order, Calculation, and Reason must be pre-eminent.

The chins of the majority of composers are dimpled; the sign for Amativeness large in all. The hair of most of them is quite different from that of ordinary people, thus showing, by this physiognomic indicator, original powers.

These faculties are possessed in varying degrees by all really good or great musical composers. The several varying degrees of

development of brain, bones, muscle, and of the thoracic and vegetative systems can be easily discovered by the observant investigator.

Those in whom the brain system dominates all the other systems will give a more lofty and refined quality of music than he who excels in muscle, as in Schubert, for example, where melodies are of the sensuous order, more nearly; and thus of each peculiar endowment, that system which is dominant gives the key-note to the style of the entire range of each individual's efforts.

Composers must possess a modicum of every sort of time, and that which inheres in each of the five superior systems is necessary for all; hence the thoracic as well as the brain system will be relatively well developed in all musical composers, as well as the brain and nervous, the muscular and osseous.

THE SYSTEMS AND FACULTIES ESSENTIAL TO A SCULPTOR.

A great variety of form and talents are found within the noble guild of sculptors; yet all are characterized by certain similar capacities. This art is really a blending of art and mechanism; we therefore expect to find some of the salient points of both mechanic and artist, with a touch of the scientific as well. A great sculptor is a grand character, and all great sculptors express in the face the nobility and comprehensiveness of their intellect, as witness Michael Angelo, Canova, Thorwaldsen, and others. The capacity to express greatness, whether by the chisel, pen, brush, voice, or by mechanism, is stamped unmistakably upon the face and bodies of those who possess this power. A knowledge of scientific physiognomy is necessary, perhaps, to ascertain the exact quality and power of this talent, although the lives and sentiments of the masters of sculpture are exponents of their innate powers. A truly great being moves, as it were, in an atmosphere of his own creating, far above the strata in which the commonplace crowd dwell; he is thus often misunderstood and misrepresented, for it is essential to the comprehension of character that we have within ourselves a germ, at least, of the traits we would understand. If this capacity be not ours, then it is impossible to comprehend a greater character than our own, for such characters cannot be measured by our limited personal standard.

A great sculptor must possess a fine brain and nervous system, together with an excellent degree of both bone and muscle, for the measurement and manipulation of such solid and hard material as marble requires the most solid tissues; then, too, the principles of Mechanism, of Calculation, of Weight, Size, Form,

Locality, etc., must be used in transforming a shapeless, chaotic block of marble into a beautiful, life-like statue. The artistic faculties of Sublimity, Ideality, Constructiveness, and Mental Imitation must characterize the sculptor, together with the faculties of Amativeness, Force, Love of Young, Love of Home, Patriotism,



FIG. 358.—ARIADNE.

In viewing the ideal beauties of this subject, one is filled with wonder and delight at the genius which was able to conceive and execute so perfect a figure of woman. This talent is little short of divinity, and bears within itself a heaven-born germ of creative energy. The grace and elegance of the attitude are only equaled by the beautiful outlines and exact details of the whole. One knows not which part most to admire; all is coherent, homogeneous, proportionate, and natural. The freedom and simplicity, the chasteness and delicacy expressed in each limb, feature, and contour entirely divests this angelic form of the slightest tinge of grossness. It would, indeed, be a base mind or a silly prude who could, at sight of this statue, be stirred by feelings other than those of gratitude to God for creating the creator of this noble work, who has wrought out of a block such perfection for the enlightenment of the ages. One generation of women possessed of similar forms would advance the moral sense of the world incalculably, for such women would express *normal powers* of mind and body.

Conscientiousness, Firmness, Friendship, Mirthfulness, and other domestic and social powers. Large Reason and Intuition must also be his. If all these powers are inherited in a high degree, and then developed by cultivation, we have a genius of transcendent power, such as Phidias, among the ancients, and Canova, Greenough, Story, Clark, and Miss Hosmer in modern times. The

art of the statuary is akin to architecture, and these two professions develop the scientific side of art, for both are based on mathematics primarily, and depend upon Measurements, Weight, Size, Form, and Calculation in a large degree. It is thus shown that high powers and a large and comprehensive mind are essential to the great professor of each art and science. It is true there are many grades in every profession, yet every student will designate, by his works, the rank to which he is entitled. The beautiful figure of Ariadne expresses the grade of artistic rank to which its designer belongs. I am happy in sharing with my readers the pleasure I derive from the contemplation of this sublime ideal of female loveliness and perfection. It is a specimen of the sculptor's skill and powers rarely excelled. It is the work of Danneker.

THE SYSTEMS AND FACULTIES REQUIRED BY A PHYSICIAN.

A physician should, in the first place, be possessed of the highest morality, for no other profession is called upon to exercise this power in so large a degree. The honor and happiness of entire communities are often in his keeping; besides, the physician, like the scientist, must abound in Conscientiousness in order to discern the *truths* of Nature as they exist, without mingling guesswork or speculative theories with his observations.

It is a well-established law of human nature that we cannot give out what we have not in our own organization, nor comprehend fully any principle which is not largely represented in our own organism; therefore, those whose province it is to discover and apply the *laws* and *facts* of *Nature* must possess a large development of Conscientiousness in order to be able to distinguish truths from errors. From this we infer that the bony system should be one of the supreme systems of the physician; bone, being the most stable tissue in the organism, is hence the most reliable. Along with the osseous system there must be also a good endowment of the brain and nervous system to afford sensitiveness and judgment, as well as of the muscular powers to aid in the mechanical parts of surgery. A good degree of the thoracic and vegetative systems are essential to nourish and sustain the mental processes and to assist the domestic and social qualities which the physician needs in order to attract and hold the friendship of his patients. A good share of Firmness is required and is observed in the faces of all good and great physicians. The faculties of Love of Home, Benevolence, Love of Young, and of the opposite sex should be normally developed; so, also, should Alimentiveness, Sanativeness, Pneumativeness, and a good degree of Force and

Resistance. Caution must be exercised and developed where it is deficient. The mental faculties of Analysis and Human Nature must be large, while Constructiveness, Self-will, and an average amount of Executiveness are required. Form, Size, and Locality are most useful with a preponderance of all the *practical* faculties; hence it is that we observe such projection of the eye-bones in all



FIG. 359.—M. PASTEUR. (PHYSICIAN AND DISCOVERER.)

The noble countenance associated with this sketch is that of a man well known to fame, for his numerous and important discoveries in phys cal and sanitary science rank him with the greatest of the world's benefactors. In this face the brain system is dominant and of fine quality; the muscular system stands second in evolution, and the osseous and thoracic follow closely in power. The lower third of the face is well developed and affords sustenance to the higher powers. The nose is broad, high, and muscular; in it we perceive the evidence of Imagination. (This faculty often aids in invention and discovery.) The lower third discloses Analysis, Mental Imitation, Sublimity, Human Nature, Constructiveness, Acquisition, Veneration, and Reason of the highest. Self-will is conspicuous. The space between the eyes and eyebrows is worthy of attention, being very broad, thus indicating large Form and Size, as well as a comprehensive mind. The eyes and mouth denote normal Language, while in the forehead we observe corroborative signs of logical capacity, as well as Memory of Events and very great Intuition.

good physicians. Large Observation, Causality, Comparison, Memory of all sorts, together with Time, Order, and Intuition are requisite. The physician who is true to his calling must exhibit for it the greatest devotion and enthusiasm, for physicians, like poets, are born, not made such by a college education alone. They should be ambitious to excel and succeed, and with a desire for progress in the high and holy profession to which Nature has called them.

A physician must *cultivate* such traits as are weak, as, for example, Secretiveness; he should be the most prudent and discreet of men—able to command his tongue and facial muscles to that degree that even the most acute and anxious patient shall not perceive the slightest movement or change. He should cultivate cheerfulness and sociality, without gossiping (a gossiping physician

is a dangerous being); he should develop his friendliness, love of children, and of the opposite sex; in short, he should be a *lover* of *humanity*.

THE SYSTEMS AND FACULTIES REQUIRED FOR A SURGEON.

The best *form* for a surgeon who attempts the most severe



FIG. 360.—EDWARD JENNER, M.D. (CELEBRATED ENGLISH PHYSICIAN, AUTHOR, AND DISCOVERER OF VACCINATION.)

No scientific physiognomist could mistake this face for other than that of a physician, and an earnest and attentive one as well, as evidenced by the signs of "natural physician" in the cheek-bones, in the attitude of the head and neck, and by the thoughtful, observant expression of the eye. The combination of systems in this subject is such as is most frequently observed among physicians, viz., the supremacy of the osseous and brain systems. The muscular, thoracic, and vegetative powers all assist in this combination by their development. The signs for Conscience and Firmness are apparent. Love of Home and Patriotism rank high. Benevolence, Amativeness, Love of Young, Mirth, Approbation, Self-esteem, Modesty, Friendship, Alimentiveness, Sanativeness, Pneumativeness, and Color combine to form a lovely domestic and social nature. The form, size, and peculiarities of the nose claim attention. It is a nose denoting Constructiveness, Originality, and logical power. The signs for Hope, Analysis, Mental Imitation, Human Nature, Ideality, Sublimity, Construction, and Acquisition are strongly delineated. Self-will is normally developed, while Size, Form, Observation, Weight, Locality, Calculation, and Memory of various sorts are manifest. The signs of Language in the eye and mouth denote fluency, while the practical faculties, being dominant, would give clearness, perspicacity, and directness to his style of expression, either oral or written. Time, Order, Reason, and Intuition are well developed. The long-continued observation and experiments of this noble physician in his endeavor to protect humanity from the ravages of small-pox by his discovery of vaccination, met at last with a suitable recognition, for he received by a vote of Parliament the sum of £30,000, and special honors were awarded him. It is a singular fact that all of the benefactors of the human race—those who have benefited it by discoveries of any kind whatever—have met with the most violent opposition, treachery, and often disgrace, before they could make the world see the value of their discoveries. Such was the case with Dr. Jenner, but his firmness and truth at last gained the victory.

operations is the round build of body and head, and many of them are of this shape. The muscular system should be supreme, with the brain system a close second, the bony and thoracic systems about equal and next in development.

The muscular tissue is *comparatively unfeeling*—insensitive;

hence, the surgeon must have a large share of this material in his organism.

The surgeon should possess large Force, to aid him in operations; a good degree of Cautiousness, in order to prevent a rash



FIG. 361.—JOHN HUNTER. (SURGEON, ANATOMIST, DISCOVERER, AND AUTHOR.)

In this portrait we have the evidence of an exceedingly well balanced character of a high order. The brain and muscular systems are well developed, while the thoracic, the osseous, and vegetative systems are largely represented. The chin discloses Firmness and Conscientiousness, also Love of Home and Patriotism. Benevolence is well defined. Alimentiveness, Love of Young, Mirth, Amativeness, Bibativeness, Hospitality, Approbativeness, Friendship, Sanativeness, Self-esteem, Modesty, Force, Resistance, and Caution are all well and about equally developed. The nose is unique. It is long, high, broad, and wonderfully elaborate in the lower third. Pneumativeness announces its power by the general large size of the nose and nostrils. Color is highly manifested. The signs for Hope, Analysis, Ideality, Sublimity, Mental Imitation, and Human Nature are in excess. Constructiveness is supreme. This faculty was probably inherited, along with other artistico-mechanical traits, from his father, who was a carpenter. Acquisition is highly manifested; this trait he exhibited by the wonderful collection he made for his museum, he having collected and prepared more than ten thousand anatomical objects. The nose also exhibits large Veneration, Executiveness, Reason, and Self-will. The space between the eyes is remarkable, and denotes a most uncommon sense of Form. The space between the brows and the width of the ethmoid bone is very great, announcing the sense of Size. The eyebrows disclose strength, vigor, and originality; the eyes, Language; the manner of their setting, large Observation and Prescience. The form of the outer angle indicates Agreeability. The peculiar formation of the malar or cheek bones is noteworthy; it reveals by its fullness the signs for the *natural physician and surgeon*. The lateral portion of the forehead shows the presence of round muscles; hence, is a secondary sign of large Construction, while Locality, Weight, Time, Order, Calculation, Reason, and Intuition are all highly manifest. The hands and fingers are characteristic, and disclose strength and flexibility. This grand surgeon and physician won the greatest honors and achieved the highest positions in his profession, having been physician extraordinary to the king and surgeon-general of hospitals in England. He wrote the "Natural History of the Teeth," "Observations on the Animal Economy," besides numerous other works, which, with his collections and museum, are left to enlighten posterity.

use of the knife; large Constructiveness, in order that he may invent those diverse appliances needed for each individual case, and also to give ingenuity and dexterity in dressing wounds. He requires large Locality, to enable him to remember and visualize the position of all the various organs, veins, arteries, bones, and muscles

in the body. Form and Size are also requisite to aid the memory of the shape and relative position of each part, and to assist Locality. Human Nature is essential in order that he may be *en rapport* with his patients, and also to enable him to *divine* instinctively all bodily and mental states. He should be a good physiognomist, and be well versed in the *pathology* of physiognomy. He must have large Observation, in order to take cognizance of the most minute changes and appearances. Calculation is a useful trait also, as it is required in many ways in the medication and treatment of the wounded, as in chemistry and in making surgical implements, etc. He should have large Friendship, in order to attach his patients to him and to command their esteem; enough Benevolence to sympathize, but not enough to weaken the feelings when severity is required. The faculty of Amativeness is necessary to *comprehend* the nature of the opposite sex; Love of Young also, that he may inspire children with love and confidence.

The sense of Weight should be a strong one, for the muscular sense is dependent upon its power in order to *gauge* the amount of force to be used in handling instruments and in bandaging wounds, limbs, etc. Executiveness is required to assist authority and give resistance. Self-will is another ally most necessary, as well as Analysis, Time, Order, and Reason. A fair share of musical ability is required to assist the ear in making examinations of the heart and lungs, and in auscultation for various other purposes. If to these faculties one adds large Intuition, he has a fine bodily and mental equipment for the practice of surgery.

OTHER CLASSES OF SURGEONS.

Many army surgeons are characterized by a round and broad form, with broad, rather low, and round heads; short, round arms, and round and tapering fingers. This build is the most suitable for those severe operations which require the greatest exhibition of force, endurance, and coolness; another class of surgeons—those who undertake the more delicate and less forceful operations—are characterized by about an equal development of the brain and muscular systems. This class of surgeons tend naturally to the treatment of those finer, less difficult, and more delicate cases of operative surgery, such, for example, as treatment of the ear, the eye, etc. This class of surgeons require a fine endowment of the brain and nervous system. In short, the muscles as well as nerves of this class must be sensitive to a great degree, and this combination calls for a fine and high organization.

The surgeon should be something of an actor in order to know when to be sympathetic and when to be severe. Yet he

should cultivate a friendly, cheerful disposition, and then use it when necessary. To all should be added a high sense of responsibility to God and humanity for his gifts and talents.

Great surgeons, like great poets, painters, and singers, are sent into the world not to selfishly enjoy their own great gifts, but for the benefit and enjoyment of the world at large. A talented surgeon lives not alone for his own day and generation, but by the power of his genius he lives for the ages, and sends the results of his skill and knowledge down the stream of time to bless and comfort millions who come after him.

The great operations and discoveries which such men as Hunter, Harvey, Jenner, Cooper, Jackson, Abernethy, Pasteur, Maudsley, Mott, Kernochan, Pancoast, Sayre, Barker, and a host of others equally gifted will aid and enlighten humanity as long as civilization progresses. These men are the world's benefactors, and I know of no profession, except it may be the theatrical, that is as charitable, and *none more self-sacrificing*. I herewith present the portraits of three eminent physicians and surgeons, each remarkable for discoveries which serve to alleviate suffering and save life. Their physiognomies will not be without interest to the reader, whom I advise to read a biography of each, which can be had in most public libraries.

THE SYSTEMS AND FACULTIES ESSENTIAL TO THE ORATOR.

Where the gift of oratory has been inherited it will assert its presence by certain undeniable signs in the face, and these will be corroborated by the bodily build and the hands. This power can be cultivated to a large degree; but where one is greatly deficient in the power of verbal expression he cannot become a fluent and eloquent speaker. It inheres in the *physical construction* of man (where it is present) as well as in the brain; there must be a consensus of action between the brain and body in oratorical subjects, for the orator expresses by his gestures and attitudes that which his voice fails of doing. There are two classes of orators—the electric and the magnetic. It is difficult to say which is the superior. I suppose, like the diverse classes of other artists, the several varieties are suited to many dissimilar departments of action.

THE ELECTRIC CLASS OF ORATORS.

The electric orators are those in whom the brain and nerve system is predominant, with the muscular system subdominant. These make clear, incisive, lightning-like speeches, appeals, and arguments. Such were Demosthenes, Cicero, Patrick Henry, Henry Clay, John Randolph, and Channing. These orators

electrified their auditors, and were capable of infusing into them a spirit of instant action.

The electric orator is characterized by a fine nervous energy, and the brain system is dominant, the figure is tall and relatively thin rather than round, the face long and oval, and eyes large and bright, quick in movement, and expressive. The logical and

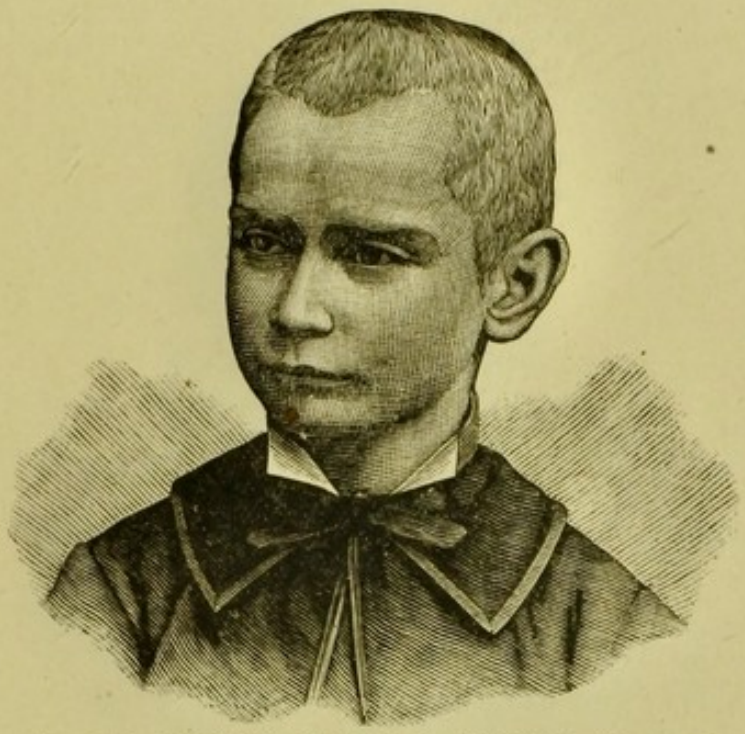


FIG. 362.—MASTER HARRY SHANNON. (ORATOR.)

The portrait herewith presented gives no adequate idea of the subject of this sketch, yet after having met personally, and having listened to the oratory of this precocious genius, I felt impelled to give my readers the benefit to be derived from a study of his speaking countenance. The mouth, ears, eyes, and frontal sinuses all announce oratorical ability. The chin is lacking in Firmness, but shows a good degree of Conscience; the jaw has the dramatic curve. The mouth is very wide, straight, and well formed. The lower lip denotes Benevolence; Love of Home and Patriotism are apparent, while Amativeness and Love of Young are uncommonly well developed. The upper lip reveals Modesty and a dignified degree of Self-esteem and Independence. Alimentiveness is relatively deficient, Sanativeness moderate, Mirthfulness, Approbativeness, and Friendship decided. The nose reveals Ideality, Sublimity, Human Nature, Construction, Acquisition, Veneration, Reason, and strong Self-will. The signs for Size, Form, Prescience, Observation, Locality, and Calculation are conspicuous. Mental Order, Time, Music, and Language most copious are indicated, while Memory of Events, Verbal Memory, and Intuition are phenomenally developed. This lad has beautiful dark-brown eyes, long lashes, a clear, delicate complexion, brown hair, and refined manners. His voice is loud and melodious, and his memory and rendition of the speeches of all the great orators is a wonderful exhibition of precocious genius. This analysis proves that the orator must have high quality and the physical and mental constitution suited to the requirements of this art. The orator should have an ardent love of Liberty, an abounding sense of Sublimity, and an appreciation of the natural rights of man, together with a large endowment of the color-sense to make his addresses fervid and impassioned.

argumentative style predominates in this class; they are noted for keenness at retort, for incisive sarcasm, vehement and scathing invective, and for holding before their auditors a high standard of conduct and motives.

This class should possess a large degree of Conscientiousness and Self-esteem; Ideality, to impart elegance and finish; sufficient of the thoracic system to give color and earnestness to their

utterances, and a normal condition of the vegetative functions to supply nutriment and the domestic sentiments.

THE MAGNETIC CLASS OF ORATORS.

Another class of orators is illustrated by those in whom the brain and muscular systems are about equally developed, and of high quality.



FIG. 363.—HENRY CLAY. (AMERICAN ORATOR AND STATESMAN.)

To meet face to face and delineate the character of such a man would indeed be a great pleasure to the scientific physiognomist. In this are all the signs of oratorical greatness. Oratory is art, hence we find signs of the artist in the face. The dimpled chin announces the influence of the muscular system, which in this subject ranks next to the brain and nervous system. The lower third of the face, from the point of the nose to the chin, is long, the cheeks full and wide from side to side, the mouth very wide, straight, and well formed, the lips even; the slight *outward curvation* of the upper lip is common to those who have spoken in public professionally, as is observed in clergymen, actors, and orators. The sign in the chin for Firmness is only average, while Conscientiousness is larger; Love of Home and Patriotism are very marked; Benevolence is full; Language in the mouth and eyes most eloquently indicated; Approbativeness, Alimentiveness, Friendship, Mirthfulness, Amativeness, Love of Young, Self-esteem, and Modesty all find strong representation. The nose is a wonderful feature; it is long, high its entire length, and broad on the back. Its *form* alone stamps its quality, for such a nose denotes the highest grade of mental and physiological power. The *tip* of the nose is remarkably developed, and indicates a broad understanding of Human Nature. It also discloses large Ideality, Sublimity, and Constructiveness, moderate Acquisitiveness, and large Reason, Veneration, Executiveness, and Self-will. The observing faculties are conspicuous. Form, Size, Locality, Observation, Memory of Events, Time, Order, and Calculation are among the great faculties which embellish this grand countenance. The frontal sinuses and the ear give assurance of development of the vocal and aural apparatus. The hair is well colored and straight, the eyes deep in hue, and the entire expression earnest and intellectual. The eye indicates sight, insight, and Intuition.

Magnetic orators are ardent, enthusiastic, witty, mirthful, and overpowering in their expression of *feeling*. So full of *emotion* are they that they catch the *popular* ear by their exhibition of and appeals to the domestic and social natures of their hearers. They depend upon their ardor and vehemence to captivate the minds of their listeners. They are possessed of strong emotional,

affectional, and often passionate natures, and seem capable, when aroused to their highest pitch of power, of carrying all before them, and of changing the minds of men whose *convictions* are based on the strongest sense of justice.

The magnetic orator is characterized by the round form of head and body, by full, convex eyes, oval face, rounded chin, and many exhibit a round or cleft dimple in the chin and cheeks; the



FIG. 364.—ERNESTINE L. ROSE.* (POLISH ORATOR AND REFORMER.)

In this expressive countenance Nature has stamped all of the signs of Oratory, as well as of Conscience, Reason, and Decision. This face shows that its owner has the courage of her convictions. It is the countenance of a lively, mirthful, witty, noble, logical woman, full of sweetness and intelligence. The upright carriage of the head and position of the neck denote rectitude, independence, and courage. In this face are all the signs of oratorical ability. The brain and muscular systems are about equal and of high quality. The artistic phase of mind is indicated, hence her oratorical efforts would be characterized by polish and elegance. The chin is oval; in it we see the signs for Firmness and Conscience well defined, also Love of Home, Patriotism, and Benevolence. The sustaining powers are well developed, as the signs for Alimentiveness, Bibativeness, Pneumativeness, and Color indicate. The social virtues are well represented, hence we find Hospitality, Friendship, Approbation, Mirth, and Language large; so, also, are Amativeness and Love of Young. The mouth is wide, straight, and beautifully molded; the upper lip denotes Modesty. The nose is æsthetic, constructive, literary, and logical in its three divisions. Strong Self-will is manifest. The width between the eyes and eyebrows is remarkable, and indicates not only the capacity to visualize forms, but shows also a breadth and comprehensiveness of intellect. The eyes denote power of Emotion and Language. The sign for Prescience is large, while the forehead denotes the supremacy of Memory of Events, Reason, and Intuition. This lady was a fearless and eloquent champion of woman suffrage and one of the world's great reformers and benefactors.

hands are muscular and dimpled, and the fingers rounded and inclined to taper, with oval nails.

This class of orators possess a large endowment of the domestic and social sentiments; hence, we observe in them the signs for Amativeness, Love of Home, Patriotism, Mirth, Love of Young, Force, Color, Approbativeness, Friendship, Hospitality. Mentally

* This cut by permission of the editor of "The History of Woman Suffrage."

they exhibit the signs for Ideality, Sublimity, Constructiveness, Acquisitiveness, Self-will, Form, Size, Credenciveness, Language, Memory of various sorts, Music, Time, Calculation, Reason, and Intuition.

This combination produces the most emotional type of oratory. Henry Ward Beecher, John B. Gough, and Robert G. Ingersoll are fine illustrations of the magnetic class.

They are all highly dramatic, and, being permeated with color, are vivid, sensational, and intense in their utterance.

The art of oratory, like all other arts, is a congenital aptitude, and must, like all other arts, be developed by exercise and cultivation to be of the highest efficiency. A natural orator can be much strengthened by learning the art of *breathing* in such manner as to conserve his respiratory powers, in order to produce the most prolonged and sustained efforts. He should study elocution to improve his gestures and attitudes; a knowledge of logic and rhetoric are essential to impart reason and elegance. To be an orator presupposes the capacity for original and rapid thought; but in order that the mind shall have material upon which to meditate, and from which to draw instruction and argument, simile and metaphor, a great amount of experience of every phase of life, thought, and emotion is essential, as well as a great fund of knowledge drawn from the master minds in every department of knowledge. An orator should be familiar with history, statistics, biography, poetry, and literature of many kinds; he should have a broad acquaintance with the political history of his country; and if to all this he add a large sense of justice, he will not fail to strongly impress himself upon the minds of all who hear him.

Fine manners add greatly to the efforts of the orator, and a kindly, sympathetic manner in private throw a charm about his personality which assists in making him popular.

To be a great orator is to be in a sense *immortal*, for as long as civilization lasts the *thoughts* of great orators are cherished; for although the magnetic or electric effect of their utterances may have died away, their thoughts, if they be noble or inspiring, or such as appeal to our common humanity, are transmitted to the most remote generations. Witness the speeches and arguments of Demosthenes, for example, now over two thousand years old!

There are other varieties of these two ruling types of orators, and all grades of capacity, from the cross-roads stump-speaker to the brilliant orator of the Senate and Parliament. These general and diverse grades may be classified by applying the laws of scientific physiognomy to their faces.

The vocal and aural developments of great speakers are

peculiar, and one has only to scan the size of the mouth and the area of the cheeks, the size of the nose and nostrils, the frontal sinuses, and the ear, to find all the evidence of vocal and auditory capacity. The section in the preceding chapter devoted to the ear will reveal linguistic capacity in this appendage.

The *color* of orators is another salient circumstance. I have never known of one who was pallid, and with colorless eyes and hair.

THE SYSTEMS AND FACULTIES ESSENTIAL TO A CLERGYMAN.

This class of men, according to Francis Galton, are "largely recruited from the sickly portion of adults." If this be so, it is a lamentable fact, for no profession has greater need of abounding health and strength than that which undertakes to be the moral guide and exemplification of a higher life. A condition of delicacy or ill health should deter one from entering the ministry, for one who is constitutionally weak cannot possess strong and hearty sympathies, nor can he perform those arduous duties which fall to the lot of most clergymen, nor practice the self-denial required, nor can he from morbid conditions of mind give forth sound, correct, and moral views of life and conduct. A weak or diseased condition of body imparts a perverted idea of religion. As the mind and body are so completely bound together that one cannot be disordered without the other partaking of its conditions, it follows that a sound constitution and robust health are the first requisites of a clergyman.

The combinations best adapted to illustrate a truly moral and religious life are the bone, brain, and thoracic systems dominant, or the brain, bone, and muscular systems supreme, or the bone, muscular, and vegetative powers in the order arranged. Those endowed with the systems here mentioned love and practice morality, purity, and truth, because they are constituents of their being; hence they are well fitted to *practice what they preach*, and are thus exemplars of their own precepts—the most convincing method of imparting truth or knowledge. Men of these characteristics are less liable to commit wrong than those in whom the muscular or vegetative systems are dominant. It is true that those of the bone and brain build are not so magnetic and dramatic as those in whom the muscular and brain powers are regnant; they are not so emotional and enthusiastic as the latter, but they are often most earnest, clear, decided, logical, practical, moral, and electric when they are gifted. Men of the emotional stamp are more fit for the stage-platform or politics than for the pulpit. The sensational and dramatic styles should be left to the theatre, and

religion, pure and simple, should depend more upon calm, dispassionate reason and sound morality for its foundation.

A clergyman should be possessed of a well-balanced physiology and physiognomy; he should have large Conscientiousness and Firmness; a good degree of Alimentiveness, in order to sustain his mental powers; a Love of Young, that he may attract and instruct

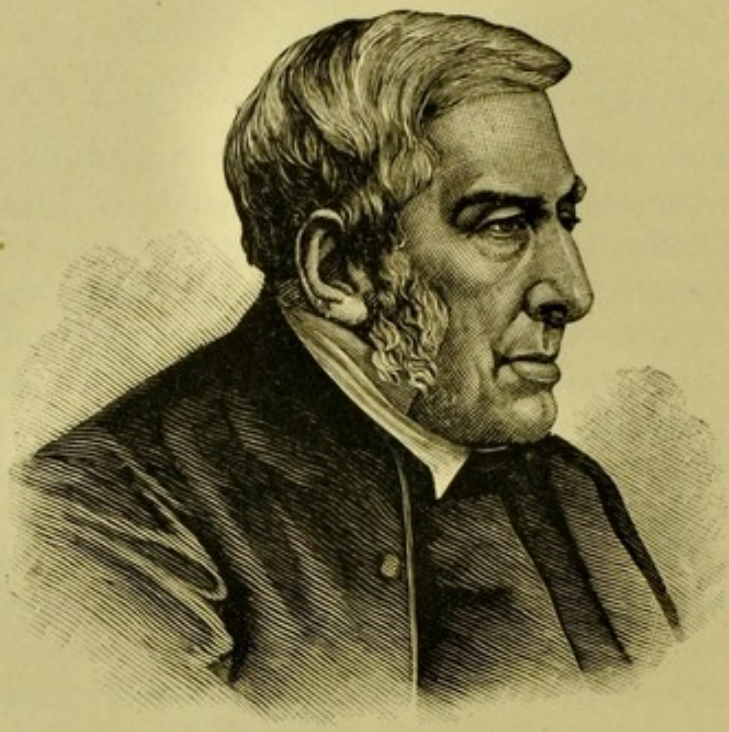


FIG. 365.—HENRY HART MILMAN. (FORMER DEAN OF ST. PAUL'S, LONDON.)

A great diversity of talents are exhibited in this countenance. Literary, philanthropic, moral, religious, and executive qualities here shine forth. Every feature is noteworthy; one knows not which most to admire. The thoracic system is supreme; the osseous and muscular systems are about equal, and rank next in the order of development; while the vegetative powers are normally indicated. The chin discloses Firmness, Conscience, and Economy, together with Patriotism and Love of Home. Benevolence in the lower lip is conspicuous. The signs of Alimentiveness, Sanativeness, Pneumativeness, Force, Color, Hospitality, Amativeness, Friendship, Approbation, Love of Young, Modesty, and Self-esteem are all large, and show that the sustaining powers and domestic and social nature was most uncommonly developed. The nose is long, high, broad, and extremely high and elaborate at the tip. The signs for Hope, Analysis, Human Nature, Mental Imitation, Ideality, Sublimity, Construction, and Acquisition announce a first-class literary power. His poems, histories, dramas, etc., are corroborations of these signs of literary capacity. Veneration, Executiveness, and Self-will fill out the upper portion of a noble feature. The eyes are deep-set, and the brows flex downward at the inner termini, disclosing Observation. Prescience is normal, while Credenciveness is deficient. Locality, Form, Size, Language, Weight, Time, Order, Calculation, and Music are well defined. The projection of the brow and the receding forehead announce a practical thinker; the squareness of the brow denotes Order, and is a secondary sign of rectitude. The ear is large, well-rounded, and reveals fine aural capacity. The form of the neck discloses vitality, and its position earnest attention. The hair is straight, with a flexibility that indicates artistic powers, and these were exhibited in his dramas and poems. Altogether it is a face of great mental capacity, moral grandeur, and of physical perfection.

children; Mirthfulness, to make him cheerful; Friendship, in order to win and hold friends, and to impel him to the active duties of friendship; Hospitality, that he may offer reasonable entertainment to his friends and flock. He should have a good share of Sanativeness, Pneumativeness, and Color to impart vigor to his body and give power to his words and works. Considerable Self-esteem

is required that he may exhibit dignity and independence; a certain amount of Force is a good quality to enable him to present his ideas with power and to combat error vigorously. Sufficient Secretiveness is a strong ally to enable him to keep the confidences of his people sacred; a fair degree of Hope and Caution assists his efforts; a large degree of Benevolence is essential that he may

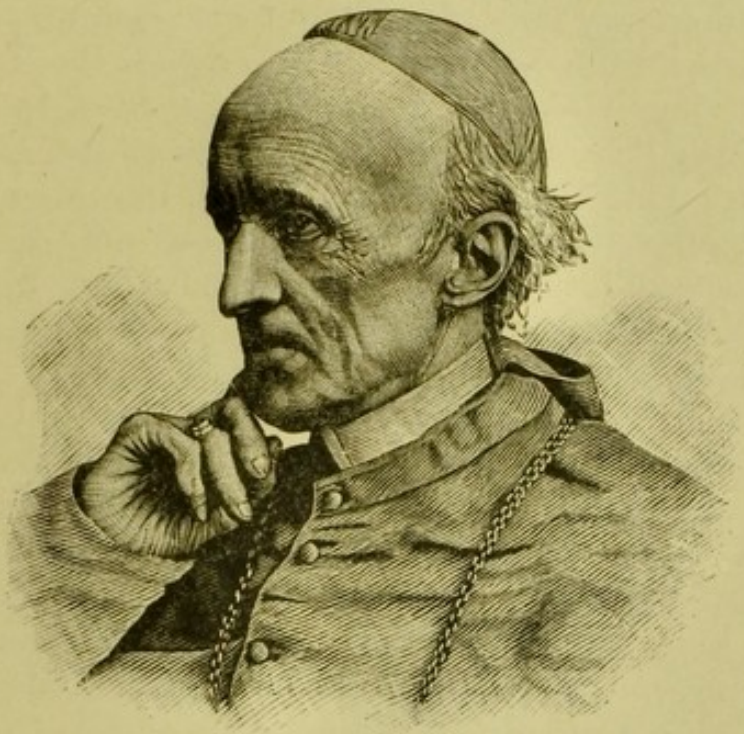


FIG. 366.—CARDINAL HENRY EDWARD MANNING.

In this noble face all of the signs of intellectual power, purity, and benevolence are visible. The brain and bone systems are supreme, while the muscular powers are well developed, as evidenced by the form of the nose and the size and form of the eye. The long, thin face and full lower lip reveal sympathetic and benevolent tendencies, while the fine quality and large development of the brain, in combination with the last mentioned, would impart the *philanthropic phase* to his character. In the chin the signs for Firmness and Conscientiousness are normal; Love of Home and Patriotism are apparent. The lower lip is full and denotes large Sympathy. Sanativeness, Mirthfulness, Pneumativeness, Economy, Modesty, and Self-esteem are largely defined. Mental courage and force of character is indicated by the large size and form of the nose, which discloses the following faculties: Human Nature, Sublimity, Constructiveness, Acquisition, Veneration, Mental Imitation, Analysis, Executiveness, Reason, and Self-will, all conspicuous. In the eye and mouth the signs of fluent Language are evident; Prescience and Credenciveness are both manifest; while in the forehead the signs of Memory of Events, Mental Order, Time, Causality, Comparison, and Intuition are most decided. The hand is characteristic of philosophic rather than of scientific tendencies. The ear is that of an orator. The brain shows a theoretical rather than a practical mind, although so large an amount of bone *tends* to make the theories practical to a *certain degree*. The expression of the face conveys the idea of intellectual and moral force. The Cardinal is inclined to reforms *within his sphere*, and has shown his philanthropy in many ways, particularly in the settlement of the recent strike of the dock-laborers in London in favor of the oppressed laborers.

be charitable and sympathetic in dealing with sinners as well as with saints. Mentally, a clergyman needs a fair share of Ideality, Sublimity, Mental Imitation, and Construction in order to arrange his ideas in good form and with beauty and loftiness. He requires large Veneration to give a sense of submission to law; Executiveness, in order to control and command; a modicum of Self-will is helpful, and Form, Size, and Prescience as well; fluent

and eloquent Language should be his. He should have large Human Nature in order to understand all phases of life and every condition of humanity—its needs and weaknesses; large Intuition, to enable him to instantly divine their mental and moral status. A large degree of Credenciveness is not required, as it tends, if too greatly exercised, to superstition, and this trait conflicts with practical truthful demonstration. He should cultivate an active liver by attention to dietary laws, for this imparts clearness to the ideas and cheerfulness to the disposition; this enables him to present religion in a pleasing and happy manner, instead of in the sad and gloomy way in which bilious and dyspeptic ministers are wont to impart their teachings. A minister should, like Moses, be a good hygienist, in order that he may know how not only to retain the healthful equilibrium of his own body, but to be able to distinguish physical ailments from moral and mental defects. Many persons often confound these two conditions.

A clergyman should be a student of the natural sciences, for in this department of nature he will find laws and truths that are "infallible." The laws of God, as shown by the laws of science, are, indeed, a "revelation," and need only close observation and analysis to assure us of their accuracy. To all these a clergyman should add a knowledge of scientific physiognomy, that he may be *sure* of his opinions in regard to the character of his people, and thus be enabled to work for their highest welfare.

A clergyman should possess the elements of progress and reform, and this requires the courage that springs from Conscientiousness. Large Conscientiousness will give this power unaided by the faculty of Resistance, for it is the mightiest force in the human mind; this faculty needs the balance of logical Reason to make it most effective.

With this analysis I present delineations of the physiognomies of Cardinal Manning and Dean Milman, eminent members of the two ruling Christian denominations, viz., the Protestant and the Romish.

THE SYSTEMS AND FACULTIES ESSENTIAL TO A LAWYER.

As long as people omit the practice of the injunction "Love thy neighbor as thyself" we shall require the services of lawyers; and, as the millennium does not appear to be near at hand, there seems a probability of our needing their services for a long time to come. I will, therefore, outline the requirements of a "legal gentleman."

He may have a combination in any degree of any of the four superior systems, if he have a suitable quality of the brain as well as of the vegetative powers to impart vigor and reason.

The various phases of the law require many diverse sorts of mind to interpret it; it is with this profession as with all others,—the several aspects and departments need minds suited to their requirements. In certain branches the best combination is the brain and bony systems dominant, as in courts of equity; in others, the brain and muscular systems supreme are required; this class make the best advocates and orators, while those with the brain, bone, and muscular systems of fine quality, well developed, make good counselors.

A good lawyer requires a good development, firstly, of the vegetative powers to give the sustenance essential to his arduous labors, and these powers create the social and domestic sentiments which he requires, not only to attract and hold friends, but he needs them in order to exhibit the emotions before a jury, for there is no use of endeavoring to *imitate* them; without in some degree feeling them he will fail in his attempt and meet with no response. He should cultivate Force, in order to stand his ground and present his ideas and arguments in an earnest and energetic manner, and also to assist sarcasm and invective; Resistance, that he may oppose with vigor the onslaughts of his opponents; and Secretiveness, that he may be able to use great discretion in keeping his ideas and plans secret until the right opportunity presents itself for him to show his hand. Caution, also, is a necessity, to make him prudent in speech and action. Large Self-esteem is requisite to impart confidence and self-possession; not too much Modesty, for it is not well for a lawyer to underrate his abilities, nor to be backward in asserting himself; sufficient Conscientiousness is wanted that he may inspire the confidence of his clients and to enable him to carry conviction of the justice of his cause to the minds of judge and jury; Firmness must be normal to give the patience and perseverance necessary in long-continued causes.

A fine mental endowment is required by one who would succeed in law, and, with this, an excellent education is a necessity. Not only is a comprehensive knowledge of the law required, but all sorts of learning as well; a lawyer must possess a mind well stored with dates, facts, and a variety of anecdotes, as well as poetry, with which to amuse, entertain, and adorn his language. He requires a good share of Veneration that he may respect the rulings of the court; large Language, in order to express himself with precision and eloquence, and sway the jury and carry public opinion with him. A wide knowledge of human nature must be his, in order to know how to comprehend the motives of people as well as how to *manage* them; to work upon the sympathies of the jury as well as to convince by logic the more reasonable part of them.

Lawyers should make a thorough study of scientific physiognomy, for this will add greatly to their power in the management of both jury and witness. This study should be a part of the curriculum of all law-schools. Mirthfulness is a great assistant, for this, with large Language and Construction, creates wit, and wit is very convincing to certain minds. A sense of Sublimity is an aid, for it gives the power and enables one to comprehend causes involving vast interests; he must possess sufficient Ideality to make his language polished, and to impart a sense of propriety, taste, and elegance to his dress, manners, and speech, for all of these circumstances carry weight and influence all beholders. A dirty, slovenly lawyer, whose dress and appearance is repulsive, must exhibit almost superhuman powers to be able to neutralize the effect of his *personnel*. A good degree of Will is a necessity, and a large and strong Memory of all sorts; Reason of the highest, also, and a large measure of Intuition. To all these great, good health is necessary, a love of work and study, indomitable energy and perseverance, and a determination to succeed.

THE SYSTEMS AND FACULTIES ESSENTIAL TO AN INVENTOR.

Among inventors are to be found men of various combinations of systems and faculties. They present various forms which are in harmony with the sort of implement or plan which they create. Edison, for example, exhibits a high quality and large endowment of the brain and nervous system supreme, and he deals with the finer forces of Nature which are akin to the electrical mechanism of the brain and nervous system. Elias Howe possessed a fine quality and large endowment of the brain and muscular system, and his invention was moved by wheels—circular objects. Morse, who invented the telegraph, had a combination of brain, muscle, and bone nearly equal in development, and his creations required the use of several principles of mechanism, and he had the organization and form suited to the creation of various sorts of mechanism.

Thus we see that the inventor inherits the peculiar powers that are required for putting in operation those principles of mechanics which are the most decided in his own organization. No postulate can be sounder than that which is so well expressed by Winckelmann, and quoted at the head of this chapter, viz., "We generally think according to our formation." Not only does man *think* according to his formation, but he *acts* in harmony with his build. Indeed, he cannot well act in opposition to it, hence the inventor is born with the *capacity* for that which his genius produces.

The inventor requires a large brain, together with sufficient development of the muscular system to aid the mental conception of *motion;* enough of the bony system to give clearness and a perception of truth; that is to say, perception of the laws of Nature, which are based on mathematical precision, and all the works of man are representative of the mechanical laws governing the works of Nature. He should have sufficient of the thoracic

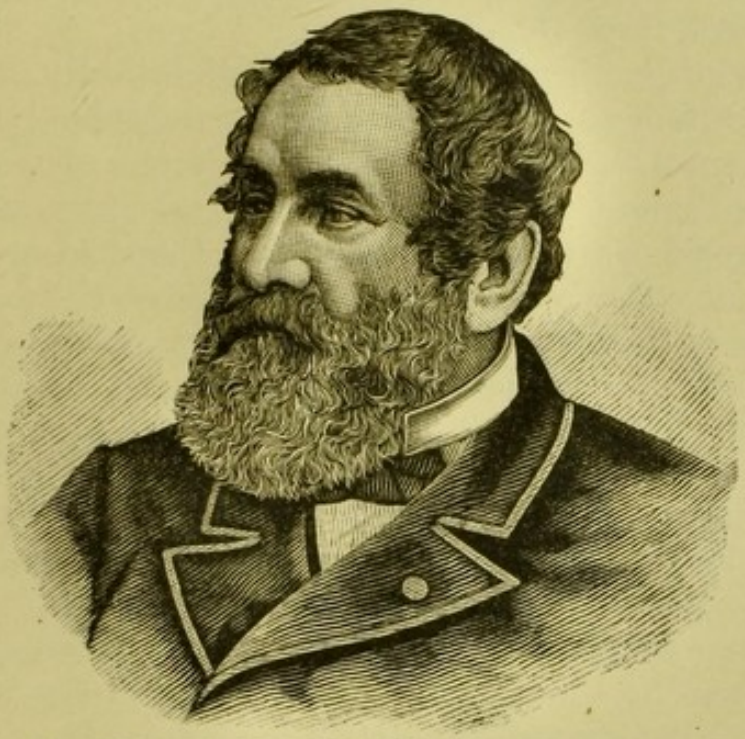


FIG. 367.—CYRUS HALL McCORMACK. (INVENTOR OF THE REAPER.)

In this energetic countenance we observe all of the elements of mechanical ingenuity. The signs for Thought, Perseverance, Construction, and Intuition are marked. The brain, bone, and muscular and thoracic systems are about equally developed and of high quality. The lower third of the face is covered, but observation of the rest of the countenance assures us that Firmness and Conscience are well represented, as well that Alimentiveness is indicated by the well-nourished appearance of the physiognomy. Color, Sanativeness, and Pneumativeness, also the domestic functions and faculties, are well developed—for so fine a superstructure has an equally excellent foundation. The nose is broad, high, and of proportionate length. The tip is both high and broad, indicating not only Human Nature, Ideality, and Sublimity very large, but it also shows a progressive, investigating spirit. Mental Imitation, Analysis, Constructiveness, Acquisitiveness, Veneration, Executiveness, Reason, and Self-will are all conspicuous. The eyes are deep set under an overhanging mechanical brow. The signs of Form, Size, Weight, Faculty, Observation, Order, Time, Calculation, Memory of Events, and Intuition are all remarkably developed. The ear is large and round, disclosing good aural capacity, Music, and Commercial capacity. The hair falls in slight and easy curves, and is an accessory sign of Constructiveness. The face, as a whole, indicates originality, will, progress, and energy.

system to enable him to *instinctively* comprehend and apply the principles of periodicity, which are characteristic of the movements of the heart, lungs, circulation, and digestion, and to all these a good share of the vegetative powers, to give sustenance to the other systems, and to evolve those sentiments which lie at the base of all creative efforts, such as Amativeness and Love of Young.

Reference to the physiognomy of all superior inventors will

disclose a large degree of these as well as of other domestic and social traits. The inventor requires a good degree of Force, Self-esteem, Pneumativeness, and Caution; he should have large Hope, but not enough to make him too sanguine and mislead him; he needs Analysis, Mental Imitation, Ideality, and (in the construction of mechanism involving great principles) a good share of Sublimity is useful. Self-will is a much-needed factor; Form, Size, Weight, Locality, Time, Order, Calculation, Reason, and Intuition are required in a large degree.

A knowledge of physics, natural philosophy, mathematics, and mechanics is required. A love of investigation, an insatiable curiosity in regard to laws and principles, and a patient, persevering spirit are characteristic of all those great inventors who have blessed the world with their inventions. I advise my readers to familiarize themselves with the life, labors, and struggles of the great inventors of modern times—those men who have wrought out of their inner consciousness the wonderful systems, implements, and machines which have been mainly instrumental in evolving a high civilization.

A knowledge of how such men as Watt, Stephenson, Fulton, Hoe, Morse, Edison, and Goodyear struggled, suffered, and succeeded would very greatly stimulate and strengthen other inventive minds, as well as the minds of all who take an interest in the development of character. Nothing so sharpens the faculties as the struggles necessary to *compel the world to accept* a great idea which has taken form and wrought out practical and philanthropic results, such, for example, as the use of steam, of electricity, the art of printing, the sewing-machine, etc.

Character is developed, first, by an inward force acting on circumstances; second, by outward circumstances and opportunities. The great characters of the world were not created in luxury, for luxury enervates and destroys. History records few inventors or reformers who were reared in the lap of ease and surrounded by wealth; and parents need not expect great things of their children whose minds are clogged and senses cloyed with the material things of life. Grand characters are the result of self-denial, self-control, self-sacrifice, and the pursuit of high ideals, or else evolve in the order of Nature by natural development, having inherited capacity for greatness which is irresistible.

THE SYSTEMS AND FACULTIES NEEDED BY A COMMANDER.

The conduct of a great campaign, whether naval or military, requires high mental qualifications and great bodily powers. Commanders need a large and broad brain to give strength and

comprehensiveness to their ideas and plans; they require a large endowment of both bone and muscle to impart stability and aggression to their movements. The thoracic system must be well developed, for this gives love of progress, a desire for leadership, and makes the mind clear and fertile. The vegetative system must be active in order to nourish and sustain the mental efforts and bodily activities. All of these functions need to be of high quality. The faculties essential to true greatness in the direction of command are many. Large Firmness and Conscientiousness are needed to make the character persevering and unyielding, and also to impart a high sense of duty and responsibility, and to hold others up to the same standard. Large Patriotism is needed to impel one to plan for his country's good and glory. Amativeness is an assistant to a vigorous manhood. Pneumativeness is required to give vigor and enthusiasm. Color also aids by imparting enthusiasm, and also makes all of the tissues more powerful. Self-esteem is a strong ally, for it lends dignity and independence to the character. Large Force and Resistance are necessary in order to oppose and resist attacks. A due degree of Secretiveness and Caution is essential, and is needed in order to keep plans secret and prevent rashness. Human Nature must be cultivated to enable one to deal with all sorts of characters. Executiveness should be one of the dominant faculties, as well as Self-will. Constructiveness on a large scale is needed to aid in plans and schemes. Form, Size, and Observation are requisite to assist Construction and enable one to *visualize* the field of action, as well as faces and all forms and shapes connected with the duties of a commander. Locality is another powerful assistant; so also are Mental Order, Calculation, and Reason.

A commander should be a well-disciplined soldier or sailor; he should have a comprehensive, technical knowledge of his profession; he should be familiar with the biography of all the great commanders of the world, and the history of all the principal campaigns and engagements of all ages.

So many varieties of character exist among commanders that it is no easy task to describe and classify them. Some are aggressive, and rush forward into engagements with an impetuosity that carries all before them. Such were Napoleon, Napier, and Julius Cæsar. Others, more calm and patient, sit quietly down and plan, in a comprehensive spirit, great campaigns, and with a knowledge of the enemy's strength, weakness, and plans move to an attack with almost a certainty of success. Marlborough and Grant were of this class. Other commanders, like McClellan, are less aggressive, but make great *organizers*. There was never as large



FIG. 368.—CAIUS JULIUS CÆSAR. (ROMAN COMMANDER, STATESMAN, ORATOR, AND AUTHOR.)

The scientific physiognomist may well pause before so noble, so god-like a countenance as this. It is the grandest I have ever beheld. Certainly no modern physiognomy is at all comparable to it. All the elements of grandeur are here. The shoulders, the chest, and neck assure us (were it not visible) of a great physiognomy. What I might say of this countenance would not begin to express what the sight of it alone reveals. Language is wholly inadequate to describe it, yet in the interests of science I must make the attempt. The chin is a truly Roman feature, and seems *too* prominent, but were it smaller the harmony of the whole would be destroyed. The rounded contour of the lower jaw reveals the *tragic* elements of his character, which he illustrated in his actions upon the stage of life. The lips are noble and beautiful; the nose—oh, what a sublime feature! The eyes announce great power, and are proportioned to the rest of the organism. The superciliary area and the brows are grand and unique. The upper part of the forehead, and the forehead as a whole, is unapproachable. The ear is in grand style, both as to size and form, and discloses wonderful powers. The brain system is of the highest quality and is dominant; the muscular ranks next; and the thoracic and osseous are about equal in degree, and are very nearly as well developed as the first-mentioned; the vegetative is sufficient for nutrition; where the muscular system is so largely developed a great degree of the vegetative is not required. In the chin we find the signs for Firmness, Conscience, Patriotism, and Love of Home; in the lower lip, Benevolence. The cheeks are muscular, and, with the curved jaw, denote great constitutional vigor. Amativeness and Love of Young are well defined. The signs in the nose are all conspicuous; Hope, Analysis, Mental Imitation, Ideality, Sublimity, Human Nature, Construction, and Acquisition are all large; the executive portion is strongly outlined. Veneration, Reason, Executiveness, and Self-will together make this the grandest and most aggressively-mental nose ever beheld. The eye shows Language, Motion, and Observation. Its position in relation to the surrounding parts is a wonderful study. The signs of Form, Size, Prescience, Observation, Weight, Locality, Time, Order, Music, Calculation, and Memory of Events are of the largest. The upper part of the forehead announces great Memory of Events, and corroborates the signs of Causality and Comparison in the nose. Intuition is immense, and this faculty in combination with Human Nature (height of the tip of the nose above the plane of the face) gave him almost superhuman knowledge and command of men and things. The whole expresses great intellectual power, comprehensiveness, and ambition.

an army so well organized and disciplined as that which General McClellan left to his successor, who had the faculty requsite to *supplement* that of General McClellan's grand gift of organization. Possibly the general who led the attack could not have built up so vast an army as the former. In military matters many sorts of character are needed to carry forward the various operations and meet the requirements of a campaign. There must be those competent to provide food for man and beast; others to secure the neces-

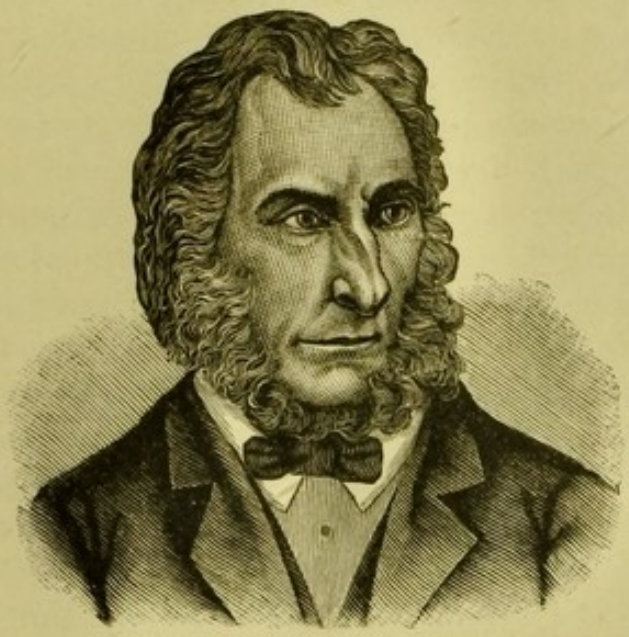


FIG. 369.—SIR CHARLES JOHN NAPIER. (ADMIRAL OF THE BRITISH NAVY.)

This truly leonine countenance reveals just what the visage of the king of beasts discloses, viz., force, courage, and aggression. We observe in this subject the dominance of the brain and muscular systems, with the osseous and thoracic taking second place. The chin is broad, thus showing a high regard for duty and giving severity to the character. Love of Home and Patriotism are manifest, while the mouth, wide and straight, denotes capacity and linguistic powers. The nose is a remarkable feature; its length denotes perspicacity; its height and breadth, vigor of the visceral organs and force of mind. The point discloses the signs of Analysis. Human Nature, Ideality, Sublimity, Mental Imitation, Construction, and Acquisition are very well defined. Veneration, Self-will, Logical Reason, and Executiveness are the prominent signs in the face. The width between the eyes is uncommonly great, and shows not only large Size and Form, but a broad and comprehensive intellect. The eyes disclose Language and muscular power. The signs of Observation, Weight, Locality, Calculation, Time, Order, and Memory of Events are conspicuously apparent. The hair and beard indicate vigor and strength, while the general expression denotes power. This subject entered the British Navy at thirteen, and the following year was wounded in an engagement. The profession of arms and the ability to command were hereditary in his family, and were shown at an early age. It requires more than one generation of commanders to develop such a nose and physique. For his brilliant services this fearless commander received high honors from his own and other governments. It is thus that true bravery and courage should be ever recognized.

sary quantity of ammunition; others to build roads and bridges; others, yet, to drill and discipline; others to organize, and others to command. Yet, because one man commands, the labors of all others should not be ignored, nor should they be deprived of their meed of praise. I regard the organizing and executive ability of General McClellan quite as great in its way as the aggressive spirit of command displayed by General Grant. It was certainly quite as essential to the success of the campaign that it should

have thorough organization and discipline as that it should have an energetic leader when ready for action. With this analysis I present the portraits of two aggressive and successful commanders, viz., Julius Cæsar and Admiral Napier.

THE SYSTEMS AND FACULTIES NECESSARY TO A SCIENTIST.

The scope and plan of Nature is vast and wide, and those who would enter her temples must be of many diverse constitutions and be dominated by the spirit of truth. This is a *sine qua non. Science is an exposition of the laws of God, as shown by the laws of Nature;* hence, law, truth, and infallibility lie at its foundation and accompany its every step. A man who does not love truth better than his own ideas and theories is a recreant, and not fit to be ranked among the noble army of truth-seekers which in this age is exploring every department of Nature's broad domain with the view of ascertaining God's laws and His method of creation. Surely no pursuit can rank higher than this. The reign of law in all departments of the universe is an assured fact. To seek out and apply these laws is the aim of the true scientist. To live without a knowledge of these natural laws is to live without God, for to remain in ignorance of law, as do the beasts, is to follow their methods of existence. That "the carnal mind is enmity against God" is well illustrated by the opposition that the weak-minded, vicious, and bigoted in all ages have shown to the advancement of truth as revealed by natural law. The persecution of Bruno and Galileo for asserting that the world moved is only one of the thousand persecutions which the truthful scientist has had to suffer. Fortunately, in these days the scientist is not threatened with the stake and faggot as formerly, yet certain ecclesiastical institutions still pursue him with opposition and anathemas. Their day is, however, short, for "Truth is mighty and will prevail," and the reign of law is bound, under the inexorable law of evolution, to become a recognized fact.

The powers and faculties needed by the discoverers, leaders, and teachers of science are many, and must be of high quality and power. They must be, in the first place, logicians; that is, they must have a large endowment of Causality and Comparison, in order to analyze and classify their ideas, theories, observations, objects, and materials. They require a sound and well-balanced body and mind. They must be fearless and independent, in order to cope with error courageously.

The scientist must possess *enthusiasm*, for nothing is so capable, it seems to me, of arousing one's whole being as the discovery and demonstration of a great fact or law in Nature.

A large degree of sensitiveness of the brain and nervous system is essential, for the scientist must be *alive* to the appearances of all things in Nature, particularly so of that class of phenomena which his peculiar talents fit him for observing. A spirit of curiosity, of speculation, and of inquiry must be his, together with untiring patience and perseverance. A broad and comprehensive manner of investigation must characterize his methods, in order that he shall know whether the principles which he promulgates are sustained and corroborated by the facts and laws of other departments of demonstrated science.

A *lively imagination* is indispensable, yet it must not exceed a certain degree, otherwise he will entertain chimerical fancies which cannot be proven by cognate facts and laws. The nerves of all good and great scientists reveal that Ideality has assisted them, not only in doing their work in an ornate and finished manner, but it demonstrates that it has aided in imagining the probability of the existence of the Unseen. In this way many missing links in the chain of scientific evidence have been discovered and worked out to a demonstration. *Sublimity* is required to bring the mind *en rapport* with the vast and complex laws and works of Nature. A small and narrow brain is not competent to grasp in its entirety the grandeur and magnificence of universal law, and Sublimity is one of the faculties which here assists.

The physiognomies of all the celebrated discoverers, theorizers, and demonstrators of science are proof of what is here stated. Examine, for example, the faces of Galileo, the Herschels, Arago, Buffon, La Grange, Huxley, Darwin, Spencer, and Agassiz, and in each countenance will be found, in varying degrees, the signs of character above named.

A sound *visceral organization* is one great essential to scientific labors and profound thought, such as is required for the solving of the great problems of Nature. The faces of the leaders of scientific thought in all cases disclose a normal or balanced degree of the visceral powers. A life devoted to scientific research is highly beneficial to health and conduces to longevity. Statistics corroborate this statement, while the investigation of the physiognomies of a large majority of scientists discloses the fact that the tendency to longevity is part of their birthright. It is this *soundness* of the foundation system of functions, in combination with a good brain, that has given them the capacity for profound and prolonged mental labor. The exercise of the *emotions*, such as are necessary in many artistic pursuits, tends to impair the health and shorten life. All of the most exhausting emotions are constantly called into play in most artists, for the expression of art is

based on love, joy, hatred, jealousy, revenge, etc., as the poems, plays, works of fiction, paintings, and statues of these classes prove, and these emotions cannot be portrayed and represented without being *felt* in a certain degree. Then, too, the passions of love, rivalry, and jealousy are much more strongly felt and



FIG. 370.—MARY SOMERVILLE. (SCOTCH SCIENTIST, AUTHOR.)

In this placid and thoughtful face we find the evidence of scientific capacity, of a lively disposition, of a true, sweet, strong-minded woman. In this organism the brain and osseous systems dominate, the muscular and thoracic rank next, while the vegetative powers assist nutrition and domestic sentiment. The chin is curved, indicating dramatic tastes and constitutional vigor. It discloses Firmness, Conscientiousness, Patriotism, and Love of Home. The signs for Benevolence, Amativeness, Love of Young, Modesty, Approbation, Alimentation, Hospitality, Friendship, Sanativeness, Pneumativeness, Color, Caution, and Mirth are conspicuous. The nose is long, high, and broad *its entire length*, and reveals Sublimity, Ideality, Human Nature, Constructiveness, Acquisition, Veneration, Reason, Executiveness, and Self-will. The mechanical faculties are well represented. Size and Form are excessively developed. Language, both in the eyes and mouth, denotes linguistic talent. Observation, Calculation, Time, Order, Memory of Events, and Intuition are decided. The neck is a noble member. The position of the head announces attention, while the expression of the eyes indicates thought and mildness of disposition. The works of this lady are very scholarly and profound. She gave a translation of Laplace's great work, "Mécanique Céleste," and produced a work entitled "On the Relation of the Physical Sciences." She wrote extensively on such subjects as gravitation, heat, electricity, comets, the tides, and distinguished herself by experiments on the magnetic influence of the solar rays of the spectrum. She was made a member of the Royal Astronomical Society, and received a pension of three hundred pounds sterling per annum from the Civil List Fund. Added to all, she was a devoted wife, an affectionate mother, a good housekeeper, and a true friend.

exhibited by the artistic classes; hence it follows that a calm and reflective state of mind is more conducive to health and longevity than where the mind is the battle-ground of excessive emotional activity. Many eminent scientists have lived in full possession of their mental powers to a very advanced age, as witness Caroline Herschel, who lived to ninety-seven years; Chevreul, who died recently at one hundred years. Humboldt lived to a great age, and

his mental labors were prodigious, and continued to his latest days. I might instance very many more. With this analysis I give the delineation of Karl Vogt, eminent German anthropologist, and Mary Somerville, the most celebrated female mathematician of Great Britain.

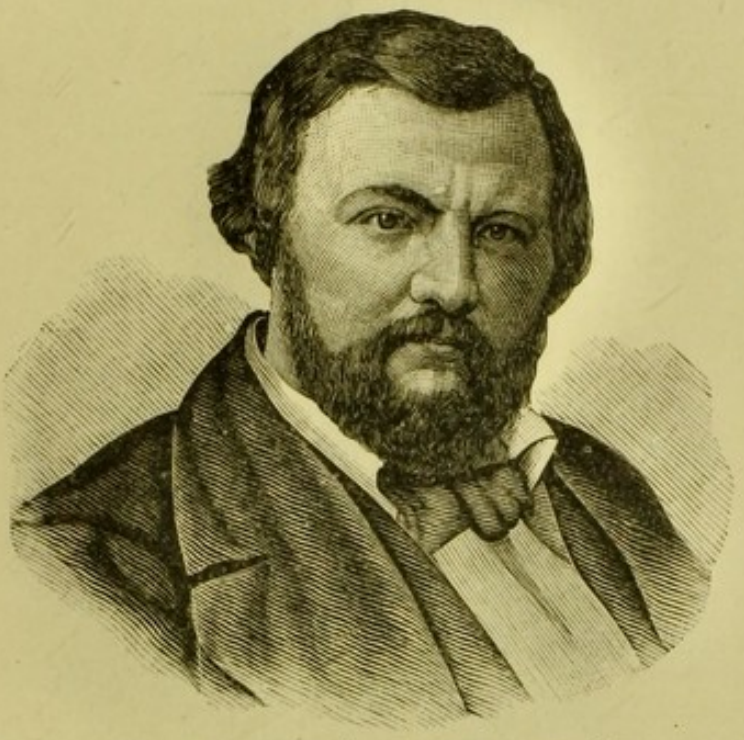


FIG. 371.—KARL VOGT. (GERMAN ANTHROPOLOGIST, PHYSICIAN, AUTHOR.)

In the face before us we have all the evidences of a sound and vigorous constitution and a broad and profound thinker; indeed, *breadth* is the key-note to the entire organism. High Quality, deep Color, Proportion, and Health are all revealed in this strong countenance. Strength without coarseness, combined with many high traits, assure us that we are dealing with one of *Nature's* "thorough-bred" creatures. The brain and muscular systems dominate. The chin announces a character of great stability. Firmness and Conscience are well defined. Love of Home and Patriotism, Benevolence, Love of Young, Amativeness, Alimentiveness, Pneumativeness, Color, Sanativeness, Friendship, and Hospitality are all well developed, and show us the basis of a sound intellect and healthy moral and domestic nature. The upper lip is relatively short, proving that egotism, at least, is not present. The breadth of cheek and signs for Sanativeness disclose great health and capacity for medical science. The nose is proportioned to the other features. The signs for Mental Imitation, Ideality, Sublimity, Human Nature, Construction, Acquisition, Veneration, Reason, Executiveness, and Self-will are conspicuous. Form, Size, Weight, Language, Locality, Observation, and Calculation are pronounced. The shape of the forehead shows a comprehensive brain, and reveals the signs for Time, Order, Memory of Events, Reason, and Intuition. The shape of the chest, shoulders, and neck tells us that the thoracic structure is capable of sending a large quantity of well-oxygenated blood to the brain with rapidity. The position of the head denotes the attentive, patient thinker.

THE SYSTEMS AND FACULTIES REQUIRED BY A CIVIL ENGINEER.

The ability to design and construct important works by application of the laws of physics as illustrated in engineering requires a superior intellect and a body constructed upon sound mechanical principles. A mechanical body is always associated with a mechanical mind; that is to say, the mind and body are a unit, and each expresses the other, if we have only a method by which we can translate form into character. This method is developed in scientific physiognomy and corroborated by the *facts* of physiology, anatomy, evolution, heredity, embryology, and kindred sciences.

The mechanical engineer requires a due development of the brain, osseous, and muscular systems of good quality. He needs a large endowment of the vegetative powers to nourish and sustain the other systems. A fair share of Color is essential to give integrity to all the tissues and for the practical uses of the materials



FIG. 372.—WASHINGTON A. ROEBLING. (CIVIL ENGINEER, AUTHOR.)

The dominant expression of this face is one of power—of calm, collected, yet conscious ability. The quality is fine, the face well proportioned. The shoulders and thoracic development are wonderful, and give assurance of great mental energy. The face is that of a typical mechanic of the most talented class. The projection of the brows and recession of the forehead reveals the born mechanic, and grand and accurate observer. The osseous, brain, muscular, and thoracic systems are equally and highly developed; the vegetative also asserts its power in an active manner. The lower third of the face cannot be seen; in this case we must rely on those parts that are visible; hence we know that the domestic functions and faculties are well defined. Alimentiveness, Sanativeness, Color, and Friendship are conspicuous. The beard indicates great vitality and is an accessory sign of longevity. The nose is broad, high, of proportionate length, and remarkably elaborated at the tip. It is a typical constructive nose—the nose of a *builder*. Upon it we observe the signs for Analysis, Mental Imitation, Human Nature, and Sublimity very large; while Ideality, Constructiveness, Acquisition, Veneration, Executiveness, Reason, and Self-will are highly developed. The formation of the eye-bones—the superciliary ridge—is uncommon. Here are located the signs for all of the observing or practical and mechanical traits. The eyes are deeply set; the brows show scarcely any arching; the outline of the forehead is worthy close attention, as well as the strong, broad, and compact head. The signs for Form, Size, Observation, Locality, Prescience, Weight, Time, Order, and Calculation are excessive. Credenciveness is deficient, while Memory of Events is excellent; language is not eloquent, yet fluent, practical, and clear. The forehead corroborates the signs in the nose of Causality and Comparison; Intuition is fairly developed. The ear discloses good aural capacity. The hair is straight, and the poise of the head announces Dignity, Independence, Resolution, Force, and Resistance.

involved in the profession. Strong muscles are necessary in order to impart the sense of rhythm and periodicity, and to aid the faculties of Constructiveness and Calculation, as well as to give dexterity in the manipulation of materials. Very large powers of observation must be had, and all the practical qualities as well.

The faculties of Form and Size should be excessive, and the

sense of Weight, also, to enable one to judge of the qualities of pressure, resistance, etc. Calculation should be most decided to facilitate the arithmetical part of the profession. Locality is required for the purpose of memorizing and visualizing places, etc. Large Sublimity is an essential trait to enable the engineer to com-

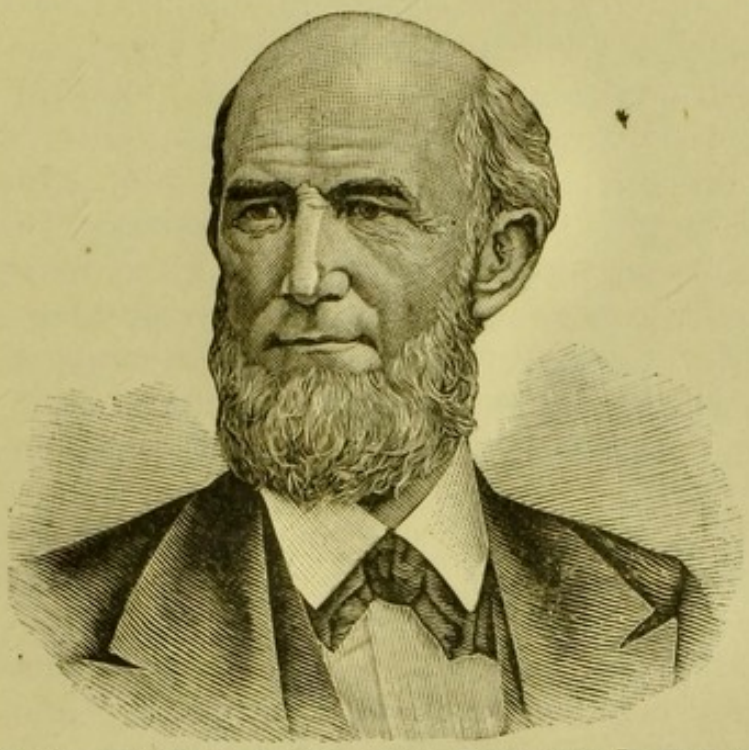


FIG. 373.—JAMES B. EADS. (CIVIL ENGINEER, INVENTOR.)

The outlines of this nose, head, and face recall to mind the physiognomies of the ancient Greek architects. In this noble countenance we observe the dominance of the brain, muscular, and osseous systems, which are highly developed and of fine quality. The thoracic and vegetative follow closely, both in amount and fineness. The position of the shoulders and thorax reveals integrity and power. The height of the top of the head from the shoulders is unusual; its uprightness speaks of straight conduct. The outline of the head describes a perfect dome. The wrinkles across the forehead show talent and *straight* thoughts. Across the root of the nose are the executive wrinkles, showing that the habit of command and authority has been long exercised. Mirthful wrinkles at the outer corners of the eyes are proofs of a cheerful disposition. The mouth shows Eloquence and Wit, as well as Mirth, Love of Young, Order, and Meditation. The chin is broad, disclosing Conscientiousness. The signs for Self-esteem and Modesty are prominently displayed; so, also, are Alimentiveness, Bibativeness, Approbation, Hospitality, Patriotism, Love of Home, Sanativeness, and Friendship. Pneumativeness and Color are conspicuous. The nose is of a pure Greek type. It is what I term an "architectural" nose, resembling, as it does, a column or pillar. It is high, long, broad, and straight. The signs for Human Nature, Mental Imitation, Analysis, Ideality, Sublimity, Construction, Acquisition, Veneration, Reason, Executiveness, and Self-will are very large. The eyes are well set under a mechanical brow, the brows close down to the eyes. The signs for Observation, Weight, Size, Form, Locality, Time, Order, Calculation, Causality, Comparison, and Intuition aré highly developed. Credenciveness is deficient and Prescience about the average. The ear is large, and indicates excellent aural and commercial capacities. The area about the root of the nose is noteworthy: it shows the most talented degree of Self-will. Allusion has been made to this in the section devoted to an analysis of Self-will.

prehend great and complex laws, and give the capacity for undertaking grand enterprises. Time is a useful trait, and, in connection with Order and Calculation, is a strong ally. Constructiveness must be had in order to impart ingenuity, deftness, and inventive skill. Strong Self-will and Executiveness are able assistants, and give the ability to hold on to one's purposes and assist in controlling large numbers of workmen.

Force and Resistance are most useful, for they enable one to judge of and estimate similar qualities in mechanism; they also impart strength and resolution to the character. Large reasoning powers are necessary for the purpose of analyzing, comparing, and classifying with facility.

Many of the great and successful engineers have been mental colossi. The labors which they have performed, both within and outside of their profession, seem to be the work of supernatural beings when we come to contrast them with the labors of men in many other pursuits. The biographies of such as Smeaton, Watt, Vauban, the Stephensons, Eads, the Roeblings (father and son), Ericsson, and others, read like fairy-tales. These records are highly instructive and throw great light upon their physiognomies.

The master-minds in all of those departments of labor which require a knowledge of mechanical principles, such as engineering, invention, and architecture, possess vigorous bodies. A man with feeble physical powers could not perform the duties appertaining to the planning and superintending of a work like the bridge over the Niagara or the erection of a building like the Capitol at Washington. Such works entail the most profound and prolonged meditation, as well as manual labor, in draughting the plans, selecting men and materials, impressing upon others the importance of the work, inspiring confidence, and imparting courage and enthusiasm to those who furnish the means, and in many ways not directly connected with the profession must the great engineer use his strength.

Above and beyond all other powers required by the engineer is the faculty of Conscientiousness,—not alone for the moral power which this trait exhibits, but it is necessary as well to the comprehension of the great underlying laws of mechanics, which in their expression are types of the laws which govern the world, hence are founded on *absolute* truth and integrity.

An equilibrated condition of mind and body is essential to the engineer, for, as the fundamental principle of all structures is equilibrium, so a man, in order to produce this condition in machinery, must possess in his own organism a large share of this most necessary principle.

With this description of the structure of a civil engineer I present the physiognomy of Colonel Washington A. Roebling, who, with his father, was engineer-in-chief of the Brooklyn Bridge, and also that of Captain James B. Eads, the engineer who planned and built the Missouri Bridge, the New Orleans jetties, and other grand structures. These two very dissimilar countenances are typical faces: that of Captain Eads is the countenance of an

architect as well as that of a mechanical engineer, while that of Colonel Roebling is a purely mechanical type; the outline of the forehead alone announces this phase of character.

THE SYSTEMS AND FACULTIES REQUIRED BY A BANKER.

In order for a man to succeed in any pursuit he must have the mental aptitudes and bodily organization suited to that pursuit. This postulate can be verified by collecting the portraits of any number of those engaged in a given trade or profession, and it will be found that the majority are similar in the formation of features as well as in bodily structure. So true it is that form and faculty are allied that it has been noted in all ages and expressed by philosophers of all nations, yet without the scientific basis and analysis which alone make observations valuable. Many persons dissimilar in form and function acquire by long-continued thought in similar directions the same expression of face, the same walk, attitude, voice, gestures, and mannerisms. Emerson, our great observational philosopher, had remarked this, for he tells us that

> Each religious sect has its physiognomy. The Methodists have acquired a face, the Quakers a face, the Nuns a face. An Englishman will pick out a dissenter by his manners. Trades and professions carve their own lines on face and form.*

The love of acquisition of material things, where it amounts to a talent, must be so strongly impressed upon the form, and consequently upon the features, as to reveal its power to those who know how to translate form into character. When we inquire which races and nations have had the most eminent success in gaining wealth, we shall find that the Hebrew race and the English nation are the best endowed with the instinct of commercialism.

This question being settled, we come then to the observation of the *forms* which the majority of these people exhibit. We shall find that an immense majority of them are characterized by *breadth*, by relative shortness of stature, and by a dominance of the vegetative functions and muscular system, as well as by a high development of the *muscular organs*, viz., of the heart, stomach, and reproductive system.

The superior development of these functions produces a *relatively* short and broad structure, and, according to the basic laws of Form, breadth means strength and shortness indicates a less mental and more of a *material* phase of intellect. From this analysis we deduce the fact that those engaged in the acquisition of material wealth by virtue of congenital ability would be of the broad and short build, with a head, face, and features to corre-

* English Traits, R. W. Emerson, p. 54.

spond; and this is what we find to be the case when we come to generalize, and by this method we see that the great bankers of the world are broad and relatively short men. The Rothschilds, Hebrew bankers of Europe; George Peabody, of London; Roswell P. Flower, of America, and many others, illustrate this principle of form and faculty.

The banker requires a large degree of Conscientiousness, Firmness, Economy, Love of Young, Patriotism, Benevolence,



FIG. 374.—ANTHONY ROTHSCHILD. (BANKER.)

In this portrait we find all the elements which go to make up a successful financier. The face is one of the best types of the Hebrew commercialist. The distinguishing form of the outline is *breadth*,—roundness,—thus evidencing a vigorous visceral organization as well as a comprehensive judgment. In the chin the signs for Firmness, Conscientiousness, Love of Home, Patriotism, Alimentiveness, Economy, and Bibativeness are well delineated. The mouth is wide, denoting good digestive capacity and linguistic talent. The signs for Benevolence, Love of Young, Amativeness, Mirth, Approbation, Hospitality, Friendship, Modesty, and Self-esteem are conspicuous. Sanativeness and Pneumativeness are decidedly developed. The nose is broad, straight, and of an equal thickness its entire length; upon it the signs for Caution, Sublimity, Human Nature, Ideality, Construction, and Acquisition are supreme. Veneration, Reason, Executiveness, and Self-will are strong allies. Form and Size are remarkably developed. Observation and Locality are excellent, while Calculation is of the highest grade of power. The forehead shows corroborative signs of Commercial Judgment, together with large Memory of Events and Intuition. To sum up the entire *personnel*, we may say that this character is social, domestic, and commercial, and possessed of æsthetic tastes, love of music, painting, and sculpture.

Alimentiveness, Approbation, Friendship, Hospitality, Sanativeness, Color, and Self-esteem. He requires all these in order to give vigor to his mental processes, to impart those domestic sentiments which are essential to one whose nature is based upon the material things of life, and because these vegetative functions and domestic sentiments are inseparably bound together.

The banker should have Force, a good share of Secretiveness, Caution, and a moderate degree of Hope. He needs Sublimity

to enable him to comprehend and invest in large enterprises. He requires Human Nature, large Acquisition, Construction, Executiveness, Self-will, not too much Credenciveness, a good degree of Size, Form, Locality, Weight, Time, Order, Memory of Events, large Calculation, and excellent reasoning powers.

A delineation of Anthony Rothschild, banker, one of the members of the most extensive banking-houses in the world, is here given. It is a typical face. and will well repay a careful analysis.

THE SYSTEMS AND FACULTIES REQUIRED BY A PHILANTHROPIST.

There are very many diverse phases of the sympathetic faculty, some of which require only the most ordinary grade of intellect to exhibit activity. Many persons *feel* sympathy for others, yet fail to take active steps to relieve them. There is one class of sufferers that require only that others listen to or witness their grief in order to satisfy and relieve them. Others in need feel the want only of some comparatively inexpensive assistance. There is a class of persons everywhere to be found who are competent to deal with this form of suffering.

And thus, for every grade and shade of human misery we shall find that Nature has provided a person or class of persons competent to sympathize with, understand, and relieve each of these several forms of want and suffering.

The philanthropist is one who has the capacity to ameliorate the condition of *large numbers* of his fellow-beings; it follows, then, that he must have within his own organization not only the requisite degree of sympathy to impel him to action in the direction of relief, but he must have also an intellect sufficiently broad and comprehensive to understand the conditions which afflict so generally large numbers of human beings, and possess sufficient ingenuity to devise ways and manage the large funds which are required in all grand philanthropic schemes. Philanthropists are subdivided into classes. One portion of them pass their time in accumulation, and leave their millions to found some grand charity after their demise, as did Stephen Girard, who has endowed probably the most magnificent charity (and one which contains in its provisions all of the elements of perpetuity) that has ever been devised.

Another class of philanthropists, like George Peabody, Count Rumford, and Leland Stanford, prefer to administer upon their accumulations before death, and enjoy the luxury of seeing the good which their gains can accomplish. Now, the ability to plan and carry forward such large schemes as these men have matured

requires the exercise of high administrative capacity; hence, the philanthropist who endows and manages a great institution for charitable purposes is necessarily great in both sympathy and intellect, and therefore we find in this class a form in consonance with these qualities.

In corroboration of this statement, study the *personnel* of Matthew Vassar, who founded and endowed Vassar College for

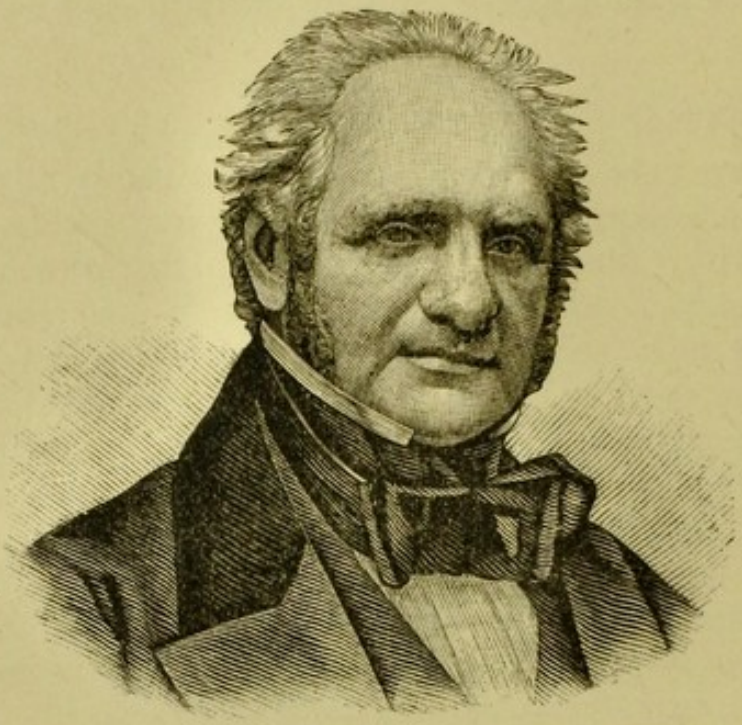


FIG. 375.—GEORGE PEABODY. (BANKER, PHILANTHROPIST.)

The brain in this subject is high and broad and reveals fine Quality; the muscular and thoracic systems rank second. The chin is also wide and the nose is both broad and high. The space between the eyes is uncommonly wide. All of these circumstances, summed up and proved by the basic laws of Form, show us that we have a very comprehensive mind to deal with. The chin discloses large Conscientiousness, Firmness, Love of Home, Patriotism, and Economy. The signs for Benevolence, Love of Young, Amativeness, Mirthfulness, Friendship, Hospitality, Color, Pneumativeness, and Sanativeness are all prominently displayed. The nose is a feature seldom met. It is constructive, acquisitive, logical, and executive; upon it the signs for Mental Imitation, Human Nature, Sublimity, Ideality, Constructiveness, Acquisitiveness, Veneration, Reason, Executiveness, and Self-will are all conspicuous. The eyes are those of an observant and thoughtful man; the brows, lowered close down to them, show their practical inclination. The capacity for Form and Size is very great. The signs for Observation, Memory of Events, Locality, Time, and Order are well defined. Verbal Language is about average, while the ability to express thought by the pen in an earnest, clear, and elegant manner is manifest. Calculation is fairly represented. The indications of the reasoning powers in the forehead corroborate those in the nose, and declare Causality and Comparison to be of the best. Intuition is one of the leading traits of this character. Credenciveness is small and Prescience above the average. The ear discloses aural, commercial, and acquisitive capacity. The position of the head shows the attentive thinker. This gentleman endowed several large libraries, homes for working-people, and other charities on a magnificent scale. He was also a very successful banker.

Women, and of George Peabody, whose endowments and philanthropies are as cosmopolitan as they are varied. John Howard, who was a practical philanthropist and reformer, also exhibited a broad and robust frame. M. Godin, who founded the celebrated *Familistére* in Guise, France, is still another example of the practical philanthropist. The name of Wilberforce should not be omitted in this connection. There are many others who belong

to this class whose *form* and *features* correspond to the foregoing description.

In order to give we must first possess, and these possessions must be either mental or material, or both. The philanthropist, then, must have the *power to acquire something*, either mental or material treasures, earthly power or position, which will enable him to act for the good of others.

This analysis shows us what is the best form for a philanthropist, and what faculties he must possess in order to successfully carry forward his plans for the relief of the masses.

The man of broad sympathies requires large Conscientiousness and Firmness; Love of Home, of Country, and of Young. Benevolence, Friendship, Approbation, Alimentiveness, Pneumativeness, and Sanativeness are required to give vigor to the body and to evolve the domestic traits. There must be large Human Nature, Constructiveness, Acquisitiveness, Executiveness, Self-will, Time, Order, Calculation, and large reasoning powers. To all of these great good health must be added in order to *personally* and actively superintend the schemes, institutions, and operations which philanthropy devises.

There are many diverse manifestations of the benevolent and sympathetic feeling, and these various forms of feeling are exhibited in other ways than by philanthropy. This is the highest or largest expression of sympathy. The faculty of Benevolence, under its various aspects, has been elaborated in Chapter II.

THE SYSTEMS AND FACULTIES NECESSARY TO A PHILOLOGIST.

The science of language is receiving in this age a great deal of attention, and from a stand-point radically different from that which characterized its study in the past. Its scientific phase is now being developed, hence its investigators require special and high faculties.

The scientific analysis of the languages of the various races of the world, both ancient and modern, is throwing a flood of light not only upon their racial descent, their habits, customs, and status in progressive evolution, but it is also giving a fund of information as to the form and structure of man. The study of philology, taken in connection with scientific physiognomy, will carry forward the science of language with rapid strides, and I predict that, with the universal knowledge of physiognomy and the application of its principles to all other departments of human science, a wonderful advance in all of them will be made.

There are so many departments of language that a great diversity and variety of students is required to investigate its many phases.

The study of the structure of language is a fascinating though ofttimes baffling pursuit. The tracing to their origin certain verbal forms is a part of this study, the comparison of sounds and of inflections another branch, and the memorizing of language, both spoken and written, still another department. Each of these requires the use of distinct faculties, and one who would combine all of these studies must possess certain inherent aptitudes.

The philologist, then, must possess a large endowment of the brain, muscular, and osseous systems of fine quality. He must

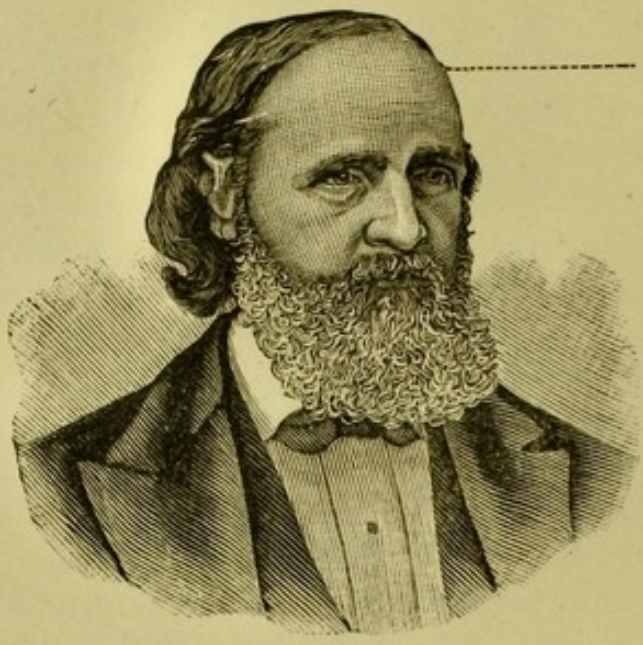


FIG. 376.—WILLIAM DWIGHT WHITNEY. (PHILOLOGIST, AUTHOR.)

The countenance of this subject bears the expression of thought, observation, and patient perseverance. The well-nourished appearance of the cheeks shows that Friendship, Sanativeness, Alimentiveness are normal, and that the vegetative system is well developed. The beard discloses vigor. The brain system is dominant, while the thoracic, muscular, and osseous systems are equally developed. In the nose the signs of Mental Imitation, Ideality, Human Nature, Constructiveness, Acquisitiveness, Veneration, Reason, Executiveness, and Self-will are conspicuous. Prescience is well defined. Credenciveness is deficient, while Form, Size, Locality, and Observation are manifest. In the forehead the sign of Memory of Events is excessive, and the faculty of Constructiveness has corroboration in the rounding out of the lateral portion of the forehead. The eyes are relatively small and deep-set, and indicate that the capacity for written language exceeds that of oral language,—evinces, in short, that the subject can write and think better than he can talk. His works on philology are practical, and show deep research and a comprehensive intellect.

have sufficient of the thoracic to aid him in comprehending and making natural pauses, intonations, and inflections, and enough of the vegetative to impart vigor to his mind in order that his deductions shall have a sound basis, which a large quantity of well-oxygenated blood can alone supply.

The mental faculties required by the student of language are Mental Imitation, Analysis, Ideality, Sublimity, Human Nature, Constructiveness, Acquisitiveness, Reason, Veneration, and Self-will. The practical traits needed are Form, Size, Locality, Observation, Language, Time, Order, Music, Calculation, and Intuition.

To all of this there must be brought the most unflagging energy, patience, perseverance, and a determination to succeed. The labors of such as Worcester, Webster, and Johnson in one department of philology have been of incalculable benefit to millions, and will descend to posterity to aid its efforts to remote ages, while those of Max Müller and Professor Whitney in another branch of Language will ever be remembered with gratitude by all who can appreciate their labors.

THE SYSTEMS AND FACULTIES ESSENTIAL TO AN EDITOR.

If one were to examine the physiognomies of a group of, say, twenty editors, one would be inclined to say that it would be necessary to give a description of each one separately in order to arrive at a knowledge of editorial capacity. Editors, like musicians, are of many diverse forms and of all nationalities, yet to the *practical* physiognomist they exhibit, as do musicians, certain indications in common. They require, and all successful editors possess, certain general characteristics which fit them for their career. There are certain individualities which distinguish each one of them—a peculiar mode of expression or of management which comes to be recognized by their readers. All these are as distinctly individual as are their respective physiognomies. It is true that editors, like all other professional people, are graded in classes according to the sort of newspapers which they publish. Some publish religious journals, others secular; others dramatic or musical, or humorous or illustrated papers. Some of these require certain traits which the others do not, yet all must have, to be successful, good health, a well-developed domestic nature, a good mental endowment, together with a fair degree of scholastic knowledge. To all this the editor must add a knowledge of current literature. If he write for a religious journal he must be conversant with the theological knowledge of all eras; if for a political paper, he must possess a comprehensive knowledge of the politics and politicians of his country, past and present, with all their measures and movements. If he edit a musical or dramatic paper, then he must be familiar with all that pertains to these two realms of art.

All editors require a good general memory of facts, dates, and occurrences. A knowledge of the biography of all sorts and conditions of people is necessary. A large acquaintance with public men and women is essential. A gift of Language, with power to use it in an original, brilliant, forcible, or witty manner, is one of the essentials of a popular editor. He must have Mental Order and Time in a large degree, and for a musical journalist the



FIG. 377.—MRS. FRANK LESLIE. (EDITOR.)

No scientific physiognomist could mistake or misinterpret the hieroglyphs of Nature which ornament every feature of this speaking countenance. The signs of many sorts of talent are here revealed. The eyes, eyelashes, and eyebrows, taken alone, are a guide to the linguistic and emotional part of the character. The muscular and brain systems are supreme, the thoracic and osseous systems stand next in rank, while the vegetative powers lend their aid in such degree as to enrich both the domestic and social sentiments, as well as to produce a vigorous physique. The chin and lower jaw are artistically curved, disclosing artistic tastes. The signs for Conscience, Firmness, Benevolence, Love of Home and of Young, Amativeness, Alimentiveness, Mirthfulness, Approbation, Friendship, Hospitality, Pneumativeness, Sanativeness, Color, Modesty, and Self-esteem are all conspicuously displayed. There is a good share of Force and Resistance. Cautiousness is large and Secretiveness normal. The nose discloses great capacity of several sorts: it is artistic, commercial, and executive. The signs of Hope, Analysis, Mental Imitation, Human Nature, Ideality, Sublimity, Construction, and Acqu'sition are all conspicuous; so, also, are Veneration, Executiveness, Reason, and Self-will. The mechanico-artistic signs are large. Form, Size, Observation, Calculation, and Language are excessively developed. This subject has capacity for art and literature as well as for finance and exhibits great administrative powers. The mouth and eyes announce talent for Language, both verbal and oral. The size of the nose reveals force of character. The hair is waving—another æsthetic symbol. Altogether, the physiognomy of a social, domestic, literary, and able woman. Her talents are well suited to her great life-work—editing illustrated journals.

faculties of Music and Time are necessary. For the editor of an art journal the faculties of Form, Size, and Color are requisite. Cautiousness is useful, yet Energy and Force must be exhibited on all questions requiring them. Mirthfulness in a large degree is needed by the humorous writer, and, if the editor manages a paper as well as writes for it, he must have good executive powers. Added to all of these many gifts, he must exercise untiring energy and manifest a desire to lead and excel. Lazy or spasmodic writers seldom succeed or become popular unless they possess genius. In these days the plodding, persevering writer (if he have a fair talent or aptitude for journalism) is the one which makes the strongest and most permanent impression upon the public mind.

With this analysis I take pleasure in presenting the physiognomy of Mrs. Frank Leslie, a most able and successful editor of several illustrated journals.

THE SYSTEMS AND FACULTIES REQUIRED BY A WRITER OF FICTION.

The prevailing opinion among people generally is that writers of fiction—and, indeed, all writers—require only brain development, including a large degree of imagination, in order to produce their works. That a good and suitable brain system is required is true, but that a fine and large brain without suitable bodily functions to *assist* emotion and *create* sentiment could produce a touching and popular work of imagination I do not believe.

The writer of fiction, then, requires a suitable brain and sensitive nervous system in order that he may be keenly sensitive to all external influences. He requires a fine muscular endowment in order to *express* emotion and passion. He must have a fair amount of osseous material to give coherence and stability to his thoughts; also a fine degree of the glandular powers to *produce* emotion. He needs the warmth and enthusiasm which arise from thoracic activity and all the fervor and enthusiasm which Color imparts. A large and active liver is essential to produce *clearness* of mind, analytical power, and fertility of suggestion. The proof that all these functions are necessary to writers of fiction is found in their facial development.

In order that a writer of fiction shall be not only popular and successful, but that his works shall find a *permanent* place in the regard of the public, very many high faculties are essential. In the first place, he requires a broad and warm, sympathetic nature. The *domestic* faculties must be as well developed as the purely mental capacities, for his success is owing largely to his skill in portraying the tender emotions and domestic sentiments, and, in

order to do this well, he must *possess* the *capacity* for feeling the same. Therefore, a writer of fiction must have strong Love of Home, of Young, and of the opposite sex. The latter trait is large in all of the great original writers, for this faculty assists *creative efforts*. A love of young is needed particularly by those who write for children, as it enables them to enter into the feelings and comprehend the characters of youth. A certain degree of



FIG. 378.—CHARLES DICKENS. (NOVELIST.)

The subject of this slight sketch possessed all the elements of character essential to a popular and successful novelist. The brain and muscular systems are supreme and of fine quality. The vegetative powers are exceedingly well developed, and created the lovely social and domestic sentiments wrought out in his works. The local signs for certain of these faculties are hidden by the beard, but Benevolence and Amativeness are visible and very well defined. The signs for Alimentiveness, Hospitality, Approbation, Friendship, Mirth, Sanativeness, Color, and Self-esteem are conspicuous. The nose is relatively short and broad and muscular, mainly—the artistic type; upon it one discovers the signs of Hope, Analysis, Human Nature, Ideality, Mental Imitation, Constructiveness, and Acquisitiveness all well defined. Veneration and Executiveness are not large, while Self-will is excessive. The signs for Form, Size, Observation, and Locality are all large. Calculation is deficient, Credenciveness average, Prescience lacking, Verbal Language well represented. The forehead is broad and curved laterally (corroborative sign of Constructiveness). The signs for Mental Order, Time, and Music are manifest. The face reveals capacity for deep feeling, both social and domestic, and herein lay Dickens' greatest power. The ability to express in language the domestic and social life and feelings of his characters is shown throughout his works, and constitutes the bond of sympathy between them and his reader. Abstract Reason was not his gift. The signs for Artistic Reason and Intuition are discernible. As a character-painter of certain phases of life he is unexcelled.

Conscientiousness is required to give thoroughness to the work, and to imbue the character of the writer with the power to feel in order to portray the like quality. The faculty of Benevolence is requisite; also Hospitality, Approbativeness, Friendship, Modesty, and a certain degree of Self-esteem. Large Mirthfulness is very essential. The development of all these sentiments is dependent upon normal and sound visceral organization, and this the writer must

have, not only to enable him to feel and portray these sentiments, but also to give the strength and vigor necessary to sustain the exhausting play of the emotions which the writer of dramatic poems, plays, and novels must experience in order to reproduce them upon paper.

The *mental* requirements of the imaginative writer are many and varied. He must have excellent analytical power, large

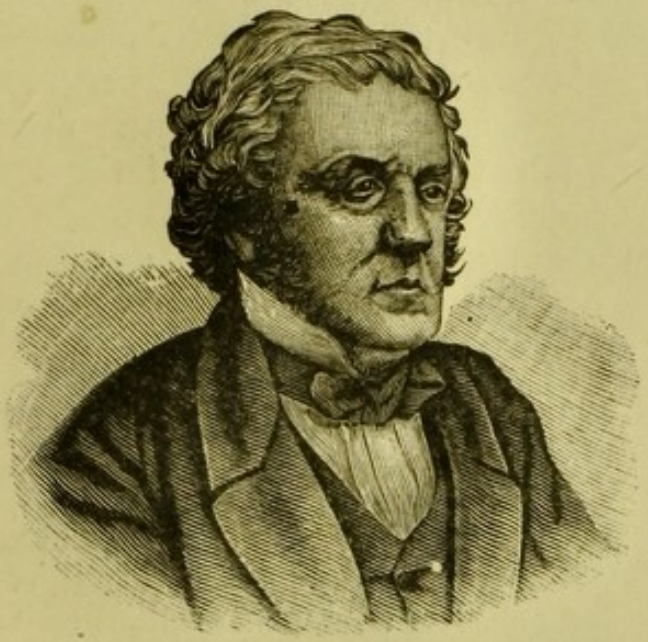


FIG. 379.—WILLIAM MAKEPEACE THACKERAY. (PAINTER, NOVELIST.)

I would that I could present the living countenance of this subject to my readers, for in it could be read at a glance the *constructive* character of every feature. The curving jaw and chin announce dramatic ability; the upper lip, Love of Young and Amativeness, both of which assist creative efforts. The thick, constructive nose is the very acme of mental and artistic creation, and the rounding temples furnish corroborative evidence of originality. The brain and muscular systems are dominant, while the osseous and thoracic follow closely in development, and a good endowment of the vegetative powers gives their quota of physical strength and domestic sentiments. The signs for Firmness, Conscience, Love of Home, Patriotism, Economy, Benevolence, Approbation, Hospitality, Alimentiveness, Friendship, Self-esteem, Modesty, Love of Young, Mirth, and Amativeness are well defined, and together form the foundation for a strong domestic and social nature. Pneumativeness, Color, and Sanativeness are strongly indicated. The nose is a remarkable feature, being long, wide, and high, and nearly straight in its outline. The signs for Ideality and Human Nature are large; Constructiveness, pre-eminent. Acquisition, Veneration, Reason, and Executiveness are conspicuous, while Self-will is a strong ally. Form, Size, Locality, Observation, and Weight are decided, while Credenciveness and Prescience are only moderate. Time, Order, and Language are manifest. Memory of Events and Intuition are strongly delineated. The hair is wavy—a secondary sign of artistic capacity. This gentleman was an excellent painter, and might have excelled in that direction had he persevered in it. His style of delineating character differed from Dickens' in this: he was satirical and exaggerated, while the latter put more humor into his caricatures, and both treated of the follies, weaknesses, and excellencies of character with the pen of an artist. For the scientific and psychological analyses of Human Nature we must look elsewhere.

Ideality and Sublimity, Human Nature in excess, large Constructiveness and Acquisition, a modicum of Veneration, and executive capacity in order to impart the same feelings to certain characters, and strong Self-will as well. The faculties of Form and Size must have a strong representation in order that he may *visualize* clearly and describe well his imaginary forms and figures. Color is essential,

that he may use color-terms in his descriptions. A good degree of Locality, Credenciveness, and Observation is necessary. Language, most fluent and ornate, must be cultivated and exhibited. A sense of Time and Mental Order is very useful. Artistic Judgment or Reason, as well as Intuition, are strong factors in the mental equipment of the imaginative writer.

I take great pleasure in presenting herewith the portraits of Charles Dickens and William Makepeace Thackeray, two of the best-known English novelists. Both of these men were wonderful physiognomists, as their descriptions of character attest. That Dickens understood, in an *artistic* way, the association of form with character, the following description of the form and mental methods of "Gradgrind" will prove:—

"Now, what I want is Facts. Teach these boys and girls nothing but Facts. Facts alone are wanted in life. Plant nothing else and root out everything else. You can only form the minds of reasoning animals upon Facts; nothing else will ever be of any service to them. This is the principle upon which I bring up my own children, and this is the principle upon which I bring up other children. Stick to Facts, sir!"

The scene was a plain, bare, monotonous vault of a school-room, and the speaker's square forefinger emphasized his observations by underscoring every sentence with a line on the schoolmaster's sleeve. The emphasis was helped by the speaker's square wall of a forehead, which had his eyebrows for its base, while his eyes found commodious cellarage in two dark caves overshadowed by the wall. The emphasis was helped by the speaker's mouth, which was wide, thin, and hard-set. The emphasis was helped by the speaker's voice, which was inflexible, dry, and dictatorial. The emphasis was helped by the speaker's hair, which bristled on the outskirts of his bald head—a plantation of firs to keep the wind from its shining surface—all covered with knobs, like the crust of a plum-pie, as if the head had scarcely warehouse room for the hard facts stored inside. The speaker's obstinate carriage, square coat, square legs, square shoulders—nay, his very neckcloth, trained to take him by the throat with an unaccommodating grasp, like a stubborn fact as it was—all helped the emphasis.

"In this life we want nothing but Facts, sir. Nothing but Facts. Thomas Gradgrind, sir. A man of realities. A man who proceeds upon the principle that two and two make four and nothing over, and who is not to be talked into allowing for anything over. Thomas Gradgrind, sir! with a rule and a pair of scales and the multiplication table always ready in his pocket to weigh and measure any parcel of human nature and tell you exactly what it comes to."

In this portrait and analysis the scientific physiognomist recognizes a man with the bone and brain systems dominant and the muscular and vegetative systems not ranking so high as the former. This combination would exhibit great Probity, Practicality, Precision, and Order, with but scant Ideality or Imagination. It also produces angularity—squareness—without balance or rounded or curvilinear ideas. There is no doubt that Dickens had met with a man of this square or angular formation, with his precise and

"rectangular" method of talking, and, with his *penchant* for caricature, had exaggerated his peculiarities in the character of "Gradgrind."

The descriptions of the forms, faces, color, and stature of the creatures of imagination by talented writers of fiction, from Shakespeare down, are of great interest to the physiognomist, as showing that the faculty of Human Nature is one of their strongest powers. The scientific analyses of characters by George Eliot and Balzac are well worthy our attention.



FIG. 380.—ARMAND RICHELIEU. (CARDINAL, DUKE OF FRANCE, STATESMAN, AUTHOR.)

This countenance discloses great capacities, superstition, craft, knowledge of human nature, and large reflective powers. It is the face of a typical sixteenth-century politician. Every feature reveals power. The chin, by its form, denotes cunning, craft, and wit, with Firmness large and Conscientiousness only of average development. The under lip shows a fair degree of Benevolence. The upper lip indicates large Amativeness. The nose is a grand feature, and reveals, at first glance, the secret of his power. The eyes, the superciliary spaces, the eyebrows, and forehead are all remarkable features. The brain system is dominant and of high quality, the muscular takes second rank, the thoracic follows a close third, while the osseous system is next in degree. The signs in the nose are all well defined: Cautiousness, Hope, Analysis, Human Nature, Mental Imitation, Ideality, Sublimity, Construction, Acquisition, Executiveness, Veneration, Logical Reason, and Self-will are developed in such large degree as to form a most unique organ, and indicate great mental powers and administrative capacities of the first rank. Form and Size are very large: so, also, are Prescience, Credenciveness, Calculation, Locality, Observation, Language, Order, Time, Memory of Events, Reason, and Intuition. The size and form of the nose indicate Mental Force and Resistance, as well as a love of domination.

Fiction has its place in the development of character, and in this age exercises a powerful influence upon the community. Its creators are receiving that attention which they justly deserve.

THE SYSTEMS AND FACULTIES REQUIRED BY A STATESMAN.

As the construction of society and governments change, the requirements of those who are to rule, govern, and administer the laws must also move with the onward march of progress.

The statesman required by a mediæval monarchy would not be

the best suited to a modern kingdom, and certainly not to a modern republic. Again, the several departments of every government must have men suited to the needs of each; hence, it is clearly proved that statesmen may be of many forms and possess a great variety of faculties, differing in kind and degree. Yet, with all these differences, they must exhibit many traits in common. A statesman needs, in the first place, a broad and comprehensive mind, well filled with facts and data of many sorts, and a large knowledge of his country's laws and history, as well as a complete knowledge of the structure of other governments. He must have a sound judgment in practical affairs, together with a strong sense of equity. Large executive powers must be his, and a strong constitution and great good health. He requires large Firmness, Conscience, Patriotism, Love of Home, Alimentiveness, Amativeness, Friendship, Pneumativeness, Sanativeness, a good share of Force and Resistance, large Self-esteem, considerable Caution, and a due amount of Secretiveness. He requires Sublimity to give breadth to his ideas and ability to cope with vast subjects. He must have Acquisitiveness, Constructiveness, Human Nature, Veneration, Executiveness, and Self-will; not too much Credenciveness; a good development of Size, Form, Observation, Memory of Events, Locality, Time, Order, Calculation, Causality, and Comparison.

To be a great statesman—such as Webster, for example—requires a gift of eloquence, as well as a comprehensive knowledge of laws, a well-stored mind, and familiarity with administrative customs.

A great statesman is a benefactor to the human race, for he will act disinterestedly for the highest good of all: he will sink his own personal interests in his efforts for humanity.

CONCLUSION.

In concluding this (to me) very pleasant work, I take leave of the subject with regret, for the reason that there is so much more that might have been written left unwritten. It is the misfortune of all sciences that no book is large enough to give them full representation. This is eminently true of the science of physiognomy. It necessarily includes *all sciences*, and in order to give it scope one must interrogate the principles of many other allied systems of science. The subjects of ethnology, evolution, heredity (yet in embryo), and hygiene are properly a part of physiognomical lore. I have not been able, through want of space, to give these subjects the attention which they deserve in this connection. I advise those of my readers who wish to become *thorough students* of physiognomy to familiarize themselves with all of these studies.

They are a part of human science and will greatly aid in the comprehension of character.

The reader will have discovered, I opine, that the knowledge of physiognomy reveals something more than merely a method of reading character by local signs in the face. It leads out in many directions. A system which gives a practical method of reading character by facial indications is a *great advancement* in knowledge. This discovery of itself forms an *epoch* in physical science, and if this were *its only use* it would be a most wonderful stride forward, but this is only the beginning of its power and usefulness. The capacity to read the face creates the ability to *adapt*, and to be able to know the characters best adapted to each other in marriage, for example, is one great step forward in progressive evolution—in the *scientific culture* of the race. The laws of adaptation, as applied to marriage, tend directly to race improvement; hence, to better physiques, to a larger life, grander qualities of mind, and higher morality.

These are not the only uses to which physiognomical science can be turned. The ability to decide accurately the trade or profession to which one is *best* adapted is another grand use which can be made of this science. It teaches how to work *with* Nature in the choice of pursuits, instead, as heretofore, of leaving one to grope in ignorance of his powers until youth and opportunity are past.

The conservation and economizing of all our powers, both mental, moral, and physical, is another grand lesson which it teaches.

The development of all sides of the character, with directions how to improve the stronger and strengthen the weaker faculties of mind, are herein set forth.

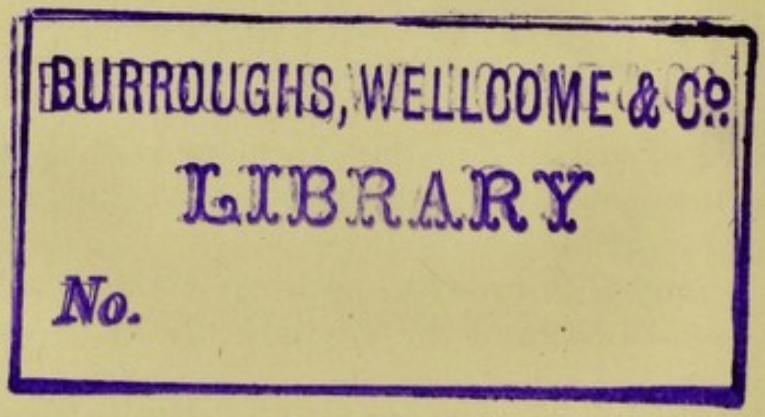
The methods to pursue in order to improve the beauty of the face, the body, the disposition, and the intellect are by this system made known.

To be able to use this science to produce all these effects is to give the ability to create the grandest types of man possible. This power then, thus used, disproves the erroneous charge that science tends to *fatality;* that because one is born with a peculiar bent of mind and with a certain-shaped face and body he is therefore destined to a certain fate from which he cannot extricate himself. Were man not the most malleable being in existence this charge might have some foundation. It is true that a human being can best pursue the path or direction which is the most decidedly exhibited in his organization; but this does not preclude the possibility of changing that bias radically, and of successfully following a direction very different to the one inherited.

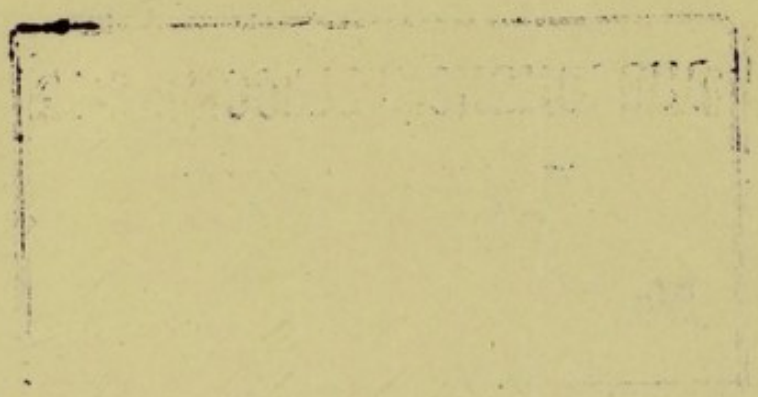
The knowledge of how scientifically to accomplish this, if practically applied, does away with the false charge of "fatality," "destiny," "predestination," etc., brought against science by those who lack the ability to comprehend or the industry to investigate the laws of Nature.

The every-day experiences of parents and teachers prove that often the most hopeless children, when brought under the influence of superior conditions, have become men and women of great promise. How much more rapidly might the work of cultivation be carried forward if an accurate method could be applied to ascertain the strength and weakness of the child without having first to experiment! This method scientific physiognomy furnishes.

Viewed in every aspect, physiognomy will be found of use to mankind. It is with the purpose of elevating humanity that I have attempted the task of giving to the world the observations which I have been a life-time in making. It is a labor of love, offered in a true missionary spirit, the knowledge of which will protect the innocent by unmasking the vicious.



Appendix to Part I.



APPENDIX TO PART I.

ORIGIN AND EVOLUTION OF THE VISCERAL ORGANS AND FACIAL FEATURES.

"Systematic physiology is based especially upon the history of development, and unless this is more complete it can never make rapid progress, for the history of development furnishes the philosopher with the materials necessary for the secure construction of a system of organic life. We should study each organ, each tissue, and even each function, simply with the view of determining whence they have arisen."—HUSCHKE.

IN viewing the beautiful ideals of art, as shown by the sculptured marbles of the great masters of ancient Greece; in regarding the beauteous blending of color and imagery, as exhibited in the works of Titian, Correggio, and Michael Angelo; in beholding the grand and sublime efforts of some impassioned orator, or in contemplating the wonderful mechanism brought into existence by the creative mind of a master inventor, the thoughtful observer will, no doubt, ask himself these questions: How has man become possessed of the varied powers necessary to the perfecting of all these creations? Did he come into existence fully equipped, like Minerva from the brain of Jupiter, and endowed with all the faculties essential to these operations? No, reader! Nature produces no miracles; in her domain orderly, progressive, unerring, infallible law is the method by which perfection is attained.

This is as true in the department of Sociology as of Biology, and governments go forward only as fast as the people are prepared. This preparation is also a matter of growth and development, and society moves forward on fixed lines, presided over by immutable laws. There are no miracles in Nature, and no retrogression. All who have gazed upon the pictured representations of the native Australians, or those who have visited them in ther own habitat, have, no doubt, observed in their organisms the absence of certain faculties and certain functions. The muscular system is seen to be very defective, as evidenced by the lack of muscular development in the calves of the legs, in the arms, and in the entire body. (See Fig. 4, page 65, Native Australians.) The faculties which derive their power from this system are, consequently, lacking in this people.

The architectural, artistic, literary, and mathematic powers are entirely wanting. Their rude habitations cannot compare in architectural skill with the buildings of the ant, wasp, mole, or beaver. You may say that they have speech, and that speech is a "divine gift." How, then, does it occur if these people are "divine"—the children of God, above and beyond all the lower animal creations, and endowed with the so-called "divine gift" of speech—I ask, how does it occur that these people are so undeveloped as not to compare, in natural intelligence, with some races of dogs, for example?

Is it because they have had no education—no schools, churches, hospitals, and jails, and other concomitants of civilization? Not at all; these would be as useless to them as clothing, houses, and furniture. They are incapable of further development. Their language alone would prevent their progress, since it is, like themselves, in its infancy; they speak in guttural monosyllables, like babes when they first essay speech. Theirs is a condition of arrested development; they have become paralyzed, ossified; they can go no further, and will die out, for when progression ceases annihilation results. The conditions requisite for the growth of this race were absent for ages. They developed without admixture of other blood, and this alone produces stagnation. They occupied what may properly be termed an island home, where no great beasts ranged to invite the force of man to their destruction. This one circumstance prevented their advance by impeding muscular development, and without the development of the muscular system the grandest achievements of civilization are impossible.

Those who have followed the course of this system of physiognomy will have seen how many beautiful faculties are evolved from the muscular system—how many depend upon its perfection and dominance. Mechanism, art, commerce, sentiment, and social life find in the high development of the muscular system their best illustration. Blot out from the human organism all these, and what remains? An organism incapable of further evolution, because Nature never leaps, and cannot progress except in her regular order. If the muscles have not been properly developed, the functions and faculties which are related to the muscular system will not make their appearance, and the bone and brain systems will not be perfected. Hence, annihilation will follow any race that does not move according to the laws and requirements of evolution.

How do we know the methods of Nature in regard to man's evolution? There are four sources from which we derive this knowledge: Comparative Anatomy, Physiology, Evolution, and Embryology. These sciences write the history of man's develop-

ment in living letters. The means of obtaining this knowledge are in existence in the world at the present time. The profoundest minds of the age are turned to the investigation of the origin of man and of his mind; it is reasonable to conclude that they will bring forth results of their investigations in the shape of proofs. This they have already done to some extent, and, by the vast researches of one man alone—Ernst Haeckel—we are able to trace the evolution of races, and of the organs of animal and human organisms.

My theories of the nature, origin, location, and meaning of the several organs, functions, and faculties of the human mind and body have been shaping for years. I have refrained from putting them forward, because I knew that, on account of their novelty, they would be subjected to severe and adverse criticism; because, also, I had not the *corroborative testimony* of those better known to science. But, as time has progressed, investigation and research on the part of eminent thinkers have given me all the evidence I need to sustain the basilar principles of my system. Observation of the faces and forms of men, women, and animals will supply the rest.

The more I investigate Mr. Haeckel's system of evolution, the more profoundly am I impressed with its truth. In it I find the corroboration of my system, or at least many parts of it; and I blush while I write it, that one so obscure as myself can claim to be able to corroborate anything that so great a scientist has advanced. I also find in physiognomy the corroboration of much that he has stated, but especially have I found in the human face the proofs of the evolution of the organs and systems of the body of man, simply by the order of the location of their signs in the face. The order of their placing and action in the body is also a proof of many of his positions, and mine as well.

Here I am about to attempt a very difficult task. I am desirous of giving my reader somewhat of Mr. Haeckel's system of the origin and progress of the systems and organs of the body in a few pages. This is a work to which he devotes two volumes, and my attempt may be thought presumptuous; but still it is my proof, and I hope I may accomplish my task without injustice to his elaborate descriptions, illustrated, as they are, with numerous diagrams and plates. It must be borne in mind that the knowledge of the origin and progressive development of the entire man, as he now stands perfected, has been sought for, first in the simplest organisms in the world, viz., in the amœba; thence coming along up the scale of progressive evolution to the family of worms, thence along the line of investigation to the brainless fishes; thence

to the skulled organisms, through reptiles, birds, and beasts, to man.*

In order to make my evidence more complete, I will go back to primeval times, and take up the investigation of primeval organisms; because, in their origin and evolution they type the growth and progress of man, his organs and functions. The amœba (Fig. 3, page 63) is composed of a small speck of slime, or plasmoid substance. Under the microscope it discloses a simple cell, or germ. This form is the beginning of life in every plant, animal, and man in the world. Man, at his commencement, is nothing more than this—a small cell, or germ, combined with a microscopic quantity of mucus-like substance. In the case of the amœba, we find that, without any organs, it yet has powers such as are seen only in developed organisms. It seems to possess the faculties of motion without muscles, bones, or limbs, irritability without nerves, digestion without stomach, reproduction without sexual organs, and respiration without lungs; and, withal, purely chemical in its action. At the first dawn of all things in existence, chemical action alone seems to be dominant. As it lies in the water—for that is its natural abode, and it can be seen in bodies of both fresh and salt water almost any day by seeking for it—it can project one part like a limb; it can expand, contract, or roll up in a spherical shape. It digests by absorption the minute animalculæ contained in the water, thus showing it to be carnivorous without teeth. It reproduces by fission, or division; that is to say, after it has attained a certain size it separates into two parts, and these again, in their turn, repeat the process when the right proportions are reached.

You will ask how it is possible for an animal to do all this without organs or functions. The answer I make to this is, that these powers must be *diffused* through the creature just as they are at the other extreme of evolution; just as they are found in man, the highest expression of organized life, as the amœba is the lowest; just as all the elements of life are *diffused* through oxygen, hydrogen, nitrogen, and carbon. All the possibilities of organic form and life are in these simple constituents; yet we see that they have neither form nor organs. Although man has several systems of functions, still they are so blended and interrelated that it is impossible for any one of them to act independently; they are *diffused*, so to speak, all through the human system. The nerves, the muscles, the bones, the tissues, the mind itself, even, is diffused, and irritation and sensibility proceed from all the nerve-ganglia in the body, just as irritation and sensibility are manifested by the microscopic amœba, without any perceptible nervous system.

* Evolution of Man, Ernst Haeckel, vol. ii, pp. 30–43.

The next stage of progression after the amœba is a simple aggregation of cells, without organs as yet. The manner in which these germ-cells aggregate or break up into other cells is most interesting, and has been observed in very low mammals, in guinea-pigs, and rabbits, in the amphioxus, and in the eggs of toads and frogs. The eggs of all these animals develop exactly as do the cells of the amœba. Observation of the manner in which the eggs of frogs develop shows that their eggs are circular, and the upper half appears darker than the lower; this marks the egg into two distinct halves. This marking into halves commences about an hour after being deposited; an hour later another line or furrow is formed, cutting the first at right angles. This change continues in geometrical progression from two to four, thence to eight, to twelve, to sixteen, to twenty-four, to thirty-six, to forty-eight, to sixty-four, until one hundred and sixty cells are formed, the greater number of which consist of the cells which later form the *animal* functions; the less number, the *vegetative* functions of the animal. This law of mathematical progression is one proof of my proposition that all the operations of Nature have mathematical law as a common basis. The commencement of all life is on so infinitesimal a scale that, until the microscope reached its present perfection, the means to ascertain all of the laws of evolution did not exist.

The next stage appears as a simple, hollow globe, filled with liquid, the wall of which consists of a single layer of cells.

The next progressive step shows us a hollow body, with an opening at one end, the wall consisting of two different cell-strata. These strata Mr. Haeckel describes thus:—

> The two cellular layers which surround the cavity of the primitive intestine, and alone constitute the wall of the latter, are of very great significance; for these two, which alone constitute the whole body, are, in fact, the two primary germ-layers, or primitive germ-layers. The outer cell-layer is the skin-layer, or exoderm; the inner cell-layer is the intestinal layer, or entoderm. The whole body of all true animals proceeds solely from these two primary germ-layers. The skin-layer furnishes the outer body-wall; the intestinal layer forms the inner wall of the intestine, and directly surrounds the intestinal cavity. At a later period a cavity forms between the two germ-layers; this cavity, filled with blood or lymph, is the body-cavity (cœloma). The two primary germ-layers—the outer, or serous, and the inner, or mucous layer—were first clearly distinguished in 1817, by Pander, in the incubated chick; but their full significance was first thoroughly recognized by Baer, in 1828, who gave the name of animal layer to the outer layer; that of vegetative layer to the inner. These names are very apt, because it is the outer layer which especially, if not exclusively, gives rise to the animal organs of sensation and movement—the skin, the nerves, and the muscles; while, on the other hand, it is especially from the inner layer that the *vegetative* organs of nourishment and reproduction—the intestine and blood-vessel systems—arise.*

* Evolution of Man, Ernst Haeckel, vol. i, pp. 19-196.

The hollow body mentioned here is the primitive intestine; the opening, the first appearance of the mouth; the two different kinds of cell-strata form the inner and outer skin; the inner skin assists in digestion, and the outer forms the covering and assists in motion and sensation.

The next advance made shows an organism—the turbellaria, a gliding worm, which is found at the present day in both fresh and salt water. These creature's have two openings to the body, a nerve-system, consisting of a simple nerve-ganglion at the top of the mouth-opening, a pair of simple eyes, and nose-pits; also, will be found a pair of simple kidney-ducts. Mr. Haeckel remarks:—

> The appearance of these (kidney-ducts) at so early a period shows that the kidneys are very important primordial organs. It also shows their existence in all flat worms; for even the tape-worms, which in consequence of the adoption of a parasitic mode of life have lost the *intestine*, yet have the two secreting *primitive kidneys*, or excretory ducts. The latter, therefore, seem to be older and of greater physiological importance than the blood-vessel system, which is wholly wanting in the flat worms.*

The reader will observe that the kidney system makes its appearance before the heart, liver, lungs, blood-circulating system, brains, bones, or any of the smaller organs or systems of the body. Mr. Haeckel observed this fact, and, as he expresses it, "the kidneys seem to be of greater physiological importance than the blood-vessel system." Of the first appearance of the kidney system, Mr. Haeckel observes:—

> These four organ systems which have been mentioned were already in existence when an apparatus developed tertiarily in the human ancestral line, which at first sight seems of subordinate significance, but which proves, by its early appearance in the animal series and in the embryo, that it must be very ancient, and consequently of great *physiological* and *morphological* value. This is the urinary apparatus, or kidney system, the organ system which secretes and removes the useless fluids from the body.†

We have already seen how the primitive kidneys appear in the embryo of all vertebrates long before any trace of the heart is discoverable. Later on Mr. Haeckel remarks:—

> The human skin and intestines are, according to this, many thousands of years older than the muscles and nerves. These again are much more ancient than the kidneys and blood-vessels, and the latter, finally, are many thousands of years older than the skeleton and the sexual organs. The common view that the vascular system—that is, the blood-circulating system—is one of the most important and original organ systems is, therefore, erroneous. It is as false as the assumption of Aristotle, that the heart is the first part to form in the incubated chick. On the contrary, all the lower intestinal animals show plainly that the historic evolution of the vascular system did not begin till a comparatively late period.‡

* Evolution of Man, vol. ii, p. 81. † *Ibid.*, p. 368. ‡ *Ibid.*, p. 358.

My observations in my own peculiar branch of science lead me to see the *importance of the kidney system*, not only from a physiological stand-point, but also from a moral one. The chapter on the "Rationale of Physical Functions and their Signs in the Face" explains this theory.

The two systems of organs which appeared first in man's primitive ancestors were the intestinal and skin systems; these came simultaneously. After these came the gill-intestine, which foreshadowed the lungs. A rudimentary stomach was also evolved. The two systems which appeared next in order, and simultaneously, were the nerve and muscle systems. Then evolved the blood-circulating system, as yet without a heart, the blood circulating through tubes without any central organ.

The next set of systems which appeared were, first, the skeleton, and then the sexual system; reproduction previous to this having been produced by fission, or in other ways not requiring sexual organs. The first two systems which appeared were, as above stated, the intestinal and the outer skin-covering, which were used for motion and also for sensation. This sense of touch stood in place of nerves to these low organisms; they gained all knowledge of their surroundings from the sense of touch, and "without touch," says Taine, "nothing could exist."

Later on in evolution this outer skin

Had become *especially sensitive*, gradually withdrew into the shelter of the interior of the body, and there laid the first foundation of a central nervous organ. As differentiation advanced, the distance and distinction between the external skin-covering and the central nervous system detached from this become continually greater, and finally the two were permanently connected by the conductive peripheric nerves.*

Says Haeckel:—

"Let us now turn aside from these very interesting features in evolution and examine the development of the later human skin-covering, with its hairs, sweat-glands, etc. The skin, in the first place, forms the general protective covering which covers the whole surface of the body, and protects all other parts. As such, it at the same time effects a certain change of matter between the body and the surrounding atmospheric air—perspiration or skin-breathing. In the second place, the skin is the oldest and most primitive sense-organ, the organ of touch, which effects the sensation of the surrounding temperature, and of the pressure or resistance of bodies with which it comes in contact. These organs of our body which discharge the highest and most perfect functions of animal life—those of sensation, volition, thought; in a word, the organs of the psyche, of mental life—arise from the external skin-covering."†

* Evolution of Man, Ernst Haeckel, vol. ii, p. 196. † *Ibid.*

The corroboration of this last sentence of Mr. Haeckel is found stated in one of the sub-basic principles of scientific physiognomy—"texture is significant of quality"—for, without seeing the face of an individual or his form even, the *quality* of his mentality is disclosed by the quality of his skin and hair, both of which must and do correspond always to man's mental quality. The finer, clearer, and more sensitive the skin, the finer will be the quality of the mental sensations and sensibility, or, in other words, of his brain and nerves. Thus another proof of my propositions is given us from this great man's research. Although the two sciences on their first presentation do not seem to be directly connected, yet as we proceed we shall find that they are corroborative of each other.

In physiognomy the brain and nerve system is located the highest in the organism, and comes last in the order of progressive development, for the reason that the true brain, the perfected cerebrum, was the last organ in developing, and is the chief seat of mentality, although mentality is diffused through all of the several systems of the entire organism, whether of man or animal.

The first appearance of anything like a skeleton is the notochord, which is not yet true bone, but cartilaginous in its nature. It foreshadows the vertebræ, or what is commonly called the backbone. Along the inner side of this cord a medullary or nerve-tube is found, which has evolved from the upper throat-ganglia—the first appearance of a nervous system. This notochord develops sufficient strength later on in evolution to support strong side-muscles and an oar-like tail, which were needed for swimming. From the anterior portion of the notochord, near and above the mouth-opening, a little capsule made its appearance. This is the first beginning of a brain. Hitherto the mental powers of animal organisms, their consciousness and sensibilities, the sense of feeling or touch, have been located in the body, in the inner and outer skin, in the muscles and notochord.

Now a great step forward is taken. A single nostril forms above this capsule, and nostrils presuppose a use. At the side of the animal in which this stage of evolution exists, just below a simple eye which has formed, are seven little openings called gill-openings. The air contained in the water taken in at the mouth, which is only a round opening without jaws as yet, is respired through these little gill-openings; this is the first approach toward breathing through an apparatus especially for that purpose. Hitherto breathing has been carried on by lower organisms through a process called skin respiration, or by using the oxygen contained in the water taken into the mouth-opening.

These characteristics are all of the most important which have evolved from the first simple one-celled amœba until the fish family is reached. Heretofore we have considered very low organisms—gastræa, worms, and lampreys. The evolution of fishes marks a great advance in the origin of organs. The one little capsular brain has formed four other similar little bladders, which, later on, form one whole brain; these five parts are the origin of the five parts of the brain as they are found divided in the human skull. Two jaws appear, also two nostrils, and the swimming bladder, which organ develops into the true lungs in the higher vertebrates; as now found in the fish it is used as a hydrostatic apparatus, by means of which the fish rises and sinks in the water. The swimming bladder is developed from the anterior portion of the intestinal canal, and corresponds in its position to the lungs in the higher organisms.

The strong side-muscles which were evolved in the swimming worm now develop into two fore and two hind limbs; the two fore limbs are called pectoral fins, and the hind limbs ventral fins. These fins foreshadow the upper and lower limbs, the hands and feet, of man, and the limbs of all vertebrate animals. With the coming of these there appeared a sympathetic nerve system, a spleen, and salivary gland. In this stage of progress the notochord has ossified and become true bone, although fish-bone is always more like cartilage than the bones of higher animals. Some little bony arches, called gill-arches, have been thrown upward and forward from the anterior portion of the notochord, or, as it now is, the backbone of the fish, and these form the upper and lower jaws. Fishes have from four to six pairs of gill-openings, which lie between the gill arches.

In the embryos of man and the higher vertebrates only three or four pairs are developed.*

In the latter only a single vestige of a gill-opening remains, the remnant of the first gill-opening. This changes into a part of the organ of hearing; from it originates the outer ear-canal, the tympanic cavity, and the Eustachian tube.

In all the three higher vertebrate classes, also in man, the tongue-bone (os hyoides) and the bonelets of the ear originate from the gill-arches. From the first gill-arch, from the centre of the inner surface of which the muscular tongue grows, proceeds the rudimentary jaw-skeleton, the upper and lower jaws, which inclose the cavity of the mouth and carry the teeth. *The original formation of the human mouth-skeleton of the upper and lower*

* Evolution of Man, Ernst Haeckel, vol. ii, p. 329.

jaws can be traced back to the earliest fishes, from which we have inherited them.

The next stage of evolution brings us to the amphibia, creatures endowed with the power to live on land or in water. In this class of animals a lung for breathing while upon land is required. This organ evolves from the forward and upper end of the intestine, and the air is inhaled through a tube or windpipe.

At the upper end of the windpipe, below its entrance into the throat, the larynx, the organ of voice and speech, develops. The larynx occurs even in amphibia in various stages of development, and with the aid of Comparative Anatomy we can trace the progressive development of this important organ from its very simple rudiment in the lower amphibia up to the complex vocal apparatus represented by the larynx of birds and mammals.*

The power for breathing necessitates a heart or blood-circulating system. We accordingly find in the order of the amphibia a heart, not yet perfected in its power and mechanism as in the higher organism of reptiles, birds, and mammals. Of this change in the mode of breathing air directly from the atmosphere instead of from water, Mr. Haeckel says:—

This physiologically significant modification of the mode of respiration is the most influential change that affected the animal organism in the transition from water to dry land. In the first place, it caused the development of an air-breathing organ, the lung, the water-breathing gills having previously acted as respiratory organs. Simultaneously, however, it effected a remarkable change in the circulation of the blood and in the organs connected with this, for these are always most closely correlated with the respiratory organs.†

In this last sentence the reader will find the proof of the origin of my sign for the action of the heart: "The larger the lung and nostril, the greater the size and power of the heart." These two organ systems are closely interrelated, and one always conditions the other. The change from water-breathing to air-breathing led to many other important changes. Of this transformation, Mr. Haeckel remarks:—

Within the vertebrate tribe it was undoubtedly a branch of the primitive fishes (*Selachii*), which, during the Devonian period, made the most successful effort to accustom itself to terrestrial life, and breathe atmospheric air. In this the swimming bladder was especially of service, for it succeeded in adapting itself to respiration of air, and so became a true lung. The immediate consequence of this was the modification of the heart and nose.‡

* Evolution of Man, vol. ii, p. 335. † *Ibid.*, p. 116. ‡ *Ibid.*, p. 116.

Here is still another proof of the origin of my sign in the face for the power and activity of the circulatory system and heart. Let us return to the further description of the evolution of the organs by Mr. Haeckel, He says:—

While the true fishes have only the blind nose-pits on the surface of the head, these now become connected with the mouth-cavity by an open passage; a canal formed in each side leading directly from the nose-pit into the mouth-cavity, and thus, even while the mouth-opening was closed, atmospheric air could be introduced into the lungs. While, moreover, in all true fishes the heart simply consists of two compartments—an auricle which receives the venous blood from the veins of the body, and a ventricle which forces this blood through an arterial expansion into the gills—the auricle, owing to the formation of an incomplete partition-wall, is now divided into a right and left half; the right auricle alone now received the venous blood of the body, while the left auricle received the pulmonic venous blood passing from the lungs and the gills to the heart. The simple blood circulation of the true fishes thus became the so-called double circulation of the higher vertebrates, and this development resulted, in accordance with the laws of correlation, in further progress in the structure of other organs.*

The vertebrate class, which thus first adapted itself to the habit of breathing air, is called mud-fishes,—*dipneusta*, or double-breathers,—because, like the lowest amphibia, they retain the earlier mode of breathing through the gills, in addition to the newly-acquired lung respiration. In their mode of life they are true amphibia. During the tropical winter, in the rainy season, they swim in the water like fishes, and inhale water through the gills. During the dry season they burrow in the mud as it dries up, and during that period breathe air through lungs, like amphibians and higher vertebrates.†

The life on land of these amphibious creatures necessitated an apparatus for locomotion. This caused an advance in the strength of the side-muscles which were attached to the fins, and a change in the fins themselves. Of the construction of these fins, Mr. Haeckel observes:—

The thorough researches of Gegenbaur have shown that the fins of fishes, concerning which very erroneous views were previously held, are feet with numerous digits; that is to say, the cartilaginous or osseous rays, many of which occur in every fish-fin, correspond to the fingers or digits on the limbs of higher vertebrates; the several joints of each ray correspond to the several joints of each digit. In the double breathers the fin yet retains the same structure as in fishes, and it was only gradually that the five-toed form of foot, which occurs for the first time in amphibians, was developed from this multidigitate form.‡

The great significance of the five digits depends on the fact that this number has been transmitted from the amphibia to all higher vertebrates. It would be impossible to discover any reason why, in the lowest amphibia as well as in reptiles, and in higher vertebrates up to man, there should always origi-

* *Ibid.*, vol. ii, pp. 117, 118. † *Ibid.*, vol. ii, p. 123. ‡ *Ibid.*, vol. ii, p. 124.

nally be five digits on each of the anterior and posterior limbs, if we denied that heredity from a common five-fingered parent-form is the efficient cause of this phenomenon. Heredity alone can account for it. In many amphibia certainly, as well as in many higher vertebrates, we find less than five digits, but in all these cases it can be shown that separate digits have retrograded, and have finally been completely lost. The causes which led to the development of the five-fingered foot of the higher vertebrates in this amphibian parent-form from the many fingered foot, must certainly be found in the adaptation to the totally altered functions which the limbs had to discharge during the transition from an exclusively aquatic life to the one which was partially terrestrial. While the many-fingered fins of the fish had previously served almost exclusively to propel the body through the water, they had now also to support the animal while creeping upon land. This effected a modification both of the skeleton and of the muscles of the limbs. The number of fin-rays was gradually lessened, and was finally reduced to five. These five remaining rays now, however, developed more vigorously. The soft, cartilaginous rays became hard bones; the rest of the skeleton became, consequently, more firm; the movements of the body became not only more vigorous but more varied. The separate portions of the skeleton system, and consequently of the muscular system, also became more and more differentiated, owing to the intimate correlation of the muscular to the nervous system; the latter also naturally made marked progress in point of functions and structure. We find, therefore, that the brain is much more developed in the higher amphibia than in mud-fishes and in the lower amphibia.

In the last few sentences of this description of the evolution of amphibia I find the corroboration of my theory of the progressive development of some of man's physical functions and mental faculties. I have shown elsewhere that as the muscular system evolved and became differentiated man's capacity for mental progression was enhanced. If the reader will refer to Fig. 4, page 65, he will find in the illustration I make of the native Australian how exactly in accord my theory of the order of development of the functions in man is with Mr. Haeckel's proof of the evolution of the organs and functions, not only in the lowest organism, but in the embryonic life of man; and, lastly, in his most developed and perfected state as a full-grown member of the latest and highest race.

As we ascend in the scale of development from a lower to a higher grade—from the Vegetative to the Thoracic, from the Thoracic to the Muscular functions—we find different growths overlapping each other, as it were, and this peculiarity is noticeable in every department of organic life. This method is not only apparent in the successive growths of the same organism, but it is also very marked in the evolution of species, where we often see, as in amphibia, functions which are useful both for aquatic and terrestrial existence. So, in the human family, as I read in the face and body, we see the remains of former existences, the re-

mains of our animal ancestors. Not only are these inheritances characterized by phenomena which the popular voice terms "animal passions," such as hate, revenge, destruction, and jealousy, but we see in the uselessness or purposelessness of numerous organs and parts of useless members, which are scattered in different portions of the human organism, the greatest proofs of evolution, and, indeed, the one of all others which would establish the truth of that doctrine on a firm and unassailable foundation. I shall give brief mention of these rudimentary remains of our ancestors.

The generality of people accept, without question or analysis, the human organism as they find it, never glancing back to trace laws and appearances to their origin; but, as soon as inquiry and investigation commence, light flows in upon them. I will refer to only a few of the remnants of former animal existences that are now found incorporated in the human system, without having any use or purpose in man's economy, but which, on the contrary, often induce disease and suffering. I will first call attention to the fine short hairs found all over the body. What is their use to man? None that physiologists have been able to discover. They are simply vestiges of the thick hairy covering found on our most immediate animal ancestors. The little circle of muscles surrounding the ear-shell is another relic of an existence which found flapping and raising and lowering the ears a necessity. These muscles are not of the slightest use to man, as his ears are immovable. At the inner corner of the eye we find a little fold of skin, the remains of the nictitating membrane,—the third eyelid,—which is useful to some birds and fishes, such as owls, sharks, and others, but serving no purpose in the human family. At the termination of the vertebræ, or backbone, we have five little bones, with joints and shrunken muscles, that are of no use to man. They are subject to disease, and I have recently heard of the successful amputation of the coccyx, as this rudimentary "tail" is called. Another useless, and worse than useless, relic is the thyroid gland. It is situated in front of the larynx, and is the remnant of the crop so useful to our animal ancestors. It is often the seat of disease. The swelling so common in the mountains of Switzerland, called "goitre," is an affection of this gland, which has no use in the organism of man. There are various other parts, like the vermiform process in the intestines, which are only a detriment to us; also, some atrophied muscles in the thighs, which are useless in our present state of existence. They were very useful formerly in climbing trees,—a process our animal ancestors found essential to their welfare. There are many remains of former conditions of the reproductive system when organisms were bisexual, and thus

it is that in man are found portions of rudimentary female organs that are functionally active only in women. These have no use in the body save to enlighten us on the subject of our pedigree and descent, and also to teach us the methods of Nature in evolution; yet all serve to illustrate the power of God, who from so small a beginning as a simple germ-cell can create by successive steps the complex being we call Man.

No portion of the human system acts independently, but all of the five superior organ systems are so correlated that neither can act without being affected by or affecting the others. These several powers are diffused, as it were, through the entire body, although there is a sufficiency of connection and similarity of action in each to enable us to trace its cause and operation through the entire organism. At the same time, each system extends its influence (as we rise in development) forward into the next growth, and there are faculties and functions which seem to belong to and affect the operations of functions and faculties in the next system above, as, for example, mouth-breathing represents the condition of amphibia before true lung-breathing was established. Yet breathing through the nose is the more perfected method of respiration.

I cannot give with the limits of this work (neither is it pertinent) the history of the evolution of all the various organ systems in the human body. I shall present simply those which in my judgment seem to be corroborative of theories which are the result of years of observation and research on my part. Without pretending to carry the reader along the regular course of the evolution of the organs, so as to show the development of the structure of the skull, brain, and interior organs of the body not already noticed, I shall content myself with giving some extracts from different parts of the second volume of Haeckel's "Evolution of Man," bearing upon and sustaining my theory of the origin and location of mind. I will first quote a paragraph which is simply a reiteration of what has already been adduced by Flourens, Longet, and other well-known anatomists. Mr. Haeckel remarks:—

> It is possible to remove the great hemispheres of a mammal, piece by piece, without killing the animal, thus proving that the higher mental activities, consciousness and thought, conscious volition and sensation, may be destroyed, one by one, and finally entirely annihilated. If the animal thus treated is artificially fed it may be kept alive for a long time, for the nourishment, digestion, respiration, the circulation of the blood, the secretion,—in short, the *vegetative functions*,—are in no way destroyed by the destruction of this most important mental organ. Conscious sensation and voluntary motion, the capacity for thought, and the combination of the various higher mental activities have alone been lost.*

* Evolution of Man, Ernst Haeckel, vol. ii, p. 225.

Of the origin of the source of mind, sensation, and consciousness he says:—

Comparative anatomy and physiology show that in the low animals specialized sense-organs are entirely wanting, and that all sensations are transmitted through the outer surface of the skin-covering. The undifferentiated skin-layer, or exoderm, of the gastræa is the simple cell-layer from which the differentiated sense-organs of all intestinal animals (*Metazoa*), and therefore of all vertebrates, originally developed. Starting from the consideration that necessarily only the most superficial parts of the body—those immediately exposed to the outer world—could have accomplished sensations, we should be justified in conjecturing, *a priori*, that the organs of sense also owe their origin to the same source. This is, indeed, the fact.*

Elsewhere Mr. Haeckel observes:—

The history of evolution, in conjunction with the rapidly-advancing comparative anatomy and physiology of the sense-organs, affords the only safe foundation for the natural theory of the mind.†

Speaking of the varying degrees of intelligence or mental activity in the lowest vertebrates, he remarks:—

Side by side within the various classes, orders, genera, and species we find so great a variety of vertebral intellects that at first sight one can scarcely deem it possible that they can all be derived from the mind of a common primitive vertebrate. First, there is the little lancelet, which has no brain at all, but only a simple medullary tube, the entire mental capacity remaining at the very lowest grade occurring among vertebrates. The cyclostoma, also, standing just above, exhibit a hardly higher life, though they have a brain. Passing on to the fishes, we find these intelligences, as is well known, at a very low point. Not until from these we ascend to the amphibia is any essential progress in mental development observable.‡

Here, again, I find still further proofs of my theories. The reader will remember that I have stated elsewhere that the natural order of the progressive development in the races of man, from the lowest to the higher, was from the vegetative system to the thoracic, from the thoracic to the muscular. Now, the great advance made by the amphibia was in the increased development of the muscular system,—first, in the addition of lungs, heart, and muscles to assist locomotion on land. This increased action of the muscular system, of course, advanced the mental powers and activities. The amphibia would necessarily be brought into contact with new and diverse methods of life in order to establish itself on land, and to accommodate itself to the new conditions which this form of life entailed. The circumstance of having to provide food other than that supplied by the waters would not only strengthen and cultivate the muscular system, but would sharpen the mental activities of the creature. Its life, being passed partly

* *Ibid.*, vol. ii, p. 235. † *Ibid.*, vol. ii, p. 237. ‡ *Ibid.*, vol. ii, p. 447.

on land, would strengthen the bony system, for sunlight is essential to the development of the osseous structure in animals as well as in man. And here the next great advance in physiological and anatomical and mental development was made, for the reader will please observe that faculties and functions advance and develop simultaneously.

Let us here continue Mr. Haeckel's description of the evolution of mind in the lower vertebrates. He says:—

> This progress in mental development is much greater in mammals, although even here, in the beaked animals (*Ornithostoma*), and the next higher class, the stupid, pouched animals (*Marsupials*), the entire mental activity is still of a very low order; but if we pass on from these to *placental* animals, within this multiform group we find such numerous and important steps in differentiation and improvement that the mental differences between the most stupid placental animals (for instance, sloths and armadilloes) and the most intelligent animals of the same group (for instance, dogs and apes) seem much more considerable than the differences in the intellectual life of dogs, apes, and men.*

This last-mentioned advance, my readers will observe, is based on the differentiations which resulted in a more complex arrangement of the organs and functions of reproduction, and of all the concomitant functions and faculties which this great advance requires. A more extensive and complex nervous system and brain would be necessitated by such change, and in the placental animals we accordingly find that the mentality has advanced in the ratio of their physical and anatomical development. Herein I find another proof of one of my theories, namely, that functions and faculties are correlated; that the mental cannot progress without the physical powers; that they depend upon each other—condition each other; that, in short, mind is a part of the *entire body*, and does not inhabit any one particular portion of the organism, but is diffused all through it—is blended with every function, and is part of every function. This knowledge simplifies the doctrine of mind, spirit, and soul very materially. As the mind or brain has always been considered the organ of the spirit or soul by theologians and metaphysicians, Comparative Anatomy will give them all the evidence needed to ascertain its locality and attributes. Of the difference between nature and spirit, Mr. Haeckel observes:—

> Accordingly, we cannot assent to the popular distinction between Nature and spirit. Spirit exists everywhere in Nature, and we know of no spirit outside of Nature; hence, also the usual distinction between natural science and mental science is entirely untenable; every real science is at the same time both a natural and a mental science; man is not above Nature, but in Nature.†

* Evolution of Man, Ernst Haeckel, vol. ii, p. 447.

† *Ibid.*, vol. ii, p. 455.

In closing this review of portions of Mr. Haeckel's "Evolution of Man," let us compare the points of resemblance and correspondence between the two sciences, and summarize the proofs by which his evidence is corroborative of my discoveries in scientific physiognomy. The first point of resemblance between the two is evidential of one of my basilar laws, namely, that all creations, as well as all particles of matter, have for their basis three underlying laws—those of chemistry, architecture, and mathematics. I have shown, in the description of germ-cells, that all life is at first a simple cell, a purely chemical compound; in its next stage it takes on a fixed and definite form or shape, thus showing its architectural proportions. The number of the divisions of the germ-cells in geometrical ratio proves that mathematical law governs every particle of matter, and controls the physical as well as mental basis of life.

My theory of the high importance of the kidney system as a moral agent and a purifier of the body and mind, I think, is well sustained by the investigations of Mr. Haeckel among the lower animal organisms, where he finds the existence of kidney-ducts long before any of the organs and functions which are considered by the generality of people more essential to the existence of the human organism. Of course, physicians and physiologists comprehend thoroughly the "high physiological importance," as Mr. Haeckel terms it, of the kidney system; because they know that, whereas the functions of the intestinal system can be suspended for from twenty to thirty days without causing death, the suspension of the functions of the kidney system will cause convulsions and death in almost as many hours.

Well might it be said that the early appearance of this system in the lower organisms showed it to be "of great physiological importance." It is not equalled by any other system in the body in point of necessity and importance. The general belief is that the intestinal system is the greatest excretory power of the body. This is not correct; the skin, which is closely related to the kidney system, far exceeds the bowel system in importance as an excretory agent. This intimate relation of the skin and kidneys is proved, by the investigations of Mr. Haeckel, by the fact of the kidneys having evolved from the outer-skin sensory layer. The every-day experience of almost all adults proves this relationship between the skin and kidneys; for where the pores of the skin have become inactive by reason of chill or cold, the kidneys act for them and throw off an increased amount of waste material, and this action is carried on *vice versâ*.

That the nerves, brain, and kidneys have originated from the

same source—that is, by evolution—is proved, not only by Mr. Haeckel's observation, but by the facts and experiences of life; by the joint indications and signs of all these functions in the bodies of human beings. The finer and clearer the skin, the finer the grade of mentality is found to be. Compare, for example, the texture of "Sitting Bull's" skin with the finely-organized cuticle of Elizabeth Barrett Browning, the grand poetess. Another proof of their common origin is found in the fact that a finely-organized skin assists in carrying off the waste and impurities of the body, thus assisting the kidneys in excreting impurities which lead to immorality where they are not discharged; while at the same time this finely-organized skin is an indication of purity of thought, which characterizes all who have a fine quality of brain, or where the brain and nerve system predominates over all other systems of the organism; thus proving my theory that Conscientiousness is related to the kidney system. I do not think that this position can be controverted except on the old theological and metaphysical basis that mind is something apart from the body, and governed by a "soul," the location and qualities of which have never, to my knowledge, been ascertained.

The next point of resemblance, and corroboration of my sign for the size of the nostrils and lungs, and the corresponding strength and vigor of the blood-circulating system, are found in the simultaneous appearance, in the low fish organisms, of these three organs and systems. Every indication of the human face and body proves the correctness of these signs. Wherever the nostrils are wide and large, or round and large, the lungs correspond in size and shape. The heart, also, must necessarily be of large size, and of powerful action, in order to receive all the blood which large lungs oxygenate. Thus these systems are naturally and necessarily correlated, and mutually condition each other. In this another proof of my theories is afforded.

Let us proceed still further in our examination of evidence. One of the strongest corroborations of scientific physiognomy that I have received is in the showing of the correlation of the functions of the muscular system with those of the brain and nerves. As Mr. Haeckel has told us, the efforts of the amphibia to accommodate itself to terrestrial life advanced greatly the power and capacity of the muscular system; hence, of the mental powers. Thus it will be seen that these operations are correlated; that, in fact, muscular movements are in themselves *mental* to a degree; not so highly specialized, it is true, as the faculty for pure abstract reasoning, although I believe this faculty will eventually be proved to have an intimate relation in the brain with the muscular and

fibroid systems. The increased activity of the muscles necessitates increase in the size of the skeleton or osseous system; also, in the power of the nerves and size of the brain; hence, of mental activity and higher intelligence; for, the anatomy of the higher animals (dogs and apes, for example) shows that the power of speech is denied them solely on the ground that they have not that development of the larynx, tongue, and lips essential to the quality of speech, which is found among the lowest human races, even, and the latter do not possess that perfection of the muscular system which gives the power for perfected speech, such as is found in European races, for example. Speech is thus shown to be a physiological gift, as Mr. Haeckel observes—not a "divine" one; that is to say, not in the sense in which that word is commonly used. I believe every created thing to be divine, and emanating from the Creator, whether it be an oyster or an ape; and the reason why neither of them speak is not from a lack of divinity, but because of the absence of a suitable physiological development, each step of which is just as divine, one as another; the first step in evolution illustrating the power of the Creator as much as the last one. All are divine, infallible, and unerring.

SUMMARY OF THE ORIGIN AND EVOLUTION OF THE VISCERAL ORGANS AND FACIAL FEATURES.

The beginnings of all life, vegetable and animal, are similar in their operation and in progressive development. Up to a certain stage nutriment for the purposes of growth is of a fluid nature, but after animal life has manifested itself as such, then more solid foods enter into the composition of bodies, even in the lowest forms of animal life; as in the polyp, slight particles of solid nutriment are sought from the passing waters.

Cell-life is characteristic of the earliest formations of vegetable growth, as well as of the first stages of animal life. Man at the commencement is simply a minute speck of protoplasmic substance without form, and is then entirely in a chemical condition, formless, shapeless, of a semi-fluid nature without organs or any appearance of them; yet all the potencies of life, of talent, and of genius are comprised within this minute, homogeneous speck. If undisturbed this germ is acted upon by the resistless force of evolutionary law, and thenceforth develops until birth. The embryo remains till that time in a chemical condition mainly; its blood is uncolored, its mental faculties not yet awakened, only a few of its physical functions in action. The cerebrum, the liver, the heart, together with certain subordinate organs, among which are the supra-renal

capsules, performing nearly all the labor of the organism. The heart is not yet divided, nor working through its proper channels, for respiration not having commenced the evolution of man is not complete; the spleen, the stomach, the true kidneys, the bladder, and the ureters have not been called into action. Up to this point the organs of man have passed through all the changes which are characteristic of vegetable and animal organisms as they have evolved successively in the innumerable tribes of vegetable, worm, fish, reptile, bird, and beast. The order observed in the development of the fœtus in utero as a whole and of its organs separately, as observed by countless skillful anatomists, is precisely the order which follows the evolutionary development of the organs separately in all the lower forms of life, from the cell-life of the plant to the animal life of the perfected human being as he appears at birth. The human animal goes through all the changes, in the nine months of his fœtal life, which the lower animals pass through in their evolution from the simplest form of life as a speck of jelly-like substance (simpler even than the cells of vegetable organisms); yet more—every organ of the human body, every feature of his face, and every limb follows precisely the same method and order of unfoldment which is observed in the upward progress and evolution of the successive lower animal organisms, commencing with the lowest forms, such as the ascidian and amphioxus; thence, coming along up the scale of advancing functions and faculties until the perfected human being is reached. If we follow the course of animal development we observe that physical functions and mental faculties appear simultaneously, and that every function sustains and is accompanied by a mental power of a kind suited to its degree of development and to the necessities of the animal in which any marked advance appears. One of the most noticeable advances of function with faculty is observed in amphibia, particularly in the metamorphoses which take place in the development of the tadpole. Within a short period, in this creature, life may be observed; the evolution of the lungs and heart. The lungs are evolved from external gills or branchiæ, and the heart develops from a two-chambered organ, consisting of one auricle and one ventricle, to a three-chambered organ. While these changes and modifications are taking place other functions come into existence. The fore legs are first evolved, later the hind legs are developed, and at last the tail disappears, and the result is the transformation of a tadpole into a perfect frog.

Along with the appearance of these prehensile and locomotory members the mental powers requisite for the searching and seizing of prey came into existence; thus illustrating the co-creation of

mental faculty with physical function as low down in the scale of creation as the tadpole.

The heart of the human embryo undergoes precisely the same modifications as the heart of this reptile. The human embryo exhibits at an early stage of its existence a heart consisting of a single chamber which develops into two chambers; later a third compartment makes its appearance, but it is not until birth and air is inhaled that the fourth division of the heart takes place. Until this time the heart of the human embryo remains imperfectly developed as to its fourth compartment; that is to say, in the condition in which the tadpole is found when it emerges from its fish-life and becomes a dweller upon land as well as an inhabitant of the water. The human embryo before its birth dwells in a fluid or watery home; not until its birth is it capable of a life upon land. The parallel at this stage of evolution between the reptile and the human embryo is most striking. All the facilities for tracing the evolution of organs, organisms, features, and faculties are in existence and within reach of most persons in civilized life. The evolution of the human family from the lowest species of the race, from the wretched, undeveloped Australian or Hottentot to the most perfected Caucasian, can be also observed and studied and the science of evolution justified and proven.

The evolution of the visceral organs, which I claim are related to the mental faculties and exhibited by the facial features, have been studied by the most skillful and eminent anatomists and scientists, and to their researches am I indebted for the proofs and verifications of most of the positions I take upon the subject of human physiognomy. Most emphatically does the evolution of man prove by its orderly progress the order which I have observed in the arrangement of the signs in the face of the visceral organs and their accompanying mental signs. A most striking and convincing circumstance in regard to the arrangement of these signs is that I *had discovered and located them years before I knew anything about evolution as a systematized science.*

These two sciences thus confirm and corroborate each other; evolution bringing an *overwhelming mass of evidence*, commencing with the most minute beginnings of animal life and forms, while scientific physiognomy furnishes the *crowning proofs* in the human face, the most perfected portion of the most perfect of the animal series,—man. I once read a thrilling description of the construction of the Mont Cenis tunnel through the Alps, and was greatly interested in the part which described the supreme moment, when the approach was made from opposite sides of the mountain with the view of ascertaining if the calculations of the engineer-in-chief

were correct, and if the perforations from either side would meet at a common centre. I imagined the breathless suspense, the intensity of the pent-up emotions with which the engineer-in-chief listened, straining every fibre of the auditory nerve to catch the faintest click of the hammer as it approached the desired spot, and when the accuracy of his mathematics was proven beyond any shadow of doubt by the light of the lanterns streaming through a faint chink in the rock, I can enter fully into the thoughts and feelings of this man at this moment; for, I believe I must have gone through a similar experience when Haeckel's "Evolution of Man" first met my gaze, and I attempted to read it. Directly I did so, I saw the proof of my long years of research verified from a source the most eminent, and my agitation was such that I was unable to calmly read the work for several days. The reason why I have given such extensive quotations from Haeckel is, that it affords most decided corroboration of my methods of relating faculty to function, and of my system generally, and because I did not wish the reader to accept the unsupported assertions of one so unknown to the scientific world as myself.

I should like here to give a detailed account of the methods pursued by Nature and described by scientists in the evolution of the human face, but, as the study of evolution is not contemplated in this work, I shall be obliged to content myself with referring my readers to the "Evolution of Man," by Ernst Haeckel.

The proofs of physiognomy are more plentiful, pronounced, decided, and clear than those pertaining to any other science. The vain and foolish self-love or viciousness of the many may impede the spread of this knowledge, but the truth will eventually triumph, and the application of this knowledge will become the most potent factor in the scientific breeding of the race. Natural selection, which is always a very slow method of evolution or progress, will be superseded by scientific selection, and thus the advance of humanity to greater heights of strength, purity, and nobility will be more rapid and satisfactory than the present instinctive method,—a method which does not call into activity the highest powers of the mind, but the very lowest, the instinctive; or, as is often the case, mercenary motives control reproduction. In the endeavor to reproduce finer types of animals man makes use of his reason, observation, judgment, and positive experience of the traits, forms, colors, and powers which he seeks to perpetuate in the animal,—a knowledge confirmed by experience and experiment. He understands that certain developments of bone, muscle, form, size, color, and quality in the horse, for example, indicate certain tendencies, and he has learned how to combine these

in the parents in order to produce certain desired effects in the offspring. Is human offspring less worthy our highest consideration? It is true, that self-love and malice do not control the dawn of life in the reproduction of animal types, and herein lies our power for systematic reproduction.

Lavater declared "that the opposition of the vicious to physiognomy proceeds from a secret belief in its power." We must be prepared for this opposition, and also for that which proceeds from the more universal form of human weakness,—self-love. *To be honest with ourselves is often a heroic act.* We must cultivate in our children a love for *absolute truth.* The study of the natural sciences will do this and reward them not only with truth, but will unfold more wonderful, fascinating, and attractive fields of knowledge than all the fairy stories and works of fiction that were ever written.

TABULATED SUMMARY OF THE ORIGIN AND EVOLUTION OF THE ORGANS.

Systematic Survey, According to Age of the Human Organ Systems—Evolution of the Skin and Intestinal Systems.

First Stage, . . .	Homogeneous protoplasm (chemical).
Second Stage, . . .	Cell-life, the same in plant and animal (architectural).
Third Stage, . . .	Division of cells into fixed numbers by geometrical progression (mathematical).
Fourth Stage, . . .	Skin and intestinal systems.
Fifth Stage, . . .	Stomach-intestine and gill-intestine, which later evolves into the lung system, and this produces the first facial feature,—the mouth.
Sixth Stage, . . .	Nerve and muscle systems appear simultaneously.
Nerve System, . .	Eyes and nose-pits; Evolution of three facial features,—eyes, nose, and mouth; Differentiation also produces upper throat-ganglia; Simple medullary tube, spinal marrow, and brain.
Muscle System, . .	Skin-muscles, side-muscles, trunk-muscles.
Seventh Stage, . . .	Kidney and vascular systems.
Primitive kidney-canals,	Simple body-cavity (cœloma).
Primitive kidneys,	Dorsal and ventral vessels.
Permanent kidneys,	Heart composed of part of the ventral vessel. Heart with auricle and ventricle.

Eighth Stage, . . .	Evolution of the skeleton and sexual systems.
Skeleton System, . .	Simple notochord; Cartilaginous primitive skull; Gill-arches, ribs, limbs; Limbs with five digits.
Sexual System, . .	Simple hermaphrodite glands; Distinct testes and ovaries; Seed-duct and oviduct; Phallus.

In the preparation of this table I have made use of the table in Haeckel's "Evolution of Man," vol. ii, p. 367. This statement gives in detail the manner of succession of the several organ systems as they have evolved in the the lower animals through the successive ages of creation. It also discloses the order in which they make their appearance in the human embryo, proceeding first from the simple speck of protoplasmic substance contained in the ovum and spermatozoa; from these two minute specks arise by differentiation the entire complex mechanism observed in the human infant at birth, proving what Professor Haeckel states, viz.:—

> That the same series of multifariously diverse forms through which our brute ancestors passed in the course of many million years has been traversed by every man during the first forty weeks of his individual existence within the maternal body.*

* The Evolution of Man, Ernst Haeckel, vol. ii, p. 5.

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GLOSSARY.

Aborigines. The earliest or primitive inhabitants of a country.
Abstruse. Difficult to be comprehended; not plain.
Acme. The summit; the top.
Acoustics. The science of sounds.
Acquisitiveness. The love of attaining property or possession.
Acrimonious. Quality of being acrid; bitter; severe; sarcastic.
Acumen. The faculty of nice discrimination; acuteness.
Adduced. Brought forward; offered; advanced; urged.
Adipose tissue. Cellular tissue containing fat-cells.
Affluent. Rich; flowing to a part.
Albuminoid. A class of nitrogenous compounds resembling albumen; *e.g.*, the white of an egg.
Alimentiveness. Love of eating and drinking.
Altruistic. Unselfish; studying the welfare of others.
Alveolar. Relating to the socket of a tooth (*Alveolus*).
Amativeness. The propensity to love.
Amelioration. The act of improving or making better.
Amœba. The name of a very minute animal, the lowest organism known to zoologists, which has the power of changing its form.
Amphibia. Applied to animals that can live both on land and in the water.
Amplification. The act of lengthening; extension.
Anæmic. Deficient in blood; may be either general or local.
Analogous. Having relation or resemblance; similar.
Analysis. The method of resolving anything into its primary elements or component parts.
Anatomy. Description of the structure, form, and relations of the various parts of the human body.
Animalculæ. Infusoria; microscopic animal forms.
Anomalous. Not typical; irregular.
Antedate. To date earlier than the real time; to anticipate or precede.
Aplome. A variety of crystallized garnet.
Approbativeness. Love of praise and commendation.
Apropos. To the purpose; opportunely.
Arcana. The plural form of *Arcanum:* a secret; a mystery.
Archetype. First pattern or type; the original form.
Architecture. The art or science of building.
Artery. A vessel which conveys red blood from the heart toward the various organs and members of the body.
Astrology. The ancient science of the stars.
Astute. Shrewd; crafty.
Auditory. Relating to the sense of hearing.
Augmented. Increased or made larger.

Belligerent. Prone to dispute or warfare.
Benignancy. Humanity; graciousness; kindness.
Bibativeness. Love of liquids.
Calcium. The metallic base of lime.
Calculation. The art of computation.
Capillary. Relating to the hair; the communicating vessel between the extremity of a vein and an artery; a small tube.
Carbon. Pure charcoal: the principal element of the various kinds of mineral coal.
Carnivorous. Flesh-eating.
Cataleptic. Relating to a spasmodic disease in which there is unconsciousness, with suspension of the senses and of motion.
Category. List or classification.
Causality. The science of cause and effect.
Cautiousness. The quality of being cautious, watchful, prudent.
Cellular. Containing cells.
Cerebral. Relating to the brain.
Chemistry. A science which treats of composition and relations of substances, and of the changes which they undergo.
Chimerical. Fantastic; imaginary.
Chlorine. A yellowish-green gas, with a suffocating odor.
Cicatrix. A seam or scar of hardened tissue remaining after the healing of a wound.
Ciliated. Having fine hairs or cilia.
Coeval. Of the same age.
Co-existent. Existing at the same time.
Color. A property depending on the relations of light to the eye, by which the mind is capable of distinguishing individual and specific differences in the hues and tints of objects which are apprehended in vision.
Combativeness. A disposition or propensity to fight.
Commissure. A line or plane of union between two parts.
Comparison. A comparative estimate; comparing one with another.
Configuration. Relating to the external form or figure.
Congenital. Originating before or existing at the time of birth.
Concomitant. Conjoined or associated with.
Conscientiousness. A scrupulous regard to decisions of conscience; exactness; uprightness.
Consonance. Harmony; consistency; agreement in tone.
Constructiveness. The faculty of constructing or building.
Contiguity. The state of being in proximity.
Corpuscles. Minute bodies found in the blood and other fluids.
Corrugator. A muscle that contracts or wrinkles the skin.
Credenciveness. Belief in hearsay.
Crystallized. Converted to the crystalline form.
Curvilinear. In a curved line.
Cyclopean. Vast; gigantic; terrific.

Deleterious. Having the quality of injuring or extinguishing life; destructive.
Denunciatory. Pointing out for punishment, accusing.
Diabolical. Infernal; impious; atrocious; devilish.
Diagrammatic. Relating to an outline, sketch, plan, or drawing.
Diaphaneity. The power of transmitting light; transparency.
Diaphragm. The muscles separating the cavity of the chest from that of the abdomen.

Dipsomania. A disease characterized by mania for indulgence in intoxicating drinks.
Dodecahedron. A solid having twelve equal faces.
Dogmas. Opinions; doctrinal formulas.
Dominant. Ruling; prevailing.
Dorsum. The back; the ridge of a hill.
Duodenum. The first or upper portion of the small intestines.
Dynamics. The science treating of forces.

Economy. Frugality; saving; prudent.
Effluvia. That which is breathed out or exhaled from bodies; odors, often unpleasant.
Elucidation. The act of explaining.
Embryotic. Pertaining to the earliest state of a developing organism.
Endogenous. Increasing by internal growth.
Entity. A real being, whether in thought or in fact; essence.
Epicureanism. Love of pleasure, especially the luxuries of the table.
Epilepsy. A disease attended with convulsions and unconsciousness; falling sickness.
Epithet. An adjective expressing some quality, attribute, or relation especially appropriate to a person or thing, often in an uncomplimentary sense.
Epitome. A brief summary; an abridgement.
Eradicate. To destroy at the roots; to extirpate.
Eschewed. Shunned; avoided.
Esoteric. Secret meaning or explanation known only to the select few; private.
Ethics. The science of human duty; morals.
Ethmoid bone. The bone in the nose through which the nerves of olfaction pass, and upon the surface of which they are mainly distributed.
Ethnology. The science which treats of the division of man into races.
Executiveness. Capacity for governing, or love of domination.
Exogenous. Shooting out from any part; growing by successive layers of tissue.

Firmness. Stability; perseverance; resolution; endurance.
Flexor. A muscle which, by contracting, bends the limb or part on which it acts.
Force. Power; strength.
Form. The capacity for remembering forms and shapes.
Friendship. Personal attachment and desire for affiliation, love of association, and cooperation.

Ganglia. Masses of nerve-tissue.
Garrulous. Talkative; loquacious.
Geometry. Science of quantity and mensuration of solids, surfaces, lines, and angles.
Globose. Round, spherical, or like a globe.
Glottis. The narrow opening between the vocal cords at the upper part of the larynx.
Graminivorous. Feeding or subsisting on grass or grains.
Gravitation. Tending to a centre; attraction of mass.
Gustatory. Pertaining to taste.

Herbivorous. Subsisting on herbs.
Hexagonal. Having six sides and six angles.
Homœopathic. A medical theory and practice founded exclusively on the principle of similars, as formulated by Hahnemann.
Homogeneous. Of the same kind or nature; consisting of similar parts.
Human Nature. Intuitive perception of human character by the form, size, color, motion, and expression of mankind.
Hydrocephalus. Watery effusion into or around the brain.
Hydrogen. The lightest gas known; an element which, with oxygen, makes water.
Hydrostatics. That science which investigates the problems presented by fluids, as water, mercury, etc.
Hygiene. A science which treats of the preservation of health.
Hypertrophy. The increase in size of a part from increased nutrition.
Hypothesis. A proposition or principle which is assumed for argument or taken for granted; theory; supposition.

Ideality. Imagination; taste; love; appreciation of the beautiful in art and nature.
Idiosyncrasy. A peculiarity of constitution and susceptibility.
Iliac. Relating to the ilium, or the largest bone of the pelvis.
Immutable. Incapable of being changed.
Incarcerated. Imprisoned; confined.
Increment. Increase; a growing in bulk; quantity; value.
Incus. One of the small bones of the ear.
Indices. Tables of reference.
Indissolubly. Not capable of being dissolved, melted, or liquefied, as by heat or water.
Inertia. Inertness; indisposition to move.
Infusoria. Microscopical animals found in liquids.
Inorganic. Not organic; not endowed with or subjected to organization.
Intricacy. State of being entangled; perplexity.
Introspection. A viewing of the inside and interior.
Intuition. A distinct inspection of the mind; an act of immediate knowledge, as in perception or consciousness; distinguished from "mediate knowledge," as in reasoning.
Iridescent. Exhibiting a play of colors, like those of the rainbow.
Irksome. Wearisome; tedious; tiresome; vexatious.

Juxtaposition. A placing, or being placed, in nearness.

Kidneys. Two oblong, bean-shaped glands situated in the abdomen, one on each side of the lumbar vertebræ, and surrounded with fatty tissue. They are the secretory organs of urine.

Lachrymal. Relating to or secreting tears.
Language. Human speech; the expression of ideas by the voice.
Larynx. The upper part of the trachea or windpipe, constituting the organ of voice.
Lexicographer. The author or compiler of a dictionary.
Literature. Learning; acquaintance with letters or books.
Lithium. One of the alkaline metals: it is the lightest metal known.
Liver. The largest gland of the body, situated just below the diaphragm: its office is to secrete the bile.
Locality. Capacity for recollecting localities, positions, directions, places once visited, and the relative position of objects to each other.
Luminosity. The quality of being luminous, bright, clear.
Lungs. Two associated organs of respiration in an air-breathing animal, surrounding the heart and filling the cavity of the thorax, or chest.

Malevolent. Wishing evil; malicious; hostile.
Malleable. Capable of extending by beating.
Malleus. The outermost of the chain of bones in the ear.
Mathematics. The science of quantity, or of magnitude and number.
Mediæval. Of, or relating to, the middle ages.
Mediocre. Of a middle quality; ordinary; commonplace.
Medulla. A fatty substance contained in the cavities of bones; marrow; the upper part of the spinal cord.
Mellifluous. Smooth; flowing as with honey.
Metaphysics. Philosophy of mind; the science which treats of thoughts and being.
Meteorologist. A person skilled in the science which treats of the atmosphere and its phenomena.
Miasmatic. Possessing the infectious qualities of noxious effluvia; malarial.

Microcosmos. A miniature society or institution.
Minimum. The least quantity; the sixtieth part of a drachm.
Mirthfulness. Love of amusement, humor, wit, ridicule, and jesting.
Misnomer. A wrong or inapplicable name.
Modesty. Sense of propriety; chastity; purity of thought and demeanor.
Mollusk. An invertebrate animal, having a soft, fleshy body.
Morbific. Causing disease.
Morphology. The science which describes the actual or ideal forms of the parts or organs in the structure of plants and animals.
Mundane. Belonging to the world.
Muscles. Organs of motion in animal bodies.
Music. The love, genius, and capacity for producing musical tones by the voice or upon an instrument; the science of harmony and relations of tones.
Myriads. An indefinitely large number.

Nerves. Organs conveying motor and sensory impressions.
Neuroses. Diseases of the nervous system.
Nictitating membrane. A thin membrane at the inner angle of a bird's eye, capable of being drawn across the ball beneath the lid; the third eyelid.
Nitrogen. A gaseous element, without taste, color, or odor, forming nearly four-fifths of common air, but incapable of supporting life.
Nomenclature. A list of names; the technical words in a science or language.
Nostalgia. Homesickness.
Nucleus. A body or centre about which anything is collected.

Obdurate. Callous; stubborn; hardened.
Observation. The act or power of observing or taking notice.
Occipito-frontalis. A muscle passing over the upper part of the cranium, which wrinkles the forehead.
Occult. Hidden from the eye or common understanding; invisible; unknown.
Octogenarian. A person eighty years of age.
Œsophagus. The gullet or membranous and muscular tube passing from the pharynx to the cardiac orifice of the stomach.
Olfactory. Having the function of smelling.
Opprobrious. Reproachful; contemptuous.
Optics. A treatise on the nature and properties of light.
Orbicularis. A muscle, circular in outline, surrounding the eye or the mouth.
Order. Precision in arrangement of ideas and articles.
Organ. A part of a living being exercising some function.
Osseous. Composed of bone; bony.

Palpebrarum. Relating to the eyelids.
Paroxysm. The fit or attack of a disease that occurs at intervals.
Pathognomonic. Characteristic of a disease.
Patriotism. Love of one's country, its people, scenery, laws, and institutions; regard for its glory and prosperity.
Paucity. Smallness of number; fewness.
Penuriousness. Meanness; parsimony; scantiness.
Percipient. Having the faculty of perception.
Perennial. Lasting or continuing without cessation.
Periphery. The border of a circle, or inclosure.
Peristaltic. A wavy or worm-like movement, especially observed in the intestines.
Permeate. To penetrate or pass through without causing displacement.
Persecution. To cause to suffer pain for opinion; to injure; to afflict.
Perspicacity. The state of being quick-sighted; acuteness of sight or discernment.
Perspicuity. The state of being clear.
Pertinent. Fitted or appropriate; concerning; belonging.
Perversion. A diverting from the proper use.
Pharmacopœia. An official publication describing the preparations of the several kinds of medicine used in any country.
Phenomenon. An appearance; anything visible.
Phrenology. The alleged science of telling character from formation of the skull.
Philologist. One versed in philology; the study of words.
Philoprogenitiveness. The love of offspring or of young children.
Phosphorus. An elementary, combustible substance, luminous in the dark.
Physicist. One versed in physics or natural science.
Physiology. A science which treats of the functions of the various organs of the body.
Pigment. A colored substance used for painting.
Plexus. Net-work of vessels and nerves.
Predacious. Living by prey; predatory.
Prescience. Knowledge of events prior to their occurrence.
Pneumativeness. The mental faculty which takes cognizance of air, gases, and vapors.
Pneumogastric. Pertaining to the lungs and stomach, especially to the nerves supplying these organs.
Polarity. Tendency to the pole.
Polyp. A simple form of animal organism.
Potassium. A bluish-white lustrous metal, having a strong affinity for oxygen, with which it forms potassa.
Proclivity. Inclination; propensity; tendency.
Prognathous. Having, or characterized by, projecting jaws.
Prognosis. The act, or art, of foretelling the course and event of a disease.
Prolific. Having the quality of generating; productive.
Prolixity. The state or quality of being prolix; diffuseness of language.
Protean. The faculty of readily assuming different shapes.
Prototype. An original or first model after which anything is copied.
Psychical. Pertaining to the human soul; relating to the living principle of man.
Pugnacity. Disposition to fight.
Pyriform. Pear-shaped.

Ratiocination. The act or process of reasoning or deducing conclusions from premises.
Receptive. Having the quality of receiving.
Resistance. Aggression; opposition; argument; endurance.
Resonance. A prolongation or increase of sound.
Reticence. The state of being reserved, or observing continued silence.
Reticulation. The state of being reticulated or net-like.
Retroussee. Turned up; elevated.

Salient. Prominent; leaping; bounding; jumping.
Sanativeness. Having the power to cure.
Sarcomatous. Of, or pertaining to, sarcoma; a tumor of fleshy consistence.
Sclerotic. The firm, white, outer coat of the eye.
Secretiveness. Reserve; reticence; policy; evasion, and watchfulness.
Self-esteem. Self-respect; true pride; dignity; decorum; self-reliance.
Self-will. Volition; spontaneous decision; self-government.
Sella turcica. Turkish saddle; hollow in sphenoid bone.
Sinistrality. The state or quality of being left-handed; wrong; perverse.
Size. Capacity for judging, by the eye, of size, height, depth, length, extent, etc.
Sodium. A yellowish-white metallic element, soft, like wax, and lighter than water.
Spectroscope. An optical instrument for forming and examining spectra.
Spherical. Rounded.
Sphincter. A circular muscle that contracts or shuts an orifice.

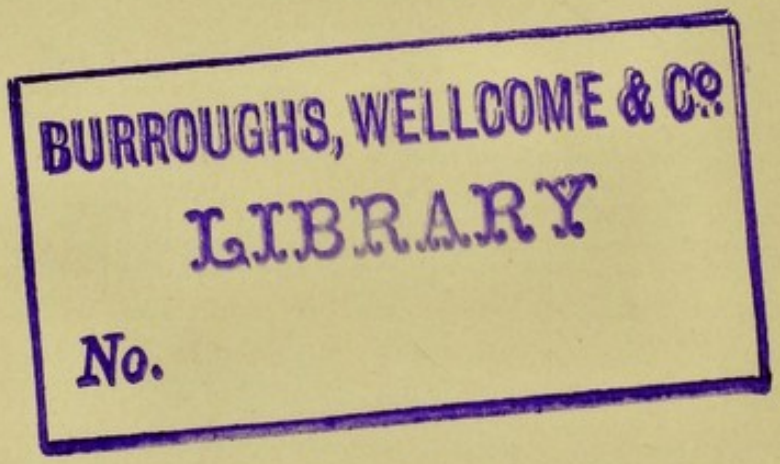
Stapes. The innermost of the small bones of the ear.
Statics. That branch of mechanics which treats of the equilibrium of forces, or relates to bodies as held at rest by the forces acting on them.
Stethoscope. A tube of metal, or other material, so constructed that, when applied to the human chest, the operator may hear the sounds within, and judge of the regular action or condition of the part examined.
Strontium. A malleable, metallic element, whose salts burn with a red color.
Sublimity. The sense of grandeur and magnificence.
Subtleties. The difficult or abstruse qualities of a subject.
Sulphur. A simple mineral substance of a yellow color, brittle, insoluble in water, easily fusible, and inflammatory.

Tangible. Perceptible by the touch.
Temerity. Unreasonable contempt of danger; rashness.
Temporo-maxillary. Pertaining to the junction of the temporal bone and maxilla.
Terraqueous. Consisting of land and water, as the globe or earth.
Tetragonal. Having four angles or sides.
Thoracic. Of, or pertaining to, the thorax or chest.
Time. Movement; periodicity; rhythm; harmony.
Typical. Of the nature of a type; emblematic.

Vaporization. The state of being converted into vapor.
Vein. A vessel in animal bodies which receives the blood from the capillaries and conveys it to the heart.
Veneration. Respect for all persons, places, and principles entitled to respect.
Vertebra. One of the bones of the back.
Vibrissæ. The stiff hairs in the nostrils; also the stiff, long-pointed bristles which grow from the upper lip and other parts of the head of animals.
Vindictiveness. The state or quality of being vindictive; revengeful.
Viscera. The contents of the great cavities of the body, as of the abdomen.
Viscid. Sticking or adhering, and having a ropy or glutinous consistency.
Vis medicatrix. Healing or preserving power.
Visual. Belonging or relating to sight.
Volition. The act of willing or choosing; the exercise of the will.

Weight. Natural perception of the laws of resistance, gravity, momentum, direction, balance, etc.

Zygomaticus. A muscle arising from the cheek-bone and inserted into the angle of the mouth.



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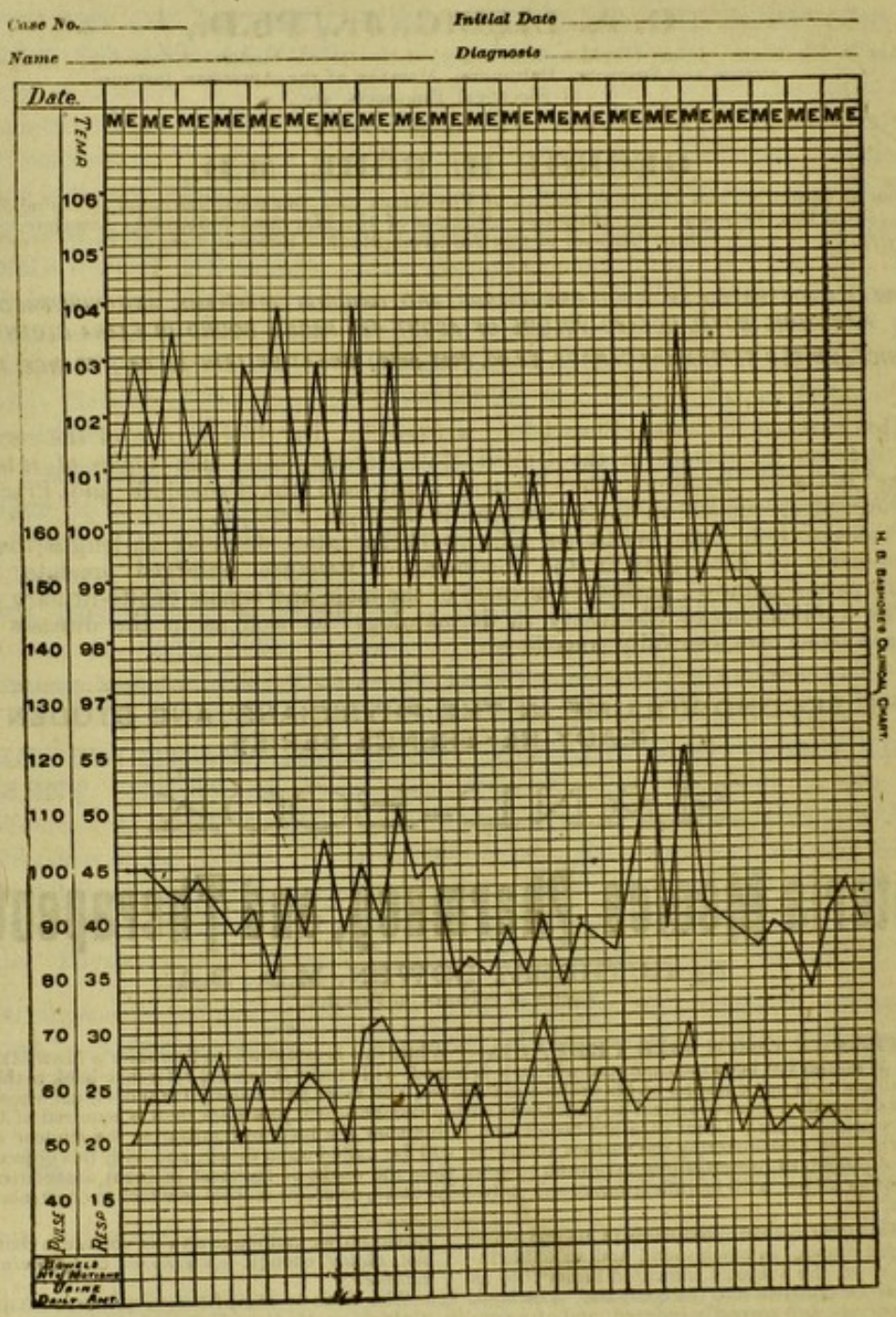
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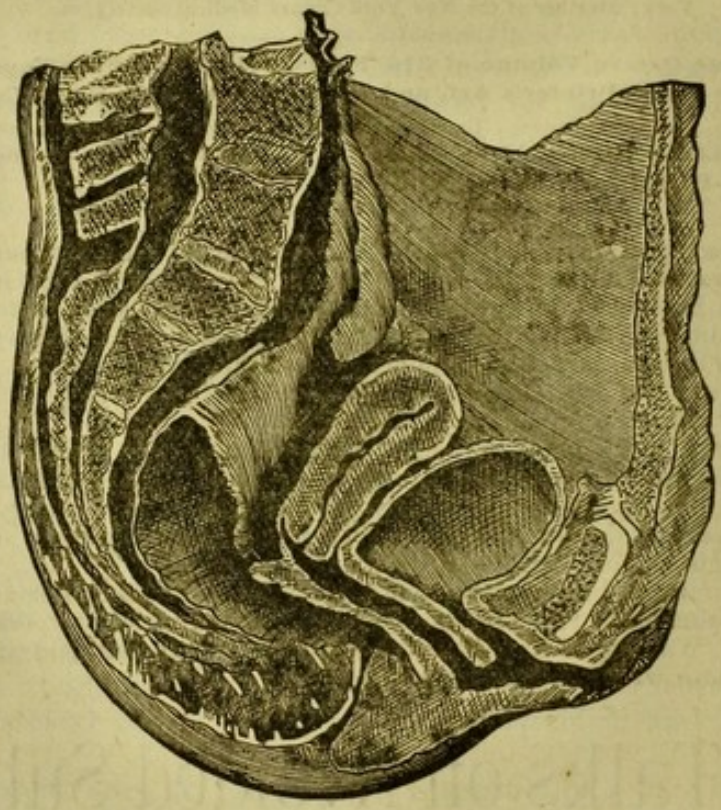
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—BY—

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Obstetrician to the Philadelphia Hospital, and Lecturer on Diseases of Women and Children; Surgeon to the Maternity Hospital; Physician to St. Joseph's Hospital; Fellow of the College of Physicians of Philadelphia, etc.,

—AND—

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—CONTENTS—

CHAPTER I.—The Methods of Study—Instruments—Fœtal Circulation—Congenital Diseases of the Heart—Malformations—Cyanosis.

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CHAPTER III.—Acute and Chronic Pericarditis.

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ACONITE LEAVES, ... 4 A.

Then by reference to 4 A in first column, you there find the Botanical or U. S. P. Name. On this Chart is also found a brief definition of the terms used, under the heading "Medicinal Properties."

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Alkaloids and Concentrations are tabulated with reference numbers for the Perpetual Clinical Index, giving Medicinal Properties, Minute Dose and Large Dose For example, ALKALOIDS AND CONCENTRATIONS:

A.	MEDICINAL PROPERTIES.	MINUTE DOSE.	LARGE DOSE.
(a) Aconitine.	Narcotic and Apyretic.	1-500 gr.	1-16 gr.

Following this, Preparations of the Pharmacopœia, each tabulated. For example:

TINCTURAL.

TINCTURA.	DRUG.	AMOUNT.	ALCOHOL.	DOSE.
* Aconiti.	{ Aconite. { Tartaric Acid, 60 † P.	5½ oz. to 24 gr.	100	1 to 3 drops.

* 60 Fineness of Powder as per U. S. P.
† P. Macerate 24 hours. Percolate, adding Menstruum to complete (1) pint tincture.

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NAME.	DOSES.	SPECIFIC GRAVITY.	SALT OR ALKALOID.	MEMORANDA.

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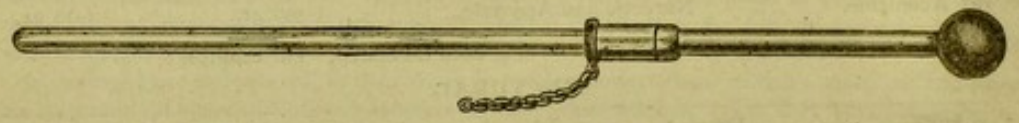


FIG. 18.—BALL ELECTRODE FOR ADMINISTERING FRANKLINIC SPARKS.

CONTENTS

CHAPTER I, Introductory; II, Apparatus required in gynecological applications of the galvanic current; III, Experiments illustrating the physical qualities of galvanic currents; IV, Action of concentrated galvanic currents on organized tissues; V, Intra-uterine galvano-chemical cauterization; VI, Operative details of pelvic electro-puncture; VII, The faradic current in gynecology; VIII, The franklinic current in gynecology; IX, Non-caustic vaginal, urethral, and rectal applications; X, General percutaneous applications in the treatment of nervous women; XI, The electrical treatment of fibroid tumors of the uterus; XII, The electrical treatment of uterine hemorrhage; XIII, The electrical treatment of subinvolution; XIV, The electrical treatment of chronic endometritis and chronic metritis; XV, The electrical treatment of chronic diseases of the uterus and appendages; XVI, Electrical treatment of pelvic pain; XVII, The electrical treatment of uterine displacements; XVIII, The electrical treatment of extra-uterine pregnancy; XIX, The electrical treatment of certain miscellaneous conditions; XX, The contra-indications and limitations to the use of strong currents.

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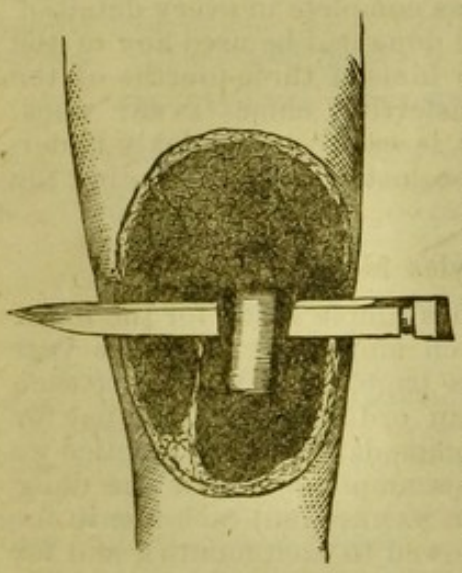
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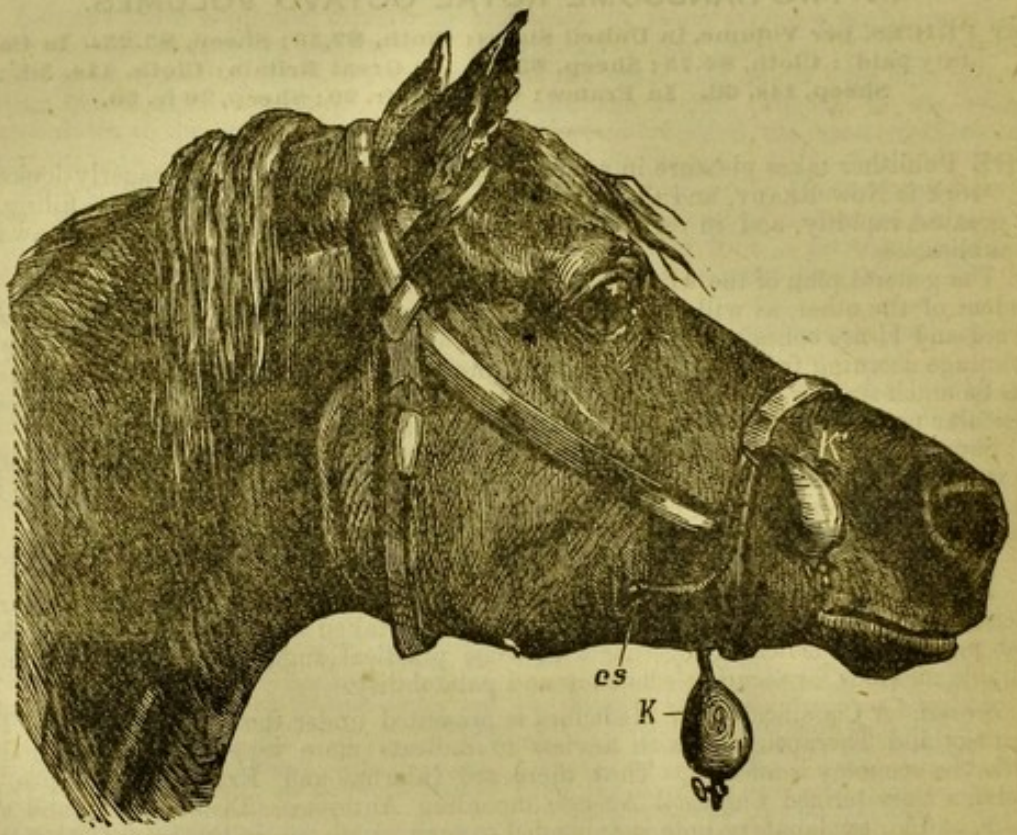


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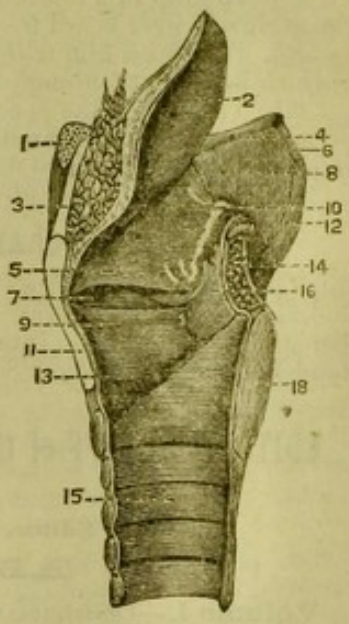
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Professor of the Anatomy and Physiology of the Nervous System in the New York Post-Graduate Medical School and Hospital; Professor of Nervous and Mental Diseases in the Medical Department of the University of Vermont, etc.; Author of "The Applied Anatomy of the Nervous System," "Practical Medical Anatomy," etc., etc.

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