

Hints toward physical perfection, or, The philosophy of human beauty : showing how to acquire and retain bodily symmetry, health, and vigor, secure long life, and avoid the infirmities and deformities of age / by D.H. Jacques.

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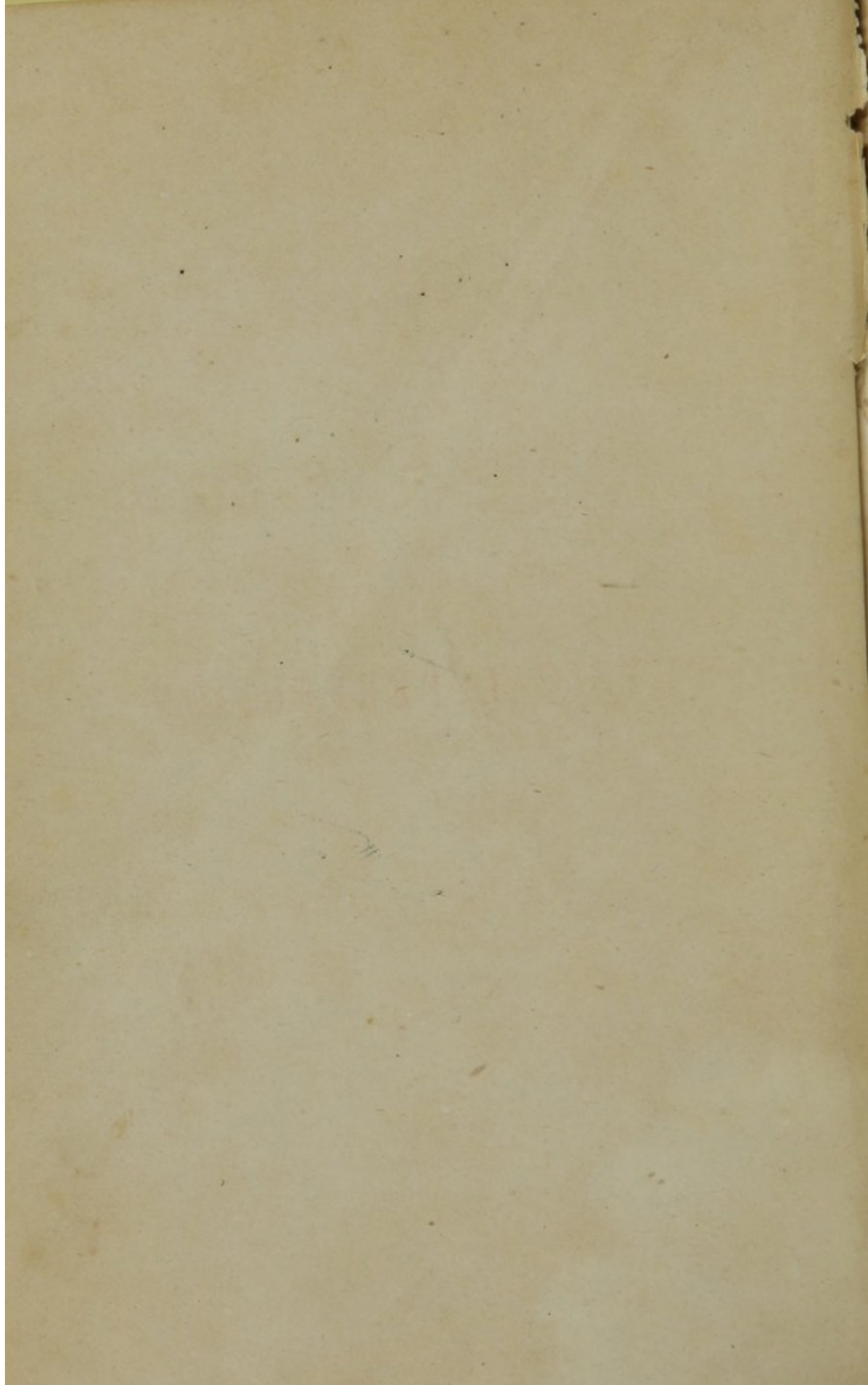
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HINTS TOWARD
PHYSICAL PERFECTION:

OR, THE

Philosophy of Human Beauty;

SHOWING HOW TO ACQUIRE AND RETAIN

BODILY SYMMETRY, HEALTH, AND VIGOR,

SECURE

LONG LIFE,

AND AVOID

THE INFIRMITIES AND DEFORMITIES OF AGE.

BY D. H. JACQUES.

IN

~~~~~  
The idea of beauty of person is synonymous with that of health and a perfect organization.

Prüchard.

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TO
THE BEAUTIFUL DAUGHTERS
OF HIS
NATIVE LAND—

The Wives and Maidens of America,

WHOM HE WOULD GLADLY TEACH

How to become more Beautiful still,

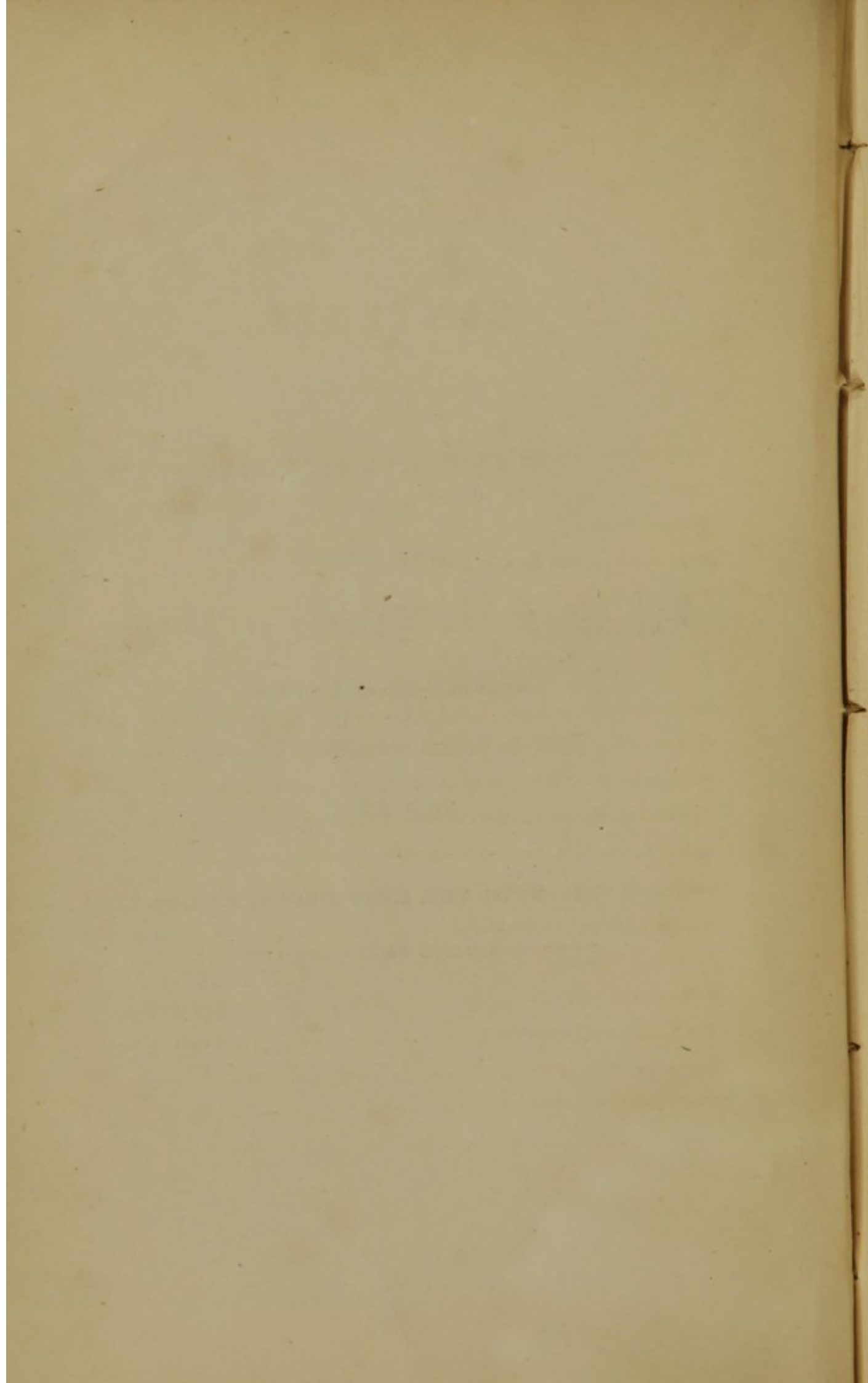
THIS BOOK

IS

DEDICATED, WITH THE MOST PROFOUND RESPECT,

BY THEIR DEVOTED FRIEND AND ADMIRER,

The Author.

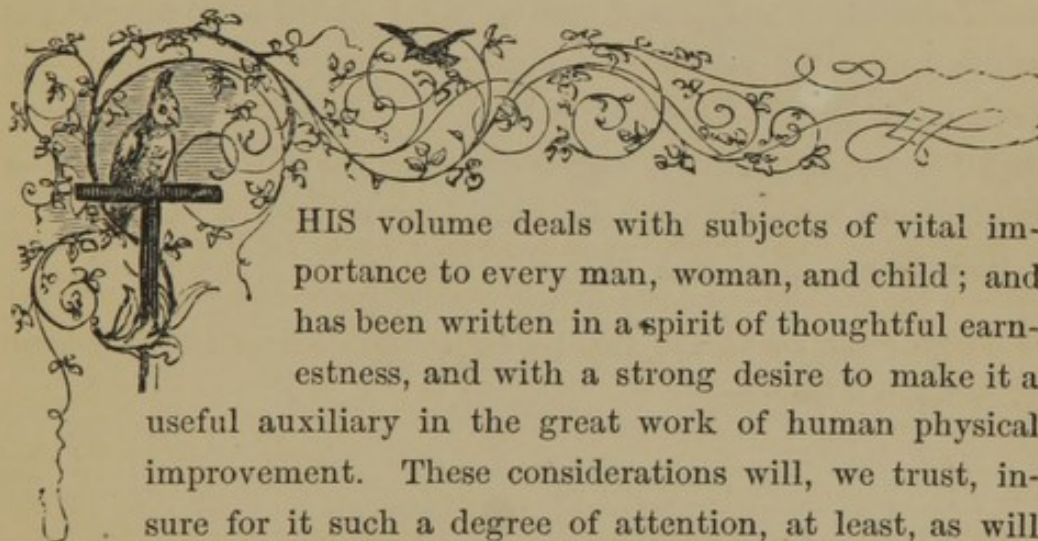


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La grandeur d'une civilisation, la physionomie d'un siècle, ne résident pas dans le bas prix des vêtements, dans la rapidité des trajets, mais dans l'état moral, physique, intellectuel, d'une population rayonnante de joie, de bonheur et de beauté — *Delaage*.

P R E F A C E .



HIS volume deals with subjects of vital importance to every man, woman, and child ; and has been written in a spirit of thoughtful earnestness, and with a strong desire to make it a useful auxiliary in the great work of human physical improvement. These considerations will, we trust, insure for it such a degree of attention, at least, as will enable the public to judge for itself with what measure of success our labors have been crowned.

We have aimed, not so much to unfold new principles or present novel facts, as to popularize those which scientific investigation had already established, and show, in some cases at least, more fully and clearly than had hitherto been done, their practical application.

Our plan has rendered it necessary for us to touch upon some topics usually ignored in popular works on physiology and hygiene, and to introduce, in illustration, outlines of the nude human figure ; but as there is nothing, we believe, either in the topics themselves, in our treatment of them, or in our illustrative drawings, at which even prudery itself can reasonably take offense, we deem no apology necessary. Our readers will hardly

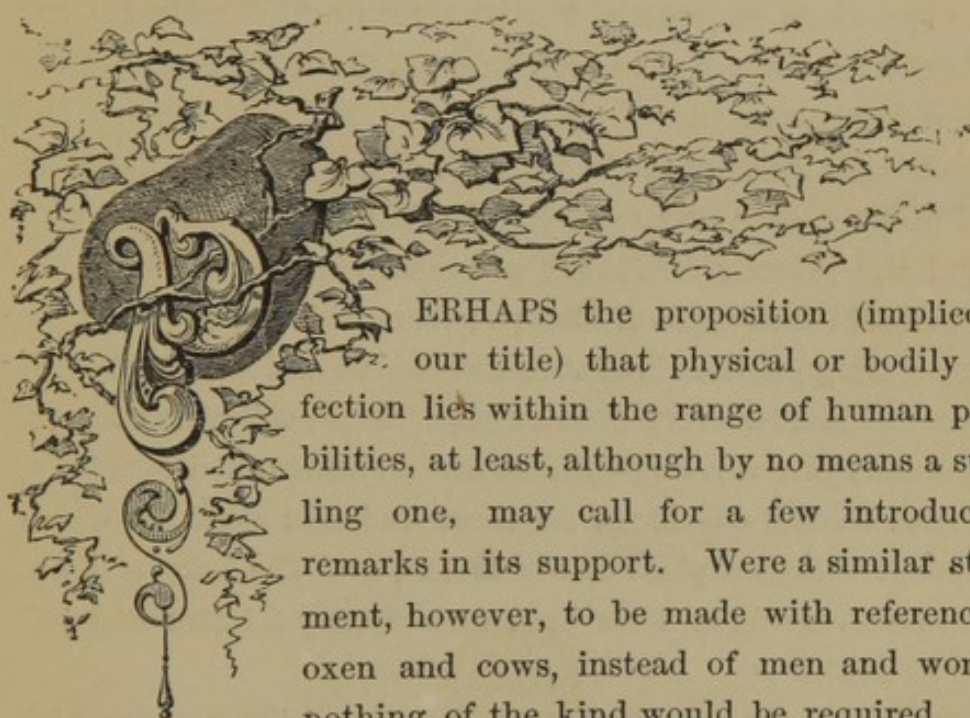
be found among those who are "ashamed of their bodies" or unwilling to be instructed with reference to their organs and functions.

We address ourself to all classes and to both sexes, but especially to woman, as she is the greatest sufferer from the evils at the removal of which we aim, and her condition has the most important bearing upon the welfare of future generations. To her we appeal, not only for her own sake, but for the sake of posterity, to give her powerful aid to the cause of physical regeneration (which is, at the same time, the cause of mental, moral, and social elevation), and to lead man with her up the ascending slopes which lead to the temple of Health and Beauty. If we shall succeed, even in the humblest degree, in awakening her interest, enlisting her sympathies, and impressing her with a sense of her dangers and her duties, we shall not have labored in vain.

NEW YORK, *March 21st*, 1859.



INTRODUCTION.



PERHAPS the proposition (implied in our title) that physical or bodily perfection lies within the range of human possibilities, at least, although by no means a startling one, may call for a few introductory remarks in its support. Were a similar statement, however, to be made with reference to oxen and cows, instead of men and women, nothing of the kind would be required. The reason is obvious. We have hitherto devoted our attention mainly to the improvement of the various species of animals and vegetables which have proved useful or agreeable to us, to the almost total neglect of our own nobler race. Experience has taught us that the former are completely under our control—that we can so order their propagation and development as to modify their shapes, sizes, colors, and other qualities at will. If we have not yet placed them absolutely beyond the reach of improvement, they are at least so nearly perfect that the additional steps required seem not only possible, but easy.

We have remodeled the horse, for instance, a hundred times to

suit our convenience and pleasure, and to adapt him to the various uses for which he is required. For our heavy work at the plow and in the dray, we have added thickness to his bones and muscles, strength to his limbs, and stoutness to his whole frame; for the carriage and the saddle, we have imparted grace, symmetry, and a more delicately molded form; and for the sports of the turf we have given lightness, length of limb, and a hound-like slenderness. In the same way we have multiplied varieties of the dog, the sheep, the barn-yard fowl, and the pigeon, changing not merely the forms and colors, but also, to a considerable extent, the natural instincts of the animals on which we have exerted our transforming power.

The changes wrought in the products of the vegetable kingdom are, if possible, even more wonderful. The noble Newtown pippin and the princely Bellflower are descended from the small, hard, and acid crab-apple of Europe; from which single stock we have now many thousands of varieties—sweet and sour, early and late, and of almost every possible size, shape, color, and flavor. The delicious pear was originally an austere and innutritious fruit, cultivation having developed all those desirable qualities which now give it so high a place on our tables; and the juicy and nutritious peach is said to have been once merely a bitter and poisonous almond.

Every pomologist knows that by the use of the means which science and the arts have placed within his reach, he can, as a general rule, just as easily and surely have good fruit of the various sorts cultivated as that of an inferior quality. By transplanting, grafting, adaptation of soil and manure, and the proper method of cultivation, he secures the desired results. Having wrested from Nature the secrets of her generative and life-directing forces, he assumes, for his own pleasure or profit, the entire control of her most complicated processes. Like Guy, the wise, for whom

The zephyr in the garden rolled
From plum-trees vegetable gold,

he seems, so wonderful are the results of his manipulations, to

Work on his Maker's own receipt,
And make each soil and element
Steward of stipend and of rent.

These facts would seem incredible, were we less familiar with them ; but, as it is, we look upon them as matters of course, and no more astonishing than the daily rising and setting of the sun, or the regular succession of the seasons.

When, however, one speaks of the physical improvement of the human race in any other than the most general terms, he seems, to a majority of minds, to have left the sphere of practical realities, and to be indulging in fanciful speculations. Having tried our skill upon horses and dogs, and upon apples and peaches, we can speak with confidence of our power over them. It seems no great exploit to give a pear the desired flavor, to stripe a tulip to our liking, or to impart the hue we fancy to a rose ; but to mold the manly or the womanly form into symmetry and grace, to tint the cheeks and lips with Nature's own colors, or to give to the hair or beard the silky softness and wavy undulations or spiral twinings which the highest beauty demands, is deemed too far beyond the reach of human science and skill to be seriously proposed.

The general principle that man, as an organized being, is subject to the same laws that govern all other organized beings, must, however, be admitted by all ; and every one who has taken the trouble to inform himself upon the subject knows that upon the nature of the germ from which he has sprung, the quality and quantity of the nutriment received, and the character of the external influences and culture brought to bear upon him, depends the physical character of the human being as well as of the horse or the dog. These truths have been announced and reiterated, especially during the last quarter of a century, by the leaders of human progress in the departments of physiology and phrenology —by Combe, Caldwell, Cabanis. Broussais, Delaage, the Fowlers

and others, but they have not yet become a part of the living faith of the world. Only here and there an individual constantly acts upon them, as upon other self-evident or demonstrated truths.

Examples, however, illustrating the improvability of man are not wanting. History and observation both furnish them. The ancient Greeks demonstrated the power of direct physical culture, and the influence of the fine arts, and an esthetic worship in developing a high order of personal beauty and vigor; and the modern Turks and Persians furnish noted instances of the transformations effected by crossings with a superior race, and the selection for many generations of mothers of great physical beauty.

But there are persons, even in this last half of the nineteenth century, who look upon it as little less than blasphemy to talk of improving, to say nothing of perfecting, man—the noblest work of God, and made in his image. “Was he not created perfect in the beginning?” they will ask. The question is irrelevant. It is enough for us to point to the fact, too evident to be disputed, that he is very far from perfection at present, whatever may have been his original state. We may, however, safely admit his pristine perfection. The “fall of man,” in a physiological sense, whatever may be said of the theological dogma so termed, is no myth. Our multiplied deformities and diseases are sufficient evidence of its truth. The horse and the sheep, the peach and the plum, as they flourished under the genial skies of the primal paradise, may also have been perfect, each in its way; but if so, they shared in the “fall.” We have been engaged in restoring their lost virtues and beauties, till, for them, earth has become, at last, almost a paradise regained. Can it be wrong to attempt to do the same for man? Should we not, on the contrary, find ourselves acting in co-operation with God himself, all of whose laws, whether revealed through inspired men or written in the great volume of Nature, indicate perfection as the ultimate destiny of the race? We are zealously engaged, through the instrumentalities of science and religion in developing and molding the intel-

lect and the affections ; but these, in the present stage of our existence, must manifest themselves through the physical organization ; and, while this is defective, their action must be obstructed and their manifestations imperfect. It is only through a healthy and shapely body that a sound and harmoniously developed mind can operate with perfect freedom and efficiency. It is also true, as we shall show in the proper place, that the natural action of the symmetrically developed mind tends to the reproduction of its own symmetry in the physical organization of which it makes use, and that therefore in bringing external influences to bear upon the latter for its improvement, we but second the efforts of the indwelling intelligence.

We find man, at present, weak, diseased, and if not absolutely ugly, at least far below our ideal standards of beauty, both in form and in face. Can he be restored to his primeval vigor, symmetry, and grace ? and, if so, how ?

It is certainly time for us to ask these questions and to set ourselves earnestly about the practical solution of the problems they involve. The results of our experiments upon the lower animals, and upon the products of the vegetable kingdom, point out the path to be pursued. We have only to modify our processes to adapt them to a change in some of the conditions under which we must work.

It may be urged here that we have not the same control over the conditions on which improvement depends, as in the case of the lower and subject animals. With them we go back to a period previous to birth, and determine the circumstances under which conception and gestation shall take place. We can not do this, it is true, except in our own persons, in dealing with the human subject ; but we sway intelligent beings not less surely in another way—through their intelligence. We have only to impress the facts and principles involved so clearly and deeply upon the public mind that they shall become a part of the established faith of the day, and our object is more than half accomplished. The work becomes thenceforth both an individual and a collective

concern, and is zealously pushed forward at all points. Progress in this department must be gradual, but each step in the right direction secures an obvious and permanent benefit.

We recognize fully the importance of the germinal principle and of the original direction given to the vital forces in the reproduction of the human being, and have devoted due attention to that point in the succeeding chapters ; but we have given special prominence to the equally momentous fact, that *the already existing and even matured physical organization may, under certain conditions, and by the use of perfectly legitimate means, be modified, both in its internal conditions and in its external forms, to an almost unlimited extent.* The former branch of the subject has been very fully and quite satisfactorily elucidated by other writers, and especially by O. S. Fowler, in his various physiological and phrenological works, and by Alexander Walker, in "Intermarriage," while the latter, though the need for its thorough exposition is equally pressing, has received, in some of its bearings at least, very little attention.

The human form is plastic. Until age has hardened its parts, it is but an image of soft clay, which we may mold at will ; and we have explained and illustrated more clearly and fully than has hitherto been done, the means and methods by which we may most effectually and salutarily act upon it—shown how we may impart fresh vitality to the languid frame ; give strength to the weak limb ; substitute grace of motion for awkwardness ; remodel the ill-formed body and homely features into symmetry and beauty, and postpone indefinitely the infirmities and deformities of age.

We might quote a thousand facts to show the importance and urgency of the work we have undertaken. We might point to the multitude of puny and deformed children ; to the records of infant mortality ;* to the numbers who crowd our asylums for the

* One fourth of those who are born die previous to the age of seven years, and one half before reaching seventeen.

blind, the deaf and dumb, and the insane ; to the almost universal ill health which sustains such an army of physicians, and renders so many hospitals and water-cure resorts necessary ; to the general lack of physical vigor in both sexes, and especially in woman ;* and to the scarcity of even tolerably beautiful forms and faces ; but these facts will suggest themselves, and need not be set forth in detail.

A popular journalist says : "The desire for beauty, or at least completeness and comeliness of form, is felt wherever a human heart palpitates. 'Am I engaging?' is the incessant, but often unrealized question of the maiden's bosom. 'Am I commanding?' the unexpressed aspiration of the boy. Beauty or strength, casketed in a rounded, complete, and admirable *physique*, free from excess or deficiency of proportions, stands among the highest ambitions of the woman or the man. *A perfect form*—it is the universal vanity ; and 'How well you are looking !' is everywhere among the most pleasing of compliments.

"We all want to be physically perfect, because we want that *our* presence should awaken attention, deference, perhaps admiration ; and because, born inevitably to love, we would be capable of awakening love in others. The admiration we bestow on a perfect form when by chance we meet with one, is a feeling that all know at some time in life. It is a feeling akin to worship—one in which the head has no part or prerogative. We reverence instinctively the largeness of grace, and of the perfection of motion, life, and capability of which we perceive that our nature is susceptible."†

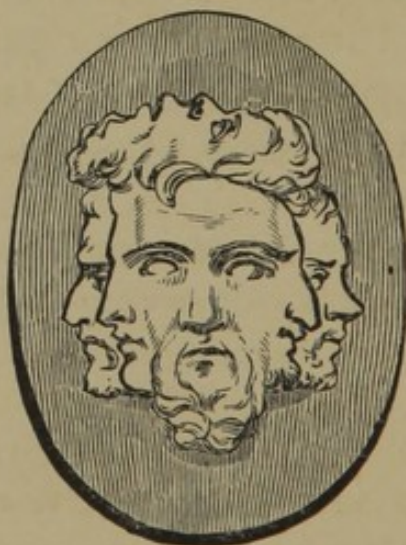
If the simple announcement of our subject do not predispose the reader to a favorable hearing, we can hardly hope to secure it

* Miss Catharine E. Beecher, in her "Letters to the People," says : "I am not able to recall, in my immense circle of friends and acquaintances all over the Union, so many as ten married ladies, born in this century and in this country, who are perfectly sound, healthy, and vigorous."

† *Life Illustrated.*

by urging any extraneous reasons. Who does not desire to be healthy, strong, graceful, and beautiful? and who, desiring these qualities, can need other inducements to give his attention to any one who shall honestly and earnestly essay, in however imperfect a manner, to instruct him in reference to the means of obtaining them?

The race of prudes, however, is not yet extinct, and there may possibly be a few among the many thousands who will read so far as this, whose squeamishness will utterly condemn the popular treatment of some of the most vital questions involved in our subject, and in whose presence the human form must never be mentioned except in the conventional language of the tailor and the dressmaker. To such persons, if any such there be, we have only to express our regret that we must part company, and to advise them to read no further. There will still remain an audience sufficiently large to satisfy our highest ambition, to whom we may talk, in a reverent spirit and in chaste and fitting language, on *any* subject, a discussion of which the occasion may require, without doing violence to those instinctive feelings of genuine delicacy and true modesty, for which no one can entertain a more profound respect than we.

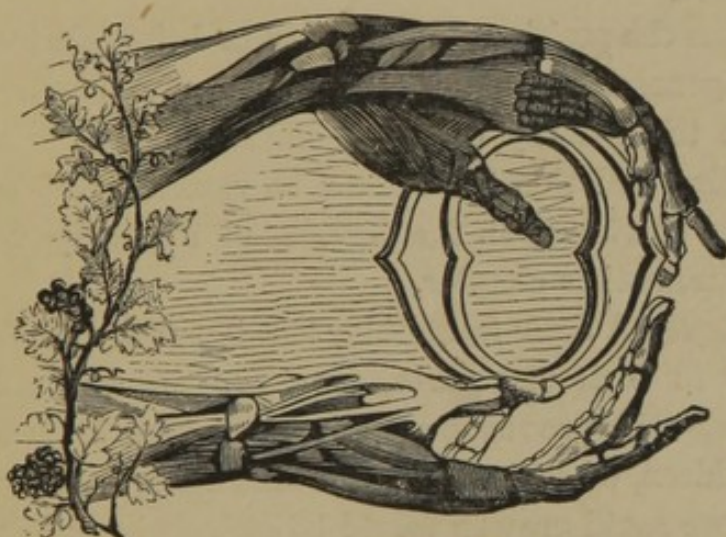


PHYSICAL PERFECTION.

I.

STRUCTURE OF THE HUMAN BODY.

La connaissance de la structure et des propriétés du corps humain doit diriger l'étude des divers phénomènes de la vie.—*Cabanis*.



OUR progress in the study of the laws of life and development, as manifested in the human form, will be greatly facilitated by a thorough knowledge of its curious and wonderful mechanism;

and we shall here devote a few pages to the presentation of such an outline of a natural system of anatomy, as will serve our purpose, and enable the reader the more readily to comprehend the teachings set forth in the chapters which follow.

The human body consists of three grand classes or systems of organs, each of which has its special function in the general economy. We will denominate them:

1. The Motive or Mechanical System,
2. The Vital or Nutritive System, and—
3. The Mental or Nervous System.

These three systems, each naturally subdividing into several

branches, include all the organs, and perform all the complicated functions of the physical man.

I.—THE MOTIVE SYSTEM.

The motive or mechanical system consists of three sets of organs, forming, in combination, an apparatus of *levers* through which locomotion and all the larger movements of the body are effected. They are:

1. The Bones,
2. The Ligaments, and—
3. The Muscles.

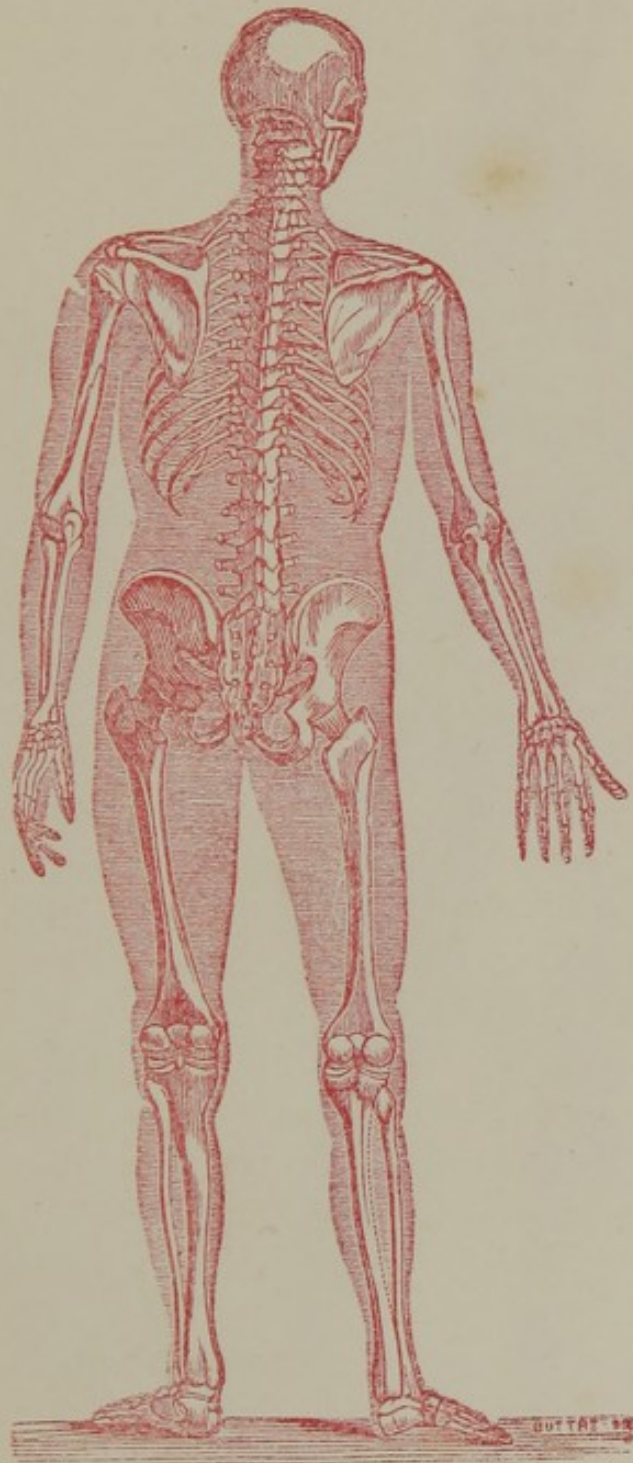
1. *The Bones*.—The bones form the framework of the body. They are primarily organs of support, sustaining and giving solidity to every part.

Plate I. illustrates the position of the bones and the relation they bear to the general system. The proportion, however, of the framework to its fleshy covering differs materially in different individuals; and this fact should be remembered, as it has an important bearing upon the doctrine of the temperaments, laid down in another chapter.

In the earlier stages of their formation, the bones are cartilaginous or gristly in their structures, very flexible, and not easily broken. This wise provision of all-wise Nature is illustrated in young children, whose innumerable falls never result in a fracture, and whose rapid growth would be entirely inconsistent with a hardened osseous frame. We may note here, too, in passing, that the legs of infants are often made permanently crooked by being required, under the injudicious training of unwisely ambitious parents, to support prematurely the weight of the body. Little is gained by interfering with Nature, in such attempts to hasten her processes.

In due time the bones, receiving deposits of lime, phosphorus, and other earthy materials, gradually harden, and at their maturity are composed of nearly equal proportions of animal and mineral matter. In old age the earthy matter often greatly predominates, rendering them very brittle.

PLATE I.



THE HUMAN FRAMEWORK.

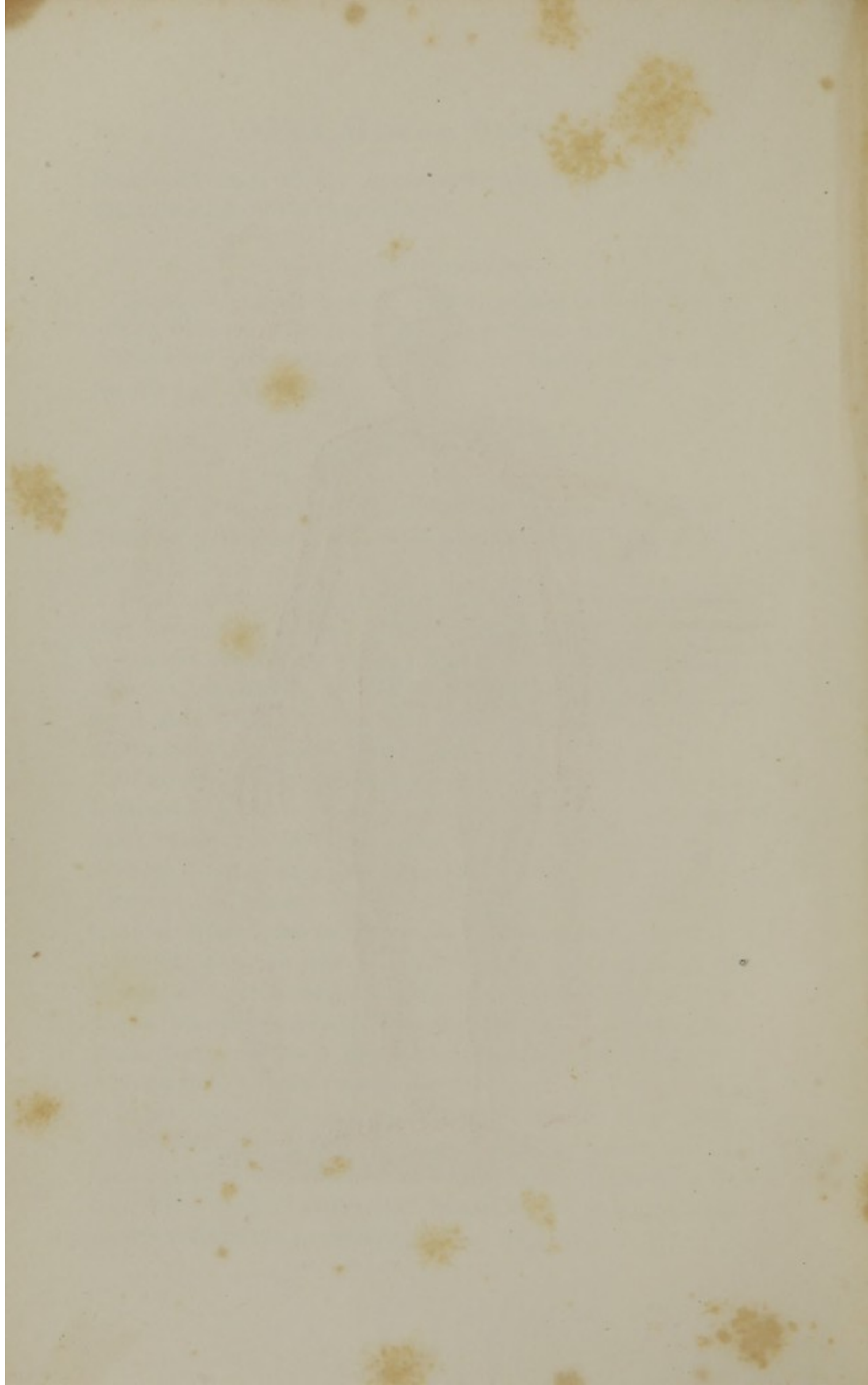
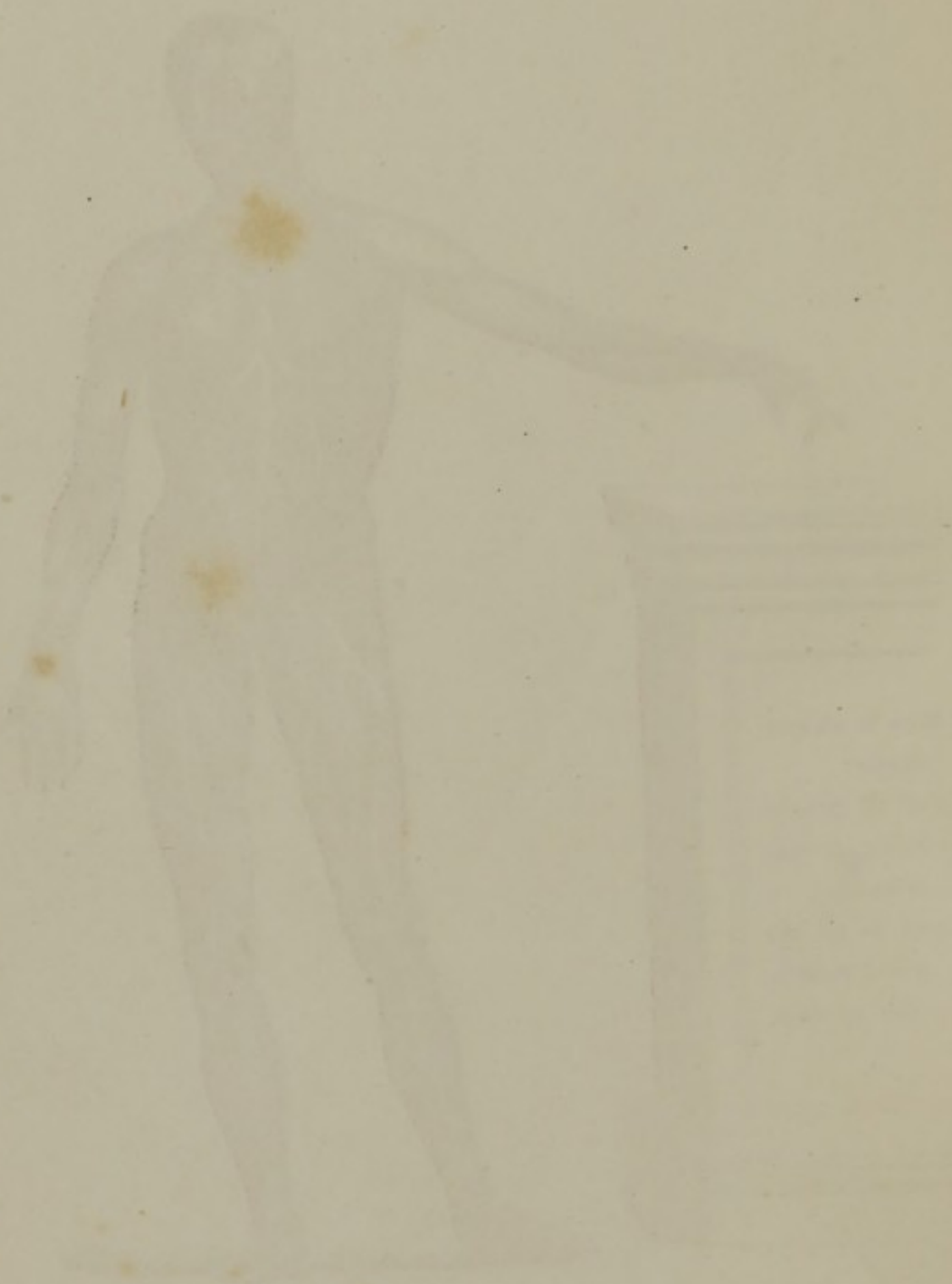


PLATE II.



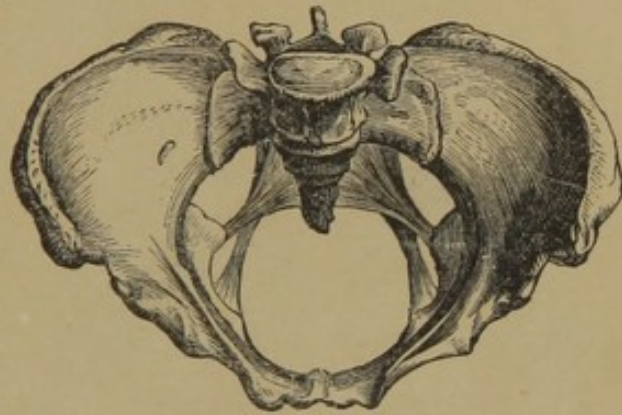
MAN is all sym-
metry;
Full of propor-
tions, one limb
to another,
And to all the
world besides.
—Geo. Herbert.

THE MUSCLES

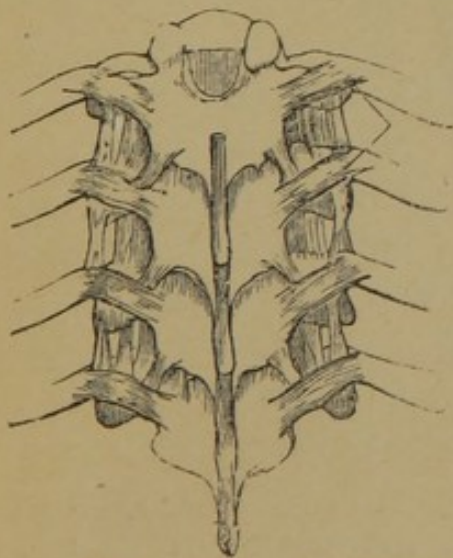


Like other parts of the body, the bones have a system of blood-vessels and nerves, and, like the other parts, are subject to growth and decay, though their changes are less rapid than those of the softer portions. Their minute structure is very curious and beautiful.

The genius and skill of man has never yet succeeded in constructing a machine so beautiful in its perfect adaptation to its uses as the human skeleton; nor can the wisest of mortals suggest an improvement in its structure. See what noble twin columns, resting upon the firm, but flexible bases of the feet, support, in its proper position, the grand arch of the pelvis! And the pelvis itself, how admirably adapted to its various functions! While it has all the necessary



THE PELVIS.

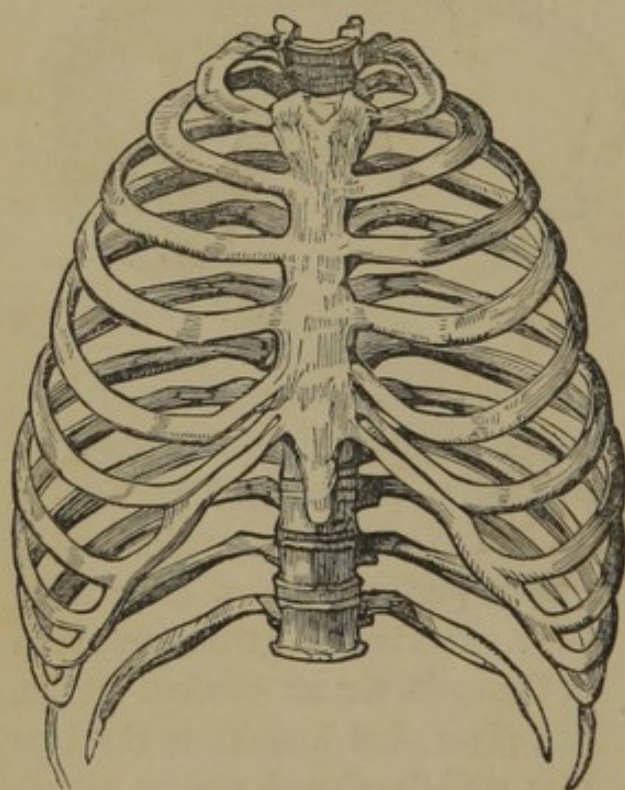


A VERTEBRAL JOINT.

strength to support the weight of the body, which rests upon it, it is not less perfectly adapted to protect and sustain the vital organs situated within it, and to afford them room for the proper performance of their functions. It is larger in the female than in the male, for an obvious reason, and gives that breadth to the hips of a well-developed woman which adds so much to the beauty of her form. The grand central pillar, the spinal column, on whose capital rests that sublime "dome of thought," the cranium, has its base on the sacrum, a wedge-like bone which forms the keystone of the pelvic arch. The spinal or vertebral column itself is one of the most wonderful of Nature's wonderful

works. It is composed of twenty-four bones, called vertebræ, linked firmly together by a complicated system of ligaments, giving it immense strength, and, at the same time, great flexibility. It is pierced by what is called the vertebral canal, through which passes the spinal cord (*medulla spinalis*), of which we shall have more to say in another place. The spinal column is not straight, since that form would have rendered it more liable to be broken, but forming a double curve, readily yields a little to any unusual pressure.

Attached to the dorsal or back vertebræ by strong ligaments,



THE THORAX.

and bending forward so as to form the grand cavity of the thorax, are the twenty-four ribs, twelve on each side. The uppermost seven on each side are called the true ribs, because each of them is connected by a separate cartilage directly with the sternum or breast-bone; while the lower five are called false, because one or two of them are loose at the anterior extremity, and the cartilages of the rest run into each

other instead of being separately prolonged to the breast-bone.

The arms are loosely attached to the body by means of movable shoulder-blades, which are kept in place by the collar-bone and the strong muscles which overlay them.

Bones are of various shapes—long, as in the arm and leg; cuboidal or six-sided, as in the wrist and instep; and flat, as in the cranium and the shoulder-blades. The larger ones are hollow, which property gives them more strength in proportion

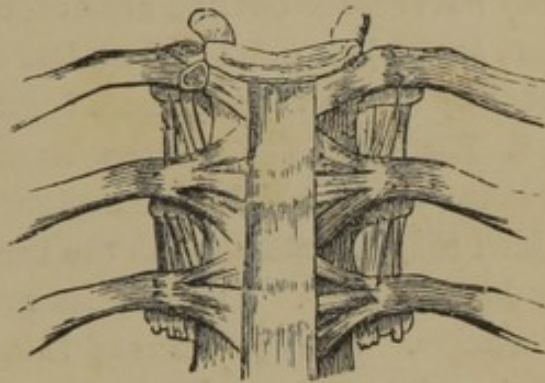
to weight than could otherwise have been obtained, and also secures a permanent storehouse for nutriment in the form of marrow, which seems to be set aside as a reserved fund for the sustenance of the body when all other supplies fail.

The connections of the bones, called joints, are very beautiful contrivances, which no mechanic or artist could improve. These connections are of various kinds—by sutures or a sort of dovetailing, by cartilaginous attachments, and by movable joints. There are hinge joints, allowing only a forward and backward movement, and ball and socket joints, which allow the bone to move in all directions.

2. *The Ligaments.*—The ligaments have been incidentally mentioned already. They help to form the joints, and are properly called organs of connection.

Their strength and toughness is so great, that it is hardly possible, by means of any ordinary force, to tear them asunder.

“It is wonderful,” a late medical writer says, “to see how admirably the ligaments are arranged to answer the purposes for which they are intended! Where the ends of two bones meet, as in some of the joints, ligaments pass across from one to the other; and so firm are they in their structure, that they never allow the joint to become loose, however much it may be exercised. Some of the ligaments are arranged so as to keep the joint from bending the wrong way. The knee joint, which, were it not for its numerous ligaments, would be altogether unfit for the important offices it



VERTEBRAL LIGAMENTS.



KNEE JOINT.

fulfills, has in it two of these bands, crossing each other like

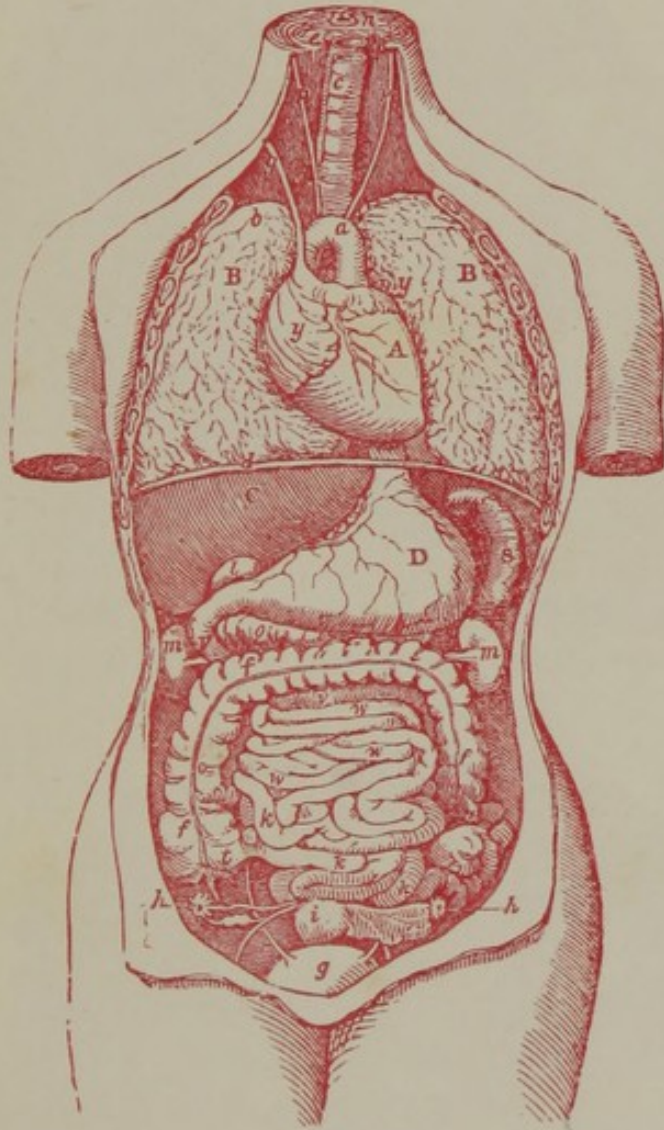
the legs of a saw-horse, in such a manner as to prevent the leg from being carried too far backward or forward; and to guard against dislocations sideways, strong lateral bands are placed on each side of the joint. Not only the large, but the small bones of the body, likewise, are bound together in this way as firmly as if they were secured by clasps of steel. Add to all this, the ligaments, like the bones themselves, are nearly insensible, being of a white and shining substance."

The provision for keeping the joints constantly oiled, so that they never wear out and are never injured in any way by friction, is not less wonderful or less efficacious than the arrangement by which they are held together.

3. *The Muscles*.—The muscles are simply bundles of red flesh, growing tougher and more compact toward the extremities by which they are attached to the bone, and terminating in white tendons or cords. The muscles are, *par excellence*, the organs of motion. It is by means of them that the indwelling mind, telegraphing its mandates through the appropriate nerves, effects any desired movement, by causing a contraction of the fibers of which they are composed; thus drawing the parts to which they are attached toward each other. This contractile power is very great—so great, in fact, that it may even destroy the cohesion of the parts, or tear the tendon from the bone. There are twenty-seven distinct muscles in the human body, divided into two classes—voluntary and involuntary; the former acting in obedience to the will, and the latter independently of it. Those by means of which we move the limbs belong to the first class, and those which keep the heart in motion and carry on the vital processes, while we sleep as well as when we are awake, to the second. They present a great variety of forms, and are of all lengths, from a fourth of an inch, as in some of the muscles of the larynx, to three feet, as in the sartorius or tailor's muscle, which is used in crossing the legs. Plate II. gives a very good representation of the muscles, so far as they appear in a front view.

The muscular system, in its development and organic con-

PLATE III.



THE VITAL SYSTEM.

A. Heart. B. Lungs. C. Liver. D. Stomach, below which are seen the large and small intestines. S. Spleen. *m.* Kidneys. *g.* Bladder. *d.* Diaphragm, which forms the partition between the thorax and the abdomen. *h.* Ovaries. *i.* Uterus.

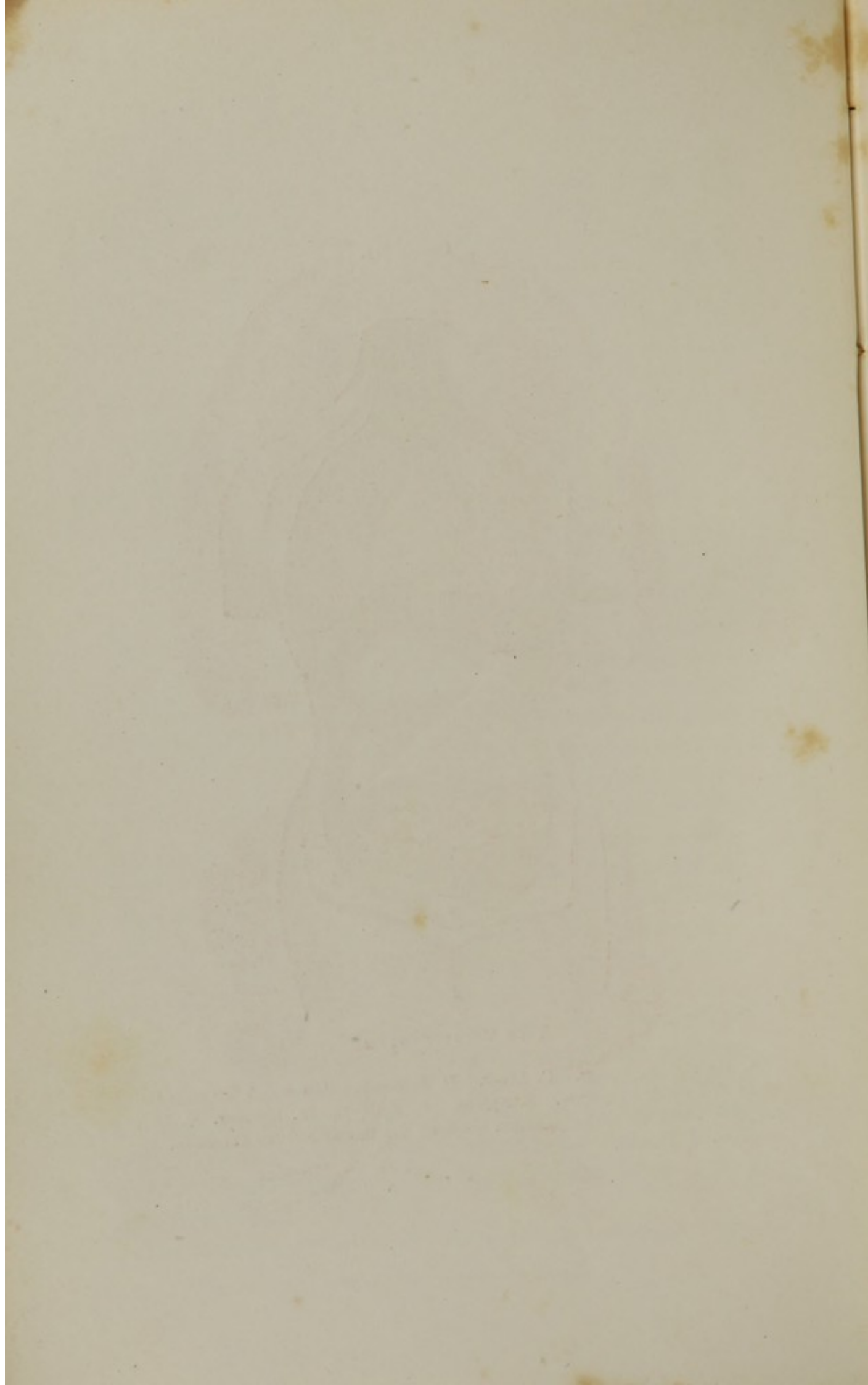


PLATE IV.

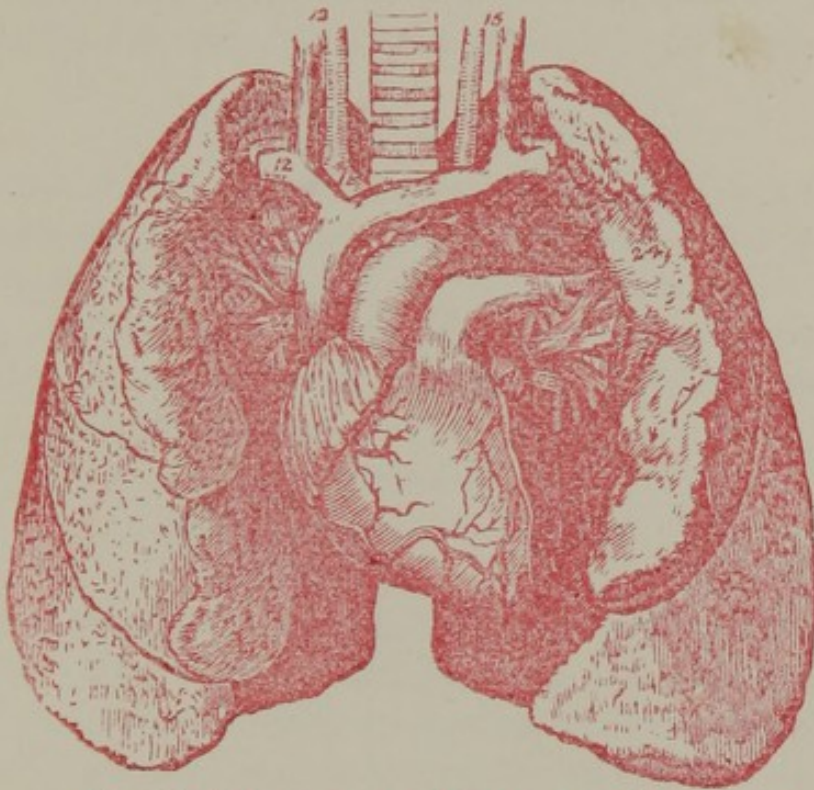


Fig. 1—VIEW OF THE HEART AND LUNGS.

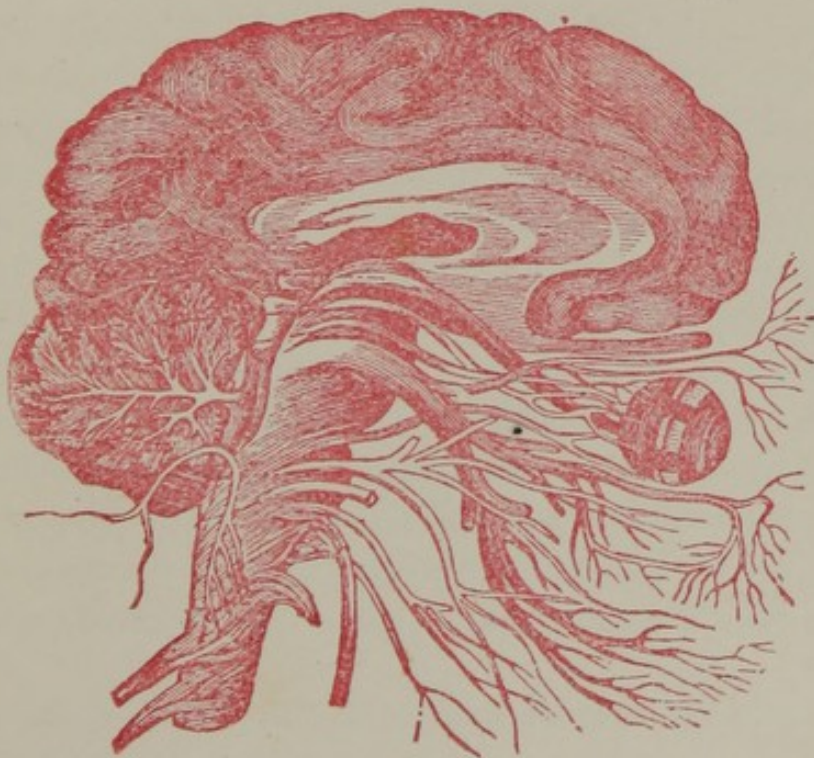
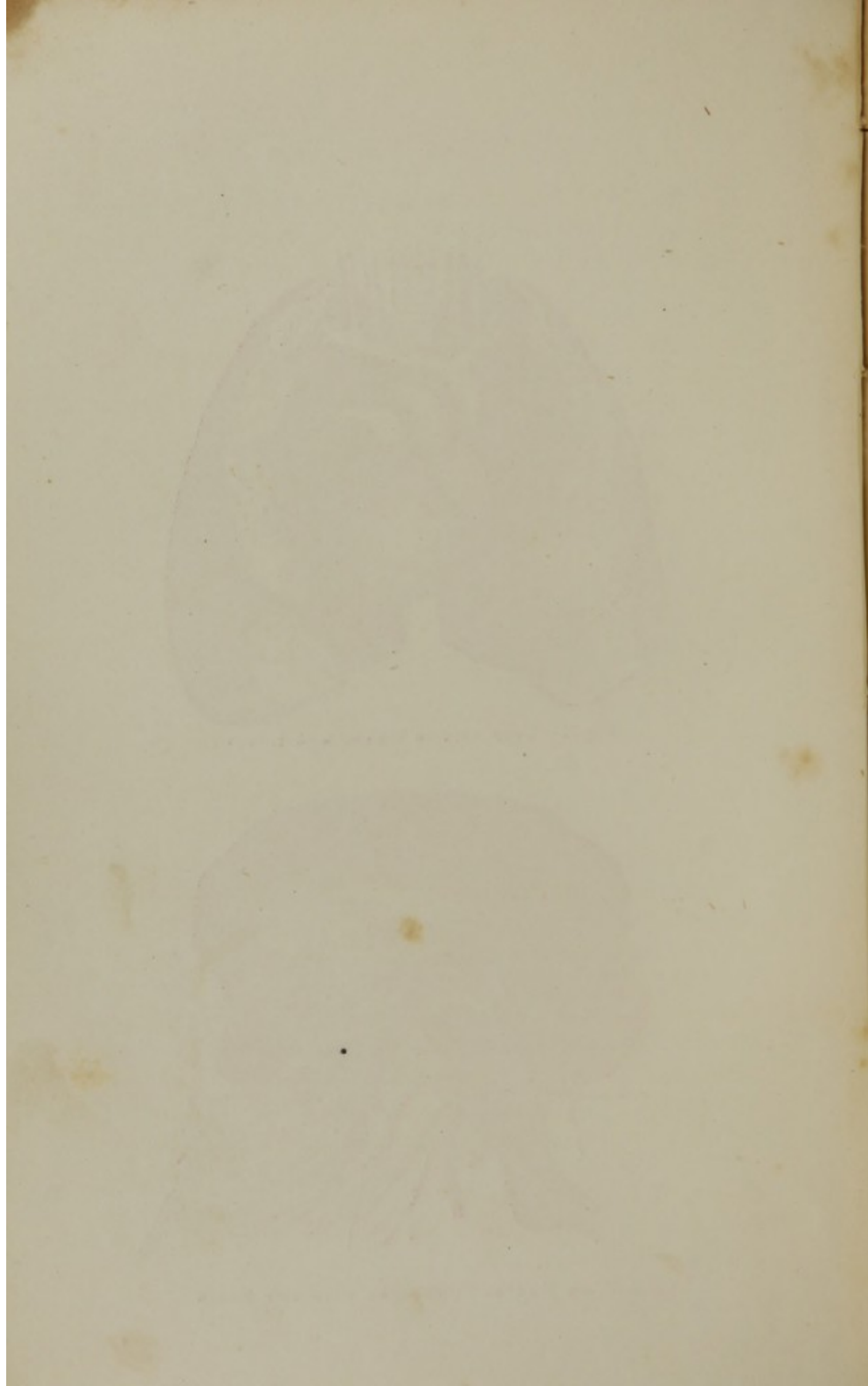


Fig. 2—THE NERVES CONNECTED WITH THE BRAIN



dition, is more completely under our control than any other part of the body, a circumstance of vast importance in connection with the subject of human physical perfectibility.

II.—THE VITAL SYSTEM.

The vital or nutritive system consists of three classes of organs, forming a complicated apparatus of *tubes*, which perform the functions of absorption, circulation, and secretion, and incidentally of purification. Their principal seat is the trunk of the body, and they exercise a minute peristaltic or pulsating motion. They are designated as—

1. The Lymphatics,
2. The Blood-Vessels, and—
3. The Glands.

1. *The Lymphatics*.—These are small transparent tubes, furnished with valves at short intervals, and connected with the ganglia or glands which are distributed over the body, but are most numerous on the sides of the neck, the armpits, the groins, and the mesenteric folds of the intestines. Their office is to absorb nutriment and pass it into the circulation. They convey the lymph from every part of the system to the descending *vena cava*, where it mixes with the venous blood returning to the heart. When, through disease or deficiency of food, the supply of nutriment from the ordinary sources is inadequate to the wants of the system, these absorbents take up the fat which has been deposited in the cellular tissues, to be reserved for a time of need, and empty it into the chyle duct, to be thrown into the circulation. This causes the falling away or emaciation observed in the sick or starving. Even the muscles and cellular tissues are thus appropriated, in extreme cases.

These organs, when they open into the intestines and serve to convey a portion of the nutriment elaborated by the stomach through the thoracic duct to its proper destination, are called lacteals.

2. *The Blood-Vessels*.—That all-important function, the circulation of the blood, is effected by means of a system of tubes,

or, rather, two interwoven systems of tubes, which carry it to every part of the body and then return it to the center of circulation. This center of circulation is the heart, a muscular organ situated in the lower part of the thoracic cavity, between the two folds of the pleura, which form the central partition of the chest. It consists of two parts, a right and a left, in each of which are two cavities, an auricle and a ventricle. In other words, it forms a double force-pump, most ingeniously constructed, with well-fitted valves, which always act perfectly, and never get out of order or wear out. These pumps send the bright-red vitalized blood through the arteries to every part of the system, to be taken up by those minuter organs, the capillaries, whose millions of fibers permeate everywhere, and furnish just the supply needed to each organ and part. To bring the blood back to the heart to be sent to the lungs and revitalized, we have a system of veins, which, commencing in minute capillaries, like little rills, gradually unite and enlarge till they pour their contents, river-like, through two large tubes (one ascending and the other descending), into the right auricle or receptacle of the heart. A muscular contraction sends it into the right ventricle, which, contracting in turn, forces it into the pulmonary artery and thence into the lungs, where it is purified and changed by contact with the air, and becomes again fitted for its life-bestowing mission.

3. *The Glands.*—The glands or filters are the organs which secrete or deposit not only the various substances of which the different organs are composed, but the fat, milk, hair, and other animal products. They are composed of two sets of capillary vessels, the one for the circulation of arterial blood, and the other for secreting their proper materials. The lungs, stomach, intestines, reproductive organs, and especially the liver, are mainly glandular in structure and function, and so far are included in this system.

“The lungs are two conical organs, situated one on each side of the chest, embracing the heart, and separated from each other by a membranous partition, the mediastinum. On the

external or thoracic side they are convex, and correspond with the form of the cavity of the chest; internally they are concave, to receive the convexity of the heart. Superiorly they terminate in a tapering cone, which extends above the level of the first rib, and inferiorly they are broad and concave, and rest upon the convex surface of the diaphragm. Their posterior border is round and broad, the anterior sharp, and marked by one or two deep fissures, and the interior, which surrounds the base, is also sharp. Each lung is divided into two lobes by a long and deep fissure, which extends from the posterior surface of the upper part of the organ, downward and forward, to near the anterior angle of its base. The right lung is larger than the left, in consequence of the inclination of the heart to the left side. It is also shorter, from the great convexity of the liver, which presses the diaphragm upward upon the right side of the chest, considerably above the level of the left. It has three lobes. The left lung is smaller, has but two lobes, but is longer than the right.”*

The lungs present to the view a spongy mass, made up of air-tubes, air-cells, and blood-vessels, all bound together by a cellular tissue. Of the air-cells, there are many millions;† and the internal surface presented by the combined air-cells and air-tubes is probably more than ten times the external surface of the body. Around each of these minute cells is woven a net-work of hair-like tubes, through which come and go the venous and arterial blood. It is through the coats of these that the air acts upon and vitalizes the blood, giving it oxygen and receiving carbonic acid in return.

The liver, which is the largest gland in the body (weighing about four pounds), extends from the right to the left hypochondrium, and is situated obliquely in the abdomen, its convex surface looking upward and forward, and its concave down-

* Wilson.

† M. Rochoux has calculated that as many as 17,790 are grouped around each terminal bronchus; and that their total number amounts to not less than 600 millions!

ward and backward. It is attached by strong ligaments to the diaphragm and other adjacent parts. Its office is to secrete bile from the blood, which is poured from the gall-bladder into the duodenum, a few inches below the stomach.

The stomach is a musculo-membranous reservoir, continuous on the one side with the esophagus, and on the other with the duodenum. It is situated beneath the diaphragm, liver, and spleen, and occupies the epigastrium and a part of the hypochondrium. Its office is to convert the food into chyme.

The intestines, or bowels, comprise the duodenum, or second stomach, the jejunum, and ileum, which collectively are called the small intestine; the cœcum, the colon, and the rectum. The duodenum, or second stomach, leads from the pyloric orifice of the stomach to the jejunum. Its length is about twelve fingers' breadth, and hence its name. The jejunum, so called from being generally found empty, forms the upper two fifths of the small intestine, leading from the duodenum to the ileum. The ileum, which signifies to twist or convolute, forms the remaining three fifths of the small intestine, ending in the colon. It is smaller, paler, and thinner than the jejunum.

The kidneys are hard, glandular bodies, lying on each side of the spine, near the last ribs. The office of the kidneys is to separate the urine from the blood and convey it into the bladder, by means of its long tubes called ureters.

The spleen is also a glandular body, and is situated at the left of the stomach. Its function is not well known.

The intimate relation and sympathy between the glands and the brain give rise to some singular phenomena, as will be seen further on.

III.—THE MENTAL SYSTEM.

It is by means of this system that sense, thought, and impulse to action, and consequently all connection between the soul and the external world, takes place. It consists of a series of *globules*, bound by membranous investments into fibers of various forms, the motion of which is invisible. The chief

seat of this system is the head. It admits, like the other systems, of a division into three orders of organs:

1. The Organs of Sense,
2. The Cerebrum, and—
3. The Cerebellum.

1. *The Organs of Sense.*—The organs through which we receive impressions from external objects—the eye, the ear, etc.—need not be described. They communicate their impressions to the brain by means of special nerves, some of which are represented in Plate IV., fig. 2. They all seem to center in the base of the brain.

2. *The Cerebrum.*—The human brain, speaking of it as a whole, is an oval mass filling and fitting the interior of the skull, and consisting of two substances—a gray, ash-colored, or cineritious portion, and a white, fibrous, or medullary portion. It is divided, both in form and in function, into two principal masses, called the cerebrum and the cerebellum. At its base there are two other portions, called the annular protuberance and the medulla oblongata.

The cerebrum is divided longitudinally by the falx, or scythe-shaped process, into two equal hemispheres, and each of these, in its under surface, into three lobes. But the most remarkable feature in the structure of the cerebral globe is its complicated convolutions, the furrows between which dip down into the brain and are covered by the pia mater, a delicate fibro-vascular membrane, which lies upon the immediate surface of the brain and spinal marrow, bending down into all their furrows or other depressions. By means of these foldings the surface of the brain is greatly increased, and power gained with the utmost economy of space; for it is a well-ascertained fact, that in proportion to the number and depth of these convolutions, is the power of the brain. “The mind’s revolvings,” as Wilkinson beautifully expresses it, “are here represented in moving spirals, and the subtle insinuations of thought, whose path lies through all things, issues with power from the form of cerebral screws. They print their shape and make them-

selves room on the inside of the skull, and are the most irresistible things in the human world.”*

The cerebrum is the organ of perception, reflection, and all the other essentially human faculties and sentiments.

3. *The Cerebellum*.—The cerebellum is the organ of permanent action and of physical life. It lies behind and immediately underneath the cerebrum, and is about one eighth the size of the latter organ. It is divided into lobes and lobules, and consists of a gray and a white substance, like the cerebrum, but differently disposed, the white portion being internal in the latter, and external in the former; in which also both substances are disposed in thin plates instead of convolutions. There is said to be no direct communication between the lobes of the cerebrum and the cerebellum.

Extending from the base of the brain to the atlas or bony pivot on which the head rests, is the medulla oblongata. It is conical in shape, and may be considered as merely the head or beginning of the spinal cord, which continues it, and, in fact, extends the brain down the vertebral canal, and by means of the nerves which it gives off and which pass through notches between the vertebræ, connects it with every part of the body. There are generally reckoned eleven pairs of nerves arising from the brain and thirty-one from the spinal marrow. It is thus seen that the whole nervous apparatus is included in the mental system, as we have defined it, and that the brain is omnipresent in the human body.

With these briefly stated facts, which form the outlines of the system of anatomy on which this work is based, the reader will be measurably prepared to read with profit what is to follow. Those who have access to anatomical and physiological works, and leisure for their study, will do well to pursue the subject further.

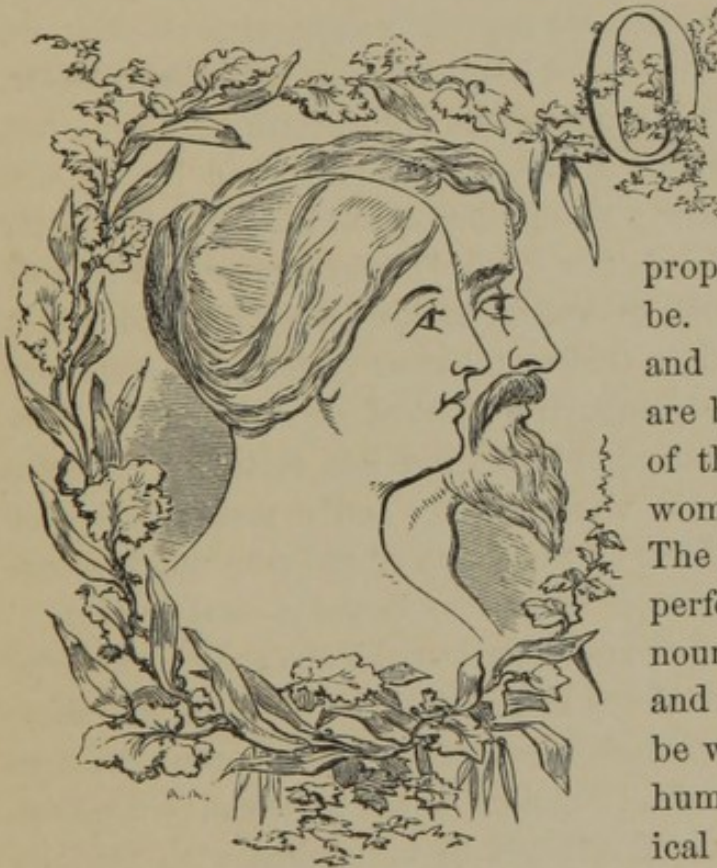
* The Human Body and its Connection with Man.

II.

THE PERFECT MAN AND WOMAN.

A form, indeed,
Where every god did seem to set his seal,
To give the world assurance of a man.—*Shakspeare.*

A perfect woman, nobly planned,
To warn, to comfort, and command.—*Wordsworth.*



OUR highest conceptions of what should be, are, it is said, merely obscure prophecies of what will be. So the ideal man and woman of to-day are but foreshadowings of the actual man and woman of the future. The injunction, "Be ye perfect," was not pronounced in mockery; and if moral perfection be within the range of human capability, physical perfection, surely,

must also be attainable. But in what does this perfection consist? and by what signs may the perfect man and woman be known, when they shall have made their advent upon the earth?

These questions would hardly be asked in reference to one of the lower animals, and if they were, our answer would be

ready and brief. Perfection in a horse, for instance, consists in the entire fitness or adaptation of the animal, as a whole, to all the functions or uses of the horse, and of each member in particular to its special function; and the external sign of this complete fitness is perfect equestrian beauty. Adaptation of form to function in different animals gives us widely differing lines, and we admire in one what would displease us in another; but, in all cases, it is fitness to the design of the species which seems beautiful to us.

Beauty, then, whether in plants and animals or in men and women, is the grand external sign of goodness of organization and integrity of function; and the highest possible beauty can indicate nothing less than perfection in these particulars. In the proportion, therefore, that we approach physical perfection, we become beautiful, "the idea of beauty" being, as the learned Dr. Pritchard truly says, "synonymous with health and a perfect organization." Physical goodness (or health) and beauty will always be found to bear a strict relation to each other, the latter being everywhere the sign or symbol of the former. A lack of beauty in any member or system of the body indicates a lack of goodness or health in that member or system. A deformity of limbs shows clearly enough a want of goodness in the locomotive system; a bad complexion not less certainly indicates something wrong in the vital system; and a malformation of the brain, made manifest by the shape of the cranium, is a sure sign of want of balance or symmetry in the mental system.

This relation was well understood by the ancient Greeks, who placed beauty next to virtue and made it an object of worship; and a French writer (a zealous son of the Church, too), declares that the true object of all religions is the progressive development of beauty, since that tends to unite man with God by making them like Him.*

But it is from external forms and colors, and their arrange-

* Plus on s'approche de la divinité, plus on reflète, son éternelle beauté. Le but de toutes les religions est donc le développement progressif de la beauté, puisque toutes elles tendent à réunir l'homme à Dieu.—*Delaage*.

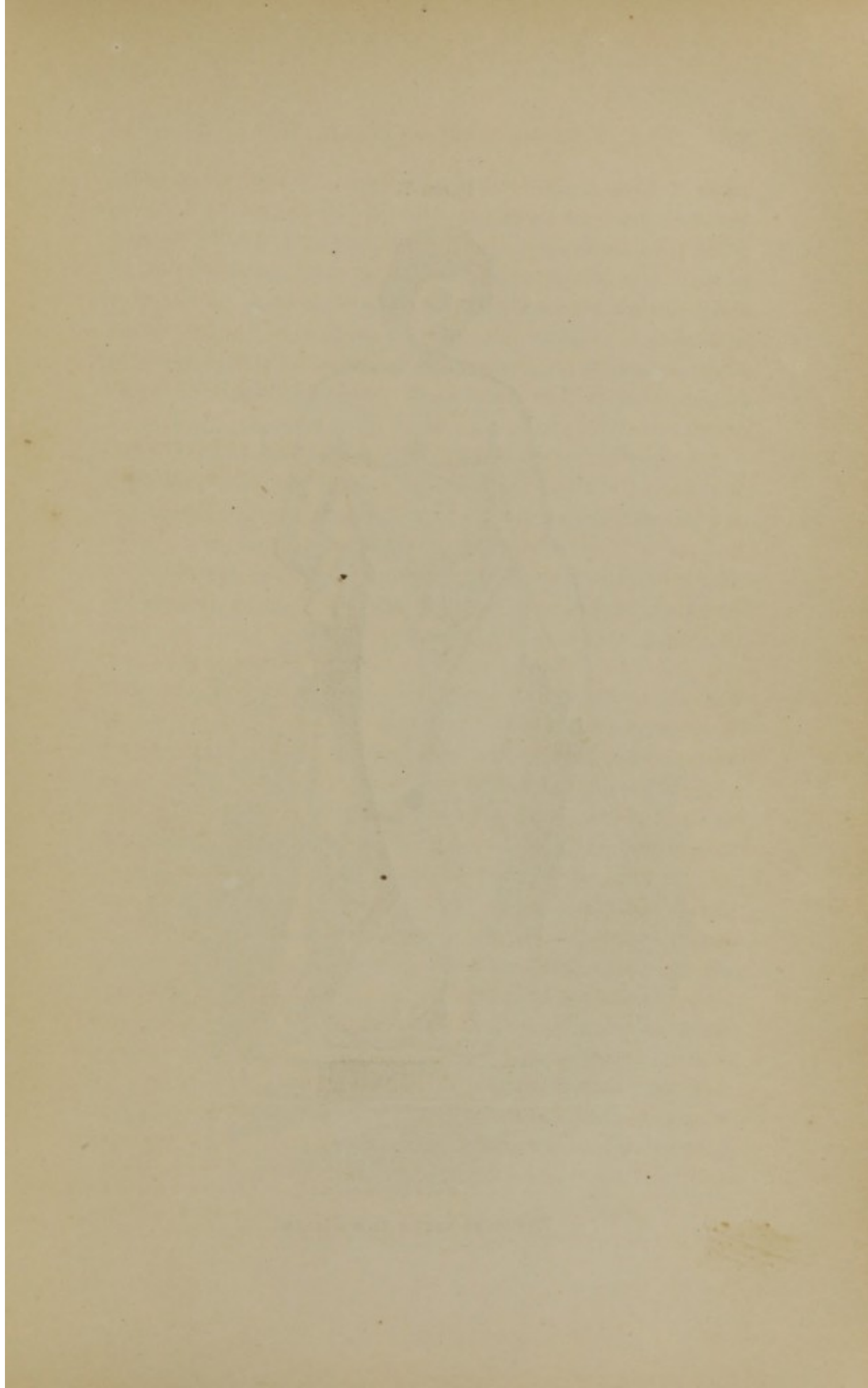
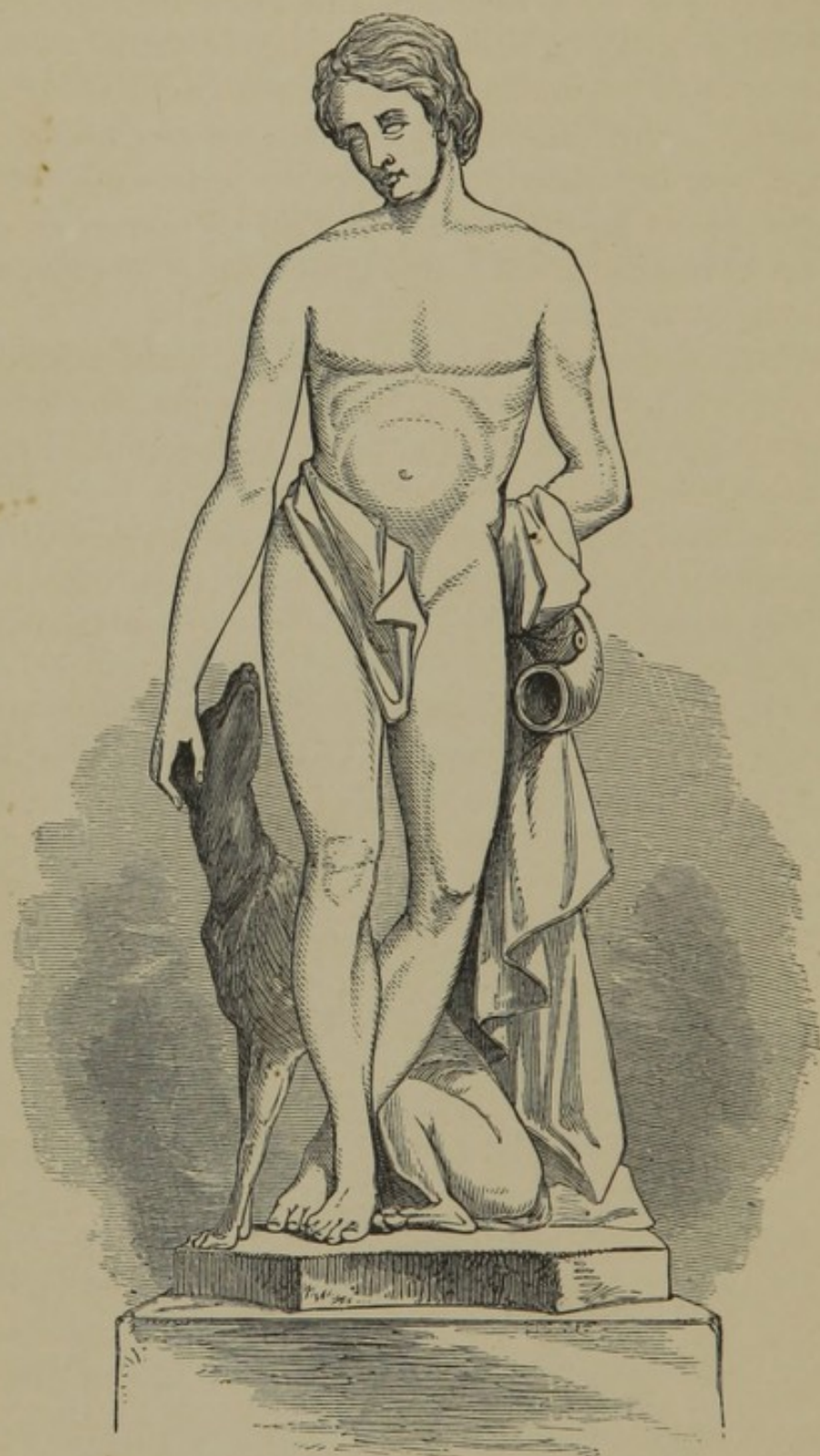


PLATE V.



REPOSING AFTER THE CHASE.

ment, merely, it may be said, that beauty results, while physical perfection includes the complete performance of all the internal functions as well. This is true; but, as we shall show in the proper place, the former are always imperfect where the latter is wanting. Any functional defect or derangement manifests itself at once externally. A dyspeptic stomach or a diseased liver records its condition on face and form in characters which can not be misunderstood. Beauty, the sign of health, has no fellowship with disease.

Looking at the subject more in detail, let us ascertain, if possible, what are the forms, proportions, and combinations which the law of perfect adaptation and, consequently, of perfect beauty, requires in the human body.

As the law just referred to demands in the female form what would be ugliness, if not absolute deformity, in the male figure, and *vice versa*, we shall best describe both by contrasting the one with the other.

The male and female figures, viewed together, present several striking differences, and show that the distinction of sex is plainly marked upon the organization in its *ensemble*, as well as upon particular parts. First, we note that man is several inches taller than woman. The ancients made the Apollo a little more than half a head taller than the Venus, and proportionally stout. Man has a more massive head, and the outlines of his form are more angular. The next thing that strikes us is, that, while his shoulders are broader than his hips, and he tapers downward from his shoulders, woman's hips are broader than her shoulders, and she tapers both ways from the hips. Camper showed that, in tracing the forms of the male and female within two elliptical areas of equal size, the female pelvis extended beyond the lines, while the shoulders were within, and that the male shoulders reached beyond the lines, while the pelvis was within them.* The neck of woman is proportionally shorter than that of man; her arms and legs are also shorter

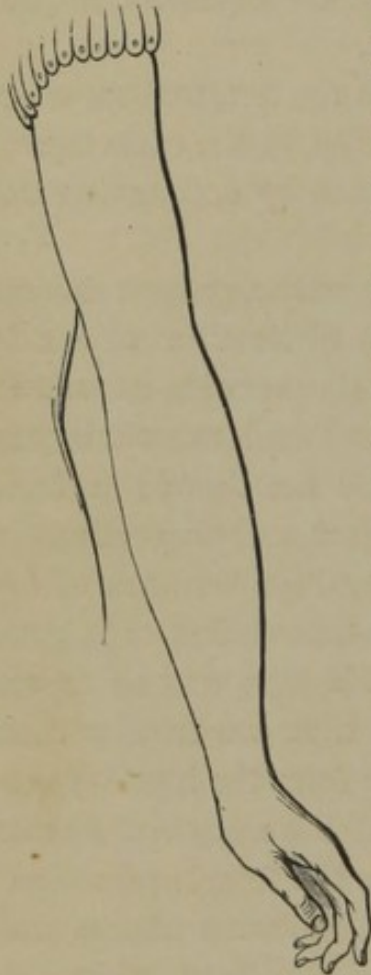
* Memoire sur le Beau Physique.

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and her trunk longer, her back more hollow, her bust smaller but more rounded, and her bosom greater in volume and more elegant in form. He is characterized by compact muscular developments and a strongly-hinged frame, indicative of power; she, by bending and varied lines, gracefully rounded limbs, smooth surfaces, and elasticity, indicative of delicacy and grace. As Milton say :

For contemplation, he, and valor formed;
For softness, she, and sweet attractive grace.

Plates V. and VI. will illustrate the principal differences between the male and female figures, as well as the beauty which results from fitness for their respective functions in each; but we offer them, beautiful as they really are, as we do these chapters, simply as hints *toward* perfection.



For embodiments of ideal beauty, in its completeness, we may at present, perhaps, look in vain to forms of flesh and blood; but we may find it in *fragments* all around us. In one person we may observe a perfect forehead; in another, a perfect nose or mouth; and in a third, a limb or a bust, which no artist could improve.

“Heavens! what an arm!” Powers is said to have exclaimed one day, as the mantle of one of the fair visitors of his studio—a young American girl—falling from her shoulders, disclosed the delicate beauty of a perfect arm and hand, which, in an ecstasy of enthusiasm, she was extending toward some work of art—“Heavens! what an arm! Oh, for the art to petrify it!”*

* American Gentleman's Guide.

This is not an isolated example. These fragmentary illustrations of physical perfection are not rare. Who will dare to say that they may not all be yet combined in one individual?

According to the descriptions we have of him, Goethe must have approached closely to perfection, physically as well as mentally. Lewes says: "Long before he was celebrated, he was likened to an Apollo; when he entered the restaurant, the people laid down their knives and forks to stare at him. Pictures and busts give a very feeble indication of that which was most striking in his appearance; they only give the cut, not the play of features; nor are they very accurate even in mere form. The features were large, as in fine, sweeping lines of Greek art. The brow lofty and massive, from beneath which shone large, lustrous brown eyes of marvelous beauty, their pupils being of almost unexampled size; the slightly aquiline nose was large and finely cut; the mouth full, with a short arched upper lip, very expressive; the chin and jaw boldly proportioned, and the head resting on a fine muscular neck—details which are, after all, but the inventory of his appearance, and gave no clear image of it."

Of the saintly Elizabeth of Hungary, the most beautiful woman of her time, Montalembert says: "Her beauty was regular and perfect; her entire figure left no improvement to be desired in it. Her complexion was dark and clear (*brun et pur*); her hair black; her figure of unrivaled elegance and grace; her walk full of nobleness and majesty."

It was by selecting the most beautiful parts of various individuals, and combining them in one harmonious figure, that the ancient Greek artists succeeded in creating those models of ideal beauty which are to this day the admiration of the world. Thus the parts are truly copies of real beauty, once enshrined in flesh and blood, though the *ensemble* is ideal. The artists have forerun rather than outdone Nature, whose intentions and tendencies, which are always toward perfection, are constantly thwarted by human ignorance and stupidity. They have created, in periods of social incoherence and physical and mental imperfection, models of the perfect forms which will be the

necessary result of the true life of the coming ages of social harmony and perfect obedience to law.

Following out the tendencies of Nature, instead of merely copying her actual forms, great artists have demonstrated, in such works as the Venus de Medici, the Apollo Belvidere, and the Greek Slave, that there are possibilities for the human form which it has not yet reached—at least in these latter ages of the world. The perfect fitness of each part to its place and function, and the complete symmetry and harmony of the whole of each of these figures, show that the artists who conceived and executed them must have been close students of Nature, and understood clearly in what manner physical integrity and well-being, and a perfect organization, are expressed in external forms.

Now, may we not, taking a hint from the artists, and co-operating with Nature, instead of contravening her tendencies, aid her to embody in real, living forms our ideals of beauty? May we not select, modify, combine, and harmonize the beautiful members already often produced singly, in spite of us, as it were, and thus obtain all the symmetry and grace of the marble Venus or Apollo in the soft, warm, sentient flesh and blood of living humanity?

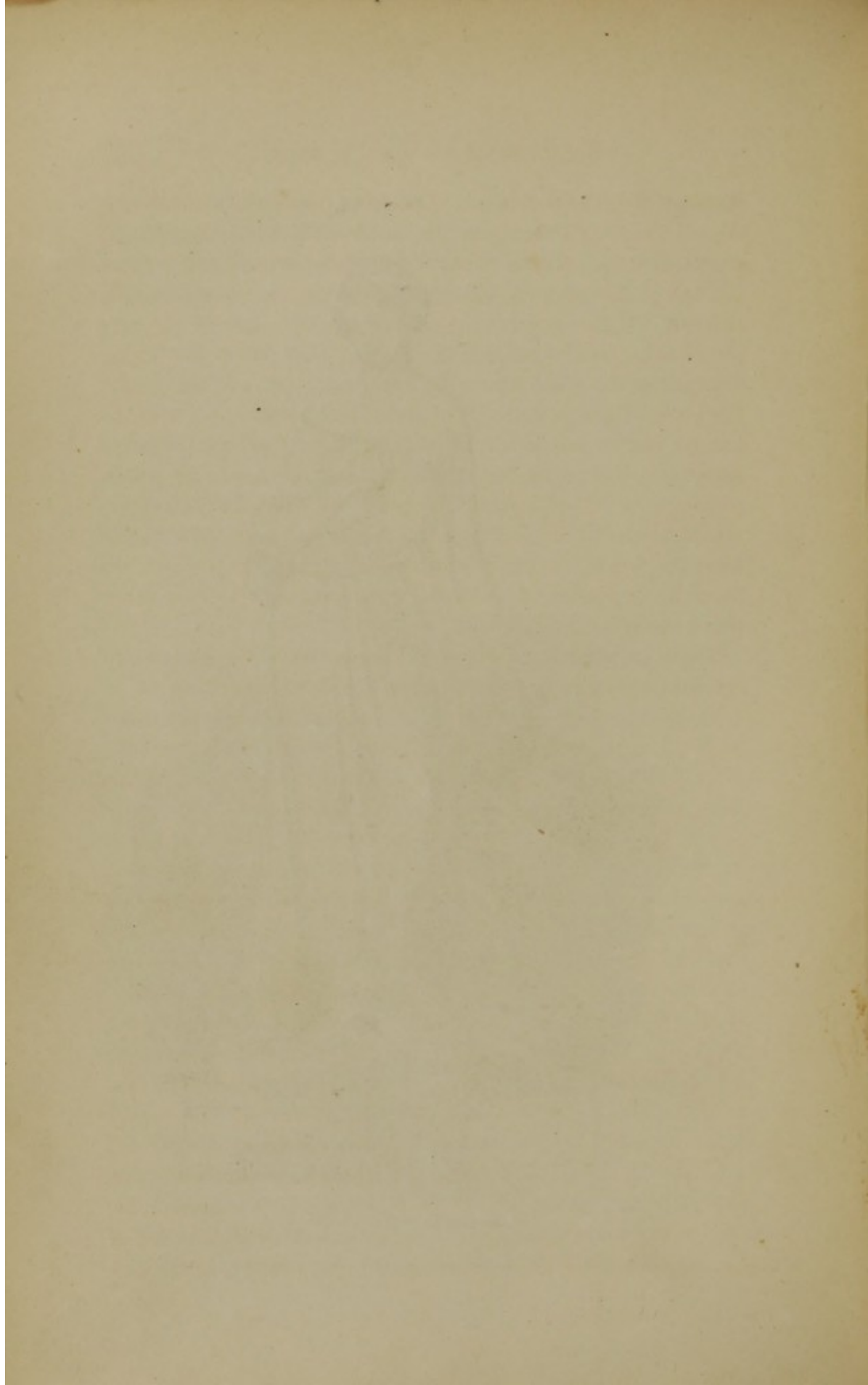
The purpose we have in view in this chapter does not require a minute description of the typical man and woman, but a few of the more important details of the figure and features, as required by the law of fitness, which is also the law of beauty, will prepare the reader for the closer analysis which will be necessary when we come to speak of the various kinds of beauty as modified by temperament.

The proportions of the perfect human figure are strictly mathematical. The whole figure is six times the length of the foot. Whether the form be slender or plump, this rule holds good. Any deviation from it is a departure from the highest beauty of proportion. The Greeks made all their statues according to this rule. The face, from the highest point of the forehead, where the hair begins, to the end of the chin, is one

PLATE VI.

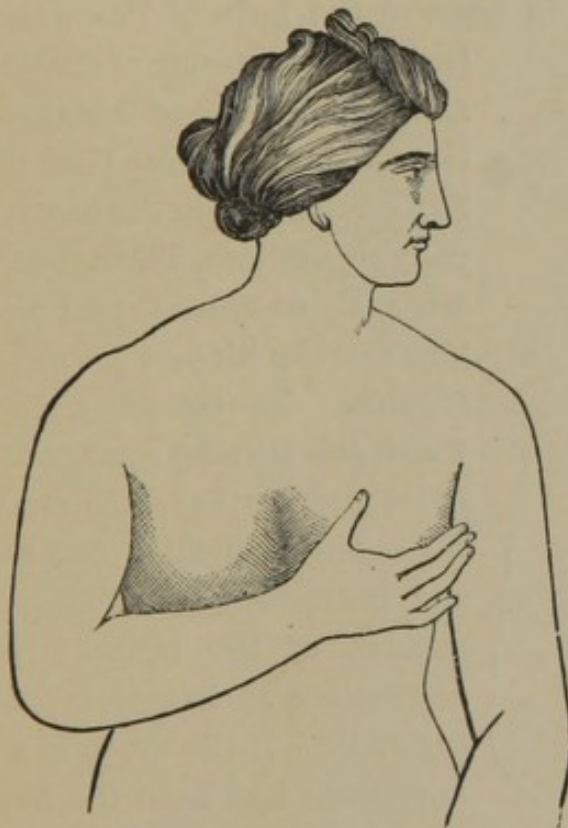


PREPARING FOR THE BATH



tenth of the whole stature. The hand, from the wrist to the end of the middle finger, is the same. The chest is a fourth, and from the nipples to the top of the head is the same. From the top of the chest to the highest point of the forehead is a seventh. If the length of the face, from the roots of the hair to the chin, be divided into three equal parts, the first division determines the point where the eyebrows meet, and the second the place of the nostrils. The navel is the central point of the human body; and if a man should lie on his back with his arms and legs extended, the periphery of the circle which might be described around him, with the navel for its center, would touch the extremities of his hands and feet. The height from the feet to the top of the head is the same as the distance from the extremity of one hand to the extremity of the other when the arms are extended.

These are general measures of the species. We shall see, in a future chapter, that there is also a rule of proportion of an individual in regard to himself, which in nature is different in all the individuals of the species.



THE VENUS DE MEDICI.

The Venus de Medici is considered the most perfect existing model of the female form, and has been the admiration of the world for ages. Alexander Walker, after minutely describing this celebrated statue, says: "All these admirable characteristics of the female form, the mere existence of which in woman must, one is tempted to imagine, be, even to herself, a source of

ineffable pleasure—these constitute a being worthy, as the per-

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sonification of beauty, of occupying the temples of Greece; present an object finer, alas! than Nature even seems capable of producing; and offer to all nations and ages a theme of admiration and delight. Well might Thomson say:

So stands the statue that enchants the world,
So, bending, tries to veil the matchless boast—
The mingled beauties of exulting Greece:

And Byron, in yet higher strain:

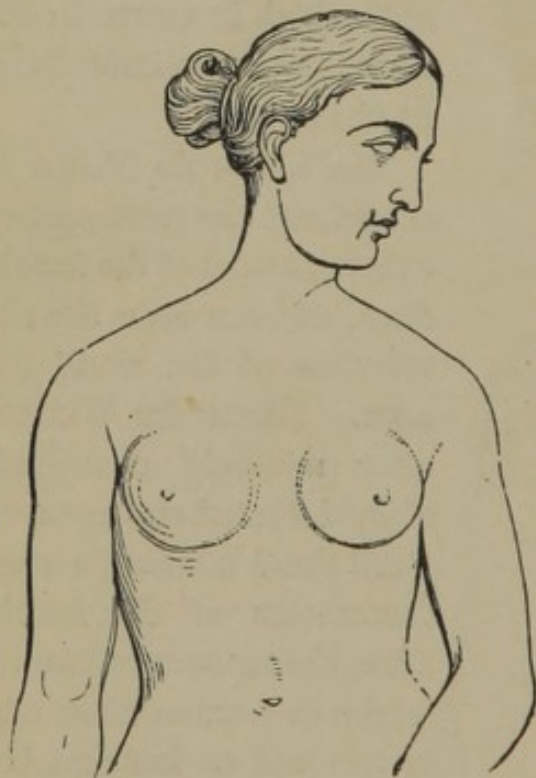
There, too, the goddess loves in stone, and fills
The air around with beauty;

Within the pale

We stand, and in that form and face behold
What mind can make when Nature's self would fail;
And to the fond idolaters of old
Envy the innate flash which such a soul could mold.

We gaze and turn away, and know not where,
Dazzled and drunk with beauty, till the heart
Reels with its fullness; there—forever there—
Chained to the chariot of triumphal Art,
We stand as captives, and would not depart.

We beg our fair readers to observe the form of the waist



THE GREEK SLAVE.

(evidently innocent of corsets and tight dresses) of this model woman, and also that of the Greek Slave, in the accompanying outlines. These forms are such as unperturbed nature and the highest art alike require. To compress the waist, and thereby change its form, pushing the ribs inward, displacing the vital organs, and preventing the due expansion of the lungs, is as destructive to beauty as it is to health. If the shape of an hour-glass had been the best shape for a woman—if her

functions had been such that their perfect performance would

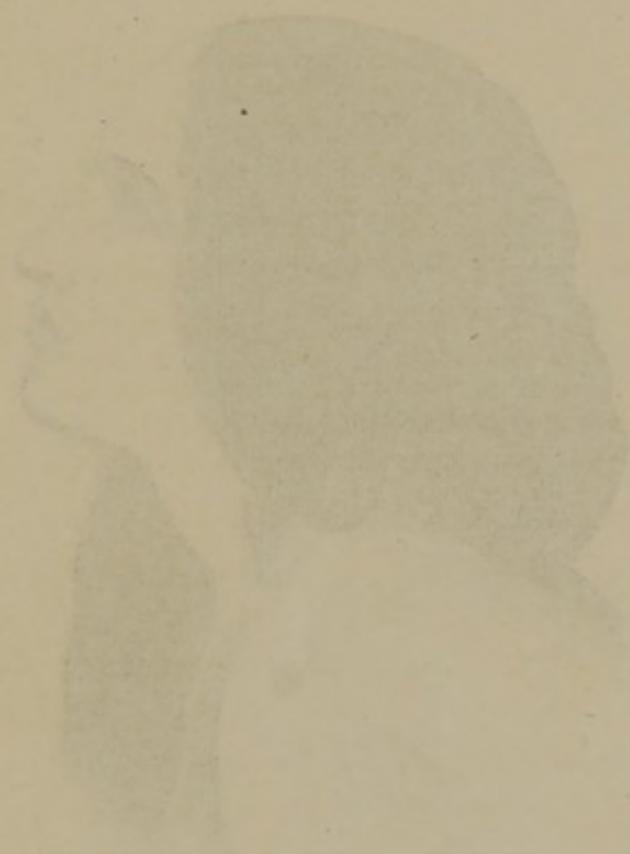


PLATE VII.



ISABELLE—THE BRUNETTE.

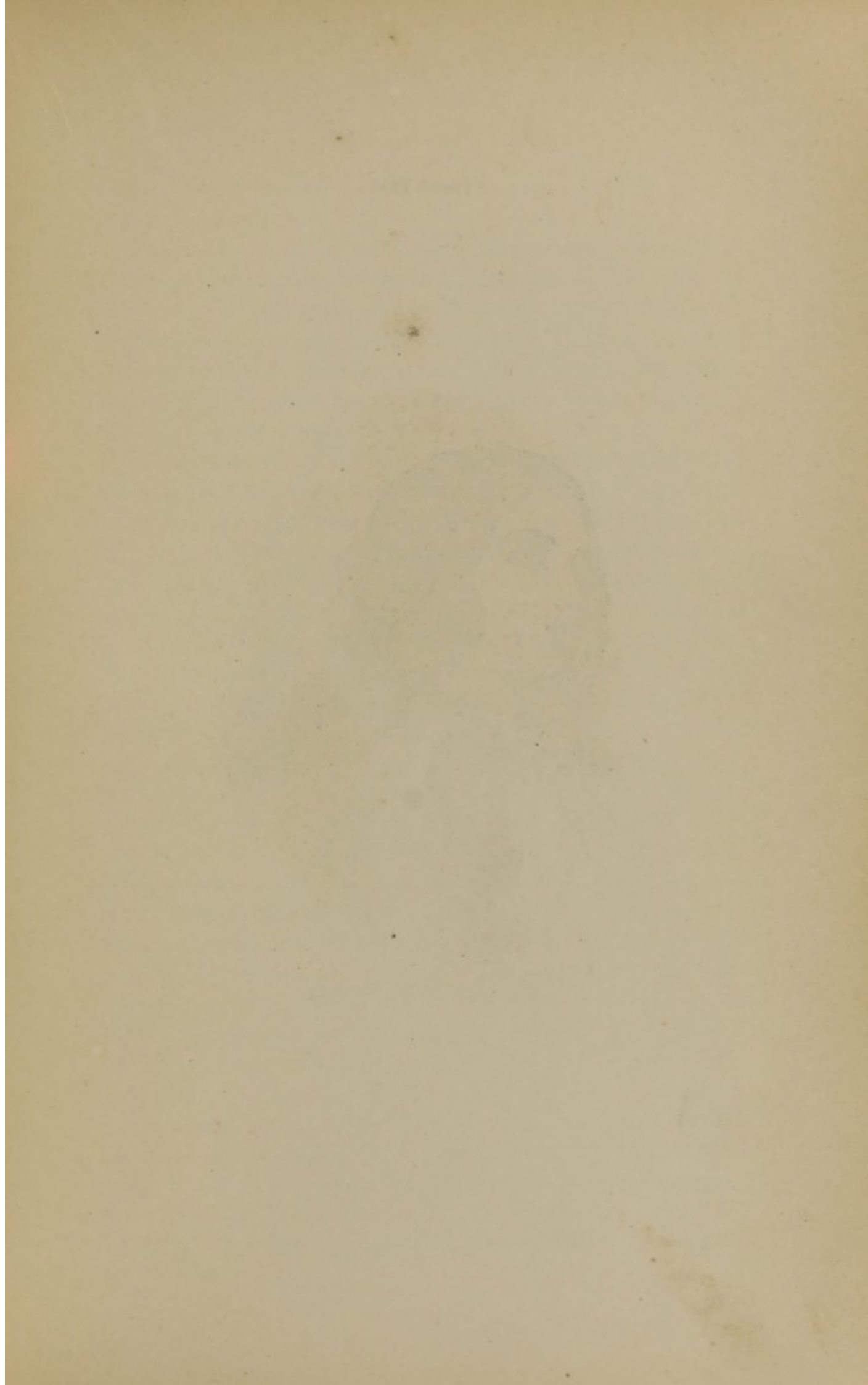


PLATE VIII.



BLANCHE—THE BLONDE.

require this form—she would doubtless have been so created in the beginning.

The perfect head in man, as we have already remarked, is larger than in woman, less smoothly rounded, and more undulating. It is also more prominent in the superior frontal region, indicating stronger reflective faculties. In woman it is characterized by greater delicacy of structure, diminished capacity, finer proportions, and a greater extent backward from the occipital bone.

In both sexes there must be such a development of the upper part of the head as will give the whole, including the face, a pyriform appearance, in which, in every aspect, it is larger at the superior portion, and diminishes gradually as it descends, till it terminates in the delicate outline of the chin. Great artists have always been guided by this rule, and in every figure designed to embody ideal beauty, the lower part of the face diminishes, while the upper part is more fully developed. Venus, Apollo, Diana, Juno, Psyche, and the Graces furnish mythological illustrations of this principle.

Camper's lines for determining the cerebral mass, and consequently the intellectual capacity of races and individuals, though exceedingly fallacious in the extended application which he and his followers have given to them, serve admirably to illustrate the facial angle. The base line is drawn from the roots of the upper incisors to the external auditory passage; and another line from the upper incisors to the most elevated point of the forehead. The angle thus formed is, in the most beautiful races of men, about eighty-five degrees. The Greek artists imparted an air of majesty to the heads of their gods by giving them an opening of ninety degrees.

The beauty of the face depends much upon the profile, which, in its perfect form, approaches a straight line. Perfection in the nose requires that it should be so placed as to divide the face into two equal parts, and that it should be on nearly the same line with the forehead, with but a slight inflection at its junction. In woman, the nose itself should be perfectly straight.

as shown in Plates VII. and IX. In man, a small degree of convexity, making it slightly aquiline, indicates the strength and energy of character which should characterize the masculine element. In both sexes it must be fine, smooth, and delicately chiseled. Our initial cut furnishes good illustrations of the male and female faces in profile.

The law of perfect beauty requires that the mouth—that most expressive and eloquent feature of the human face divine—should be of medium size, but smaller in woman than in man. The curve of the upper lip is said to have furnished the ancient artists with a model for the bow of Cupid. It must extend beyond the lower lip, which must, however, be more fully developed and rounded, turning outward so as to leave between it and the chin a gracefully curved hollow. The teeth must be small, slightly rounded, and perfectly even and white.

The chin should be of moderate size, but larger in man than in woman, in whom it must be white, soft, and gracefully rounded.

Perfect beauty in the eye requires a long rather than a short high opening between the eyelids, and immaculate clearness of both the white and the iris. Dark blue, black, and brown eyes are most beautiful in woman, and light blue, gray, or hazel, in man, since the latter indicate hardihood and masculine vigor. The eyes should be large rather than small, especially in woman.

Eyes loving large,

as Gerald Massey has it, have been admired in all ages and by all nations. They find a place in almost every description of beauty, real or imaginary, from Helen of Troy to Ninon de L'Enclos. Plates VII. and VIII. illustrate the beauty of the eye. The former also shows an exceedingly beautiful face in profile.

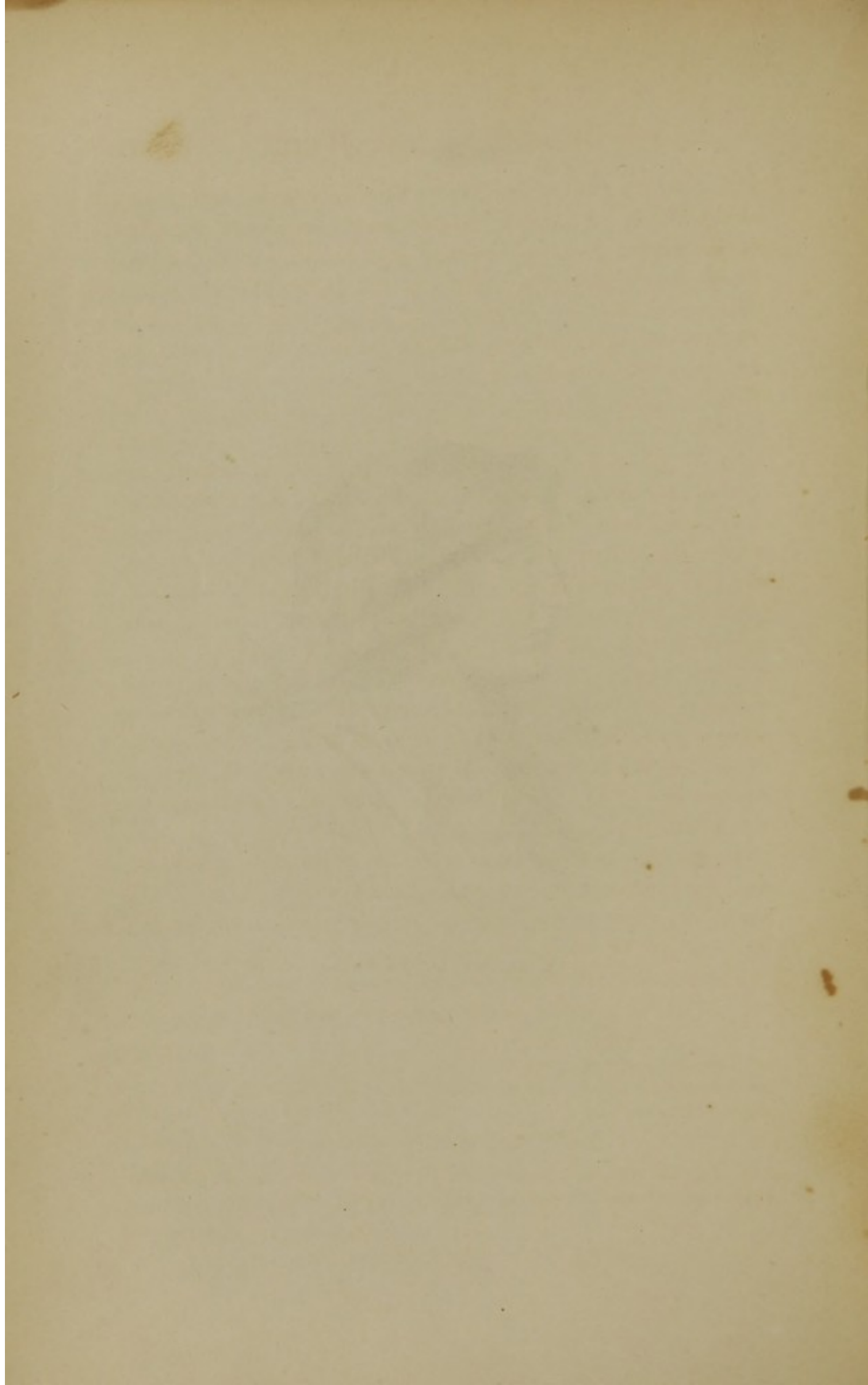
The cheeks should be moderately plump, and delicately tinged with the hues of thriving health.

The most beautiful hair is fine and soft, especially in women.

PLATE IX.



MARGARITA—THE PEARL



and either wavy or curling.* Brown, auburn, and golden are generally thought to be the most beautiful colors. The ancients were great admirers of golden hair, which they believed to symbolize the highest mental beauty and excellence. Many of the historic characters of antiquity are described as having hair of this color. Of Milto, the beautiful Ionian, we are told: "Her hair was yellow, the locks a little curled." Helen of Troy, Poppæa Sabina, and Lucrezia Borgia are described as having beautiful golden hair. Among the great men of whose hair history has taken note, Alexander the Great, Demetrius of Macedonia, Sylla the dictator, Commodus, Camoens, Tasso, and Alfieri had yellow or golden locks. Cervantes had brown hair and a yellow beard. Of Commodus, the historian tells us, that when he walked in the sun his locks glittered like fire, so that some believed that they had been sprinkled with gold dust.

Hair dividing in a line extending from the crown to the forehead and falling over the temples, as it generally does in women and sometimes in men, indicates symmetry and beauty of soul; hence the ancient sculptors never omitted this in their highest characters. In pictures of Christ, also, we always see this peculiarity.

The most beautiful neck in woman is white, smooth, straight, and flexible; less above, and increasing gently toward the shoulders. The masculine neck should be more muscular and less rounded, but easy and pliant.

The shoulders should be whiter, narrower, and more softly rounded in woman than in man, but firm and elastic.

* There are many allusions in the poets to what the Romans were wont to call "the smiling locks" (*crines ridentes*). The hair of the Beatrice of Dante was of this description.

Io miro i crespi e gli biondi capelli,

the poet says in one of his canzoni; and in another he speaks of the fair locks which love, to consume him, had gilded and curled:

Biondi capelli

Ch' amor per consumarmi increspa e dora.

42 THE PERFECT MAN AND WOMAN.

The whiteness, firmness, and elasticity of the neck and shoulders should extend to the bosom, which, in woman, must be well developed, but not so large as to be at all out of proportion with the rest of the figure. The breasts must be grace-



CANOVA'S HEBE.

fully rounded, smooth, equal in size, and distinctly separated.

The arms and hands are susceptible of a degree of beauty of which we see few examples. In woman, the arm is plumper and more rounded, and has softer forms and purer and more flowing outlines, than in man. The hand in woman is softer, whiter, and fuller. The fingers, in their perfect form, are long, round, tapering, and delicate.

Beautiful ankles are not rare, but the feet of the moderns, and especially the women, are almost universally deformed by tight boots and shoes. The second toe, which naturally projects most, as we see in the

antique, is arrested in its development, and the foot, which in the outline of its extremity, ought to approach the elegant form of the ellipsis, is rounded without beauty, and disfigured by our ridiculous compressions. The ancients attached much importance to the form of the feet, and the historians, as well as the poets, make mention of their beauty in speaking of Polysene, Aspasia, and others.*

Conjoined with perfection of form in figure and face, we shall not fail to find that index of perfect functional integrity, a soft, smooth, transparent, and delicately tinted skin. This

* Walker.

is "the barometer of health and soundness of the individual, and the most indubitable sign of beauty."* The cheeks must have the true blending of the rose and the lily. Too much redness is as far removed from the highest beauty as a deficiency of color.

These outlines will suffice for the present. In future chapters we shall enter upon more minute descriptions of the forms which the law of perfect human development requires, and show by what means they may be acquired and retained.

* Sir James Clark.



III.

THE TEMPERAMENTS.

The comparative standing of individual man, as relates to his race, is graduated by the predominance of his leading organs.—*Caldwell.*



IN order to prepare the reader fully to comprehend and appreciate the important practical details which follow, it is necessary for us to set clearly before him the doctrine of the temperaments, as we understand and purpose to apply it. It will be seen to have an important bearing on the leading topics of our work.

When we compare man with the other animals, we observe that he is distinguished by characteristic features which do not permit us, for a mo-

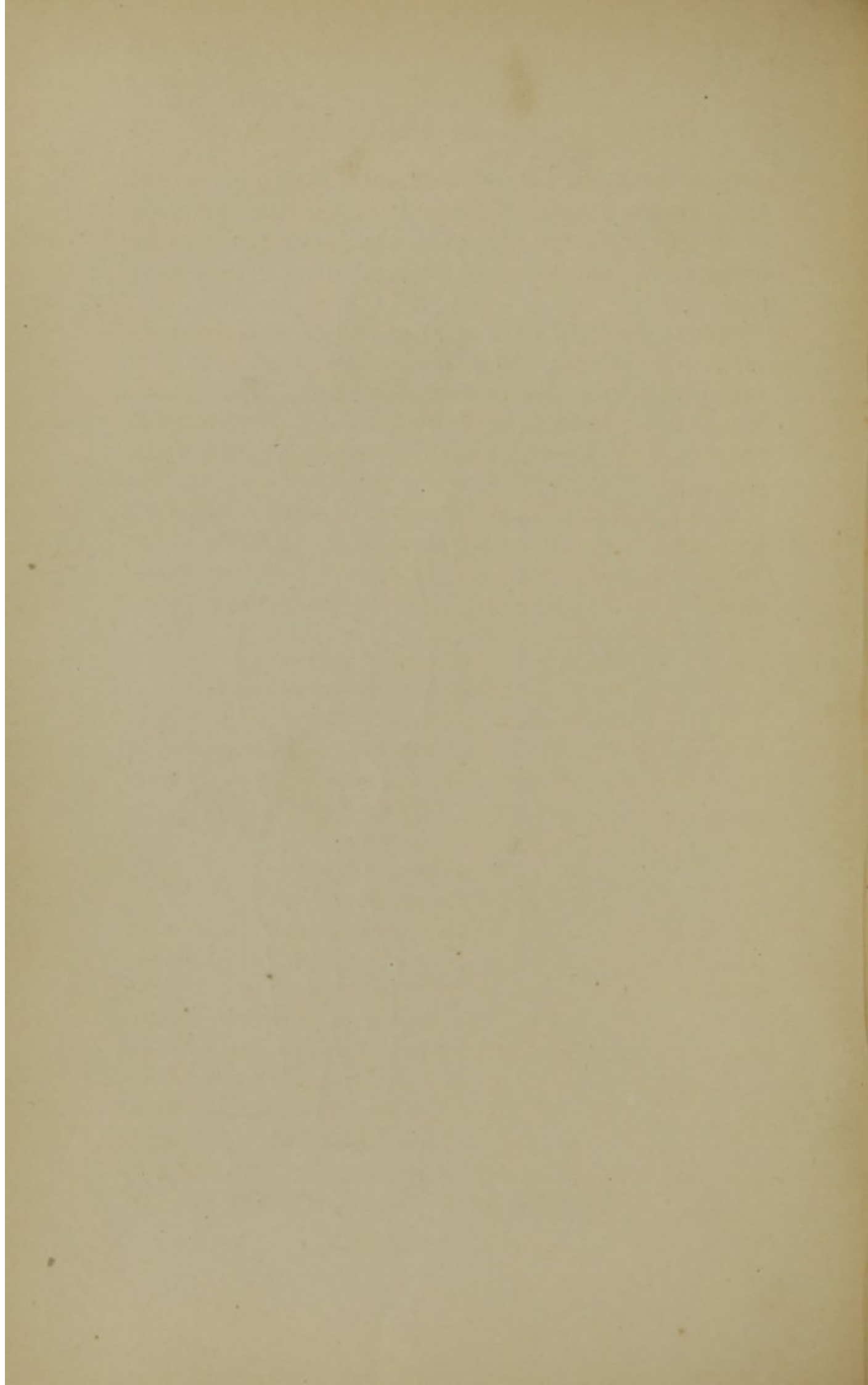
ment, to confound him with any of them; and when we compare man with man, we are struck by the no less obvious fact, that there exists between individuals differences analogous to those which mark the different species. One is tall and muscular, another short and plump, a third small and slender. We observe, also, that the functions of life are not performed in all with the same degree of force or rapidity, and that their likes and dislikes have neither the same direction nor the same intensity.*

* Cabanis' *Rapports Physique et du Moral de l'Homme.*"

PLATE X.



THE MOTIVE TEMPERAMENT.



These differences are the result and indication of what we call temperament, which is defined as "a particular state of the constitution, depending upon the relative proportion of its different masses and the relative energy of its different functions."

In their last analysis, the temperaments are as numerous and varied as the individuals of the race, no two persons being found with precisely the same physical constitution. Tracing them back to their simpler forms, however, we shall find them all to result from the almost infinite combinations of a few simple elements.

In the outlines of a natural system of anatomy, which we have given in a previous chapter, it is shown that the human body is composed of three grand classes or systems of organs, each of which has its special function in the general economy. We have denominated them—

1. The Motive or Mechanical System,
2. The Vital or Nutritive System, and—
3. The Mental or Nervous System.

On this basis rests the true doctrine of the temperaments, of which there are primarily three, corresponding with the three systems of organs just named. We shall call them—

1. The Motive Temperament,
2. The Vital Temperament, and—
3. The Mental Temperament.

It is the predominance of the class of organs from which it takes its name that determines each of these temperaments. Thus the first is marked by the superior development of the osseous and muscular systems, forming the locomotive apparatus; in the second, the vital organs, the principal seat of which is in the trunk, give the tone to the organization; and in the third, the brain and nervous system exert the controlling power.

The simple or primary temperaments are, however, practically, little better than abstractions; but they serve as points of departure from which to arrive at their various combinations.

I.—THE MOTIVE TEMPERAMENT.

The bony framework of the human body determines its general configuration, which is modified in its details by the muscular fibers and cellular tissues which overlay them. In the motive temperament the bones are proportionally large, and generally long rather than broad, and the outlines of the form manifest a tendency to angularity. The muscles are well developed, but only moderately rounded, and correspond in form with the bones. The figure is commonly tall, elegant, and striking; the face oblong; the neck rather long; the shoulders broad and definite; the chest moderate in size and fullness; the abdomen proportional; and the limbs long and tapering. The complexion and eyes are generally, but not always, dark, and the hair dark, strong, and abundant. Firmness of texture characterizes all the organs, imparting great strength and endurance.

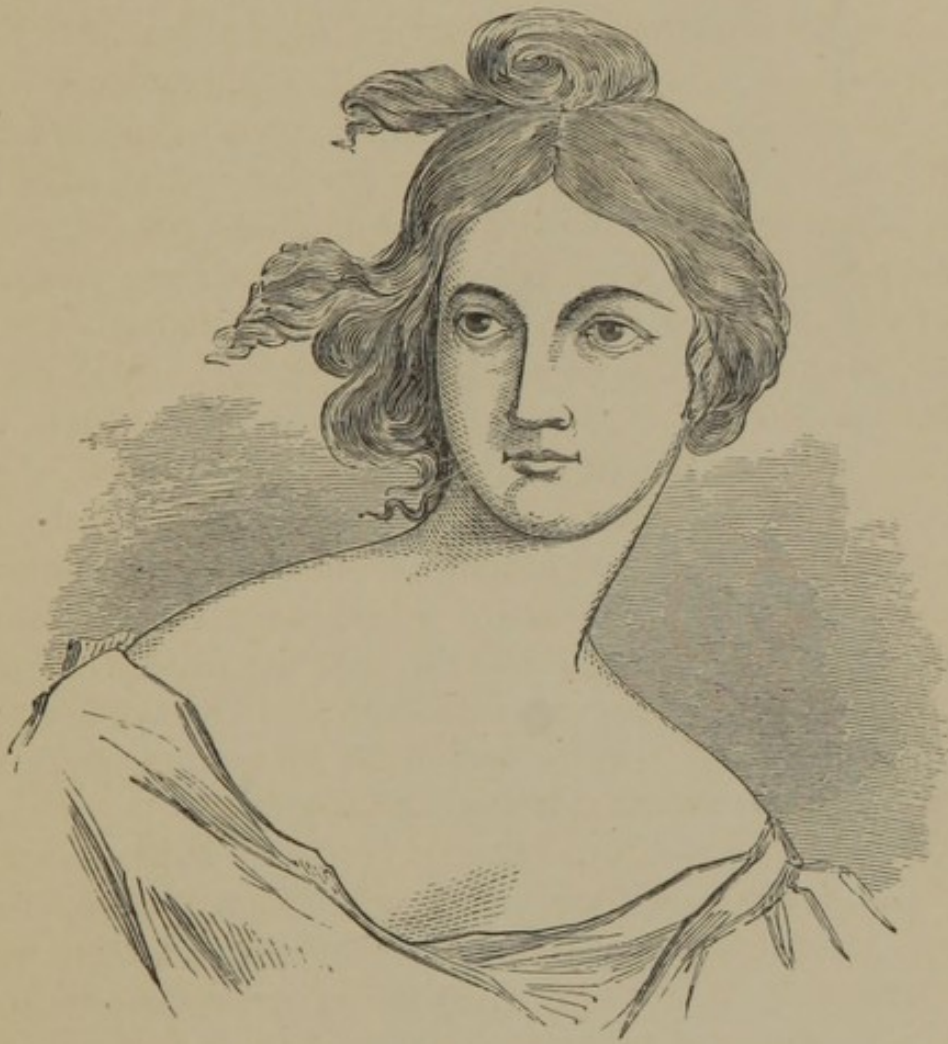
Men of this temperament are naturally vigorous, active, energetic, and impassioned, and possess strongly marked, if not idiosyncratic, characters. They manifest great capacity for conception, receiving and combining rapidly many and varied impressions, and are constantly carried away, bearing others with them, by the torrent of their imagination and passions. They are leaders, rulers, and conquerors in the sphere in which they move. This is the temperament for rare talents, great works, great errors, great faults, and great crimes.*

The motive temperament was the prevailing one, apparently, among the ancient Romans. An aquiline nose, great ambition, and an insatiable love of power and conquest, very frequently accompany it. It is pre-eminently the American temperament.

In a woman of this temperament, the bosom is only moderately developed, the waist remarkable for its fine proportions, the haunches not very broad, the thighs elegantly formed, and the arms and legs indicative of agility and lightness. "The whole figure," Walker remarks, "seems almost aerial; and we should imagine that if our hands were placed under the lateral

* Cabanis.

PLATE XI



A REAL HEBE

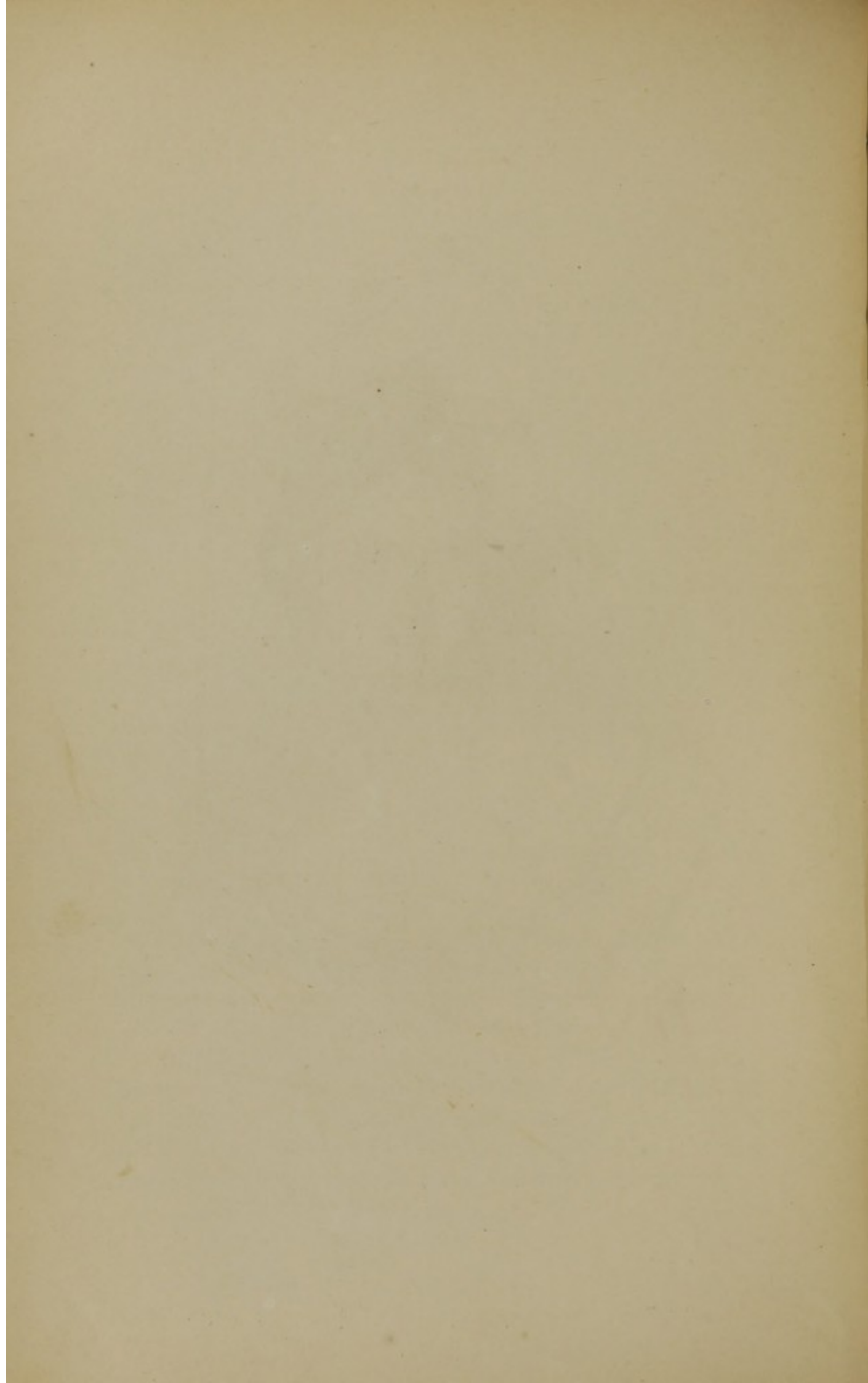
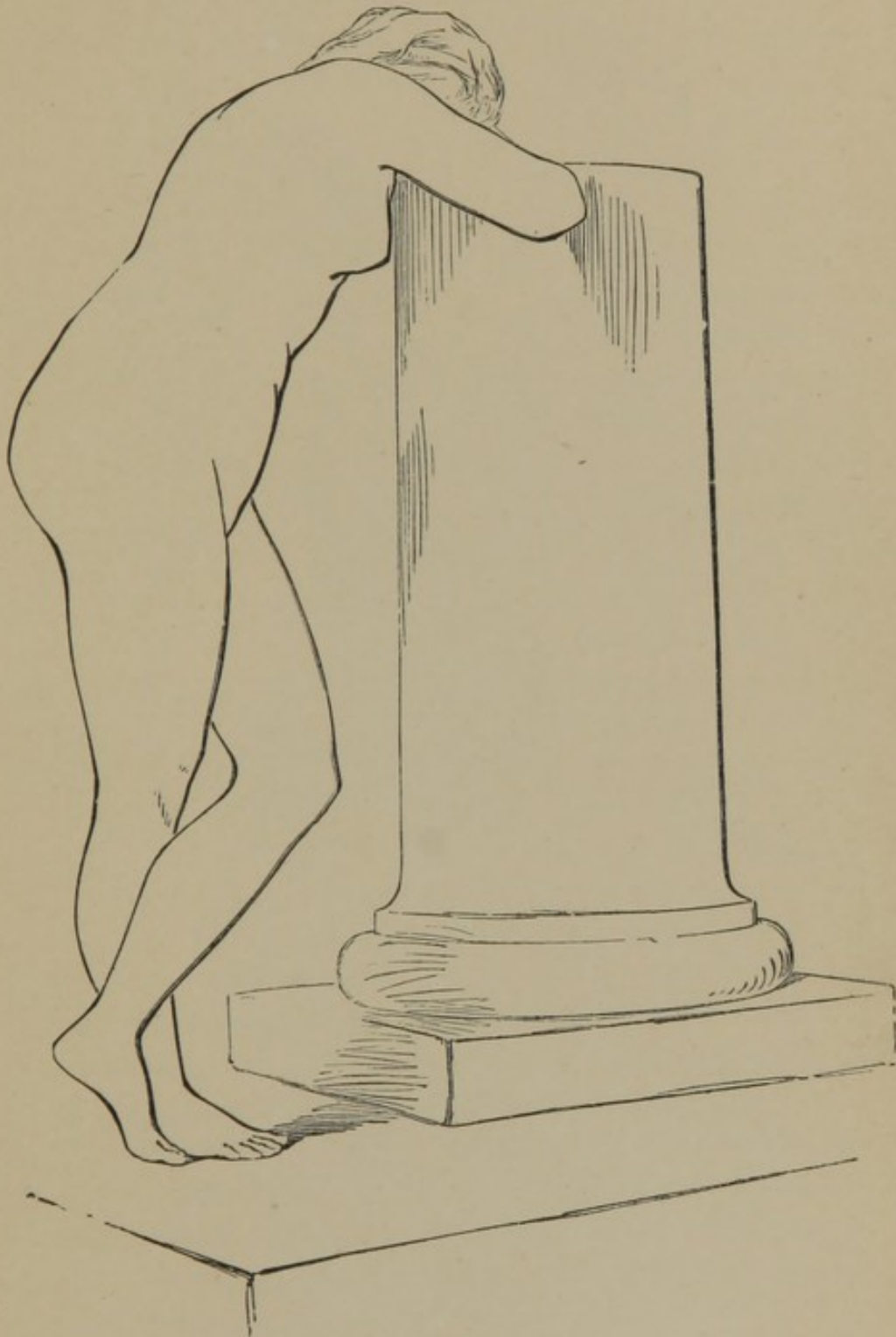
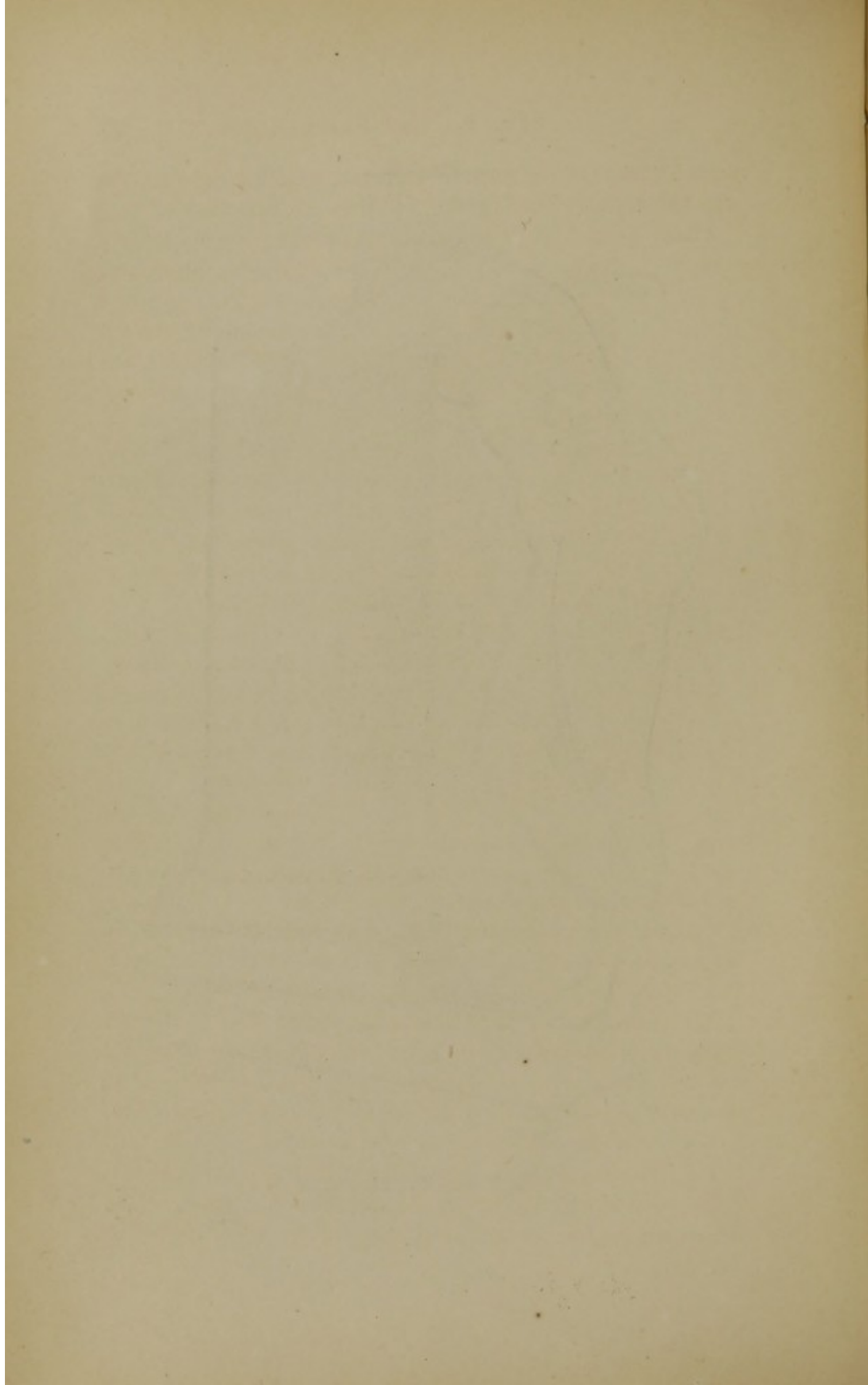


PLATE XII.



THE VITAL TEMPERAMENT



parts of the tapering waist of a woman thus characterized, the slightest pressure would suffice to throw her into the air."

Plates X. and XI., also the accompanying portrait of Mary



MARY WORTLEY MONTAGUE.

Wortley Montague, happily illustrate the beauty of form and face characteristic of women of this temperament. The Diana of Grecian sculpture furnishes a fine classic representation of the same species of beauty.

Helen of Troy, according to the descriptions we have of her, must have been of this temperament; for we are told that she was tall, and that

she had "a very long and white neck, whence she was said to be the daughter of a swan."

The motive temperament, in its typical form, is less proper to woman than to man; but we may note two or three modifications of it which constitute its more feminine phases:

The first is that in which the bones, except those of the pelvis, are proportionally small, which gives the figure additional delicacy and grace. This conformation, while it adds to the beauty of the female figure, detracts from the strength and, consequently, from the beauty of the masculine form.

The second is that in which the development of the ligaments and the articulations which they form are proportionally small, which adds to the beauty of the female figure by correcting the

tendency to angularity and abrupt bendings which, as we have seen, is characteristic of this temperament, and rounding and softening the contour of the joints. This will be particularly apparent in the wrists and ankles.

The third is that which presents proportionally shorter bones, and, except around the pelvis, smaller and more rounded muscles, affording less strongly marked reliefs and more of that rounded plumpness essential to the highest beauty in woman.

An abnormal development of the motive temperament, in which both the vital and the mental systems are sacrificed to mere animal strength, forms what the ancients called the athletic temperament. It is marked by a head proportionately small, especially in the coronal region; a thick neck; broad shoulders; expanded chest; and strongly-marked muscles, the tendons of which are apparent through the skin. The Farnese Hercules furnishes a model of the physical attributes of this abnormal constitution, in which brute force usurps the energies necessary to the production of thought, and leaves its possessor decidedly deficient in all the higher mental manifestations. This temperament does not occur in woman.

II.—THE VITAL TEMPERAMENT.

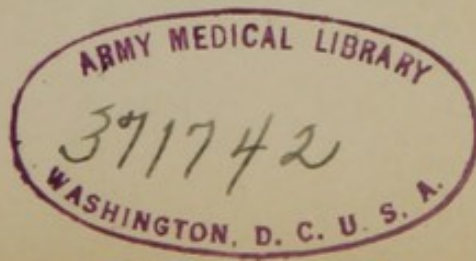
As this temperament depends upon the predominance of the vital or nutritive organs which occupy the great cavities of the trunk, it is necessarily marked by a breadth and thickness of body proportionately greater, and a stature and size of limbs proportionately less than in the motive temperament. Its most striking physical characteristic is rotundity or plumpness. The face inclines to roundness; the neck is rather short; the shoulders broad and round; the chest full; the abdomen well developed; the arms and legs plump, but tapering and delicate, and terminating in hands and feet relatively small. The complexion is generally rather florid; the countenance smiling; the eyes blue; and the hair soft, light, and abundant.

In a woman of this temperament (which seems peculiarly the temperament of woman), "the shoulders are softly rounded.

and owe any breadth they may possess rather to the expanded chest, containing these organs, than to the bony or muscular size of the shoulders themselves; the bosom, a vital organ, in its luxuriance seems laterally to protrude on the space occupied by the arms; the waist, though sufficiently marked, is, as it were, encroached on by that plumpness of all the contiguous parts which the powerful nutritive system affords; the haunches are greatly expanded for the vital purposes of gestation and parturition; the thighs are large in proportion; but the locomotive organs, the limbs and arms, tapering and becoming delicate, terminate in feet and hands which, compared with the ample trunk, are peculiarly small; the complexion, depending upon nutrition, has the rose and lily so exquisitely blended, that we are surprised it should defy the usual operation of the elements; and there is a luxuriant profusion of soft and fine flaxen or auburn hair. The whole figure is soft and voluptuous in the extreme."*

Such forms and faces have had more numerous admirers than those of any other style, and enter into almost every description of beauty in the works of both Asiatic and European writers. Americans are said to be the only people who manifest a decided passion for slenderness. The arts which women have practiced in order to acquire the desired *embonpoint* are detailed at length by various writers. Camus tells us that the women of Egypt are wont to "bathe themselves several days in lukewarm water, eating and drinking while in the bath. During the time they are in the bath, they take every half hour some broth made of a fat pullet. After taking this sort of bath four times, they eat a fat pullet, all but the head!" The Empress Theodora also "made abundant use of the bath, remaining in it long, and leaving it only to eat and rest in bed, during the greater part of the day and night," to increase her *plumpness* and heighten her charms.

* Walker. Beauty: Illustrated chiefly by an Analysis and Classification of Beauty in Woman.



Plates XII. and XIII. furnish good illustrations of the species of beauty founded on this temperament. See also the initial cut, at the head of this chapter (a portrait of Anna Cora Mowatt Ritchie), for another example.

Persons of this temperament are characterized mentally by activity, ardor, impulsiveness, enthusiasm, versatility, and sometimes by fickleness. They have more elasticity than firmness, more diligence than persistence, more brilliancy than depth. They are frequently violent and passionate, but are as easily calmed as excited; are generally cheerful and amiable, and almost always very companionable and fond of good living.

An undue and abnormal preponderance of the absorbent system and a sluggish action of the circulatory organs give rise to what has been called the lymphatic temperament, which presents forms even more rounded and softer than those we have been describing, but lacking their well-defined and graceful outlines. A feeble color of the skin, a lack of expression in the countenance, insurmountable sloth, and a general weakness and apathy, both of body and mind, characterize this state of the system, which is so evidently the result of disease that we see no propriety in setting it down as one of the natural temperaments. When perfect health shall have become universal, we shall have no lymphatic people, and no lazy ones.

III.—THE MENTAL TEMPERAMENT.

The mental temperament, depending upon the predominance of the brain and nervous system, is characterized by a slight frame, and a head relatively large and of a pyriform appearance. The face is generally oval; the forehead high and pale; the features delicate and finely chiseled; the eye bright and expressive; the hair fine, soft, not abundant, and commonly of a light color; the neck slender; the chest rather narrow; the limbs small; and the whole figure delicate and graceful rather than striking or elegant. In woman, the bosom and pelvis are only moderately expanded, and there is a decided lack of that *embonpoint* which characterizes the vital temperament.

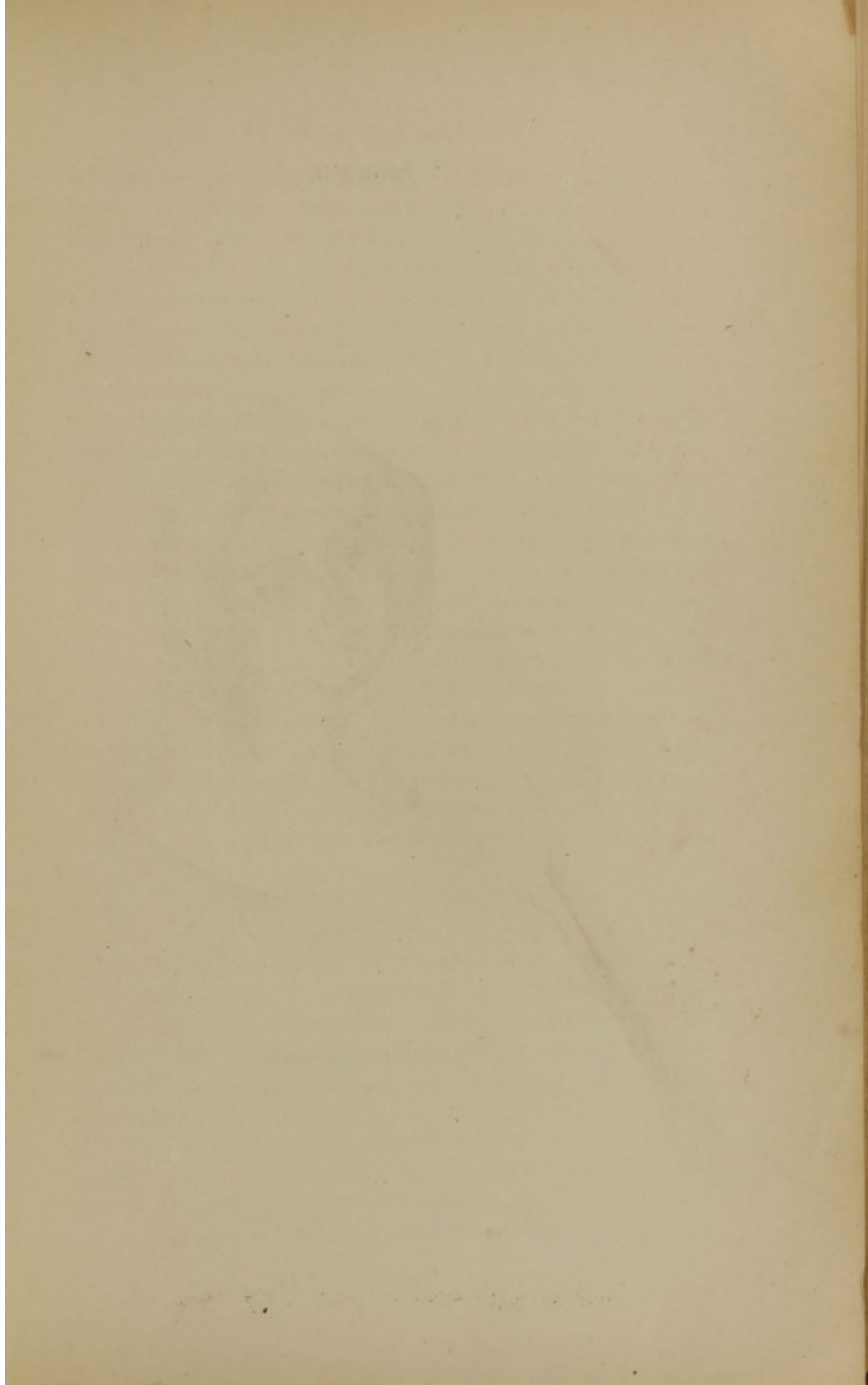


PLATE XIII.



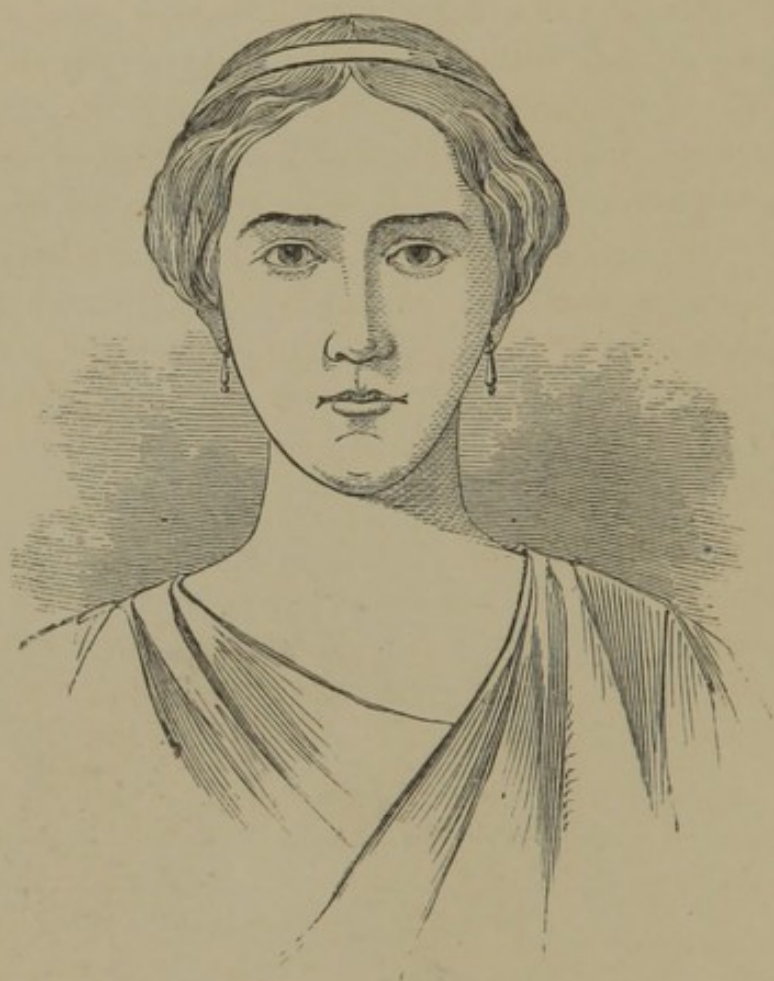
LA BELLE ANGLAISE.

PLATE XIV.



THE MENTAL TEMPERAMENT. 7

PLATE XV



RACHEL.

Illustrations of this temperament are furnished by Plates XIV. and XV. The face of Rachel is particularly fine, and no ideal can express, in general contours, more intellectuality. The following brief but graphic description of the great Queen of Tragedy, as she appeared on the stage in New York, in 1856, will complete the picture.

"Pale, with jet-black hair, a small, regular nose, a mouth mobile enough, but rather sweet in its expression and tender in its lines for the heroine of tragedy, and a large forehead quite protruding itself over the straight, black brows that shadow her wondrous eyes, she is the very embodiment of feminine intellect. Her figure is slight, and her mental entirely dominates her vital system; but her limbs, with all their delicacy, have a firm look, and she is rather lithe than fragile. The fall of her drapery would make any sculptor despair, did he not see that itself is but the reproduction in tissue of lines into which the Grecian sculptors wrought their marble."

In persons of the mental temperament, the brain and the nervous system are active, the thoughts quick, the senses acute, and the imagination lively and brilliant. It is the literary and artistic, and especially the poetic, temperament, of which Byron,



KEATS.

Shelley, Keats, and Poe furnished good examples.

There is at the present day, and in this country, an excess-

ive and morbid development of this temperament, especially among women (to whom, even in its normal predominance, it is less proper than the preceding), which is most inimical to health, longevity, and happiness. It answers to the nervous temperament of the old classification, and is characterized by the smallness and emaciation of the muscles, the quickness and intensity of the sensations, the suddenness and fickleness of the determinations, and a morbid impressibility. It is caused by sedentary habits; lack of exercise; a false system of education, inducing a premature and disproportionate development of the brain; the immoderate use of tea, coffee, and tobacco; and habits of sensual indulgence. We shall show farther on how this state of the system may be prevented, or, if already existing, remedied, in a measure, at least.

The three primary temperaments combining with each other in different proportions, and being modified by various causes, form sub-temperaments innumerable, presenting differences and resemblances depending upon the relative proportions of the primitive elements. The simplest combinations of which the three primary temperaments are susceptible, give us six sub-temperaments, which may be designated as—

1. The Motive-Vital Temperament,
2. The Motive-Mental Temperament,
3. The Vital-Motive Temperament,
4. The Vital-Mental Temperament,
5. The Mental-Motive Temperament, and—
6. The Mental-Vital Temperament.

The names of these compound temperaments sufficiently indicate their character. The motive-vital and the vital-motive differ but slightly, the name placed first in either case indicating the element which exists in the larger proportion. The same remark applies to the motive-mental and the mental-motive, and to the vital-mental and the mental-vital.

It is evident that perfection of constitution must consist in a proper balance of temperaments. If any one of them exists in great excess, the result is necessarily a departure from symme-

try and harmony both of form and character. Whatever, therefore, has a tendency to promote the disproportionate development of either of them should be carefully avoided.

Each person is born with a particular temperament, in which there is an inherent tendency to maintain and increase itself, since it gives rise to habits which exercise and develop it; but this tendency may be counteracted and changed entirely by external circumstances—by education, occupation, superinduced habits, climate, etc., and more particularly by special training instituted for that purpose. George Combe, in one of his valuable works, points out the important changes produced in the temperament by a continued course of training. "It is common," he says, "for the bilious [motive] to be changed into the nervous [mental] temperament by habits of mental activity and close study; and, on the other hand, we often see the nervous or bilious changed into the lymphatic [vital] about the age of forty, when the nutritive system seems to acquire the preponderance." Spurzheim was accustomed to say that he had originally a large portion of the lymphatic temperament, as had all his family; but that in himself the lymphatic had gradually diminished, and the nervous increased; whereas, in his sisters, owing to mental inactivity, the reverse had happened, and when he visited them, after being absent many years, he found them, to use his own expression, "as large as tuns."

Let these facts be borne in mind when we come to give practical rules and directions for physical improvement.



IV.

THE LAWS OF HUMAN CONFIGURATION.

It is the law of formation, that the development of any part of the body is in direct proportion to the vital currents which, by means of exercise, are brought to bear upon it.—*Théophile Gautier.*

Quand on sonde la nature humaine à une certaine profondeur, on trouve l'âme.—*Anonyme.*



To be a good gardener, one must have a practical knowledge of the laws of vegetable life—must understand the effects of climate, soil, manures, grafting, crossing, and cultivation, on the character, growth, and forms of plants.

A clear comprehension of the laws of animal life, on which human development and configuration and, consequently, human health and beauty, depend, is certainly not less important to him who would attempt his own physical culture, undertake the training of children, or assume the office of public teacher or reformer; and we shall, we believe, best promote the practical ends we have in view by devoting a few pages to an exposition and illustration of these laws.

It is everywhere the indwelling life which determines the external forms of things. The soul shapes the body and not the body the soul. This principle (which runs quite through nature) we take as our point of departure.

Among all created things, in strict accordance with the law just stated, differences of form are found to be commensurate with differences of character and use. Things which resemble each other in quality and function resemble each other in shape; and wherever there is unlikeness of quality and function there is unlikeness of configuration. It may be observed, further, that whenever a change of vital character takes place in anything, whether mineral, plant, or animal, there is a tendency to a corresponding change of form. We are hardly permitted to doubt, therefore, that there is, in all cases, a determinate relation between the constitution and the appearance of things, though we may not always be able clearly to trace it out. The differences we observe among species, and among individuals of the same species, are not accidental, nor are they mere arbitrary marks. There is a cause in the nature of things why each individual, plant, or animal should assume its own precise figure rather than any other, and this cause may be found in *the necessity of adapting form to character*.

The outer or physical man, then, is but an image or material representation of the inner or spiritual man. The soul, modified in its manifestations by external conditions, and subject to constant impressions from the various objects by which it is surrounded, builds up the body and changes it at will, to meet its own changing character and wants; every alteration in a man's style of being necessarily tending to express itself in every fiber, fluid, and movement.

It would carry us too far from the practical work we have undertaken, to discuss the abstract question of the soul's connection with the body or to investigate the mode of its action upon it. It is better, in cases like this, to dogmatize, if necessary, than to theorize. There exists then in man, we will assume, circulating through every nerve, a very subtile fluid. We

do not see it; it can hardly be said that we feel it; but we recognize it as an *influence* running along the nervous fibers from the limbs or body to the head in sensation, and from the head to the limbs or body in voluntary motion. This fluid seems to form the connecting link between soul and body, and to be the instrument by means of which the former builds, rebuilds, and shapes the latter. It is generally supposed to be electric or magnetic in its nature. The ancient Magians called it the *living fire*. Delaage, our French *thaumaturge*, gives it the name of *l'esprit de vie*, and says that "it has the color of fire or the electric spark, and is generative and plastic, inducing formation, and bending everything it touches into the forms prescribed by the directing intelligence."

"Soul of the world," he continues, "spirit diffused through all nature, it is the vital essence of all the bodies which it animates and of all the species in which it is incarnate; and is itself profoundly modified by all the mediums which it traverses. It is flesh when it traverses the flesh, and bone when it traverses the bones; and so truly is it the essence of each man, that if you present to a lucid somnambulist a lock of hair impregnated with this fluid, he will, in his super-normal condition, describe physically and morally the person from whose head it was taken.

"As another illustration of the fact that this fluid develops and animates specifically each body which it traverses, take a branch of the plum-tree and graft it upon an apricot-tree. The spirit or sap, which is the life of the latter, penetrates the former, where it is changed into the sap of the plum-tree, and, by virtue of its generative power, develops the branch and covers it, at the proper season, with leaves and flowers, and in due time with matured and ripened fruit, having the proper form, color, and flavor of plums."

Virgil proclaims very clearly, through the lips of Anchises, the same great truth. The passage is a magnificent one:

Know first, a spirit with an active flame,
Fills, feeds, and animates this mighty frame;
Runs through the watery worlds and fills the air,

The ponderous earth, the depths of heaven afar,
Glow in the sun and moon, and burns in every star.*

Now, the reader may accept the theory (which our quotations show to be not a new one) thus briefly stated and illustrated, or he may supply its place by one that may suit him better. In either case our facts retain their full value, and the real foundation of all our practical teachings remains unmoved.

Constantly but unconsciously

We build and unbuild our echoing clay,

changing, particle by particle, fluid, muscle, and bone. Cuvier, in developing this grand idea, remarks:

“In living bodies no molecule remains in its place; all enter and leave it successively; life is a continual whirlpool, the direction of which, complicated as it is, remains always constant, as well as the species of molecules which are drawn into it, but not the individual molecules themselves; on the contrary, the actual material of the human body will soon be no longer in it; and yet *it is the depository of the force which will constrain the future material in the same direction as itself*; so that the form of these bodies is more essential to them than the material, since the latter changes unceasingly, while the other is maintained.”

Cuvier refers to the general form, characteristic of species. Molecular changes do not effect this. Individuals change, but species are permanent. The “force” of which he speaks constrains new material to follow the direction marked out by the old, which it displaces, so far only as character and function require the same configuration. Any change in life and habits changes correspondingly the direction of the vital currents; so that, while the perpetual process of building and rebuilding our physical frames leaves us all the marks which distinguish the race to which we belong, individual peculiarities may be

* *Æneid*, Book VI. In these sublime and exalted verses Virgil follows the refined sentiments of Plato concerning the *anima mundi*, or soul of the world, pervading and vivifying all created things.

greatly modified, or even wholly lost, by means of the changed direction of the vital forces. The volume of the vital organs contained in the chest and abdomen, for instance, may, by means of a mode of life favorable to such a result, be largely increased, while that of the brain and nervous tissues may meet with a corresponding decrease. The oval face may become round; the long, thin bones and muscles broad and thick; the slender, angular frame plump and rotund, through the simple action of this grand law of formation.*

Within certain limits, the nervous fluid or vital force strengthens and develops any part of the body or brain in proportion as it is brought to bear upon it. Its currents are controlled in two ways—directly by a mere act of the mind, and indirectly by the exercise, whether voluntary or involuntary, of the part to be developed. Study and reflection summon it to the forehead, the lobes of which gradually protrude; the exercise of the moral sentiments calls it to the coronal region, where it elevates insensibly, but certainly, the cranial arch; the lower faculties make use of it to feed and develop the basilar organs and to enlarge the jaws and abdomen. The special exercise of the arm induces a stronger tendency of the vital currents to that organ; the process of waste and renovation is quickened; and if the exercise be regular and not excessive, more particles are deposited than are carried off, and the arm is strengthened and increased in size. It is for this reason that the right arm and hand are larger and stronger than the left. By allowing the right arm and hand to fall into comparative disuse and transferring their functions to the left arm and hand, the latter may be increased and strengthened while the former will shrink and grow weaker, till the relative size and strength of the two opposite sides are reversed. Riofrey mentions a pianist who, by

* Under different mental and vital influences, there must be a change in the *make and structure* of the body. The skin, the muscles, the adipose tissue, the internal organs, the brain, and, in the end, the ligaments and bones, become molded to a new type—from the gross to the refined, or the opposite.—*Prof. Levi Reuben.*

playing for a number of months with a weight on the left hand (which, of course, called for additional exertion and created a tendency of the vital fluid and blood to the part to give it the requisite motion), gave it equal strength to the right hand, so that their touch could not be distinguished. On the same principle, any part of the body or brain can be developed and strengthened. The application of the law we have unfolded to fetal life will set its importance before us in a very strong light.

The impregnated human ovum, or egg, infolds the germ of a new human being. The first direction has already been given to the vital forces, creating a tendency to a specific character and form. Direct paternal influence ceased with the generative act. Whatever the father does henceforth to impress his own image, or that of some ideal form, upon his unborn child, must be done through the mother. Her soul is the governing principle which determines its final character and configuration. Every thought which passes through her mind; every emotion, no matter how transitory; every impression from external objects affects, in a greater or less degree, the fetal being. Intense grief, violent anger, or uncontrolled terror may cause its destruction or mar irretrievably its symmetry, both of character and form.

Those curious phenomena called *nævi materni*, or mother's marks, illustrate very strikingly the influence of the mother's mental impressions upon the organism of the fetus. They are marks or blemishes, extending sometimes to absolute deformity, produced upon the body of the child by some strong impression made upon the mind of the mother during gestation. For instance, a lady is mentioned by some medical writer, on whose back, between the shoulders, is the perfect impression of a mouse, hair and all, flattened down to the surface of the skin. Several months before her birth her mother was frightened by a mouse which got between her clothes and her person at that particular part. In accordance with the same law, all impressions, emotions, passions, and mental states of which the mother is the subject, are inwoven with the very texture of the unborn being. Anxiety, moroseness, jealousy, or any other morbid

state of mind, as well as the constant sight of ugly or disagreeable objects, mar and deform, in proportion to the impression they make upon the mother, the figure and features of the child. Love, hope, happiness, and the contemplation of beautiful objects in nature and art, impress upon it the lines of grace and beauty, and tend to produce symmetry of form. The sensitive paper in the camera of the photographer repeats not more certainly the lines thrown upon it by the graphic pencils of light, than the unconscious embryo does the images, whether of beauty or deformity, reflected from the maternal soul. But more of this in the next chapter.

With birth, the direct psychical influence of the mother ceases. Impressions made upon her soul no longer affect directly the character or configuration of the child. It is now an independent being, subject only to the laws of its own organization. Its inherent tendency is to develop itself according to the model existing in the primitive germ. If it could now be placed beyond the reach of all external influences, a temperament and configuration already determined would result from the simple action of the indwelling life-principle.

But impressions, acting now directly upon the mind of the child, are scarcely less potent in molding its soft and pliant features and form than they were before birth. It is now that climate, society, material surroundings, food, and clothing, as well as direct culture, begin to exert an influence in modifying configuration, and determining the direction and degree of departure from the primitive type.

While in the womb of the mother, the child is, as it were, a part of herself—a branch growing upon the parent stem. The vital fluid which circulates through her body, in obedience to her intelligence and the law of her organization, permeates its body also, developing it in the likeness of the model set up in her soul. Cut off from her—transplanted, to commence an independent existence—the life-spirit obeys the directings of the new intelligence, as influenced by the conditions under which it exists.

All parts of the infant being now require development, and by perpetual movement he causes the nervo-vital fluid to circulate in every part. The parent may direct, in a measure, the distribution of this fluid, and consequently control to the same extent his proportional development. If the limbs are weak, he may encourage their exercise and thus promote their growth and strength, by directing upon them the creative forces—exercise (within certain limits) always promoting development. But too often the physical system is neglected, defrauded of its share of the elements of life, and deformed, by compression and constrained postures; while the attention of parents and teachers is directed wholly to the intellect. This being spurred up to an unnatural and feverish activity, withdraws the vital forces from the stomach, the lungs, and the limbs, and throws them upon the various parts of the brain, which are disproportionately expanded. Symmetry and beauty, as well as health of body and brain, are thus sacrificed to a narrow and mistaken notion of education. An opposite course dwarfs the intellectual organs of the brain, withholds from the features all those varied and delicate lines, softened contours, and elegant phases of expression which are the signs of mental culture, and confers mere brute strength and animal vigor. The laws of configuration which we are endeavoring to explain are equally exemplified in either case. The organs exercised—the parts to which attention and culture have drawn the creative forces in a disproportionate degree are disproportionately developed, while those which are robbed of a portion of the nutriment which belongs to them are starved and dwarfed.

Education has an all-powerful influence, as is well known, upon the configuration of the cranium.* It just as certainly and necessarily modifies the features of the face and the form of the body.

Impressions, as we have seen, play an important part in hu-

* Mr. R. Beamish, F.R.S., stated, at a meeting of the Edinburgh Phrenological Society, that a bust taken from his head could not be recognized as his own, after he had spent two years in severe study.—*Amer. Phren. Jour*

man physical configuration, particularly during youth. They affect it by means of one of the simplest mechanisms of the organization. They exert an influence upon the vital fluid contained in the nerves, causing it to flow toward a determined point. This fluid or life-spirit, being eminently creative, develops, by making use, of course, of the nutritive elements furnished by the blood, the parts upon which it is thrown. Now all the mystery of the production of beauty consists in giving such a direction to the fluid currents as to develop the different parts of the body in the proportions determined by the rules of art, which will, after all, be but co-operating with Nature and following out her tendencies, which we, instead, so constantly thwart. It is a primary law governing mental impressions, and consequently human configuration, that *man becomes insensibly transformed into a resemblance of an object attentively contemplated.*

History shows us that the great geniuses who instituted the practice of ceremonies, under the name of worship, for the improvement of man, always applied to the pencil of the painter and the chisel of the sculptor, in order to place before the eyes of the faithful, statues and pictures of ideal beauty, the sight of which, constantly repeated, should in the end impress their beauty upon humanity; for the face of man, like a daguerreotype plate, reproduces the features constantly contemplated.*

On this principle must be explained the striking resemblance so often observed between husbands and wives, who have lived long and in true love relations with each other. Each has insensibly approached the other, till each is the other's *alter ego* in face and form as well as in soul. This is the key, too, to other mysteries, as we shall see further on.

The fundamental laws of human configuration, then, to sum them up or re-state them in a more compact form, seem to us to be these:

1. The active and plastic principle is the soul—the true man

* Delaage.

—of which the body is but the external expression and instrument.

2. The soul forms, changes, and controls the body through the instrumentality of a nervo-vital fluid, which forms the connecting link between mind and matter.

3. This vital fluid strengthens and develops any part of the brain or body in proportion as it is brought to bear upon it.

4. The vital fluid, or creative life-spirit, may be thrown upon any organ or part by the exercise of that organ or part, or by a simple act of the mind directing the attention intently upon it.

5. Impressions made upon the mind by external objects affect the configuration of the body by acting specifically upon particular parts or organs, through the nerve-spirit or vital fluid.

6. Impressions made upon the mind of the mother affect the configuration of her unborn child; and they are far more striking in this case, because the fetal being is in process of formation, and is more pliant and impressible than after birth.

We might illustrate each of these points by numerous facts, but as such facts may be more advantageously cited in future chapters, in which we shall set forth and explain the influence of parentage, education, mental states, occupation, amusements, climate, social institutions, government, natural scenery, works of art, etc., upon configuration, we shall leave these principles for the present with this simple statement.



V.

EMBRYOLOGY.

Like produces like, not in generalities (for generalization is an act of the mind), but in details, modified only by the necessity of adaptation between two beings uniting for the production of a third one, and by subordinate circumstances affecting them.—*Alexander Walker.*



IN order to secure the highest possible excellence in the quality of his grain, the wise and skillful agriculturist carefully selects the best seed and sows it, in a suitable soil, at the proper season to insure the necessary warmth, moisture, and other conditions

essential to its germination and growth. The scientific cattle-breeder is equally heedful in reference to similar conditions, in taking measures for the increase of his herd. Both have a living faith in the grand truth that LIKE PRODUCES LIKE. Is it not time that those who aspire to generate *men* should act as wisely, at least, as the cultivator of *corn* and the breeder of *oxen*? Perfection in the human being is to be reached by the same path which leads to a similar result on the lower planes of life.

It is hardly necessary to stop here to prove, or even to illustrate, the great law hinted at, in obedience to which, in every department of organic nature, genera, species, and varieties propagate themselves "each after its kind." It is made clear enough by the every-day observation of the least curious. If we sow a field with wheat, and it spring up and grow and mature, we can rely with absolute certainty upon a crop of wheat. It never proves to be oats or barley. Nor do our cows ever astonish us by bringing forth colts, or our sheep by producing pigs. So in the human species, the offspring of a Caucasian father and a Caucasian mother is invariably a Caucasian, and not a Negro or Malay.

The fact that particular forms and qualities, characteristic of families or individuals, are equally transmissible from parents to children, though less striking, is equally subject to verification by common observation. We once knew a gentleman who had a supernumerary finger on each hand, and an extra toe on each foot. He had several brothers and sisters marked by the same peculiarity, which had been a characteristic of the family for many generations. The transmission of peculiar and striking features, from generation to generation, is particularly observable in royal and noble families, in which alliances with persons of a different rank are seldom formed. The Bourbons and the reigning house of Austria furnish cases in point. The thick lips introduced into the latter by the marriage of the Emperor Maximilian with Mary of Burgundy is visible in their descendants to this day, after the lapse of three centuries. But almost every neighborhood furnishes examples equally conclusive. The reader has but to make a few observations and inquiries to convince himself of the fact. The general resemblance of persons of the same blood to each other is a subject of common remark. We can in general readily trace similar lines of countenance in them all.

Like produces like everywhere and always—in general forms and in particular features—in mental qualities and in bodily conditions—in tendencies of thought and in habits of action.

Let this grand truth be deeply impressed upon the hearts of all who desire or expect to become parents.

The first step toward human physical perfection must be pre-natal. "A corrupt tree can not bring forth good fruit." It is only from properly developed and ripened seed, sowed in good soil, that we can expect strong and healthy plants. The intelligent and well-informed farmer is aware that if he should plant the small and imperfectly matured corn from the "nubbins," which he is accustomed to appropriate to the sustenance of his cattle, that his grain would deteriorate, in spite of the best cultivation, and, if this course were persisted in, would finally become valueless. In the cultivation of the potato, strangely enough, this unwise policy has been pursued to a considerable extent in many localities, with the natural result—continued deterioration. Unfortunately, we have experimental demonstration that a similar cause always leads to a similar result in the human species.

"But if like always produces like," it may be asked, "How is perfection in offspring to be attained without the agency of perfect parents? and how does it happen that children are often born more beautiful or more homely, more healthy or more diseased, more intellectual or more imbecile, than those to whom they owe their existence? How, too, are we to account for the fact that, while there are generally marked resemblances among those of the same blood, there are also striking differences? and for the no less evident circumstance, that although a child may resemble one parent in some features or parts of his organization, and the other in other features and parts, he may also possess individual peculiarities which can not be traced to either, or to any combination of the traits of both?"

These questions are important and pertinent, and indicate the necessity of something more than a general statement of the law of parentage. The difficulties suggested will vanish, if we mistake not, on a more careful and minute examination of the subject,

Both the maternal germ and the vitalizing fluid which is destined to impregnate it, in common with the other secretions, must necessarily be modified by every condition of body or mind to which the individuals in whom they are prepared may be subjected during the process. They must represent not only permanent traits of character and configuration, but also whatever is temporary and accidental in physical and mental states; and *especially must the condition of body and soul existing at the moment in which the generative act is consummated impress itself upon the germ thereby vitalized.* Thus, a fit of petulance or ill-humor existing at the time of conception, in a mother ordinarily amiable and sweet-tempered, will be transmitted to her child, marring irretrievably its disposition and character. In the same way a transient derangement of the digestive organs, a bilious attack, or a temporary torpidity of the liver, as well as the more chronic conditions superinduced by cancerous, scrofulous, or rheumatic humors, must inevitably affect offspring generated during its existence, imparting a predisposition to disease of the corresponding organs. And, fortunately, gentle and loving moods, beautifying and ennobling passions, earnest thoughtfulness, and conditions of health and vigor in the physical system, however temporary, are equally subject to transmission.

These facts indicate the means by which physical perfection may gradually be reached. Parents who understand this law, and act with a conscientious regard to the well-being of their posterity, will transmit only their highest conditions of body and mind, thus producing children superior to themselves, who, in their turn, will impart a still higher tone of organization to their offspring. O. S. Fowler, in one of his excellent physiological works, mentions the case of a gentleman who chose an occasion of festivity and uncommon social enjoyment, in which his wife had also fully participated, on which to give existence to his youngest child. That child proved to be a child of joy in every sense, being the very embodiment of good-nature and quiet happiness. In the light of such facts we

can readily comprehend how parents may generate children far more beautiful than they, in their permanent traits of countenance, could ever claim to be, and how a reverse of these conditions may exaggerate homeliness into ugliness; leaving out of view entirely other modifying causes hereafter to be mentioned. Thus, what is temporary in the parent becomes permanent in the child, and what may often seem a complete departure from the parental types, is merely such a modification of the features of one or both the parents as they could and did assume and communicate, though differing widely from their ordinary expression.

It follows from the principles and facts already stated, that habits and tendencies of thought and action, developing and rendering active the organs which they employ, are communicated from parents to offspring. Facts confirm this deduction. It is known that the whelps of well-trained dogs are, almost at birth, more fitted for sporting purposes than others, and that the communicated powers are not of a vague or general kind, but that any particular trick or art acquired by these animals is readily practiced by their progeny without instruction. Teachers have observed, too, a remarkable difference in the capacities of children for learning, connected with the aptitudes of their parents. Children of people accustomed to arithmetic learn figures more readily than those of differently educated persons; while the children of classic scholars acquire a knowledge of Latin and Greek with a facility unknown to others. With some striking exceptions, which a knowledge of all the circumstances of their case would explain, the natural dullness of the children of uneducated parents is proverbial.

But in the case of the mother, it is not enough that we consider merely the conditions existing at the time of conception and previously thereto. In endeavoring to account for the mental or physical peculiarities of her child, we must bear in mind that, during the whole period of gestation, every influence which affects the maternal organism makes a corresponding impression upon the fetus. The same blood which sustains her.

nourishes and develops it; the same nervo-vital fluid which circulates through her system, conveying the mandates of the soul to every part, and executing everywhere its behests, permeates the soft and impressible form of the unborn child, modifying continually its character and configuration. If her blood be pure and highly vitalized, the fetal being will be built up in purity and strength; and if the nervous fluid through which she calls its organs, one by one, into existence, be the messenger of pleasant impressions, happy thoughts, and beautifying emotions only, the unborn being will be molded into harmony and beauty. So, on the other hand, every disorder of the mother's physical system, and every disturbing passion of her soul, must inevitably corrupt, weaken, and deform her offspring.

The Margravine of Anspach observes, that "when a female is likely to become a mother, she ought to be doubly careful of her temper; and in particular, to indulge no ideas that are not cheerful, and no sentiments that are not kind. Such is the connection between the mind and body, that the features of the face are molded commonly into an expression of the internal disposition; and is it not natural to think that an infant, before it is born, may be affected by the temper of its mother?"*

The facts illustrative of this truth, collected by various physiological writers, would fill volumes. The reader who is curious in this matter, may find a large number of them in O. S. Fowler's works on "Love and Parentage," "Maternity," and "Hereditary Descent." Two or three must suffice here.

Mrs. D. traces minutely in the diversities of character and disposition of her numerous children, her own life-history during her long maternal career. While pregnant with her first child she was happy and in the exercise of her most amiable traits, and it is peculiarly beautiful and sweet-tempered. After this her husband began to drink, which naturally darkened the sky of her happiness, and brought into action some of the less lovely attributes of her character. Her next child

* Memoirs.

faithfully represents, in disposition and temper, the state of mind thus induced. Then came poverty and the consequent struggle with adversity, which, while they called out all the latent energies of her nature, developed also still further the unamiable traits already too active; and the character and disposition of the children born during this period correspond; and so on through still other changes of a somewhat eventful life.

A lady of Boston who had become intensely interested in Napoleon and his exploits, and was accustomed to read everything she could procure relating to him, bore a son during that great conqueror's triumphal career. He inherits the most decided martial tastes, and is so enthusiastic an admirer of Napoleon that he has covered the walls of his house with pictures of him and his battles.

The case of Napoleon himself furnishes a capital illustration of the point under consideration. His mother while pregnant with him, shared with her husband, and frequently on horseback, the dangers of a military campaign.

A lady writes: "From the age of two I foresaw that my eldest son's restlessness would ruin him; and it has been even so. Yet he was kind, brave, and affectionate. I read the Iliad for six months before he saw the light, and have often wondered if that could have had any influence on him. He was actually an Achilles."

It has been observed that children born during a period of great intellectual excitement and heroic exertion, inherit great natural energy and genius, and are far superior to those who receive their being under circumstances which do not call out so fully the powers of their parents.

A lady possessing a large brain and active temperament was employed professionally as a teacher of music. Her husband had a fine temperament and a well-constituted brain, but his talents for music were only moderate. They had several children, all of whom were produced while the mother was in the full practice of her profession, and the whole now indicate superior musical abilities. They have learned to play on several

instruments as if by instinct, and highly excel. In this case the original endowments of the mother, and her actual exercise of them, conspired to transmit them to her children.*

That the physical configuration of the fetal human being is, in an equal degree with the mental character, subject to modification by the physical and mental states of the mother, might be left to be inferred from the facts already adduced, but illustrative examples are readily furnished, as they abound on the pages of physiological and medical works.

Roussel remarks, that "children have been subject all their lives to convulsions, in consequence of their mothers having, during pregnancy, been struck with terror or some other powerful emotion."†

"A man residing in Clarendon, Vt., while crossing the North River, near Albany, in a boat, some years since, was assaulted by another man with a broken oar, and a deep gash was cut through his scalp. In this wounded condition he returned home to his pregnant wife, who, of course, was deeply horrified at the spectacle. Some seven or eight months afterward she gave birth to a child, upon whose scalp was a wound corresponding in shape and position with that made upon her husband's head. By means of adhesive straps the wound was made to heal, and the child lived."‡

There is a child now living in Boston whose countenance bears such a striking resemblance to a monkey, as to be at once observed. The mother visited a menagerie during her pregnancy, where a monkey jumped upon her.§

It is not necessary to multiply examples. These are extreme cases; but if *any* physical condition or any mental state of the prospective mother affects her unborn offspring, then *all* such conditions and states, each in its degree, must do so; and we now readily comprehend how, independently of the explanation already given, a child may be very unlike both his parents in

* Combe. Constitution of Man.

‡ Scalpel.

† Système Physique de la Femme.

§ Maternity.

form or features, and yet furnish a confirmation, and not a refutation, of the doctrine we have advanced. The impression in the soul of the mother to which the child owes its individual characteristics was to her a reality—an integral part of herself—a something inwoven into her very being, and transmissible, like her own features or her own mental character. It is still only like producing like.

That the sages of ancient Greece understood the doctrine of fetal impressions, and saw clearly that the work of perfecting the physical man should begin before his birth, is evident from their teachings. They directed that women, and especially those in the condition of child-bearing, should devoutly worship Apollo, Narcissus, Hyacinthus, Castor and Pollux, deified personifications of masculine beauty; and the fair and pious daughters of Attica placed the statues of these gods in their bed-chambers, and, fixing their eyes upon their seducing forms and their features of ideal purity, adored them with loving fervor. Is it strange that these marble deities, grateful for such worship and radiating grace and inspiration, gave to their children a beauty equal to their own?

As a circumstance liable to modify, in appearance at least, the law of transmission, we may observe here that children sometimes resemble their grandfather or their grandmother, instead of their father or their mother, peculiarities reappearing in a subsequent generation, after having failed, from the operation of causes not easily explained, to show themselves in the immediate progeny. This phenomenon, which prevails throughout the animal races, and probably among plants, has been called *atavism*.

Another apparently well-established principle, and an important one in its practical bearings, should be mentioned here; namely, that during the first four or five months of gestation, the physical system and the organs lying at the base of the brain are the subjects of more special development, and that the reasoning and moral organs are developed and their proportional size adjusted after the fifth month.

The practical value of the grand truths enunciated in this chapter can hardly be over-estimated. A thorough knowledge of them in all their bearings puts it within the power of parents to predetermine, to an almost unlimited extent, not only the mental and moral qualities of their offspring, but also, and through these, their physical conditions and configuration. *Children may be brought into the world intelligent or stupid, amiable or ill-tempered, beautiful or ugly, at will; nor need we stop with this general statement. It is equally true that any particular quality of organization, contour of figure, or cast of features, even though feebly or not at all developed in the parents, may, through the instrumentality of the means already indicated, be imparted to children.* In making this statement we would not be understood as underrating health and beauty as parental qualifications. All other things being equal, the healthiest and most beautiful parents will produce the healthiest and most beautiful children; but plain and comparatively sickly parents, by acting in strict accordance with the principles set forth in this chapter, may give existence to healthier and more beautiful offspring than the most favored in these particulars who shall live in ignorance or in willful violation of physiological laws.

Prospective parents, can a more moving appeal be made to your hearts and consciences than we have placed before you in these simple but overwhelmingly important statements? Can you shut your eyes to them, or in their clear light sin against Heaven and your own posterity by propagating imbecility, ill-nature, disease, or deformity? You have no *right* to usher either physically or mentally deformed children into a life of bodily pain or mental suffering. The means of perfecting your offspring are in your own hands, and you are responsible for their use. No child should be the offspring of weakness, or apathy, or indifference, or of any accidental combination of conditions, much less of organic disorder, perverted passions, or brutal lusts; but of health, activity, thoughtfulness, earnestness, sincerity, purity, sweetness, harmony, and beauty.

From the principles laid down and illustrated on the foregoing pages it follows

1. That the highest possible conditions of health, physical vigor, mental activity, and moral goodness on the part of both parents, should be secured and uniformly enjoyed for a considerable time previous to the conjugal union, and the greatest care taken that these conditions be all combined at the moment of conception.

2. That if any particular faculty or organ be weak in one or both of the parents, it should, at such times, by a special determination of the vital fluid to the proper part, be stimulated to unusual activity, that it may be transmitted in greater strength to the child.

3. That in case any disproportionate or perverted developments exist in either parent, manifested in marked faults or defects of character, they should be held in strict subjection at this period, in order that only a normal development may be communicated.

4. That if special qualities or talents be desired in offspring, the organs in the parents through which these qualities or talents are naturally manifested should be specially exercised.

5. That after conception the mother should continue to enjoy all the healthy conditions already insisted upon; be adequately nourished; take sufficient exercise in the open air; obey all the laws of her being; and be watched over with the most tender, loving, and thoughtful care.

6. That during the first four or five months of her pregnancy *special* attention should be paid to the condition of her physical system, and during the remainder of the period to the state of her intellectual and affectional nature.

7. That during the whole term of gestation no efforts should be spared to strengthen and fortify the nervous system in order to preclude the liability to dangerous shocks from fright or other violent emotions.

8. That nothing that would promote her happiness should

be withheld, and every cause of grief, anxiety, or ill-temper be, so far as possible, at once removed.

9. That she should be constantly surrounded by beautiful objects, in nature and art, and especially that she should constantly contemplate images of ideal, physical, and moral beauty, earnestly desiring and willing that her child shall resemble them.

10. That all ugly, and particularly all deformed and monstrous, objects should be carefully shunned, and only those external impressions which are favorable to harmony and beauty be received.

More extended practical rules for the guidance of those who may desire (as who does not?) to become the fathers or mothers of healthy and beautiful children, will be given in the last part of this work.



VI.

CHILDHOOD.

Old trees are not trained, but saplings, which readily take any given direction.—*Riofrey.*



N infant may come into the world healthy or diseased, vigorous or feeble, beautiful or ugly; and we have shown in the last chapter how parents may predetermine these physical conditions. But we will suppose that the candidate for the rose-crown of Beauty has already been ushered upon the arena of life. It is not too late to make or mar the future man or woman. Past errors may yet, in a great measure, be remedied. If

sickness, or disease, or deformity exist, we shall labor under a disadvantage, but need not despair. The infant is yet but as soft clay for our molding. Its physical as well as its moral destiny is still in our hands.

Comparatively few children are born with irretrievably bad organizations. Even a delicate, puny infant, the offspring of weak or scrofulous parents may, by means of careful, judicious, and persevering physical training, become healthy, robust, and

beautiful. The reverse of this is also, unfortunately, true. Beale remarks that "a long-continued course of injudicious feeding, want of air and exercise, indulgence of various kinds, and neglect of mental activity, will effect such a change, that an infant born of healthy parents, with all its organs well formed, may become a miserable, rickety, scrofulous child."* This fact is too evident to require proof; and the principle involved can not be too deeply impressed upon the minds of parents. Even those who have secured for their offspring all the pre-natal conditions insisted upon in the last chapter, and proudly exult in the possession of a healthy and beautiful child, can not safely leave the rest to chance. It is natural, no doubt, for the healthy and beautiful child to continue to be healthy and beautiful; but it requires natural and healthful conditions, and these it can not control. It is for you to see that nature has fair play.

Fortunately, it is *not* natural for the weak, diseased, or deformed child to remain weak, diseased, and deformed. These are not *natural* conditions, and there is a constant effort on the part of Nature to substitute for them health, strength, and beauty. Let this most encouraging circumstance be borne in mind. In inducing disease or deformity we necessarily fight against Nature, while in promoting health and cultivating beauty we co-operate with her, throwing ourselves, as it were, into the current of her tendencies.

In Sparta, Plutarch says, immediately after the birth of a child, it was taken from its mother and carried to a place called *Lesche*, where the heads of the family then assembled and examined the infant. If well-formed and robust, and all its limbs properly shaped, it was decided that it should be brought up; but if it was deformed, ugly, or feeble, it was condemned to be thrown into a place vulgarly called *apothetis*; as it was considered inexpedient that any child should live unless likely to become a vigorous and useful citizen. We would

* Laws of Health

not restore this barbarous tribunal, but in order to secure to the State the most vigorous and beautiful citizens possible (as important a matter now as in the days of ancient Sparta), a wiser and more humane court should hold its session around the crib of every new-born infant, to deliberate upon the best manner of correcting any deformity or ugliness that may exist, and of promoting its health and beauty.

In the nurture and training of infancy, it must be borne in mind, in the first place, that the subject of our parental care and solicitude is a very tender and pliable being, just emerging into a new phase of life, and in the highest degree susceptible to external influences, whether hostile or friendly; but possessing an inherent tendency toward the highest forms of manhood or womanhood. It is not natural for it to be deformed or diseased, or to suffer pain. If these conditions exist, they have been *forced* upon it; and whether they are the result of some imperfection in the germ from which it sprung, or of some unfavorable pre-natal impression, there is a constant effort on the part of its vital forces to correct them; and by a wise co-operation we may assist Nature to restore the system to its normal state. If, on the contrary, it has come into the world with no defect of constitution—if it be already in a healthy or normal state, it is left for us simply to supply natural conditions—the elements essential to the growth of its body and the development of its mind.

The chief business of childhood is to grow. This grand object must not be lost sight of for a single moment. Nature never loses sight of it; and if the conditions be favorable, the growth of the child will be healthy and beautiful. Health and disease are, neither in this case or any other, matters of chance, or the effect of any special dispensation of Providence, but subject to law, and each resulting from its own legitimate cause.

The rapid growth of childhood gives us the command of a most efficient means of physical improvement; but, at the same time, it increases the liability to deterioration and the ultimate destruction of the organism. The particles of which the child's

body is composed are subject to constant mutation. It is never wholly the same for two successive minutes. Old matter becomes effete and passes off, giving place to new. Healthy bones and muscles may thus gradually be substituted for diseased ones; or reversing the conditions, health may be driven out and disease take possession of the domain of life. We are constantly building and rebuilding the human edifice, and the structure will be strong and beautiful, or weak and ugly, accordingly as we use good or bad materials, and manipulate them wisely or unwisely.

Now, what are the conditions essential to the healthy and beautiful development of the well-born child?

1. Pure air is a prime necessity. First of all, the infant must breathe. Its mother can no longer breathe for it. It has commenced life on its own account. See to it that the new-comer has enough *pure air*. Bad air—air deprived of its proper proportion of oxygen and surcharged with carbonic acid and other poisonous gases—has killed thousands of strong men. Do you think the tender infant can withstand its deleterious influences? Air, the vitality of which has been consumed by combustion or by previous breathing, is entirely unfit for the respiration of any human being, and most of all for that of the new-born child, whose delicate tissues are so readily poisoned. *The copious breathing of pure air is absolutely essential to beauty, whether in the child or the adult.* That alone can vitalize the tides of life and give the roseate tinge to the fair cheek. Give your child, then, as the first condition of a healthy growth, a plenty of PURE AIR. Attend scrupulously to the ventilation of the nursery and the bedroom. You neglect it at the peril of your child's life and the certain marring of its beauty.

2. The second requirement of the young child is pure food of the proper kind and in sufficient quantity. Nature indicates what this food should be, up to the time when she shall have furnished the means to masticate solid aliments, and enables the well-developed mother to supply it in the proper quantity.

For the first year the child needs little if any food except milk, and this should be drawn, fresh and full of vitality and magnetic virtue, directly from the opulent bosom of a healthy and loving mother. That this is according to the ordinance of Nature is too evident to require proof or argument. The mother's holiest feelings sanction and confirm it. No true woman, we think, can willingly permit her offspring to draw its very life-blood, as it were, from the bosom of a stranger and a hireling. But suppose the mother be sickly or deficient in mammary development? Then we have a choice of evils. We may procure a wet nurse, or fall back upon the friendly cow. Circumstances must determine which may be the least dangerous alternative. The milk of a healthy cow is certainly preferable to that of a diseased woman; but the slop-fed cows of the city never are healthy. Good cow's milk can be manufactured by none but the grass-eating cows of the country. If a nurse is to be procured, the greatest possible care should be exercised in the selection. She must be healthy, and of not too coarse an organization. Her habits, temper, and morals must also be good.

Bone and muscle are formed from materials furnished by the blood; the blood is manufactured from the chyle; the chyle is a product of digested food. If the food, then, be impure, or poisoned by an admixture of the elements of disease, can the blood be sound and healthy?

Now, in order that the child may imbibe only pure and healthy nutriment from her bosom, the diet of the mother or nurse must be strictly attended to. Her food should be pure, nutritious, and easy of digestion. Graham or other coarse bread, cracked wheat, rice, ripe sweet fruits, milk, and cream are all excellent. If flesh-meat be made use of, it should be of the best quality, and sparingly eaten.

The milk secreted by her mammary glands will represent faithfully the changing states of the mother's body and mind. The passions affect it as inevitably as food and drink do. Albinus gives an account of an infant which was thrown into convulsions of which it died, by being suckled by its mother im-

mediately after a violent fit of anger. Be careful, then, that your child do not draw acrid poison from your bosom instead of milk.

When it has been furnished with the means of masticating solid food, it seems natural that the child should be furnished with it; but it must be gradually accustomed to a kind of nutriment so different from that to which it has become habituated; and milk should for a long time, and perhaps during life, form an important part of its diet. For the rest, bread and fruit should be its staples. The grosser kinds of animal food, and particularly pork, should be entirely excluded from its dietary. Our own opinion is, that young children should never taste flesh-meat of any kind, whatever adults may find it necessary or expedient to do. At any rate, we need not be in haste to create an artificial appetite for it. Give a healthy child sufficient bread, milk, and sweet fruits, and it will have no desire to poison its stomach with pork. Candies, rich cake, pastry, and sweetmeats should be utterly ignored. It should not know that such things exist.

Regularity is a very important point in diet, and is particularly necessary in childhood. Regularity in meals promotes regularity in growth, which is essential to symmetry and beauty.

After the first year a child requires but three or, at most, four meals a day. Continual eating is destructive to the digestive organs, and the cause of an untold amount of disease, both in children and in adults. *Without purity, simplicity, and regularity of diet in childhood, there can be no such thing as perfect health, beauty, and regular development.*

Children should drink pure water only. Spring water is best. Water in which soap does not dissolve and which is unfit for washing, is not wholesome.

3. Young children require a great deal of sleep, and the younger they are the more they require. Be careful that they sleep in well-ventilated rooms of the proper temperature; that they lie in the proper position; and that the chest be free and the face uncovered. *Never put a child to sleep by rocking in a*

cradle. If you have such a piece of furniture in use, we entreat you to banish it at once to the darkest corner of your attic.

4. Warmth is another essential. Young children, in common with all other young animals, are very susceptible to cold. The exposure of their bare legs and arms to a temperature which would cause positive discomfort to the healthiest adult, is therefore not likely to promote their physical well-being. It is, in fact, a most foolish and mischievous piece of cruelty, whatever fashion, which evidently ignores physiology, may say to the contrary.

5. Light is just as essential to a child as to a plant. When the latter is kept in the dark it soon loses its shape, flavor, and color—becomes etiolated or blanched, slender and weak. Deprivation of light has a similar effect on the human frame, and is naturally more marked and more disastrous in childhood than in maturity. Light evidently aids the development of the different parts of the body, and the occasional exposure of its whole surface to the action of the solar ray is very favorable to its regular conformation.

6. Perfect cleanliness can hardly be too strenuously insisted upon. Young children require at least *two full baths every day*—one in the morning, and the other at night. At first the water should be at the temperature of from 85° to 92°, which may be gradually lowered after the first three months; but we can not recommend *cold* water to be used on young children, except occasionally in the treatment of disease. After it is a year old, the evening bath may be omitted, except in warm weather. The morning bath should be kept up during life.

7. Exercise is as essential as breathing itself. Without it there can be no healthy and beautiful growth. After a child is a month old, it should (the weather permitting) have its *daily exercise in the open air*. In the house the largest liberty consistent with its safety should be allowed. Its clothes must not be tight, its crib narrow, or its perpetual motions in any way restrained. As it grows older it will naturally require still more exercise. It should then be much out of doors, and

should play, dance, sing, and shout as Nature dictates. Still, quiet, noiseless, "good little children" die young. Give us rather those who are "full of mischief," and "drive around and break things." It is worse than murder to compel children to stay quietly in the house, to say nothing of sending them to school to be shut up six hours a day in an ill-ventilated room, and confined to a hard, uncomfortable bench; or of putting a book into their hands at home. We say in all seriousness, with a writer in *Blackwood's Magazine*, that "a child three years old with a book in its hands is a fearful sight. It is too often the death-warrant, such as the condemned criminal stupidly looks at—fatal, yet beyond his comprehension." The child three years of age, or even six, should know little of books, except that they sometimes contain pretty pictures.

The distinguished Dr. Spurzheim says: "Experience has demonstrated that of any number of children of equal intellectual power, those who receive no particular care in childhood, and who do not learn to read and write until the constitution begins to be consolidated, but who enjoy the benefit of a good physical education, very soon surpass in their studies those who commence earlier, and read numerous books when very young. The mind ought never to be cultivated at the expense of the body; and physical education ought to precede that of the intellect, and then proceed simultaneously with it, without cultivating one faculty to the neglect of others; for health is the base, and instruction the ornament of education. * * *

Napoleon, when in the school of Brienne, was noted in the quarterly reports of that institution as enjoying good health; no mention was ever made of his possessing any mental superiority; but in physical exercises he was always foremost. Sir Isaac Newton, according to his own statement, was inattentive, and ranked very low in the school, which he had not entered until after the age of twelve. The mother of Sheridan long regarded him as one of the dullest of her children. Adam Clarke was called a "grievous dunce" by his first teacher: and young Liebig a "booby" by his employer.

Shakspeare, Molière, Gibbon, Niebuhr, Byron, Humphrey Davy, Porson, and many others, were in like manner undistinguished for early application to study, and, for the most part, indulged in these wholesome bodily exercises and that freedom of mind which contributed so much to their future excellence.*

Hufeland, a learned German physician, observes: "Intellectual effort in the first years of life is very injurious. All labor of the mind which is required of children before their seventh year is in opposition to the laws of Nature, and will prove injurious to the organization, and prevent its proper development.

* * * * It is necessary that we should not begin to exercise the faculties of the mind too early; it is a great mistake that we can not commence their cultivation too soon; we ought not to think of attempting this while Nature is wholly occupied with the development of organs, and has want of all the vigor of the system to effect this object. If children are made to study before this age, the most noble part of the vital force is withdrawn from perfecting the organization, and is consumed by the act of thought; from which it necessarily results, that the bodily development is arrested or disturbed, digestion is deranged, the humors deteriorated, and scrofula is produced."†

8. But intellectual culture must not be neglected. It is not less essential than physical training, to any high order of beauty. The mother commences this culture with almost the first hour of her child's life. Looks and intonations speak to it before it is at all capable of comprehending the value of words. It is not long, however, before it recognizes something more than the tone in its mother's expressions of tenderness. It finds that words have a significance (that is, if the mother have the good sense to speak English or some other rational language, and not "baby talk"), and soon it makes an effort to repeat what it hears. Now, if its mother speak them, or it can have the

* Education.

† Art of Prolonging Life.

companionship of persons to whom they are native, a child may learn two or three languages besides its mother tongue, before it is old enough to open a grammar—that is, before it is seven years old—and that, too, without any excess of mental exertion. Then, by means of nursery tales and rhymes, songs, games, pictures, and judicious answers to its constant questions, its mind may be kept in healthy activity, and regularly and harmoniously developed. This kind of education, without injuring the health, checking physical growth, or detracting from the simplicity and grace of the infantile features, gives to face and form those expressive and beautiful lines and shades which culture alone can impart. A different course of intellectual training—a course adapted to men and women, and not to children—prematurely and disproportionately develops the reflective organs of the brain, and gives an expression of age and maturity to the childish face, and as unpleasing to the eye of correct taste as it is physiologically and psychologically unnatural. Avoid, as you value your child's physical well-being, the precocious intellectual development now so common in this country. We have already well-nigh abolished the institution of infancy altogether, and filled the world with miniature men and women. Let us, before it is too late, make an effort to bring back to the earth the reign of *childhood*.

9. And with the rest the affections must be cultivated. A sweet temper and loving moods are in the highest degree friendly to health and beauty. A cross, ill-natured, unloving child can not be beautiful. That temper and disposition make their characteristic marks upon face and form is especially observable in childhood, when the features and configuration are so readily modified. As the crowning excellence, then, cultivate a gentle, tender, loving spirit in your children; for goodness and beauty ever go hand in hand.

If any deformity, mal-formation, deficient or excessive development, or any morbid action exist, advantage should be taken of the earliest childhood to correct it. The change of matter to which the physical system is constantly subject is

now rapid, the muscles are soft, the bones are pliant, and the patient entirely under an easy control. Almost any modification of form or change of action is now possible. The principles on which all physical training, whether general or special, should be based, have already been set forth. In a future chapter, devoted to direct physical culture, an efficient code of practical rules and directions will be given.

The parent should carefully watch over every organ of his child's body, to see that each is brought into play, and has its proper degree of activity. But to do this without interfering with the order of Nature, which is always the *true* order, the law of periodicity must be studied. Now, Nature develops particular portions of the body and brain at particular periods. We should take counsel with her, and endeavor, by education, to help her complete the part she may have on hand at given periods. If we find Nature to develop a particular function, or class of functions, from one to seven, another from seven to fourteen, still another from fourteen to twenty-one, and another subsequently, shall we not try to develop, at these specific ages, those particular functions which she is endeavoring especially to mature? Thus, from the first to the seventh year, the perfectly healthy child is very fleshy, which signifies great activity in the vital functions. This period is devoted particularly to food and sleep, yet sufficient exercise is required to carry forward these two functions; whereas from seven to fourteen a greater amount of muscular exertion, as compared with the vital functions, obviously accords with Nature's constructing economy.*

To sum up, if you would lay deeply and firmly in your child's constitution the foundations of a vigorous and beautiful manhood or womanhood, endeavor to secure to it all the essentials of a healthy growth, and carefully guard it against all deleterious influences. Give it pure air, wholesome food, warmth, light, sleep, exercise, and regularity in the action of all its functions.

* *American Phrenological Journal.*

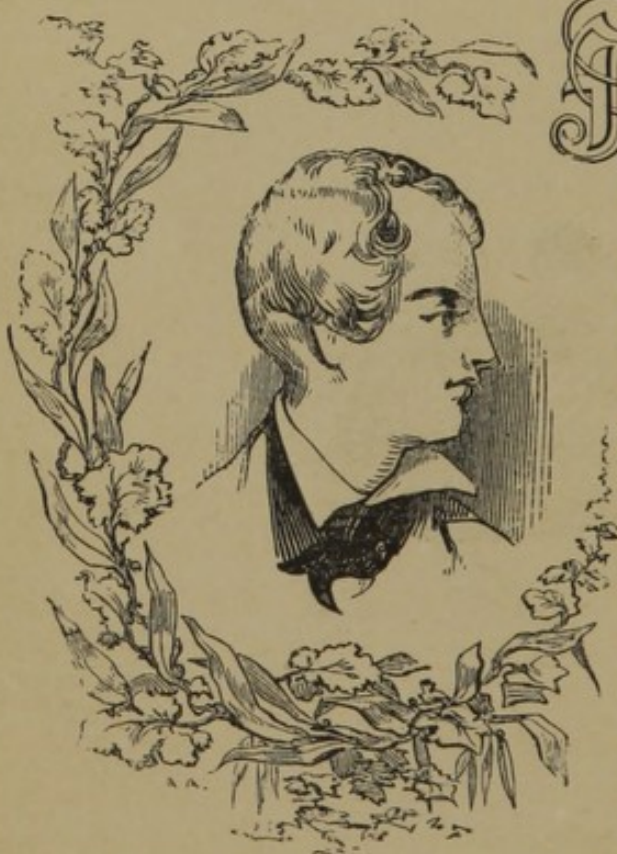
Let it live much in the open air, play, sing, shout, and laugh. Beware of tight dresses, constrained postures, involuntary quiet, "doctor's stuff," school-books, enforced study, confinement, and ill-temper! Remember that growth is now the principal thing. You may direct, but you must not compress or fetter. Study Nature, learn her tendencies, and aid her to reach the Perfection at which she aims.



VII.

EFFECTS OF MENTAL CULTURE.

L'âme, en effet, suivant son caprice, porte dans l'intérieur du crâne l'esprit nutritif de la vie sur les parties du cerveau qu'elle désire vivifier ; en rassemblant par la pensée le fluide de vie sur certaines bosses cérébrales déterminées, elle les développe et en fait des facultés d'où il résulte que la configuration primitive peut toujours être modifiée par l'éducation.—*Delange.*



It is related of that singular psychological phenomenon, Caspar Hauser, that when he was first brought to Nuremberg, in a state of complete intellectual inanition, his brutal and stupid countenance filled the mind of the beholder with pity and disgust ; but that as his intellectual faculties were brought into action and developed by culture, his features gradually became more regular and expressive. Similar, though perhaps

less striking, illustrations of the influence of education in modifying the features may be observed every day and in every neighborhood.

The general statement, that intellectual culture modifies configuration, will hardly call out an expression of dissent. The

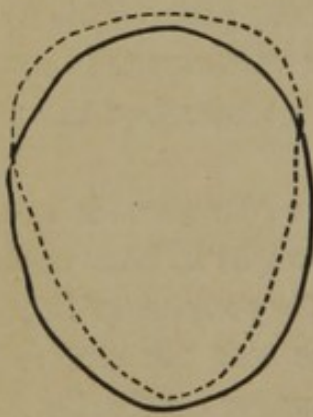
differences observable between a highly educated person and one whose intellect has received no special culture are too striking to admit a doubt on that point. But the modifications induced by intellectual culture are not, as is popularly supposed, of a vague and merely general character. They are specific and predetermined, though in their details perhaps not easily defined.

We have seen that the body is controlled and molded by the mind, which gives it a configuration adapted to its own proper manifestations. The phrenologists have shown clearly enough, not only that wherever there is intellectual improvement the head grows, getting larger and better shaped, but that the special cultivation of any particular faculty or class of faculties modifies its form by developing the organs of those faculties in the brain, and that, too, even in the case of adults in whom the ossification of the cranium is complete. Broussais states, that within two or three years in which he was closely engaged in deep reflection and argumentative study, the organ of causality in his head increased to a degree easily perceptible by measurement. O. S. Fowler makes similar statements in reference to his own head and those of others whom he has examined at different times.

Now, not only is a direct nervous influence (the nervous system being but an extension of the brain) brought to bear upon the features and general configuration, *for the purpose of keeping unimpaired the harmony between them and the cerebral organs*, but there is constant special action under cerebral control directed to the same end. The lines of the face and the form of the body are therefore just as inevitably changed by intellectual cultivation, whether general or special, as the shape of the head; though accurate observations and measurements have not been applied to the same extent in the former as in the latter case. "There is a continual relation," Riofrey truly observes, "between the body and the mind; slavery, vice, and ignorance brutalize the features; virtue, independence, and knowledge ennoble them. How hideous is the countenance

of an ignorant, vicious man! how admirable is that of an honest man, enlightened by knowledge and science!"

One of the most striking effects of intellectual culture on configuration may be observed in the gradual change which takes place in the outlines presented in a front view of the head and face. The expansion of the forehead and the superior and more intellectual portions of the face, and the relative if not absolute diminution of the lower parts, produce a marked departure from the circular, which is a low order of form, and an approach, more or less near, to the perfect pyriform outline. This alone is a great gain in the direction of beauty; for nothing is more repugnant to correct taste than rotundity of form and bullet-headedness in a man or a woman, significant as such a conformation is of predominant animality. A writer in *Household Words*, speaking of the English face of the debased times of the Georges, says: "The swinishness of our manners fixed its mark upon our features. The shape of the head was an irregular round, larger at the bottom than at the top; the



brow thick, low, and sloping backward; the nose coarse and big; the mouth fleshy, lax, ponderous, and earthy." The accompanying diagram will illustrate in a rude way the character of the change of outline we have indicated.

Now, if we look at the face more in detail, we shall observe that there takes place during the process of culture, an evident change in the expression of the eye, a softening of the lines of the eyebrows, and a lateral expansion of the nose from the bridge downward; that the lips become more gracefully arched and firmer; the chin more delicate and clearly defined, and the lines of the face, as a whole, more diversified and beautiful. The higher the culture the more varied will be the expression of the countenance, and the more capable of the highest beauty; organization and forms growing more complicated as we rise in the scale of being. Any face, however, no matter how

highly the intellect which informs it may have been cultivated, will, as we shall show further on, fall far short of perfect beauty unless the moral feelings and the affections shall also have received due development.

It must be evident that whatever has power to change the shape of the head and the permanent expression of the face may be capable of modifying, in the same degree, the temperament, and consequently the contours of the body. The cultivation and continual activity of the intellectual faculties have a tendency to diminish the action of the motive and vital systems, and while they impart expression and refinement to the features, render the body more delicate and, within the limits of physical health, more beautiful. Excess here, as well as in any other direction, produces disproportion and deformity.

The effects of an opposite course will further illustrate our position, and show that beauty may be lost as well as gained.

Let a well-educated person of an intellectual organization, and, to make the example as striking as possible, of mature age, be deprived of his books and intellectual companionship, thrown into the society of coarse, uneducated people; subjected to rude labor or exercise, to the almost entire exclusion of consecutive thinking; and made to adopt the gross diet which usually accompanies the other conditions we have named, and mark the result. Another set of faculties are now brought into action. The base of the brain expands; the lower features grow broader, the neck thicker, the eyes duller, the mouth coarser, and the face, as a whole, rounder and less expressive. The whole frame shares in the degeneracy. The muscles become thicker, the joints larger, the limbs less graceful, and the body stouter and grosser. If, further, the privation of accustomed mental stimuli shall lead, as it likely is to do, to the undue gratification of alimentiveness, by means of intemperate eating and drinking, an additional measure of grossness both of face and form will be the result. Observation will furnish the reader with examples enough of the transformations thus briefly indicated, and convince him that those who would acquire or

retain a high order of beauty must keep the intellectual powers in healthy activity.*

It follows, from the principles already laid down and illustrated, that the cultivation of particular faculties or classes of faculties must lead to the development of distinctive physiognomical traits; and as each organ of the brain has undoubtedly a corresponding portion of the body with which it maintains a special relation of sympathy, we need but to fully understand this connection to readily control, to a great extent, the conformation of the latter and the more permanent expression of the features, inducing elevations and depressions of surface at will. We know, for instance, that the cultivation of alimentiveness has a tendency to impart a fullness and give a florid appearance to the face just below the location of that organ, and that studious, industrious, and energetic habits, determining the vital forces to other parts and tending to depress alimentiveness, produce a corresponding depression in the cheek. The general influence of the basilar and coronal regions of the brain on corresponding portions of the face and body has already been noticed.

On this principle, too, we may account, in part at least, for the particular caste of countenance characteristic of nations, ages, classes, and professions, so evident to the careful and thoughtful observer. The writer in *Household Words*, already quoted, observes, that "the Greeks and Italians, who in former

* While engaged in preparing this chapter for the press, the following paragraph fell under our eye in the columns of the *Home Journal*. It furnishes a good illustration of the text:

"We were speaking of handsome men the other evening, and I was wondering why K—— had lost the beauty, for which five years ago he was famous. 'Oh, it's because he never did anything,' said B——; 'he never worked, thought, suffered. *You must have the mind chiseling away at the features, if you want handsome middle-aged men.*' Since hearing that remark, I have been on the watch at the theater, opera, and other places, to see whether it is generally true, and it is. A handsome man who does nothing but eat and drink, grows flabby, and the fine lines of his features are lost; but the hard thinker has an admirable sculptor at work, keeping his lines in repair, and constantly going over his face, to improve the original design."

times were the most artistic people in the world, possess to this day the most ideal heads and faces that are anywhere to be met with," and that one may see in "the melancholy, meditative eyes" of the poor Hindoos, who sweep the crossings, "the essential characteristics of that ancient race from whom all mythology and mystical philosophy are derived." The writer also remarks on the fact that, though national physiognomy always preserves certain broad and general distinctions, it varies in different ages in accordance with the prevailing moral or intellectual tendency of the time. He says:

"Most men have observed, in looking over any collection of portraits of the great men of successive eras, a change in the shape of the head, in the outlines of the features, and in the general expression; and this in the case of individuals belonging to the same nation. The effect is commonly attributed to difference of costume, to a change in the method of arranging the hair, or to the fact of the beard and mustache being worn in some instances and not in others; all of which may be admitted to have an influence in modifying the countenance. But this is not everything; the main distinctions lie deeper. Shave the face of Shakspeare, clapping a powdered wig upon his head, and he would no more look like the men of the Georgian era—even the most intellectual of them—than an Englishman could be made to look like a native of China by being dressed in the costume of that country. It is not merely that there is no man of an equal degree of intellect with Shakspeare; the distinction is in kind still more than in amount. The architecture of the palace of the soul has changed, and the soul itself looks through its windows with a different glance."

He contrasts the faces of Chaucer and the great men of the Elizabethan age with those of later and more debased periods of English history, particularly the Georgian era.

"In the portrait of Chaucer," he says, "we see a face of the noblest kind—a head beautifully built and proportioned, and therefore in perfect harmony with itself in all its component parts; oval, greater in length than breadth, and with the broad-

est part at the top—that is to say, in the region of the brain; the forehead broad, smooth, and high; the nose straight and sensitive, and the mouth and lower part of the face neither brutalized into an animal-like thickness, nor starved into an ascetic rigidity which denies its own humanity as completely



CHAUCER.

as it refuses to sympathize with that of others. We have here, in short, the face of a poet and a humanist, which Chaucer emphatically was."

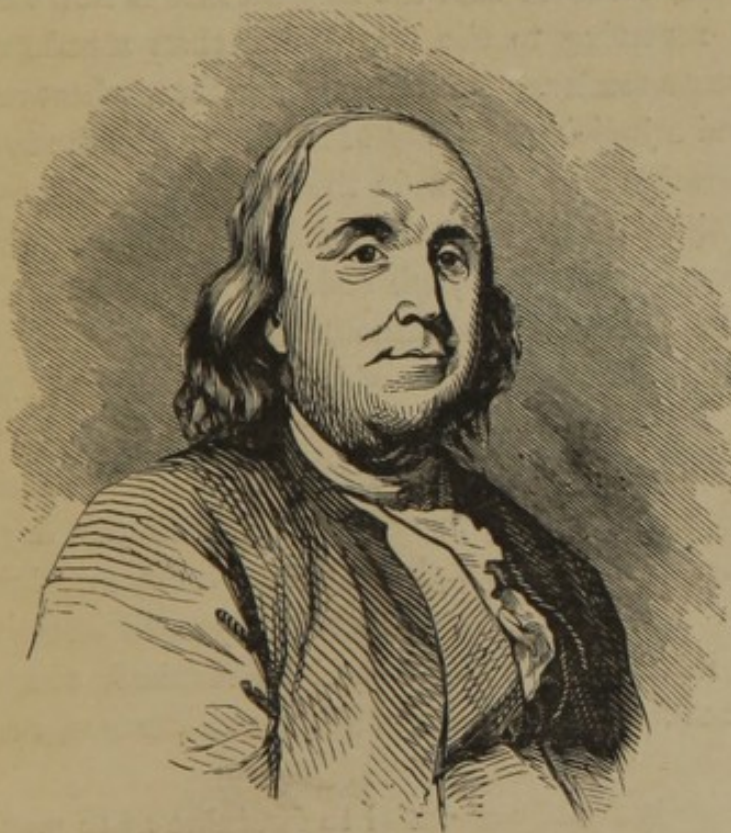
"The Elizabethan age was an age of awakening intellect, of aroused secular life, shaking itself free from the long sleep of priestly domina-

tion—an age of healthy physical existence and of large brain; of intense, warm, sensuous perception of all shades of character and all moods of the rich heart of man—an age, emphatically, of deep human sympathy (we speak of its intellect, not its actions), yet of a sympathy which did not end with man, but mounted, flame-like, toward the heavens—an age that was like a new birth to the world; proud with its young strength, exultant in its great future, yet flushed and gorgeous with the sunset splendor of the past. And all this is reflected in the faces of its poets, philosophers, and statesmen. The oval form of the skull remains; the broad, grand forehead keeping the lower parts of the face in subjection, yet not insolently domineering over them, is still found."

With the civil wars of the reign of Charles I. another modification of the English national face occurred. A glance at the portrait of the chief republican and religious innovators of that magnificent and glorious period, shows them to be "either overshadowed with the melancholy which generally attends on the leaders of any great movement in a new direction, or roughened with that bluntness, both of features and expression, which indicates a firm resolution to abide, at all hazards, by a principle; the difference being, of course, determined by individual temperament.

"After the Revolution of 1688 commenced the era of cool, sober sense; of newly acquired constitutionalism; of the modern spirit of energetic, practical life, and of the preponderance of the mercantile or shop interest. Poetry, enthusiasm, devotedness to grand abstract principles, at whatever cost, religious mysticism, and pervading spirituality had departed from

the faces of all men, great or little; and instead thereof was a calm, shrewd cleverness, or a comfortable domesticity. The shape of the head, too, had greatly deteriorated. It was beginning to get round, and its outline was often blurred by the overlapping of flabby integument."



FRANKLIN.

The face of Franklin, though belonging to a somewhat later

period and to another continent, admirably illustrates the character and physiognomy of this age of practical common sense and shrewd commercialism. Contrast the face of this philosopher of the eighteenth century with that of the poet and dreamer of the fourteenth, to whose portrait we have already called attention. Do not their faces differ as widely as their respective intellectual characters and the tendencies of their times? The face of this period was, however, a fine one, upon the whole, and infinitely superior to that of the next age; but we begin to see the animalizing effects of habits of intemperance creeping slowly upward, from the enlarging jaw.

With the perverted alimentiveness and active animality of the next age came the round head, with a general basilar predominance; the gross, heavy face, larger at the bottom than at the top; the thick, low, sloping brow; the coarse nose; and the fleshy, lax, and ponderous mouth, already described.

Our journalist sees evidence that the English face is now improving—that is, reverting to the fine Elizabethan standard. We perceive the same tendency in the American face, wherever studious leisure and a judicious culture of literature and the fine arts have been permitted to supersede the general restless activity of our too utilitarian life; but the spirit of the age in this country is far from friendly to a high order of manly beauty. The spiritual, affectional, esthetic elements in our nature are kept in subordination to a lower order of faculties, and debarred from their proper influence upon character and configuration. Our excessive love of gain, our selfish ambition, and our ceaseless and energetic activity tend, in connection with our dry, stimulating climate, to render our physiognomy hard, angular, sharp, and mean. A better style of face will prevail when a higher degree of intellectual culture shall be reached, and a proper development of the spiritual and affectional parts of our nature attained.

Intellectual culture is equally essential to feminine as to masculine beauty. Shining tresses, rose-tinted cheeks, and a doll-like prettiness may be consistent with an inane or shallow mind,

but no face through which active intelligence does not look forth can justly claim to be, in any strict sense, beautiful. Only persons of a low order of development can be permanently pleased with it. The would-be belle, therefore, who neglects the cultivation of her mind for the mere adornment of her person, will learn, sooner or later, that the most magnificently embellished shrine, without the manifest presence of a presiding divinity, will attract few real worshipers. There can be no true or satisfactory beauty in the human face without cultivated intelligence.

But as woman differs essentially from man, mentally as well as physically, she evidently requires an education differing widely in kind, if not in amount, from that demanded for his harmonious development. Some modern reformers, therefore, in demanding for woman precisely the same culture as is received by man, have placed themselves in direct opposition to Nature. Exceptional women, we are well aware, may successfully pursue, to the utmost extent to which they are taught in our universities, the highest and most abstruse studies, and afterward compete with man in almost any of the avocations of practical life; but such women do not give the law to their sex, or abolish the differences which Nature has established between man and woman; and, in every case, it is evident enough that masculine culture must be acquired and masculine functions exercised at the expense of feminine beauty and womanly attractiveness.

What the intrinsic differences between the sexes really are, we have indicated in our second chapter. Physically, woman has a relatively larger development of the vital system than man, and a relatively smaller development of the muscular system; mentally, the feelings predominate in her and the intellect in him. She has naturally stronger domestic instincts and more active moral sentiments, but less reflective intellect and less executive ability than he; and any kind or degree of education which has a tendency to destroy these fundamental and inherent differences must be radically wrong, and destruc-

tive to the harmony which Nature loves and health and beauty require.

No one can insist more strenuously than we desire to do, upon the importance of the most liberal culture of the female mind; but we must, at the same time, protest against any and every system of education which ignores the existence of sex in mental manifestation. Culture adapted to each will give to each new charms—will make man more manly and woman more womanly; and it is through such culture only that we shall be able to improve the beauty, or the mental or physical character of either.



VIII.

MORAL AND EMOTIONAL INFLUENCES.

The face being the outward index of the passions and sentiments within, the immortal dweller fashions and molds the plastic substance of his home, and helps to form and to alter the architecture of its house, like the bees and birds. In return, his mind is not seldom influenced by the house itself. Between the head of a Shakspeare or a Bacon, and that of a Newgate murderer, there is as much difference as between a stately palace standing apart and a rotten hovel in a blind alley. The spiritual principle writes his own character on its exterior walls, and chronicles from time to time its upward aspirations or its more complete abasement.—*Household Words*.



ROUSSAIS and other phrenologists have noted, with great care and exactness, the changes wrought in the shape of the cranium by the action of moral as well as mental causes, and

the facts they have given the world on the subject are interesting and valuable; but these cranial changes are necessarily

effected with comparative slowness, and fail to indicate merely temporary mental states. The face reports much more rapidly, and with terrible fidelity, the progress of any inner struggle between Good and Evil, which may be going on. No one can fail to observe how, even in mature life, the face

is often altered, for better or worse, through the agency of moral causes. The expression which any passion or emotion temporarily gives to the features tends, by constant repetition, to become permanent. A scowl or a frown recurring frequently, and for a considerable length of time, fixes its distinctive lines upon the face, perpetually overshadowing its beauty like a cloud. So care, sorrow, and remorse stamp their respective impresses upon the countenance and become permanent traits, which can be eradicated only by the action of opposite influences.

The other day we met a former acquaintance whom we had not seen for several years. In the interval he had resided in a distant city and under moral and social influences radically different from those to which he had previously been accustomed. We did not recognize him. The particular traits of countenance with which he was associated in our mind had given place to very different ones. We inferred, and, as we afterward learned, with entire correctness, that the moral and intellectual character of which they were the external expression had met with an equally radical change. As Prof. Reuben beautifully expresses it, "A man's bone and muscle come to be as his thought; and the very ligaments that vibrate to form the voice, take their quality and tone from the sentiment that rules in his heart."

A religious journal speaking of the "transfiguration of countenance of the trance-speaking mediums" while under the control of supposed super-mundane intelligences, argues that they must express "a beauty and spirituality corresponding with the nature of the communicating intelligence;" and that if spirits out of the body can thus change the expression of the countenance of the medium, the spirit in the body, by a change of its condition from a low natural state to a high spiritual one, may effect a similar and permanent change in the features.

"We see," the writer adds, "the same phenomena take place in natural order every day. The countenance, and even the form and bearing, of a person measurably changes from a thick, heavy, and gross expression, and a downcast and stooped de-

meanor, to one of refinement, beauty, and grace, just in the degree that the *state of his affections and thoughts* change from a low and gross state to one of spiritual purity and goodness. The habitual state of the soul enstamps itself upon the expression of the features. It is hardly possible for us to truly say that a person of rude and irregular features is homely, when he or she is pure, wise, and good. There is a spiritual beauty that gleams out from behind the features, and which transfigures them with a divine expression. This inner spiritual beauty molds the expression of the features into correspondence with it. Very true, it will not alter the hereditary form, it will not change a gray eye to blue, nor an irregular nose to a straight one, yet it will change their *expression* so as to put them, as it were, in the background, and make the inner beauty prominent and captivating. There is, we believe, a practical truth in this suggestion. Honesty, purity, and love have their lawful physiology and facial expression. Every love, impulse, affection, and indeed every power of activity in the universe, is in the constant effort to express itself outwardly in the true and orderly form.”*

The effects of vice in its extreme manifestations are marked and terrible. Ugliness and Satan are synonymous terms; while beauty is the robe of divinity itself—the privilege of angels.† The expression imparted varies of course with kind and degree, but in every kind and degree is repulsive. Its general tendency is to depress the upper part of the cheeks and give undue prominence to the regions around and below the mouth, the effect of which is to impart a coarse and vulgar if not sinister and fierce expression to the countenance.

It follows from the propositions thus informally stated, that any departure from moral rectitude, or any indulgence in vicious habits or violent passions, must have an unfavorable effect upon beauty; and that the cultivation of moral goodness and serenity of temper, and a life of obedience to the laws which govern our spiritual being, will promote in the same degree

* *Spiritual Telegraph.*

† Delaage.

our physical beauty and well-being. It is this culture and this orderly life which imparts to the superior portions of the face those rounded outlines and that rich and softened expression which render the countenance of a refined and amiable woman so lovely. In man, a similar development should be modified by a greater degree of fullness below and outward from the alæ of the nose.*

Goodness of heart and purity of life co-operate with an expanded chest, wholesome air, copious breathing, and out-door exercise, in imparting to the fair cheek the coveted roseate tinge. Quiet happiness, ease, and freedom from care are essential auxiliaries. Violent passions, mental or physical suffering, care and anxiety, depress and bleach the cheek, and give a peculiarly haggard expression to the countenance. Whatever, then, is favorable to goodness, happiness, and ease is, in the same degree, favorable to health and beauty.

But beauty, called into being by the genial warmth of Goodness and invigorated by the soft radiance of Joy, expands into perfect flower only in the bland atmosphere of Love. This passion is Nature's grand cosmetic. It has power to transfigure every form in which it is truly incarnate. Homely indeed must be the face which is not rendered pleasing by its influence. It gives roundness to the form, fullness to the bosom, grace to the movements, light to the eye, sweetness to the mouth, color to the cheek, and animation to the whole figure. Every organ of the body seems imbued by it with new life, and every function to be rendered more efficient. This fine spiritual stimulus is in the highest degree favorable to health, and thus indirectly, as well as by direct nervous influence, favoring the development of beauty. To the face of many a pale-cheeked girl have "three sweet words" brought the rosy hue of health and beauty. "Even in a few hours," remarks a writer in one of our monthly journals, "we have all, probably,

* These are not merely fanciful specifications, though our space does not permit us to develop the physiognomical principles on which they are founded. A little observation will confirm them.

known the protean symptoms of organic asthenia, as well as physical depression, disappear, as if by the spell of an enchanter, and all this from the mere assurance in the mind of a woman that she is beloved."* The betrothed, in that beautiful Irish song, "The Welcome," says:

Light is my heart since the day we were plighted
Red is my cheek that they told me was blighted.

Hopeless and blighted love, in their inverse action, are as destructive to health and beauty as mutual and happy love are favorable.

Love is not less promotive of manly than of womanly beauty. It makes one "twice a man," and equal to anything that man may do or dare. It makes him strong and brave as well as gentle and tender, gives firmness to his figure, grace to his carriage, and character to his face.

The religious sentiments, which, when proportionately developed and active, form the grand unitary and harmonizing passion of the soul, have undoubtedly a powerful influence in modifying physical configuration. Veneration, while it gives a sublime altitude to the coronal arch of the cranium, has a similarly elevating influence upon the features. Wherever the spiritual nature of man has been harmoniously developed, there will be found a higher tone of organization and a purer type of face, together with a sweet radiation of life—a subtile, penetrating, and indescribable charm which attracts all hearts.

We have spoken simply of the religious element in man, irrespective of theological dogmas and forms of worship; but these, too, have their influence, and it would be interesting and instructive, if space would allow, to trace out, in the heads, faces, and figures of their disciples, the physical effects of the doctrines and ceremonies of the various religions—Pagan, Mohammedan, and Christian, and assign to each its proper place on the list of God-appointed instrumentalities for perfecting humanity.

Delaage has contrasted in a very striking and beautiful man-

* *American Phrenological Journal.*

ner the refined and elegant but materialistic Paganism of the Greeks, with the simpler but more sublime and spiritual doctrines of Christianity, in their effects upon human beauty. He has shown that, although in the worship of the former, traditional truths were concealed under the most gracious myths ever invented for unfolding to a people the profound mysteries of Divinity, and charming, meanwhile, their ears, seducing their eyes, and enchanting their imagination, the people contented themselves with the symbols and took little thought about the truths they concealed. They saw no more in their gods than fine men, and in their goddesses no more than beautiful women; and were satisfied to sleep under the grand portico of the temple of Truth without caring to enter. They saw only the magnificent vail with which their sages and poets had concealed truths too dazzling for their weak vision. Now the beauty of a people being always modified very greatly by its idea of the Divinity, it is evident that the beauty of the Greeks must have fallen far short of the highest reaches of intellectual and moral character. In painting and sculpture, they appreciated and attained to only that which is external and within the sphere of the senses. Here, modern art has never rivaled them. Their poets never speak of a moral sentiment as being reflected from the face or impressing its lines upon the features. What they boast of in their heroes and goddesses is the agility of their feet, the beauty of their limbs, the whiteness of their shoulders, and the firmness of their flesh. It is not the beauty which springs from the soul. In irreproachable purity of lines, admirable contours, and happy proportions of parts, Grecian beauty was no doubt nearly perfect, but it was external, material, and immobile, and lacked the animation and spiritual radiance essential to a complete realization of the highest ideal. Their art necessarily lacks the same elements.

Alexander Dumas has remarked that "there is a singular analogy between the heads of a people and their monuments." The Greek forehead was flat and low, like the front of one of their own temples. One of the first and most striking effects

of the more spiritualistic religion of Jesus of Nazareth was to raise it to the arched or pointed form, in analogy with the elevated vaults and pointed arcades of cathedral architecture, and to correspondingly change the whole face and its permanent expression.

As Christian heads and faces reached an order of Beauty beyond what the most favored of the Greeks ever knew, so did Christian art rise far above Grecian art in reproducing them. Greece furnished no models for the heads of Jesus and the Madonna. In the first, Christian art succeeded in combining the meekness and enlightened benevolence of the philanthropist with the rapturous love and high moral elevation of the martyr; and in the second, the modesty of the maid with the ripe affection of the mother.* In both there is evidence of that spiritual transfiguration which the artist of ancient Attica had never witnessed or conceived, and could not therefore represent. If Christian artists have failed in every other department to rival the ancient Pagans, they have surpassed them here; not because their genius has been greater, but because a new measure of spiritual life and light had been infused into the souls of men.

Delaage, a zealous Catholic, claims for the Church that, "by the sublime and ravishing harmony of her chants, the bluish wreaths of her ascending incense (*l'encens qui s'envole en fumée bleuâtre*), the pictures and statues with which she adorns her cathedrals and churches, and the magnificent and impressive ceremonies of her worship," she brings to bear upon mankind the most powerful objective as well as intellectual forces friendly to the highest order of beauty, and is thus pre-eminently the promoter of physical well-being; and, whatever we may think of the dogmas associated with these instrumentalities, we must admit that, so far, he is right, and that Protestantism has unwisely discarded some of the most potent agencies which might have been made available for the spiritual and physical culture of man.

* T. P. Healey.

Each of the religious denominations has its distinctive phrenological and physiognomical traits strongly marked and easily recognized in those adherents in whom their theological views form an influential element in their characters. A Methodist is readily distinguished from an Episcopalian, a Universalist from a Presbyterian, or a Swedenborgian from either. We must leave our readers to judge, in the light of the principles we have explained and illustrated, what theological tenets are most favorable to intellectual and moral, and consequently to physical perfection; simply remarking that those creeds which imbue their adherents with the highest conceptions of God and the spiritual life must, all other things being equal, have the most elevating and ennobling influence upon configuration and expression.



IX.

INFLUENCE OF THE FINE ARTS.

The Beautiful is higher than the Good ; for the Beautiful includes the Good within it as a part.—*Goethe.*



HUMAN configuration, as we have shown in Chapter IV., is the result of two forces—an internal, intellectual, or subjective force, the seat of which is in the brain, and an external or objective force, residing in whatever is capable of making an impression upon our senses. The character and influence of the first have been

sufficiently exemplified in the last two chapters; the fine arts, *tableaux vivants*, spectacles, and imposing ceremonies, in their elevating and beautifying effects on the face and figure, furnish striking illustrations of the latter.

It is impossible to doubt that the law which constrains like to beget like, is capable of a much wider application than has

hitherto been given to it. Forms habitually contemplated tend to repeat themselves in our features or in the contours of our bodies. The permanent effect produced upon one's face and figure by a single visit to a gallery of paintings or sculpture is doubtless too small to be readily appreciable; but we are by no means justified in affirming that no effect is produced. Let the visit be repeated daily for a few months, or, what is better, let the subject of the experiment be constantly surrounded by fine works of art, and habituated to their contemplation, and their effect will be marked and evident. The wonderful art-loving Greeks well understood this; and there can be no doubt but that the worship of gods and goddesses of ideal beauty had an immense influence in perfecting their configuration.

It will be readily conceived that the influence of external objects (received through the senses of the mother) must be most effective in molding the plastic form of the unborn child while yet in the process of formation. It was for this reason, as we have seen, that the Grecian women placed the statues of the gods in their bed-chambers, and made them the objects of constant, loving, and reverent contemplation. In childhood this modifying influence, no longer indirect, is still marvelously efficacious; and even in mature life it is not inconsiderable.

In the light of this fact, the fine arts assume a new degree of importance and utility. They not only minister immediately and directly to our inherent love of the beautiful, but serve us still more effectually by increasing continually the available fund of beauty in ourselves and our children. The beauty of the pictures and statues which adorn the homes of wealth and taste, reflected upon the faces of their inmates, gradually transfigures them. Loving wife and mother, if you would be beautiful, and see beautiful children grow up around you, adorn your rooms with beautiful objects. If you can not get paintings and statues, you may at least have engravings, statuettes, and medallions, as they are within the reach of every one above the grade of absolute poverty. No sitting-room.

parlor, or bedroom should be destitute of them. Imitate the fair and pious daughters of Athens in all but their superstition. An engraving of one of Raphael's Madonnas, a head of Christ by Delaroche, and a plaster copy of the Greek Slave will serve you in place of Apollo, Hyacinthus, and Castor and Pollux. It will be enough that you appreciate and admire their beauty, and love and reverence the physical, intellectual, and moral attributes of which they are the symbols. Impressions, whether physical or mental, are constantly deepened by repetition, and it is impossible for you to be long surrounded by beautiful forms, without a portion of their beauty being transferred to yourself and your offspring. Depend upon it, this is no mere fancy of ours. Beauty begets beauty always and inevitably.

Music acting upon another sense and co-operating with beautiful objects of sight, is a most effective auxiliary in the grand work of enhancing human beauty: It acts powerfully upon the best elements of our nature, and tends to elevate and harmonize at the same time the character and the configuration. Who has not seen the most wonderful changes in the expression of a face wrought by an impressive piece of music? This expression, in its full extent, is very temporary of course, but it tends, by repetition, to permanency, and the effect of a single performance can never be wholly lost. We can not dispense with the lyre in the physical culture of man.

A similar, but, in proportion to the duration of their direct action, a more powerful influence, is exerted by *tableaux vivants*, spectacles, and impressive ceremonies, as exhibited in the theater, the opera, public shows, and the rites of religion. The efficacy of these instrumentalities was well understood by the ancient Greeks, whose fêtes in honor of the gods were days of festivity for the whole nation, and made a deep impression upon all. Their plays and spectacles, while they sanctified, as it were, the exercises of the gymnasium, and fired with a noble ambition the hearts of those who engaged in them, gladdened also the eyes, inspired the souls, and animated the features of every beholder. We can not, and would not, restore the Olympic

Games, but festivals recurring still more frequently, and adapted to the civilization of to-day, should take their place. Our mechanics' exhibitions, our cattle shows, and our agricultural fairs are excellent things in their way, and should be encouraged and multiplied; but we need, in addition to them, a series of more esthetic festivals—exhibitions of art, music, and gymnastics. We may take a hint from the *Sangerbunds* and *Turnvereins* of our German fellow-citizens, the good influence of which he must be a barbarian indeed who doubts. They would aid in the development of our taste, promote joyousness, which, as a nation, we so sadly lack, and conduce in every way to public well-being and physical and moral development.

The theater and the opera unite the objective force of art and intellective force of ideas, and thus act with a double power upon configuration, affecting it through both the senses and the intellect, and modifying it profoundly in both ways. So great, in fact, is the power of the drama in its highest manifestations and in its unperverted state, that a dramatic writer of genius, understanding the profound truths of anthropology, might change at will the configuration of a nation, the physiognomy of an age.

The theater as it should be, might become one of the most effective instrumentalities for the culture and elevation of man. The plays which the highest genius has created, translated into action by a genius equally complete in its way, and supported on either hand by the sister arts of music and painting, might leave all other instrumentalities far behind in their civilizing and beautifying influence upon the mass of mankind. But the theater as it is, too often panders to low and degrading tastes, if not to open licentiousness, instead of elevating, refining, and purifying the popular mind. If with one hand it elevates us, with the other it drags us down. Whether evil or good predominates in its influence, may be considered an open question. The few who have the skill to extract the honey, rejecting the impurities and the poison so intimately mixed with it, may be nourished and strengthened by its ministrations, but the un-

skillful many doubtless find what is sweet in the mouth very bitter in the stomach. It is not then the *actual*, but the *possible*, theater that we commend.

The opera is open to fewer objections than the theater, and with all its imperfections and incongruities is one of the most elevating influences brought to bear upon the public mind and heart in our great cities; but it is far above the present low standard of taste and cultivation among the masses.

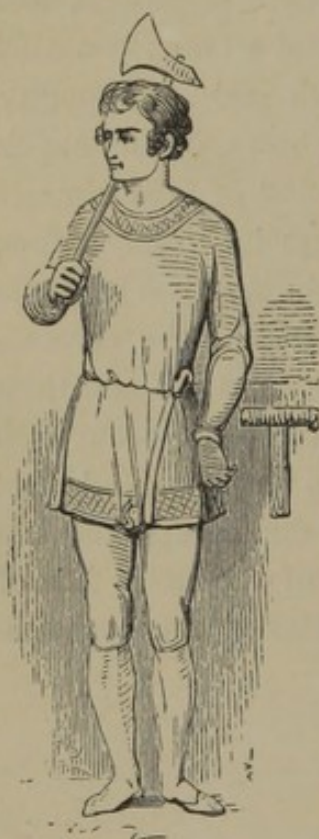
The rites of religion, so far as they are, to those witnessing or taking part in them, expressive of grand spiritual truths—and thus elevate their thoughts, purify their affections, and chasten their senses—tend to make men and women beautiful in the same proportion that they make them good. Thoughts of the supermundane and supersensuous spheres, of the angels—beings of more than earthly loveliness—and of God himself—the type and source of all beauty—must inevitably refine, elevate, and spiritualize the expression of the features in those who habitually have these thoughts awakened by the ceremonies of any worship in which their faith is engaged and their feelings enlisted. Mere unmeaning forms (or what seem such to us, however expressive to others) can do us little good; but whatever enlists the highest sentiments of our nature, and lifts us, even temporarily, above the grossness of the mere life of the senses, will impress the signs of that elevation on our features.



X.

SOCIAL CONDITIONS AND OCCUPATIONS.

The face and figure of each man indicate more or less clearly the place which he occupies in the social scale.—*Constant.*



THE differences, in form and features, between the civilized man and the savage, are striking and significant; and fully confirm the statements already made with reference to the physical effects of mental and moral states. M. Alphonse Esquiros says:

“One of the forms in which the improvement effected by civilization manifests itself is variety. In the savage state, the females all resemble each other—that is, have the same form—while in a higher social condition, the shades of difference are innumerable. The uniformity of the women in the state of nature, and their variety under the *régime* of civilization is due, in a great measure, to the fact that the physical laws act upon the first equally and universally, whereas upon the second, their own volitions and the influence of man, in connection with their manner of living, constitute the source of illimitable differences. As the *régime* of castes disappears, and human individuality is more and more clearly manifested, the countenance also becomes individualized.”

In the savage state, we find the nose depressed, the eyes dull, the face flat, the skin rough, and the limbs gross; but in proportion as civilization acts upon them, both features and figure

acquire distinctness and beauty of contour. The eyes light up, the nose projects, the skin becomes soft and smooth, the limbs acquire elegance, and the whole person gains refinement and delicacy.*

But leaving the savage entirely out of view, we shall not lack illustrations of our position. A little close and careful observation will convince the most skeptical that face and figure are everywhere and always modified by social condition. The different classes of society (and we can not, if we would, ignore them, even in this land of political equality) may be as readily distinguished from each other by their features and forms, as by their language, manners, or dress. A late French writer brings a well-known historical fact to bear upon this point, in the following graphic statement:

"Within the last fifty years numerous revolutions have been effected in the name of equality, and the cannon have vomited their balls against the barriers which separate the different classes of society ; but these balls have all harmlessly rebounded, and the barriers remain as before. No human power can destroy the aristocratic principle, which, with its invisible but powerful hand, has imprinted the seal of his condition upon the forehead of each man, in characters visible to all eyes. It was easy for the people, in the day of their wrath, to tear the parchments, break the escutcheons, suppress titles and armorial bearings, and impose upon all men clothes of one uniform color ; but by one of the most mysterious laws of human progress, each class preserved the sign of its condition, the head bearing a living blazon, sculptured by the chisel of one of those fantastic genii who inhabit the resplendent domains of the occult sciences."

In this country, the lines which separate the different classes are less clearly defined than in Europe, and individuals and

* "La civilisation," Delaage says, "est la montagne de Thabor : il est difficile d'arriver au sommet et de s'y transfigurer, mais il est plus difficile encore d'y séjourner et d'y dresser une tente respectée par l'orage des passions et l'ouragan fougueux de l'âge "

families are constantly rising from lower to higher social grades; acquiring at the same time, measurably at least, the physical traits of the rank which they assume. What the cannon balls and republican edicts of the French revolutionists failed to accomplish, the peaceful workings of free institutions and the general diffusion of knowledge are here gradually effecting. Instead of putting down any real aristocracy which may exist among us, we have labored, with some indications of ultimate success, to raise the lower classes to the aristocratic level. Leaving untouched the blazonry which thought and culture has been engaged for centuries in sculpturing upon the foreheads of a real nobility, the genius of our political system, removing every disability, permits all individuals and families to assume the same armorial bearings, as they may, in the sight of Nature prove themselves worthy.

The reader is already prepared for the statement, that *the highest order of beauty, and especially of female beauty, is found only among civilized people*. The savage may be muscular, lithe, erect in bearing, and even symmetrical in form; but he is always deficient in those elegant *details* of face and figure which are essential to physical perfection. The finishing touches of the Great Artist seem to have been withheld.

But the possession of a nominal civilization is not, of course, sufficient to secure physical beauty to a people. A degree of freedom, ease, mental and moral culture, and social enjoyment are essential. Lacking these to a great extent, the European peasant is often less elegant in form and more homely in features than the savage himself. Constant toil, intellectual torpor, and social debasement are in the highest degree inimical to physical well-being. "There is no fact in physiology better established," a late writer says, "than that hard labor, followed from day to day and from year to year, absorbing every thought and every physical energy, has the direct tendency to depress the intellect, blunt the sensibilities, and animalize the man." As an illustration of this fact, a contrast is drawn between the Irish gentleman and the Irish peasant. The former is "large, handsome.

courageous, courtly in manners, and full of vital force;" while the latter, descending from the same original stock, and growing by his side for centuries, is "stunted, ugly, and pugnacious."* Here, freedom from compulsory toil, liberal intellectual culture, and high social advantages on the one hand, and constant hard labor—the drudgery of a beast of burden—and the mental and social deprivations which are the necessary concomitants of such industrial slavery, on the other, have been, directly and indirectly, instrumental in separating these two classes by a barrier which it would require centuries of political equality to break down. A similar contrast might be drawn between the cultivated, courtly, and handsome South Carolina planter, one of the finest specimens of manhood among us, and the semi-barbarous "sand-lappers" of the piney woods, who are no less ugly than ignorant and degraded; although it must be confessed that in this case hard labor can be held responsible for neither the ignorance nor the ugliness.

The same causes are in operation in this country as in Europe, modified in their action, as we have seen, by the counteracting influences of education and political enfranchisement. Saying nothing of the day laborers on our railways, canals, and farms, most of whom are foreigners, the effects of these causes will be made evident by a comparison between our native agricultural population (the most favored on the globe), and the inhabitants of our cities and towns, whose labors are generally lighter and whose intellectual and social privileges are greater. The writer last quoted, speaking of the farming population of New England, which will probably compare favorably with that of any other part of the country, says:

"The forms of both men and women are angular, their features are not particularly intellectual, their movements are not graceful, and their calling is evident by indubitable signs. The fact that the city assemblage is composed of a finer and higher grade of men, women, and children is of particular mo-

* *Atlantic Monthly* August, 1853.

ment to our argument, because it is composed of people who are only one, two, or three removes from a rural origin. The city comes from the country; the street is replenished by the farm; but the city children, going back to the farm, show that a new element has been introduced into their blood. The angles are rounded, the face is brighter, the movements are more graceful, there is in every way a finer development."

Widely as this picture differs from the generally received views of this subject, it is but too correctly drawn. The almost constant, exhausting, and (as generally conducted) unattractive toil which fills up the greater part of the farmer's existence, and leaves no time for mental culture or social enjoyment, is no less unfriendly to physical than to spiritual symmetry. It robs heart and brain to feed bone and muscle, destroying the harmony which should exist between body and mind, and assimilating the man to the oxen he drives.

Cities are not, in themselves, favorable to health and beauty. The country has greatly the advantage of them in natural hygienic influences; but the higher ideas of life, the quickened intelligence, and the social amenities which they encourage, and for which their less laborious pursuits afford room, place their inhabitants, in spite of the physical and moral impurities, to the influence of which they are exposed, far above those of a similar social rank in the country. We leave out of view in this remark the dregs of a city population—the denizens of such localities as the Five Points—whom so many adverse influences, material and spiritual, seem combined to debase and brutify; as there is no class in the rural districts with which they can properly be compared.

The intelligent reader will not misapply these facts. They by no means prove that labor is necessarily a curse, and a cause of human deterioration and degradation. It is its *excess*, and the consequent deficiency in the other essential elements of a true life, which constitute the evil. Nothing is clearer than that a proper degree of bodily exercise is not only consistent with health and a beautiful physical development, but is abso-

lutely essential to it. It is a law of Nature, which we can not violate with impunity, that we shall exercise, and thereby develop and strengthen every organ and faculty with which we are endowed. If we allow an arm or a leg to fall into disuse, it soon withers and loses its strength and beauty. It is the same with any part of the body, or any faculty of the mind.

Some persons require more labor, or bodily exercise in some form, than others; but in no case, we believe, is the amount of hard work generally performed by farmers (and by mechanics in the exercise of the more laborious trades) by any means favorable to the highest physical development. If labor is essential, so is leisure. The activity of heart and brain can no more be dispensed with than that of body and limbs.

Pushing our observations a little further in the direction already indicated, we shall discover that each profession and occupation has a tendency to impress its peculiar lines upon the physical system of those habitually exercising it; so that we may generally know a man's trade by the cut of his features. An assemblage of lawyers, disguise themselves as they might, would never be mistaken for a conclave of bishops and priests, or the latter (even with the help of gold-headed canes) for so many disciples of *Æsculapius* in council. The merchant and the mechanic are as unlike in face and figure as in occupation and general habits; and the farmer, in spite of his Sunday coat and a stove-pipe hat, is recognized at a glance, however far he may have wandered from his barnyard. It would be interesting and profitable to take up and examine in detail each of the professions and occupations with reference to its effects upon health and configuration; but our space will allow little more than a mere general view; nor is more than this essential to the end we have in view.

We may divide society, in reference to occupation, into seven grand classes:

1. Agriculturists and other Out-of-door-Laborers;
2. Operative Mechanics and Manufacturers;
3. Shopkeepers;

4. Merchants and Master Manufacturers ;
5. Professional Men ;
6. Women employed in Housekeeping and Domestic Labors ;
- and—
7. Persons of Leisure.

1. In theory, agriculture is the noblest and most ennobling of all human employments. In no other occupation can the conditions of health and perfect physical development be so readily secured, and the causes of disease and deformity so completely avoided. The farmer's vocation supplies him with the most varied and salutary bodily exercise in the open air, where his lungs are constantly expanded by the pure breath of heaven ; an abundance of wholesome food is almost always within his reach ; he is seldom necessarily exposed, to an injurious extent, to the inclemencies of the season ; his brain is not overtasked by his business ; and he is comparatively free from the harassing cares and anxieties which, in some callings, make men prematurely old.

Ideal farm life is a life of healthful activity, rational enjoyment, and constant development—a continuous and beautiful growth. Whenever the real approaches the ideal, as it sometimes does, the most eloquent tongue or pen can not too highly extol it. But real farm life, as it exists in the actual experience of a majority of American farmers, is, alas ! quite another thing—a mere round of working, eating, and sleeping, with no higher end in view than the accumulation of material wealth—the increase of acres and crops, or the multiplication of cattle.

We have alluded to the effects of the exhausting labor which is commonly, but not necessarily, one of the conditions of farm life. Connected with this circumstance, and growing out of it, is the intellectual and social stagnation which generally exists in farming communities. There is too little reading, study, and thinking, and too little social recreation. The farmer's life is too monotonous, too dull, too selfish, too low and mean in its aims. The results we have already indicated.

Now, we beg our readers of the farming communities of

America to look these facts, which no sane man will attempt to call in question, boldly in the face. If we have placed them in a strong light, it is because we have the elevation of farm life and the welfare of the farmer and his family at heart, and not through an unfriendly or hypercritical spirit. Although we can not shut our eyes to the evils to which we have alluded, and will not attempt to conceal them from the eyes of others, we are by no means discouraged by the contemplation. They are not inherent in the employment, but are the outgrowth of circumstances connected with the settlement and subjugation of a new country, many of which no longer exist, at least in the older States. Effects often remain long after the causes which produced them have ceased to operate. It has been so in this case. If unremitting labor was necessary before the wilderness had been subdued and the forces of nature enlisted in the service of man, it is not so now; if a sparse population, infrequent opportunities for neighborly intercourse, and a constant warfare with savage Nature rendered our rural ancestors somewhat unsocial and selfish, there is no cause, except the habit inherited from them, for the existence of the same state of things at the present day; and if low and unworthy notions of life were engendered by the imperious material necessities of earlier times, there is no reason why higher and better ones may not now take their place. In short, there is an available remedy for the evils we have depicted. Our remarks have already suggested it. The first thing to be done is to impress upon the minds of our farmers, so far as we can reach them, the great fact—a fact that should be impressed upon *all* minds—that neither work nor its mere material results constitute the true end of life; but only a means of reaching something higher—individual development and social progress and happiness. It is a matter of small moment, and scarcely a subject for congratulation, that our crops of corn are growing heavier, from year to year, under improved methods of cultivation while the crops of men and women left without cultivation are rapidly deteriorating.

With correct ideas of what it is to truly live, the farmer will see the necessity of mental culture, social recreation, and the elevating and refining influences of books and the plastic arts; and depend upon it, he will find means to secure these elements of development and progress. He will discover that it is his own fault that his life is a mere round of drudgery—that his slavery is voluntary, and the result of his false notions of the real meaning of life. The improved implements, the labor-saving machinery, and the more scientific methods of culture of the present day enable all who choose to avail themselves of them, to greatly reduce the amount of manual labor required to produce a given result. Taking science and machinery into his service; working a little more with his brain, and a little less with his hands; and conducting the whole business of the farm more systematically, the agriculturist will soon overcome the unfavorable conditions under which he now labors, elevate his noble calling above the mere mechanical drudgery which now debases him, and in his own person and those of his sons and daughters show us finer specimens of vigorous, symmetrical, and beautiful manhood and womanhood than the world has yet seen.

What we have said of the farmer will apply, with modifications which will naturally suggest themselves to the reader, to workers in the open air generally, and we will dismiss them all with a single remark in reference to the butchers, whom we place in this class. They are generally robust, fresh-looking, and apparently healthy; but at the same time they are not, as a class, long-lived. Thackrah says, "Butchers, in fact, live too highly—not too highly for temporary health [perhaps], but too highly for long life. * * * * Does not high living produce that plethoric state which gradually leads to disease? I believe so. Congestion of blood, affecting chiefly the vessels of the abdomen and head, shortens the lives of numbers who are plump, rosy, and apparently strong. The preventive is obvious."*

* The Effects of the Arts, Trades, and Professions, and of Civic States and Habits of Living, on Health and Longevity. By C. T. Thackrah. London. 1833.

2. The occupations of the second class, embracing operative mechanics and manufactures, are generally lighter, and afford advantages for mental improvement and social intercourse superior to those enjoyed by the majority of out-door laborers; but, in themselves, these occupations are, with few exceptions, less favorable to health and physical well-being than those of the first class.

Many artisans, like the brass-founders and copper-smiths, for instance, are subject to injury from the poisonous gases engendered by the processes of their trades; others, like the machinists, the printers, the house painters, the plasterers, the hatters, and the bakers, suffer from the minute particles of foreign matter inhaled or otherwise received into the system from the materials on which they work; while a third class, of which the tailors and the shoemakers are noteworthy examples, become diseased and almost deformed from the effects of the constrained and unnatural postures which their employments require. The tailor's employment is a particularly unfavorable one. A proper and efficient performance of the important functions of respiration, circulation, and digestion are impossible where the habitual positions of the body are such as his labor seems to require; so that a fresh, rosy, or truly healthy tailor can hardly be found. The shoemaker is only a little more favorably situated. We trust that the sewing-machine and other labor-saving inventions will soon abolish these trades, as at present exercised, together with that of the seamstress, which is almost equally fatal to health and beauty.

The sedentary character of some of the mechanical and manufacturing employments constitutes their most unfavorable feature, the persons engaged in them suffering quite as much from the lack of bodily exercise as the farmer or the stone-cutter does from an excess of it.

But no other single cause probably is doing so much to depreciate the vital stamina of in-door workers as the vitiated and poisonous atmosphere of the ill-ventilated rooms in which they are generally compelled to labor. Carbonic acid is not

wholesome. The effete matter thrown off the body in the form of vapor and mixed with the surrounding stagnant air, was never intended to be received again unchanged into the circulation. We have said, and we shall repeat the statement in one form or another on every suitable occasion, that the copious breathing of pure air is absolutely essential to health and physical beauty. We may just as safely eat poisoned food as breathe poisoned air. Unfortunate, indeed, are those who are forced to imbibe poison daily in both these ways.

A thorough ventilation of all work-rooms, which only the most deplorable ignorance of natural laws or the most culpable disregard of human life prevents; the greatest possible cleanliness; out-door recreations; and special gymnastic exercises, would counteract, in a great measure, the unfavorable influences of which we have spoken. Labor-saving machinery and improved processes will ultimately do the rest.

3. Retail dealers, clerks, and book-keepers (who form our third class) are affected unfavorably by confinement, bad air, and deprivation of sunlight. Those conducting business on their own account also suffer, physically as well as mentally, from the cares and anxieties consequent upon the uncertainties of trade. Book-keepers, confined all day to the desk, are less favorably situated than salesmen. It is well for them to stand and sit alternately if possible; but standing is preferable to sitting, if one position only be practicable. Headache and dyspepsia are very common complaints among this class. More exercise in the open air would do much to improve the health of shop-keepers; and to secure them time for this, earlier hours for closing should be adopted.

4. Wholesale dealers and men of large business generally are able to secure many advantages and avoid some of the causes of disease to which the preceding class is subjected. They reside either in the country or in the more healthful parts of the city, in large and comfortable houses; eat, as a general rule, food of a more wholesome character; are confined for comparatively few hours to the counting-room; and occasionally

give themselves a little recreation. But the way in which most business men take their meals is highly injurious. At one or two o'clock they bolt in hot haste, at an eating-house, what passes for a lunch, and then dine at five or six o'clock, taking a heavy meal at an hour when, according to the laws of health, only a very light one is admissible.

But of the causes of ill-health and premature old age among merchants, anxiety of mind is the most frequent and powerful. They live in a state of unnatural excitement; and while their muscles waste for want of action, their nerves are worn out by excess of action. A hurried gait and care-worn features are among the signs of this over-stimulated life. With a favorable temperament and constant success in business, however, merchants are sometimes remarkably healthy and long-lived.

"The physical evils of commercial life," Thackrah says, "would be considerably reduced if men reflected that the success of business may be prevented by the very means used to promote it. Excessive application or anxiety, by disordering the animal economy, weaken the mental powers. Our opinions are affected by the states of the body and our judgment often perverted. If a clear head be required in commercial transactions, a healthy state of the body is of the first importance, and a healthy body is incompatible with excessive application of mind—with the want of exercise and fresh air."

The proprietors and conductors of manufacturing establishments are exposed in a slight degree to the injurious agencies, if any, which affect their workmen, but their condition, though somewhat similar, is more favorable than that of the merchants. In common with the latter, they need more relaxation, less "making haste to become rich," and more active, out-of-door exercise.

5. The time was, so at least our grandmothers have told us, when our farmers' wives and daughters were models of healthy womanhood—fresh-cheeked, full-breasted, straight, lithe, active, and vigorous—worthy to be the wives and capable of becoming the mothers of strong, brave, large-hearted men. Such

undoubtedly were the wives and mothers of the men of Colonial and Revolutionary times, and such, perhaps, may be found now, but they are the exceptions to the prevailing pallor, debility, and disease.

The country girl is a favorite theme with the poet, and when she is what he generally paints her, she is more than worthy of his verse. What a picture of fresh and charming beauty does the mere mention of her name call up before the mind's eye! Those noble contours, that full and rounded bust, those sweet, frank, maidenly features; those deep, clear eyes, so full of sweet expression; those health-tinted cheeks, with their diffused and peachy bloom—all conspire to form a combination which no mortal man has either the power or the will to withstand. Such a being is a queen in her own right, and all men are her willing slaves. This is the ideal country girl—the country girl as she ought to be and might be. Seek her among the cornfields and orchards, and in the cottage-homes which hide themselves among the apple-trees! If you do not find her, you will find, in her place, the actual country girl of to-day, with perchance a crooked spine, a contracted chest, a diseased liver, and a dyspeptic stomach. Neuralgia, general debility, “decline,” chlorosis, prolapsus uteri—the whole train of female diseases, in short—are now almost as common in the country as in the city. It is fashionable to be sentimentally pale; to have “delicate health;” and, alas! to be consumptive and die young.

How has the sound health and vital stamina of our grandmothers been lost? The country air has not deteriorated; pure water and sunlight never fail, and have not lost their virtue; the household duties of women are not more but less severe; wholesome food, or, at least, the materials for making wholesome food, are more abundant. Where, then, shall we look for the causes of the decay of health and beauty (for the latter always goes with the former) among the women of the country?

The foundations for it were perhaps laid in the very time;

of which our grandmothers boast and in their own persons. They were full of vital stamina—vigorous and active; but they had little or no assistance from servants or “hired help” in their household labors—too severe even for them—which were scarcely remitted during gestation and lactation. The result, through the action of immutable laws, was deterioration in their offspring. Their daughters, less strong than themselves, grew up to the same round of drudgery; married in due time; spent the months of maternal expectation in the kitchen, and in the performance of the rudest labors of the household; and gave birth to their children (the expression is scarcely figurative) in the midst of their pots and kettles! A still further decadence was inevitable.

Is it not strange that intelligent men—men, at least, who have long ago learned that dismissal from labor and extra care are required by their domestic animals during the period of gestation—remain still ignorant or careless of the fact that the same physiological laws apply, still more imperatively, to the mothers of their children? Shame on the stupidity or the brutality which fails to recognize and respect the sacred office of maternity, and to surround woman in the exercise of it with the profoundest reverence and the most devoted and tender care!—but we digress.

To the inherited depreciation to which we have alluded, add grave errors of diet and unphysiological habits generally—hot biscuits, poisoned with cream of tartar and saleratus; smoking griddle cakes, saturated with melted butter; rich pies, cakes, and puddings; the immoderate use of tea and coffee; close, stove-heated parlors; unventilated bedrooms; lack of exercise in the open air; and insufficient mental and social stimulus, and we need hardly look further for the causes of the decay we deplore. To these causes, dismissed here with a mere mention, we shall revert in another chapter, as they affect more or less both sexes and all classes.

In the city, women labor under many disadvantages from which their sisters in the country are exempt. The general at-

mosphere, even in the most favored situations, is less pure than that of the country; their food, provided the cookery be the same in both cases, is less wholesome; and the prevailing customs in reference to the hours of eating and sleeping are less favorable. But, on the other hand, they take more exercise in the open air, strange as it may seem, and live a life of comparative mental and social activity. In place of the debilitating stagnation and inertia of country life, they have the constant stimulus (natural and healthful if not in excess) of contact with the general movement of society. The danger in their case is too much excitement. Household cares, and the trouble growing out of that great but unavoidable evil, domestic servitude, are their great burdens.

Our domestics being almost always of European birth or parentage, are generally fresh-complexioned and robust, and enjoy a degree of animal vigor which their employers may envy; but their employments and habits, especially in large families in the city, are far from being favorable to a high state of health. They are very liable to fevers and other acute diseases, and are not long-lived.

6. The professions are, *per se*, favorable to health, physical development, and long life. They require and encourage mental activity, afford opportunities for social intercourse, and, as a general rule, allow ample time, if taken advantage of, for bodily exercise. If professional men, therefore, as a class, be not fine specimens of physical manhood, the cause must be sought in their own ignorant or willful disregard of the laws of their being. What is the testimony of general observation in reference to them?

As a class, clergymen are sickly and physically inefficient. The exceptions are mainly found among those who have the unclerical habits of taking a good deal of exercise in the open air, and cultivating a somewhat jovial disposition.* While the

* A correspondent of one of our religious journals gives his brethren the following timely hints, suggested by the conversion of a noted pugilist:

"I dislike to see Satan's body-guard — *blackguards* — as though they are — six

ideas now generally entertained respecting the proprieties of the profession continue to prevail, we shall see few healthy, robust men in the pulpit, and the ministrations of our public teachers of religion will fall far short of the grand effects which they ought to produce. We can not, of course, estimate too highly the value of the *soul*, but we must not forget that, in this state of existence, the body is a very useful appendage, and can not be neglected and abused with impunity.

The healers of the diseases of other people do not, by any means, always present us examples of perfect health in themselves; but we think them a much healthier body of men than the clergymen. Frequent night-calls no doubt injure the health of practitioners to some extent, and there is a liability to become infected by contagious diseases; but their profession is, on the whole (provided they do not swallow their own pills and powders), favorable to health.

Persons engaged in literary pursuits are often pale, emaciated, and dyspeptic, but these conditions are seldom the effects of mental application in persons of mature mind. Confinement, impure air, and lack of exercise, conjoined with dietetic errors of the gravest character, are generally accountable for their lack of high health. Literary pursuits generally are, in themselves, favorable to health; and vital statistics show that literary men, as a class, are long-lived.

What literary men most need is more exercise in the open air,

feet high and forty-five inches about the chest; while the servants of God go creeping about—little shad-bellied fellows—scarce able to walk under the Christian armor, much less able to fight in it! * * * * * We want more *muscle*, as well as more *mind*, in our pulpits. When Henry Ward Beecher went to be examined by a phrenologist, Fowler walked around him, and eyed him as a jockey would eye a fine horse, and said, ‘You’re a *splendid animal*!’ ‘That’s just it,’ he replied, ‘that’s the secret of my success.’

“Truth! When a man’s *body* is vigorous, his *mind* is vigorous, and his thoughts are energetic, searching, and clear. I don’t know whether our Christian churches have grown weak because our ministers have grown lean, or whether the ministers have grown lean because the churches have become weak; but of this I am sure, that many of our ministers to-day weigh too little in the pulpit, because they weigh too little on the scales.”

well-ventilated libraries and study-rooms, a plain, wholesome diet, and frequent social recreation.

7. Persons in what are called independent circumstances—that is, persons who are not under the necessity of exercising any trade or profession for livelihood—have health and happiness more in their power perhaps than any other class; but, as a general rule, they allow both to escape them. A person supplied with food and comforts without labor and care, is at full liberty to exercise body and mind in just the degree which the highest health of both require. He has nothing to do but to grow—to expand freely in symmetry and beauty. The conditions of health are all within his reach; the causes of disease may nearly all be avoided. A few, perhaps, are wise enough to use the advantages of their position and attain the grand objects of life—health and happiness; but the great majority make the grand mistake of seeking happiness in idleness and dissipation, or wasting their energies in desultory and aimless pursuits. In the professions and trades the muscular or the nervous system, as the case may be, is often exhausted by excessive exertion; here it quite as frequently declines for want of exercise; and *ennui*, *tedium vitæ*, and hypochondriasis afflict the idler not less deeply than the abdominal diseases of the shoemaker, the dyspepsia of the tailor, or the cephalic disorders of the anxious merchant. This *ennui* is a not infrequent cause of suicide. Dr. Darwin gives several cases:

“Lord S. one day said to a friend, ‘I am tired of the insipidity of life, and intend to-morrow to leave it.’ He kept his word. The next evening the corpse was found leaning over the arm of a great chair, the pistol on the ground, and its contents lodged in the brain.” A gentleman of polished manners, and about fifty years of age, said to Dr. Darwin: “A ride out in the morning, a warm parlor, and a pack of cards in the afternoon, are all that life affords.’ He shot himself a few months afterward.” The misery of idleness is shown as much in men whom circumstances have transformed from active to useless life. Tradesmen and merchants who have accumulated fortune

and retired to enjoy it often find rest an intolerable load. The celebrated Dr. Gartshore, in whom the change from activity to confinement had induced *tedium vitæ*, said, when he knew that he was about to expire, "I am glad of it. I am tired of having my shoes pulled on and off."

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XI.

EFFECTS OF CLIMATE AND LOCALITY.

The whole physical and moral condition of man is modified by climate and locality.—*Dunghison.*



THE effects of climate and locality upon the physical character of man are too marked to be left out of the account in our investigations. All the other agencies to which attention has been drawn in the preceding chapters are modified, more or less, by temperature, altitude, and atmospheric, electric, and solar conditions. The relations in which our bodies stand to the inorganic elements and forces of Nature is closer than we may at first be inclined to admit. Each of us may appropriately adopt the language which the poet puts into the mouth of Mithridates:

From the earth-poles to the line,
All between that works or grows,
Everything is kin of mine.

By understanding this relationship, which it would be very absurd to dispute, we may turn it to our profit, as we shall presently see.

Heat, which many ancient philosophers regarded as the soul of the world, is truly (as modern science admits) one of the principal agencies through which Nature calls forth and sustains vitality; and within certain limits it always promotes activity and development; while cold, contrary to the generally received opinion, is a sedative, depressing life, and retarding or preventing growth. It is for this reason that both animal and vegetable forms in tropical regions are characterized by luxuriance, if not excess, whereas those of the frigid zone are generally stunted, and marked by evident tardiness and want of development.

Cold, it is true, has a stimulating and tonic effect upon the animal system, so far as it tends to excite a reaction (which produces heat), and no further. Beyond this it debilitates the body, and finally destroys life. Dunglison asserts that two fifths of mankind, at least, die of acute diseases, a majority of which are occasioned by exposure to cold. Its effects upon children and old people are particularly marked, the mortality among them being very much greater in winter than in summer. Heat, too, it should be observed, like any other stimulant, if in excess and long continued, enervates the muscles, and in the end produces that state of languor and inactivity which we are accustomed to associate with a Southern climate.

The highest order of physical development and personal beauty, as we should naturally infer from what we know of the effects of the extremes of heat and cold, need be sought only in temperate climates. Alexander Walker says:

"The native country of beauty is not to be found either in regions where cold freezes up the living juices, or in those where the animal structure is withered by heat. A climate removed from the excessive influences of both these causes constitutes an essential condition in the production of beauty."

"In the finest climates of the globe," Dr. Lazarus remarks, "a more harmonious human life has generally been found indigenous. They favor the life of the affections and natural instincts. The more permanent and genial influence of the solar ray refines the organism with an intense animation, till the dull

clod becomes all sense, all heart. The serene weather and the beautiful earth call men and women forth from that domestic seclusion whose artificial routine stifles, in civilized countries, our natural instincts." He instances some of the West India Islands, whose harmonious and affectionate natives are so well described in Irving's "Life and Voyages of Columbus," and such South Pacific isles as Typee, the Marquesas, and others, the physical beauty and perfection of whose natives the navigator can not find words to express.* These regions are tropical in their situation, but their climates, being tempered by the surrounding ocean, are practically temperate.

We have no recorded observations of the physical effects of the various climates of the United States, sufficiently extensive and accurate to warrant any positive generalizations. That there are striking differences between the inhabitants of the North and those of the South, and even between the people of contiguous States, is a matter of common remark; but the precise nature of these differences has seldom been clearly defined, and it is difficult, where so many other conditions are also dissimilar, to determine to what extent the effects observed are due to climatic influences.

According to our own observations, which have extended from New Hampshire and Vermont on the north to the borders of Florida on the south, the finest race of men, in *physique*, in this country are to be found between the parallels of 34° and 40° north latitude, and particularly in the States of Maryland, Virginia, and Kentucky.†

They are large, symmetrically formed, erect and graceful in carriage, and have generally fine, open, and pleasant counte-

* "Passional Hygiene"

† A newspaper correspondent, writing from the interior of Kentucky, says: "I have been struck with the profusion of really great-looking men at the State Fair. You may single out any group of twenty, and in it you will be sure to find two or three who, in stature, physical development, or expression of countenance, bear testimony to the manliness and royalty of their nature. *It seems as if Kentucky were educating a race of kings, from which to supply the world.*"

nances. Between these parallels also lie our finest climates; and, although the concurrence of these circumstances does not prove that the relation of cause and effect exists between them, we are justified in considering some connection as at least probable. The more aristocratic origin of the early settlers of these States, their higher culture, less austere religious views, and stronger social tendencies; their abundant pleasurable exercise in the open air; and their freedom from severe labor, have no doubt conspired with the genial influences of a milder climate to produce the striking differences observable between their descendants and those of the New England Puritans.

A comparison between the people of the North and those of the South, leaving out of view all smaller geographical divisions, will illustrate in a striking manner some of the most obvious effects of climate on the human physical system.

The Northerner is characterized by a tendency, more or less marked, to angularity of form, sharply defined, if not prominent, features, a fresh complexion, density and firmness of muscle and bone, and rapid, but often ungraceful, movements. These manifestations are of course modified by sex; and the women of the North, wherever there is a sufficient development of the vital system to give the necessary plumpness and roundness of contour, present a brilliant and attractive style of beauty; but even in them the tendency to hard and angular outlines is often apparent.

In the South there is a predominance of more elegant and gracefully rounded contours, greater symmetry of body, more finely chiseled, but less prominent, nose and chin, somewhat fuller lips, a softer expression of the eye, less relative breadth in the lower part of the face, and, in general, an indication of more delicacy and refinement, and less force. In the movements of the Southerner there is an easy grace, to which the inhabitants of northern regions are strangers. This is particularly observable in the women, who seem to float along with a swan-like motion, which belongs only to the most harmoniously developed forms.

But in discussing the effects of climate, other conditions besides temperature must be taken into the account. Prominent among these is altitude. This affects not only the temperature, but the weight and consequent density of the atmosphere, and through these all the functions of the animal economy. Both animals and plants require an atmosphere rich in the vital principles which they are accustomed to draw from it, and therefore can not thrive in the rarefied air of very elevated regions. A certain degree of atmospheric pressure seems also to be necessary to the preservation of their shapes. In a greatly rarefied atmosphere, such as is found on the summits of high mountains, the pores of the skin are relaxed, and the vessels and veins swell. If the monks of St. Bernard do not occasionally leave their mountains to breathe the denser and more strengthening air of the plains, they gradually waste away. Trees and plants grow more and more stunted as we ascend the mountains, till they finally disappear altogether.

Riofrey says: "Elevated situations should be avoided by those who have short breath, or any complaints of the lungs or heart; but where the mountains are not very high, lymphatic and scrofulous persons may derive immense benefit from a residence near them, particularly if the chest be large, and the lungs expand without difficulty in the pectoral cavity, and the heart be sound."*

The active bodily exercise and hardships of mountain life favor the development of the motive temperament, and if not excessive, promote masculine beauty; but they are not favorable to the development most proper for women. In illustration of this point, we may mention the fact noted by Walker, that in some parts of the Highlands of Scotland the men are as remarkable for beauty as the women for ugliness, while in some of the eastern counties of England precisely the reverse is the case. The strong features, dark curled hair, and muscular forms of the Highlanders are as unsuitable to the

* Treatise on Physical Education.

female sex, as the soft features, flaxen hair, and short, tapering limbs of the women of the eastern coast of Great Britain are to the male.

The luxuriance of fertile plains, the abundance of nutritious food which they afford, and the comparative freedom from hardships and severe toil which they permit, are favorable to the development of the vital system and to human beauty, especially in women. The same law applies to the inferior animals, oxen and sheep becoming large-bodied, fat, and short-legged on low, rich soils, while in higher and drier situations the bulk of the body decreases, and the limbs grow longer and more muscular.

The prevailing state of the atmosphere with reference to humidity has also a powerful influence upon human health, physical development, and beauty.

The effects of excessive dryness of atmosphere are an increase of insensible perspiration, a drying and hardening of the skin, a gradual stoppage of the pores, and an obstructed and painful action of all the bodily functions. With these direct physical changes are conjoined, in persons highly sensitive to atmospheric influences, a state of extreme discomfort, restlessness, fretfulness, and vacillation. This state of the atmosphere is in the highest degree unfavorable to beauty, destroying the *embonpoint*, smoothness, and freshness which are among its essentials, and imparting prematurely the wrinkles and roughness of age. The lack of plumpness, which has become a prominent American physiological characteristic, is doubtless, in part at least, owing to the comparative dryness of our atmosphere.

"The air of England," a writer in one of our literary journals beautifully says, "seems favorable to richness and abundance of blood; there the life-vessels sit deep, and bring opulent cargoes to the flesh-shores; and the rotund figure, the ruddy, solid cheek, and the leisurely complacent movements, all show how well supported and stored with vital resources the Englishman is. But to the American's lip the great foster-

mother has proffered a more pungent and rousing draught—not an old Saxon sleeping-cup for the night, but a waking-cup for the bright morning and busy day.”

A Swiss *savant*, M. Desor, attributes to the dry and stimulating character of the American climate our national restlessness and impatience. He says:

“There is no European who, on landing in New York, Boston, or Baltimore, has not been struck with the feverish activity which reigns on all sides. Everybody is in a hurry—people on the wharves and along the side-ways run rather than walk. If two friends meet each other in the street, they merely shake hands, and have no time to converse together. An impatience so general must, necessarily, have its source in some general cause. Although we do not yet possess much precise information as to the manner humidity in the air works more or less on the nervous system, we do not believe we err in attributing this nervous irritability of the people of the United States to the dryness of the American climate. Can we not cite in support of this opinion the less durable effect, but not less constant, that the easterly wind produces with us? [The easterly wind is a dry wind in Europe—the west wind being humid, and bringing rain.] The inhabitants of the Jura know too well what effect it has on the nerves, and even on the disposition of the mind, to such an extent, that when the easterly wind blows for a long time, people feel a sort of uneasiness, of irritation, which often degenerates into bad humor—so much so, that in certain localities it has become a common saying, that the easterly wind makes women wicked; and I have heard more than one remark, that they would invite no person to their houses during an easterly gale.

“If, therefore, dry winds produce such marked effects among ourselves, where they only occasionally blow, we may imagine that their influence must be much greater in a country where they are the prevailing winds all along the Atlantic coast.”

An excess of humidity in the air is, equally with extreme

dryness, inimical to health and physical well-being. Combined with cold, it deranges greatly the principal functions of the body, producing rheumatic, scorbutic, and catarrhal affections, and predisposing to consumption. United with heat, its effects are still more serious, eruptions, bowel complaints, and fevers—nervous, intermittent, malignant, and contagious—being among its most common results.

A medium between the two extremes of dryness and humidity, which we have here contrasted, is of course most favorable to the well-being of the physical system; and other things being equal, should be sought by those who are at liberty to choose their locality.

Wilkinson, in that unique and most admirable work, "The Human Body and its Connection with Man," thus characterizes some of the effects of climate upon the human features: "The inhabitants of the regions of gusty winds have weather-beaten faces, and lines as of the tempests blown howling into their skins. Mountain races have stony or granitic features, as of rocks abandoned to the barren air. The people of moist and marshy places look watery and lymphatic. Those where extremes of temperature prevail for long periods are leathern and shriveled, as though their skins had given up the contest with Nature and died upon their faces."

The climate of the country, as we have already incidentally remarked, is more favorable to health and beauty than that of the city. It is so because the air is purer, the sunlight less obstructed, and our communion with Nature more complete. The last specification may provoke a smile on the lips of some readers, but it is the most important of the three. Considered as physical beings, we are, at most, but two steps removed from the clods among which we delve. There is but a single link (the vegetable kingdom) between us and the earth; and ties, unseen but strong, and inwoven with every fiber of our bodies, unite us to the rocks and trees and running brooks. We appeal to the student and true lover of Nature to say if this be not so. Are you not conscious of an accession of life

and vigor every time your foot touches the fresh earth? does there not come to you an actual, although it may be a nameless, good, from the hills and fields, which neither air, nor water, nor sunlight, nor all three combined, can impart? This magnetism of Nature (to give the influence a name) doubtless affects some more than others, because some are, so to speak, more completely *en rapport* with Nature than others, but all feel it more or less. In the city, the ties which unite us with living Nature—the invisible tubes through which her vitalizing currents flow into us—are mostly cut off. We lose our foothold on the earth, and tread only upon cold, dead, hewn stone and burned bricks.

Bearing in mind the laws of human configuration set forth in a preceding chapter, we shall be prepared to admit that there may be some connection between beautiful scenery and beautiful human forms and faces, although we may not be able to trace it out clearly in every case. The magnificent parks of England have, we can readily believe, been instrumental, in more ways than one, in forming that high type of personal loveliness which distinguishes the women of the English nobility, whose walks and rides bring them daily within the sphere of their influences.

The poets, with their intuitive perceptions of truth, have always recognized this influence. Wordsworth's "Lucy" furnishes an apt illustration. Nature, who will be equally kind to all who truly love her, is made to say of Lucy :

The floating clouds their state shall lend
To her, for her the willow bend ;
Nor shall she fail to see,
Even in the motions of the storm,
Grace that shall mold the maiden's form
By silent sympathy.

The stars of midnight shall be dear
To her ; and she shall lean her ear
In many a secret place,
Where rivulets dance their wayward round,
And beauty, born of murmuring sound,
Shall pass into her face.

In distinct recognition of the same principle, Alexander Smith, speaking of a maiden who

Grew up 'mong flowers and rills,
In the heat of distant hills,

beautifully says :

There into her being stole
Nature, and imbued the whole,
And illumined face and soul.

Worthy to be placed on the same page with these quotations is the following stanza, by a writer whose initials (F. O. T.) only are known to us. It refers, we believe, to a real child of Nature, whose delight in the lady-like labors of the flower-garden is celebrated in the poem from which it is taken :

'Mid the roses she has wrought—
'Mid the lilies till she caught
Health and grace in form and thought.



XII.

DIRECT PHYSICAL CULTURE.

We can not stretch out an arm or a foot, or walk, or run, or leap, without freshening the life-currents of the system; sending new flashes of electric warmth along the nerves and muscles; and scattering a cloud of those blue and black devils that buzz around the ears of poor sedentary students, stayers at home, and women imprisoned in nurseries and amid their household cares.

—*North American Review.*



THE agencies affecting human physical development, to which our attention has been mainly directed in the preceding chapters, are such as are generally supposed to lie beyond the range of systematic bodily culture.

We come now to speak of the more direct and obvious means and methods of acting effectively upon the physical system, modifying the shape of body or limbs, curing disease or deformity, and promoting health and beauty.

Those glorious old pagans, the Greeks, from whom, in spite of our boasted modern civilization, we have still so much to learn, appreciated more fully than any nation has done since their time, the importance of physical culture; which they made the foundation of their whole system of education. They, evidently, were not, like some of the moderns, "ashamed of their bodies;" but, rather, gloried in them, as tenements worthy of the indwelling soul. All the young men of the nation were trained in manly exercises, and their emulation excited by the high honors bestowed upon those who excelled in them. The simple crown of green leaves, which was placed upon the

brow of the victor in their noble athletic games, under the eyes of his assembled countrymen and countrywomen, was more coveted by the Grecian youth than the diadem of a king. It was not only a crown of glory for himself, but gave renown to the city in which he was born.

It was in the gymnasium and at the Pythean, Nemean, and Olympic games that the sure foundations of an integral education were deeply and strongly laid in the most complete and systematic bodily culture. Philosophy, oratory, poetry, music, painting, and sculpture formed the fitting superstructure. It was also in the gymnasiums and at the national games that Plato, Aristotle, and the other philosophers lectured and taught, conversing with their pupils as they rested from their exercises, and carrying along mental with physical training.

And now, to bring it to the true test, what was the result of the Greek educational system? Undoubtedly the finest race that the world ever saw grew up under it—the strongest and bravest men and the most beautiful women (for the physical culture of the latter was not neglected)—philosophers, poets, orators, and sculptors, which the modern world has never equaled.

The moderns, and especially the most modern of all the moderns, the Americans of the United States, have adopted a different system, and, as would naturally be inferred, have attained a different result. We, like the ancient Greeks, offer prizes or rewards to excite the emulation of our youth, and bestow much coveted honors upon those who excel; but these prizes and honors are calculated to stimulate merely the already too active mental powers and promote brain-stuffing at the expense of everything like a harmonious development of the whole being. Manly sports and games are, for the most part, ignored (our only gymnastic exercises being performed within the walls of the cranium); physical strength and beauty are practically contemned; and the body itself is degraded from its high offices as the companion of the soul and the temple of the Divine Intelligence. In our scholastic architecture, the foundation—

the material basis of bone and muscle—is considered of little importance. No wonder our beautiful superstructures of classic and scientific learning so frequently tumble down.

The culture which children get in the public and private schools of our country is mainly a hot-house culture—a system of mental forcing which is fast destroying the vital stamina of the rising generation, and rendering a natural and harmonious development of body and mind impossible. Everybody ought to know that even the most vigorous child can not be confined to a school-room and subjected to the forcing process to which we have alluded, for six hours a day, without the most serious injury to its health and a direct contravention of the organic laws. No one, and especially no parent or teacher, ought to be ignorant of the fact, that the principal business of childhood is to grow—to develop, not the brain merely, or principally, but the whole being in symmetry and beauty; and that to do this, fresh air, sunlight, and abundant bodily exercise are absolutely essential. But very few, seemingly, have any knowledge whatever of the body's needs, beyond the ordinary supply of food and clothing. We fear, in fact, that not one person in a hundred even gives the subject a thought. It does not surprise us, therefore, to hear the warmest praises bestowed upon a girls' school in one of our large cities, where the hours of study amount to *nine and a quarter daily*, and only *one* hour is given to exercise. What sort of wives and mothers do you think the pupils of that school will make? Accomplished, no doubt, they will be—well-skilled in French, Italian, music, and painting—and if they be not also “pale and interesting,” fashionably delicate, and dyspeptic, and too good to stay long on this lusty life-loving earth, it will not be the fault of their teachers. We have faith in a better future, otherwise we should despair of the Republic.

The girls suffer more than the boys from our false educational system, on account of the conventional proprieties which so completely fetter them, depriving their limbs of all freedom of movement, even when they are liberated from the desk.

Boys *will* play, when out of school, and it is generally admitted to be proper enough, if not necessary, that they should. It is to the irregular and inadequate exercise thus obtained that many of them owe their physical salvation. But their sisters are restrained, partly by their costume, but still more by the absurd ideas of propriety of deportment so industriously instilled into their minds by their mothers, aunts, and teachers, and the consequent fear of being called romps or tom-boys. They are expected to be ladies, instead of children, and to avoid all those vigorous exercises which their natural instincts would lead them to engage in. Pale cheeks, indigestion, headache, nervous debility, and crooked spines are among the inevitable results. Give us the romp or tom-boy, with her vigorous limbs and her rosy or nut-brown cheeks, rather than the delicate little lady of ten summers. It is among the former, depend upon it, that the young men of the rising generation will look for their wives.

So far has our hot-house culture of both sexes been already carried, that one seldom observes a ruddy face in a school-room without tracing it back to a Transatlantic origin. The teacher of a large school in Canada goes so far as to declare that she can recognize the children born on this side of the line by their invariable appearance of ill-health and their intellectual precocity.*

The only school, so far as we know, where anything like an effective system of physical education is carried out is the national Military Academy at West Point. The pupils of that institution are graduated with broad shoulders, full chests, finely developed frames, and an erect and graceful carriage. In fact, they are generally among the finest specimens of manhood that we have ever had the pleasure of seeing. They go forth, as some one has happily said, "fully armed and equipped with better than shield and spear for life's great struggle, even with the panoply of a vigorous sheathing of muscle upon a rock-like groundwork of bone, operated by untrembling nerves and stead-

* *Atlantic Monthly*, for March, 1858.

ily-beating pulse." In the other professions activity and vigor are generally supposed to be of no special utility.

Our colleges, with all the learning and wisdom brought to bear upon their management, manifest no clearer recognition of the body and its wants than the common schools. The forcing system, commenced in the latter, is continued in the former. The results are thus summed up by one of our popular lecturers:

"We make brilliant mathematicians, and miserable dyspeptics; fine linguists, and bronchial throats; good writers, and narrow chests; high foreheads, and pale complexions; smart scholars, but not that union which the ancients prized so highly, of a sound mind in a sound body. The brain becomes the chief working muscle of the system. We refine and re-refine the intellectual powers down to a diamond point and brilliancy, as if they were the sole, or the reigning faculties, and we had not a physical nature binding us to the earth, and a spiritual nature binding us to the great heavens, and the greater God who inhabits them. Thus the universities become a sort of splendid hospitals, with this difference, that the hospitals cure, and the universities create disease. Most of them are indictable at the bar of public opinion for taking the finest young brain and blood of the country, and after working upon them for four years, returning them to the owners, skilled indeed to perform certain linguistic and mathematical dexterities, but very much below par in health and endurance, and, in short, seriously damaged and used up—physically demoralized."

We recognize the fact that such words as these are now not infrequently finding utterance in our lyceum halls, and even in our pulpits, as one of the most hopeful signs of the times. The press, too, has lifted up its voice in behalf of physical culture. Even that staunch old conservative Quarterly the *North American Review* not long since had an excellent paper on "Gymnastics as a Part of Education."* We copy the follow-

* We think we do not err in attributing this paper, together with the articles

ing paragraphs, regretting only that we have not room for more:

"O for a touch of the Olympic games, rather than this pallid effeminacy! O for a return to the simple Persian elements of telling the truth and hurling the javelin, instead of the bloodless cheeks, and fleshless limbs, and throbbing brains of our first scholars in Harvard, Yale, or Princeton! But there is a medium, doubtless, between the ancient and modern discipline, by which we might secure the benefit and exclude the vices of both. And until some measure of this kind is adopted, we must continue to have our hearts agonized by the spectacle of brilliant scholars dragging out a miserable existence in unstrung and dilapidated systems, the mind, with all its tastes, faculties, and energies, tuned like an angel's harp, and performing all its fearful and wonderful operations to a charm, while its earthly companion seconds its high functions in the feeblest manner, and jars and grates with its crazy aches and ills in harsh discords amid the sublime concert of intellectual and spiritual harmonies.

"It needs to be rung into the ear of every educator, as with the peal of a trumpet, that the body can not be neglected with impunity; that in its effeminated capacities the most morbid and monstrous passions will hold their saturnalia; and that only in its vigorous exercise and expansion, as well as in the development, culture, and equipment of the intellect, and the enriching and purifying of the heart, can the world have 'assurance of a man.' No school or college with any pretensions to be level with the spirit of the age ought to proceed upon the old system of drugging the intellect to satiety with knowledge, and leaving the physical and moral powers comparatively uncared for, since only as all the capacities are harmoniously unfolded, can any one of them attain its maximum of strength, usefulness, and happiness. The ancient phil-

in the *Atlantic Monthly*, from which we have had occasion to quote, to the eloquent pen of Rev. T. W. Higginson, to whom the public is so deeply indebted for his efficient advocacy of physical education.

osophers can yet teach us many a lesson of high wisdom ; but they can give us no more significant symbol of the fine balance of their systems than the lovely walks of the gymnasium, the arena of active sports for innumerable youths, musical with the voices of Socrates, Plato, and Aristotle.”*

The neglect of bodily exercise, which is compulsory in the school-boy and school-girl, becomes finally habitual ; and men and women whose occupations do not necessitate their exercise voluntarily, allow many of the muscles of their bodies to fall into almost total disuse. And even those engaged in pursuits which call for considerable physical exertion, are generally well-developed and strong only in particular parts. The blacksmith wields his sledge with as little difficulty as the child handles his painted toy, but, ten to one, he can not run a quarter of a mile without putting himself out of breath, or climb a rope to the ridge-pole of his shop without feeling the effects of his exploit for a week. So the farmer manages his heavy plow and follows it all day with ease, but talk to him of walking twenty-five miles a day (not to say forty) ; climbing the precipitous sides of Black Mountain, dining on its summit, and sleeping at night by a log fire, on a bed of fragrant boughs at its base ; or swimming across a river a mile wide (easy feats for any tolerably healthy man with a good physical education), and he will open eyes and mouth with astonishment. As to female pedestrianism (or any kind of out-door exercise, in fact), the tradition of it has long since died out among us.

In short, the lack of physical education shows itself in both sexes and in all ages and classes of people, and we trust that no reader, whatever his position or occupation may be, will skip

* In Germany, some time ago, when wise and patriotic men thought they saw the young degenerating, both physically and socially, eloquent appeals were made through the public press in behalf of gymnastic and vocal exercises ; and were followed, in a short time, by the organization of these exercises throughout the whole country. The result has been a revolution in the physical constitution of the people. We trust that the voice of the press will be equally potent here. The Germans have brought over to us their *Turnvereins* and *Sangerbunds*. Let us adopt them and make them national.

over the following hints on practical bodily culture, with the idea that they are not needed by him, or can be of no use in his case. They have a universal application.

In entering upon an explanation and illustration of some of the most available of the many forms of physical exercise, which should be comprised in a complete system of bodily culture, it is necessary, first of all, to give our attention briefly to the subject of

BODILY POSITIONS.

Before attempting anything more complicated or difficult, we ought to learn how to lie, sit, and stand properly, our habitual attitudes having an immense influence upon our development and configuration.

The position of the body during sleep is worthy of more attention than is generally bestowed upon it. All persons in whom there is no malformation, deviation, or serious functional derangement should sleep alternately on the right and left side. Lying on the right side favors digestion, and persons retiring soon after a meal (which should be avoided if possible) will find their comfort and rest promoted by taking that position; but the fact that the lungs on the side on which one lies are obstructed in their action, complete inflation taking place only on the other side, affords a sufficient reason, were there no other, why a change of position is desirable. Where the heart beats too rapidly, it may be retarded somewhat by lying on the back. This is, therefore, in special cases, a good position; but in general it is to be avoided.

"Bolsters and high pillows," Dr. Trall remarks, "are among the abominations of fashionable life.



A PROPER POSITION IN BED.

The head should never be raised more than a few inches, by a

single *small* pillow. But it is a general custom to pile pillow on pillow, like "alps on alps," until the poor "doubled and twisted" victim is elevated out of all reasonable shape, and the neck so bent and lungs so compressed



A BAD POSITION IN BED.

sed that congestion is sure to affect the brain, while free breathing is utterly impossible.

"Dullness of mental comprehension, and general torpor or stupidity of the intellectual faculties, are among the consequences of this pernicious habit."*

One's "standing" among his fellow-men is quite as important a matter in a physiological as in a social or moral sense. "The splendid problem of the erectness of man," Delpech says, "has not been sufficiently studied;" or, he might have added, often enough exemplified. It *is* a splendid problem—a wonderful phenomenon—and happy are those who always carry about in their own persons a complete solution and illustration of it. An erect carriage is essential not only to health and beauty, but to grace of movement. The mere act of standing may seem a little thing, and too easy to require any special attention. It is *naturally* easy, no doubt, but habit, which has been aptly denominated a second nature, has rendered a proper position in standing, in the case of nine persons out of every ten, a matter of no small difficulty. We have wandered so far from Nature in this, as well as in many other respects, that it is with much toil and patience only that we regain her paths.

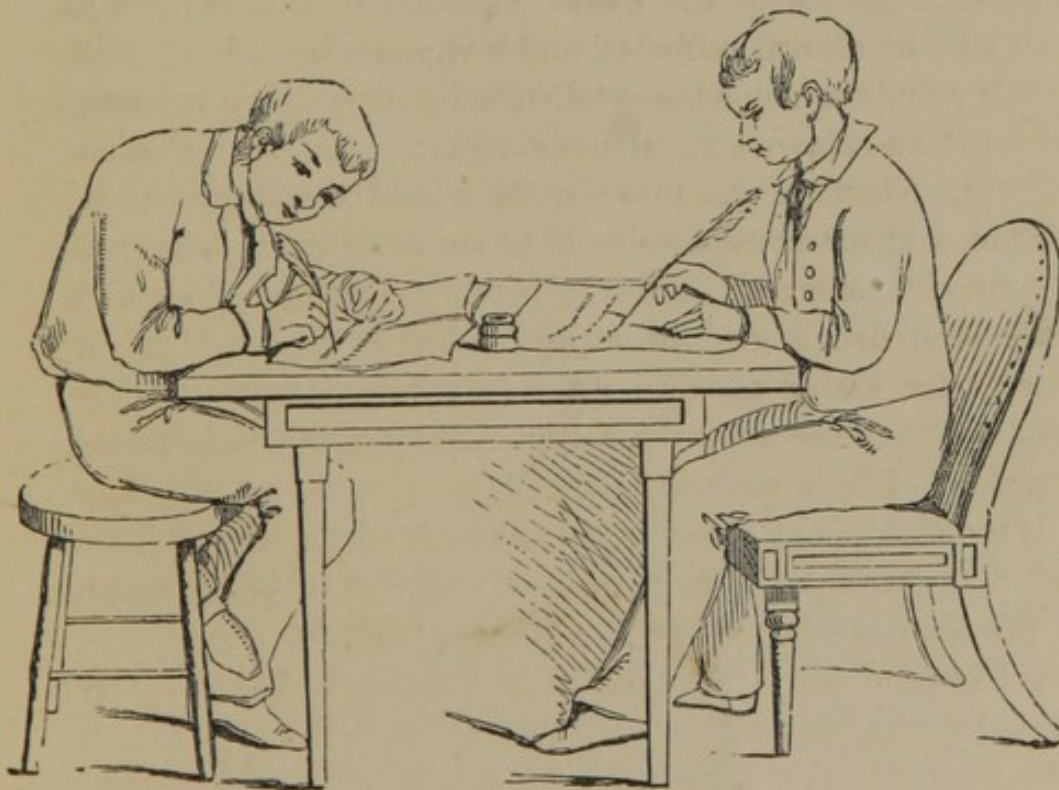
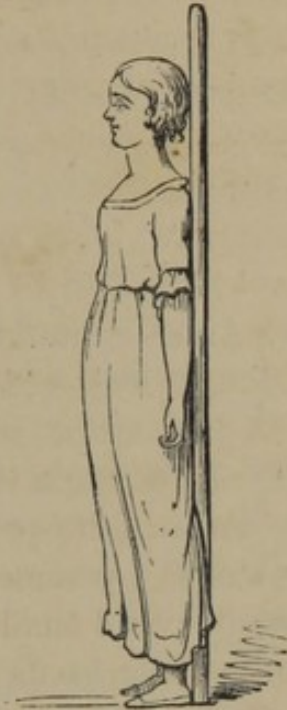
In ancient Greece, we are told, mothers exhorted their

* The Illustrated Family Gymnasium. By R. T. Trall, M.D. New York Fowler and Wells. [Price, \$1 25.]

daughters to be virtuous, *but they urged them still more to hold themselves upright and put back their shoulders.* We give emphasis to the latter clause of this exhortation because it is that alone which need be addressed to American maidens.

To acquire erectness of body, practice the position represented in the accompanying cut for a few minutes at a time, several times a day, performing the inhaling process, described in another place, at the same time. The other movements recommended for expanding the chest will contribute to the same result.

A bad position in sitting is quite as common as in standing. It is by constantly assuming it that students and literary men so often become round-shouldered, and particularly liable to



POSITIONS IN SITTING.

diseases of the lungs. The two figures of school-boys in the cut illustrate very happily the right and the wrong positions. Malpositions in lying, sitting, and standing frequently result, especially among women, in curvatures of the spine and other distortions.

WALKING.

An erect posture requires the use—a certain degree of tension, at least—of nearly all the muscles. Walking calls them all into action, especially where inequalities of ground throw the body into a variety of positions.

As a health-promoting exercise, walking has been too much extolled by some and undervalued by others. A prescribed walk over a familiar road, and with no object in view beyond mere exercise, is of comparatively little value; but when one climbs a hill to obtain a better view of a fine landscape, or wanders through a wood in search of a rare plant, or to seek beneath the leaves the hidden blossoms of the fragrant mayflower, he returns refreshed and invigorated.

We find the following excellent rules for walking in print, but do not know to whom to credit them:

“1. When we rise to walk, the whole body—the trunk, the head, and extremities—should be thrown into a universal but general tension; all lassitude, bending, carelessness, falling of the head, dangling of the limbs, bending of the trunk, and loose, irregular gazing should be avoided; this general vigor brings all the muscles up to that state which instantly fits them for action. It is a positive injury to the body to exercise when it is toneless, lax, flexible, and careless.

“2. The body (if not the spirit) should be perfectly erect. The whole body must be easily poised upon its own gravity as the beam of the scales upon its pivot. Then the various muscles acting upon the body, levers of the limbs and chest, will be freed from the labor of holding the body up, for that will then be done by the happily balanced skeleton, and then the muscles will be ready to move the various joints as the will of

the individual may dictate. Ordinarily, walkers throw their bodies so far from the center of gravity as to compel the muscles to not only bend the joints in the exercise, but in addition actually sustain the whole weight of the body. The erect position in walking is all-important; not only is it valuable to the corporal system, but begets an erect habit in the mind and heart. No person can walk with a dignified, honorable, and executive mien without feeling a mental and moral elevation. As an aid to this position, the eye should not strike the ground for many rods in the distance; the sight should run horizontally; this will prevent the head from drooping, the trunk from bending, and the joints from being lax and weak."

To make your walks in the highest degree profitable to body and soul, cultivate a love of the beautiful as manifested in nature—in hills, rocks, forests, birds, flowers, and insects—and pursue, if leisure permit, such studies as botany, geology, mineralogy, ornithology, so that your spirit will always accompany your body, animating and invigorating it at every step, instead of wandering elsewhere, or remaining snugly housed at home.

Those who would add the beauty of graceful movement to the attractions of face and form, must be careful to correct any inelegance of gait to which they may be addicted. A little careful and systematic practice is all that will be found necessary to effect this.

"Our women," an accurate and critical observer (G. W. Curtis, if we mistake not) remarks, "are too stiff in their walk and attitude. In walking, an American woman only bends her knees, and hardly that; she should yield a little in the upper joints. Her gait gives a movement to her body like the squirming motion of a wounded insect with a naturalist's pin through its midriff. American women hold their arms badly in walking; they almost universally bring them forward, crossing their hands in front; they have, in consequence, the look of a trussed fowl, and have about as much freedom of motion. If the arms were allowed to fall freely by the side, our women

would move more gracefully, walk better, and look better. The prevailing mode of carrying the arms hoops the shoulders, contracts the breast, prevents all proper development of the bust, ruins health, and what our ladies will be more likely to attend to, destroys beauty of form and all grace of movement."

RUNNING.

Running, if not carried to excess, is a fine exercise for healthy and well-formed boys and men; but it must be cautiously, and at first very moderately indulged in by those who are at all feeble. The most serious injuries have frequently resulted from the injudicious use of this and other violent movements.

Little girls may run with their brothers and playmates as much as they please (fashion and their mammas permitting), though they are generally less fleet of foot and fall oftener than boys. They will, like the boys, be invigorated by the sport; for, during childhood and early youth, the two sexes differ very slightly from each other. On the approach of womanhood, when the peculiarities of form which distinguish her sex begin to manifest themselves, and new functions are brought into operation, the maiden, without by any means neglecting outdoor exercise, should discontinue some of the ruder sports of childhood. She is no longer like a boy; for if she were, the boy would never love her. She can not run swiftly and leap gracefully if she tries, or without danger.

A distinguished author rather maliciously observes, that "women run merely in order to be pursued and caught." We have not, however, forgotten the fable of Atalanta (was she not finally caught, too?), or the fact that the maidens of Lacedemonia ran and wrestled naked in the arena; and we by no means deny that some modern women, might, by means of the necessary training, become models of swiftness in the foot-race; but we do not say that such exercises as running and leaping are inconsistent with the character and functions of true womanhood.

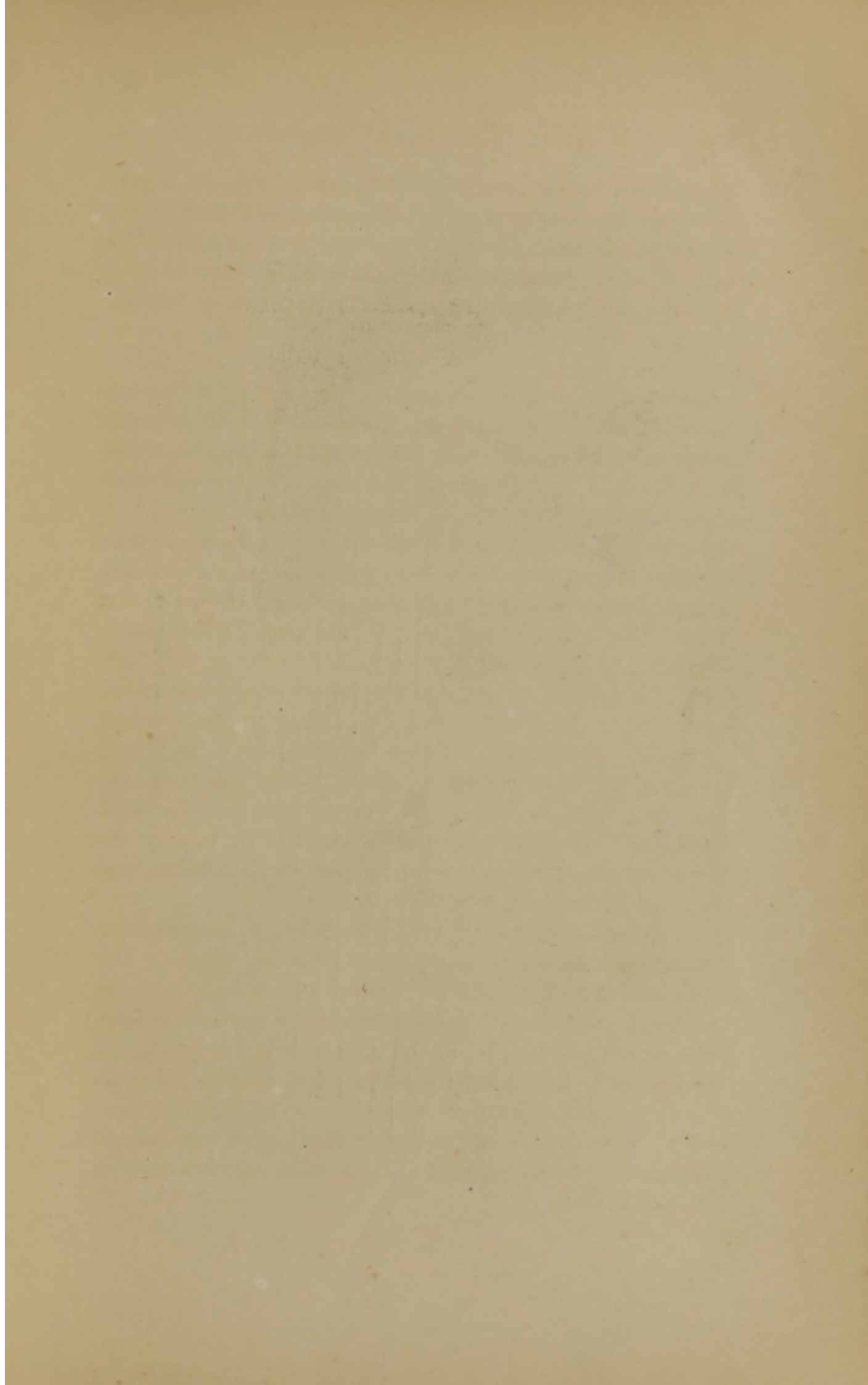


PLATE XVI.



SWIMMING—ATTITUDE.

SKATING

Skating is an exhilarating and invigorating exercise, and we are glad to perceive that it is becoming fashionable. It requires a moderate exertion of nearly all the muscles in the body; but a skillful and experienced skater can travel on the ice at the rate of from six to ten miles an hour, for several hours in succession, with very little fatigue. Girls and women may skate with profit and (if fashion permit) with propriety, provided great caution be observed in the first attempts, and before the skill which renders the exercise so easy has been acquired, to avoid the falls and violent straining of the muscles that boys usually experience. In Holland, skating is universal among the ladies. Queen Victoria of England also skates, it is said, and surely the fair female sovereigns of America may do the same.

SWIMMING AND ROWING.

When the ancient Athenians wished to designate a man who was good for nothing they were accustomed to say, "he can not even swim;" which shows how important the art was considered by them. With the moderns it is by no means a common accomplishment, notwithstanding we are so often placed in situations in which it may at any moment become of more importance to us than all the rest of our boasted acquirements put together, and even essential to the preservation of our lives, or of other lives even dearer than our own. Really good swimmers—men who might bridge the Hellespont with their strong limbs, as Leander did for love and Byron for glory—are very rare indeed among us. Even sailors, it is said, are not infrequently unable to swim a single stroke.

As a hygienic agency and a means of physical culture, in which aspects, mainly, it concerns us here, swimming very properly takes a high rank. In fact, we consider it to be, within the range of its application, one of the most efficient of bodily exercises. Its free and graceful movements give healthful action to the muscles; the contact with the animate waves, so full of magnetic virtue, which it involves, refreshes and in-

vigorates the body; and the conquest of a new element, which it secures, dilates the whole being with a sense of triumph and of power.

Everybody, we believe, should learn to swim—women no less than men. “Beauty, the mother of love,” according to one of the significant myths of the ancients, “is the daughter of the waves and of light.” Water and sunshine still acknowl-



BEGINNING OF THE PULL.

edge the relationship, and the fairest forms grow fairer still in the loving embrace of the limpid elements. The maidens of the Pacific islands swim like water nymphs; so do the Italian, Mexican, and South American women, and many others. Our wives and daughters need not be ashamed to follow their example in this matter; and we earnestly recommend our fair



END OF THE PULL.

readers (as well as our readers not so fair), who have not already learned, to commence their lessons at the earliest opportunity.

A practical treatise on swimming with the necessary illustrations would occupy too much space to be admissible here; but all necessary instructions, so far as they can be conveyed in words and drawings, may be found in Walker's "Manly Ex-

ercises," Trall's "Family Gymnasium," or in a little paper-covered volume entitled "The Science of Swimming," which may be bought of the publishers of this work for twelve cents.

Sailing and rowing should be mentioned in connection with swimming, and with almost equal commendation. The latter may be learned in two or three lessons; and with a light skiff and light oars is a fine exercise for girls as well as boys.

RIDING.

Riding on horseback is a fine manly exercise (and womanly too), promoting respiration, circulation, and digestion; expand-



THE CORRECT POSITION.

ing the chest, and giving tone and energy to the whole system. It has fallen into almost total disuse in most parts of the Northern and Eastern States, but in the South and West is a universal accomplishment, children of both sexes learning to ride almost as soon as they learn to walk. Our elegant velvet cushioned carriages are very comfortable and



A BAD POSITION.

convenient; but if we allow them to effeminize us and deprive us of the use of our limbs and lungs, they are of questionable utility. They have their place and use, however, and so, let us not forget, has the saddle.

BALL PLAYS AND BOXING.

The various out-door athletic games—base-ball, foot-ball, cricket, etc., need merely be mentioned with a word of hearty commendation. Those who have been long unaccustomed to

active and vigorous exertion should however begin cautiously, or their aching bones might discourage them. Boxing and fencing, although the prize-fighter and the duelist have sometimes degraded them to unworthy and bloody uses, are noble manly arts and have our warmest approval.

DANCING.

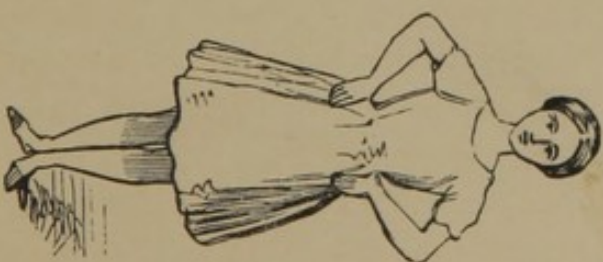
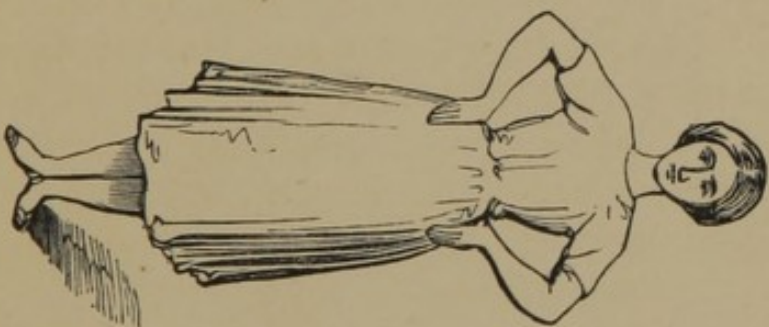
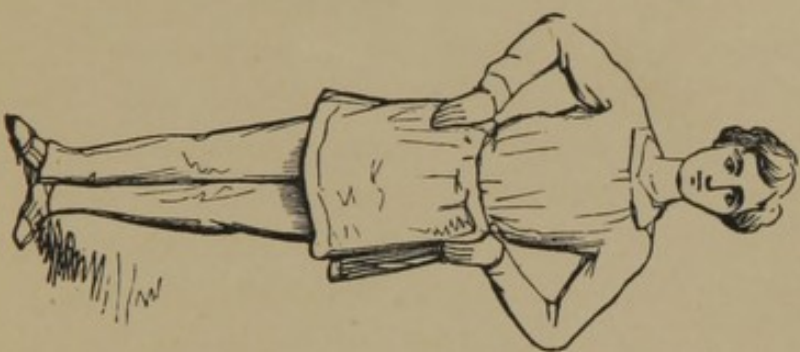
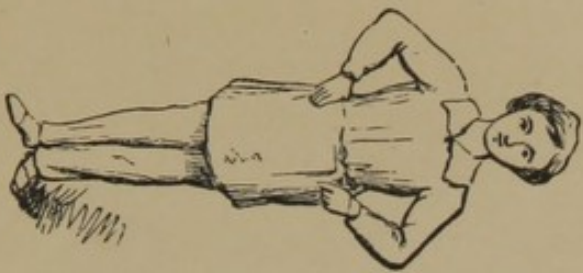
We have the greatest respect for true piety and for all the moralities and proprieties of civilized life, and just a little for the honest prejudices begotten by erroneous ideas of human life and fostered by a false education; but we can not allow this respect to warp our judgment or fetter our pen. The "resolutions" of synods and presbyteries doubtless have weight, but the truths of physiological science, we must be permitted to think (and, on all proper occasions to say), are sufficient, when the two conflict, to turn the scale against them. In other words, we do not believe that dancing is "an invention of the devil," although many most excellent and pious people have repeatedly denounced it as such. That the devil sometimes makes use of it to promote his own ends, we freely grant; so he does of music, poetry, painting, and even religion itself; but that is no reason why we should give him a monopoly of it.

We could fortify our opinion by an array of quotations from learned and pious authors, but we prefer to let it rest upon the sure foundations of science and common sense, merely introducing here a single witness.

Fordyce, in his "Sermons to Young Women," says: "It seems to me there can be no impropriety in it, any more than in modulating the voice into the most agreeable tones in singing; to which none, I think, will object. What is dancing, in the most rigid sense, but the harmony of motion rendered more palpable? Awkwardness, rusticity, and ungraceful gestures can never, surely, be meritorious."

Looking upon dancing from a physiological point of view, we see in it one of the most effective instrumentalities for promoting a harmonious bodily development, a graceful carriage, a

PLATE XVII.



READY TO BEGIN—FEET IN FIRST POSITION—HANDS AT REST.

1875

free circulation of the fluids, and a cheerful flow of spirits, all of which are in the highest degree friendly to health and beauty. It is, in fact, *the best of all in-door exercises*, as it brings to bear upon the physical system a greater number of energizing and harmonizing influences than any other.

Dancing is particularly beneficial to women and to students, literary men, and those engaged in sedentary occupations; but, as Miss Harriet N. Austin truly says, "even the man weary with physical toil, inspired by the music of the violin or the piano, feels the weight of his fatigue lifted from him and can join the dance for an hour in the evening with positive refreshment."

It is hardly necessary, we presume, to say that because we so heartily recommend dancing, it does not follow that we approve all dances, much less all the concomitants frequently associated with their performance—such as late hours, unphysiological modes of dress, and midnight suppers. The beautiful and beauty-giving Terpsichorean art—the veritable "poetry of motion"—is no more responsible for these abuses than true religion is for the puritanic public opinion that drives those who desire to dance to the hotels and public halls, instead of opening private drawing-rooms and saloons to them. "There are hundreds and thousands of youth" (we quote Miss Austin again), "the sons and daughters of pious fathers and mothers, too, who *will* dance, though it were on the brink of ruin. They can not dance in their fathers' parlors; they will go where they can—to the ball-room, where they mingle with such companions and such associations as cluster round public houses. And as the opportunity to dance is not very frequently enjoyed, they wish to make the time as long as possible, and often dance on till morning." Let the responsibility rest where it belongs.

Dances which throw the body into unnatural and painful (not to say indecent) postures, and those that require violent exertion, should be left to the professional dancers of the theater and the opera. They deform and demoralize rather than elevate and beautify those who engage in them.

The waltz is generally looked upon as inimical to morality and true delicacy. We need not discuss it on those grounds here. It is enough for us to say that, as an exercise, physiology pointedly condemns it. The rapid whirl of its movement makes the blood rush to the principal internal organs—the heart, the lungs, and the brain—and tends to cause dangerous congestions.

We leave instructions in dancing to be given by those better qualified for the task than we, but two or three hints having a direct physiological bearing will not be out of place.

The arms should be kept in an easy semi-oval position, so that the bend of the elbows be scarcely perceptible, otherwise they would present angles which would offend the eye and destroy all appearance of elegance. The feet should be turned out, in order that both may attain an equal degree of execution. All idle attitudes must be avoided. Forcing the shoulders up to the ears, stooping or rounding the back, if long permitted, may give rise to local deformities. The body should be kept in an easy and graceful position—the chest advanced and the waist retiring; by which means the breast will be naturally and elegantly developed, and the shoulders brought to range evenly with the back and form a graceful contrast with the waist.*

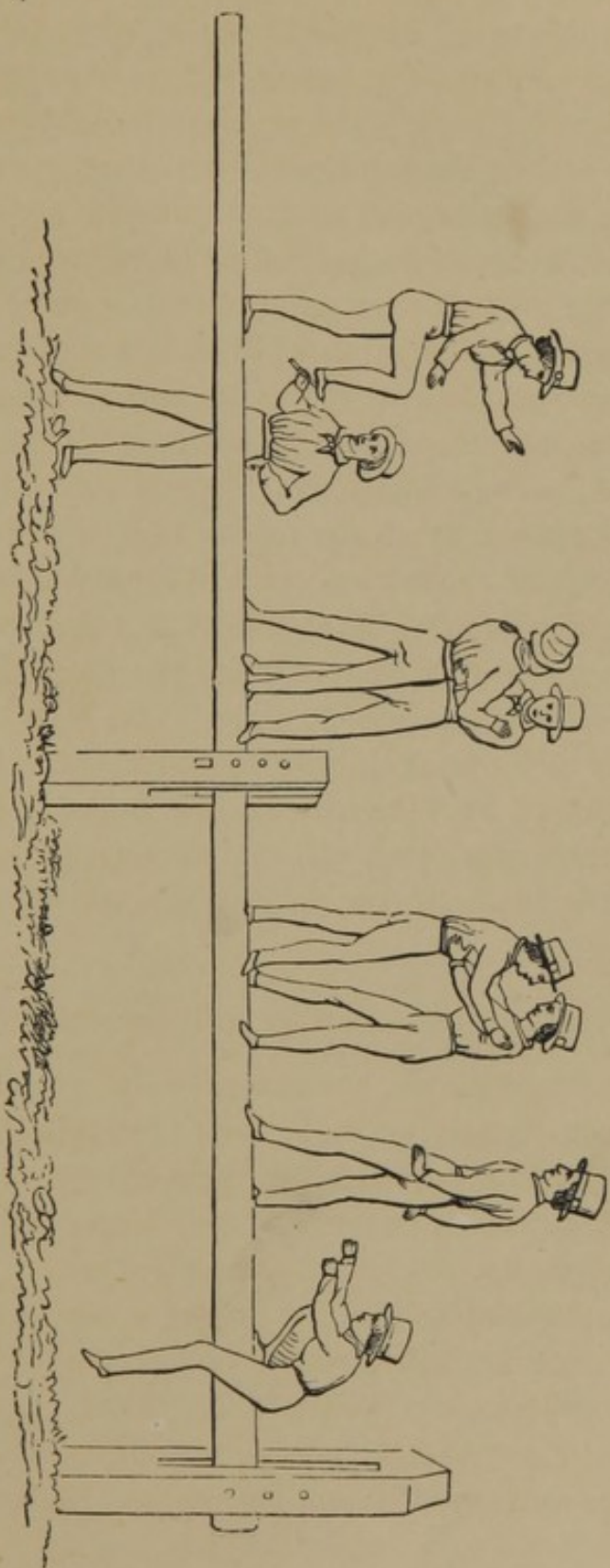
THE EXERCISES OF THE GYMNASIUM.

All the exercises we have mentioned in the preceding sections might, properly enough, have been introduced under the general head of gymnastics, but the word is now generally used and understood in a more restricted sense, embracing merely those systematic movements performed within the walls of a gymnasium and mostly by the help of apparatus.

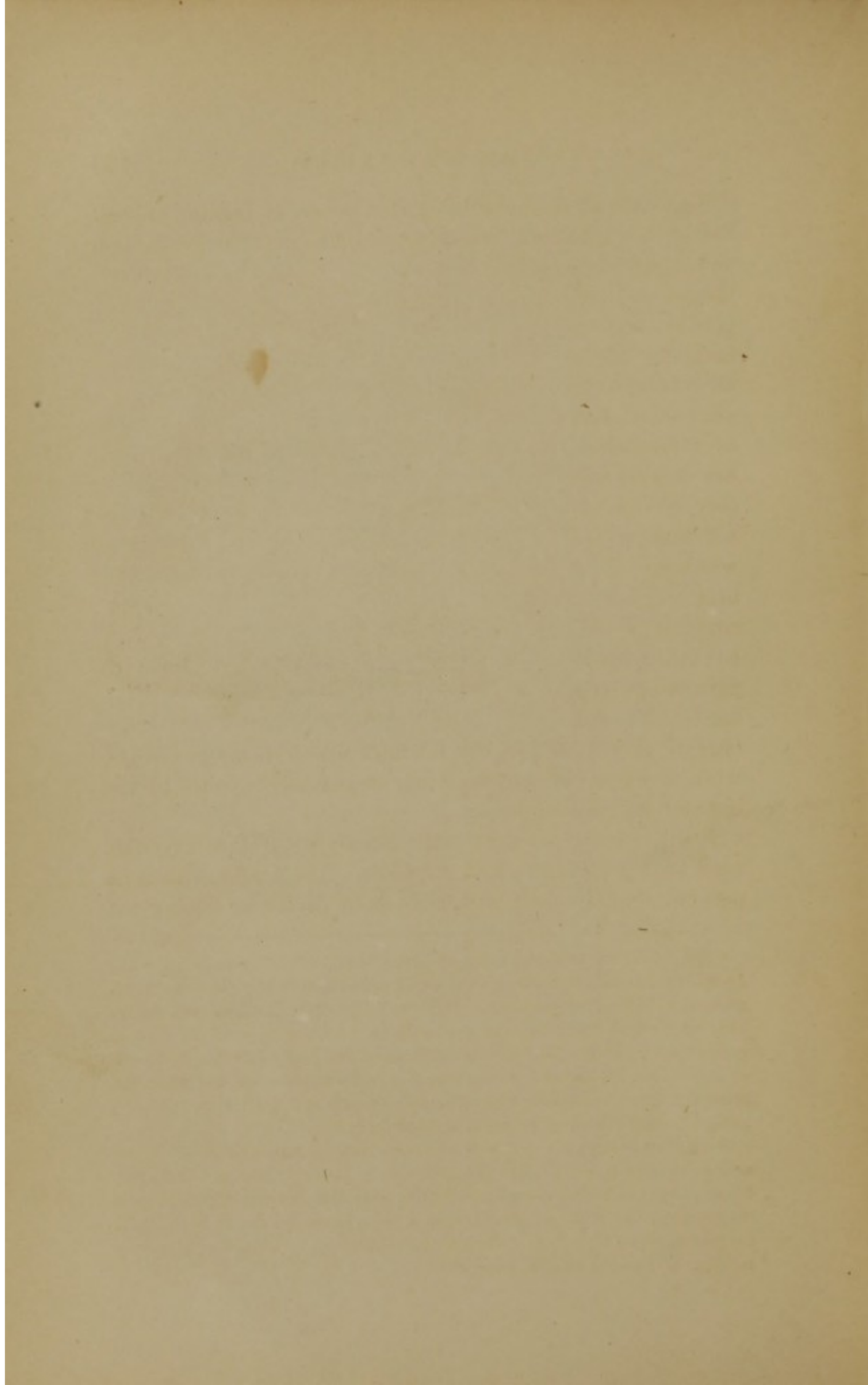
These exercises, taken together, form a most efficient means of bodily culture, developing the muscles, imparting activity and grace of movement, increasing bodily strength, improving the form, curing disease, and promoting health and beauty.

* Riofrey.

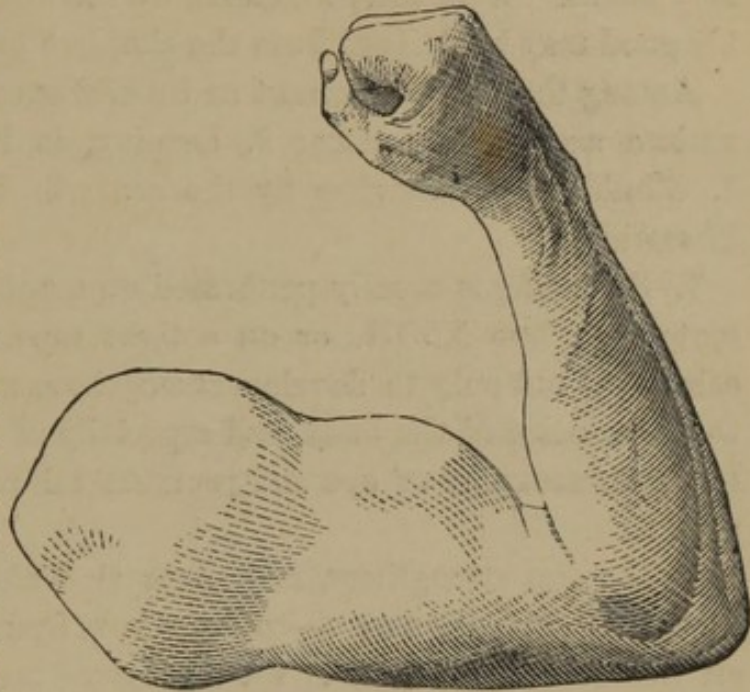
PLATE XVIII.



THE BALANCING BAR.



To secure all the benefits which a course of training in gymnastics is capable of imparting, a well-appointed gymnasium and a judicious teacher are requisite; and we earnestly advise all who can, to avail themselves of these helps; but where neither gymnasium nor teacher are within reach, a balancing-bar, a climbing stand, and other simple fixtures (which can be easily and cheaply erected), will prove a tolerable substitute for the former, while the place of the latter may be partially supplied by the instructions found in books.



THE ARM OF A GYMNAST.*

The caution thrown out with reference to other exercises must be repeated here with emphasis. The danger with most persons, and especially with boys, is in daring and doing too

* We introduce this engraving to show the effects of exercise upon the growth of muscle. It is taken from a cast of the arm of Mr. James L. Montgomery, a teacher of gymnastics in New York. Mr. Montgomery, we are told, commenced the practice of gymnastics when about 19 years of age—was quite slender—weight 145 lbs.—chest 36 inches, arm around the biceps muscle or upper arm, 12½ inches. At the time the cast was taken he had practiced about four years—weight increased to 160 lbs.—chest 43 inches, fore-arm 13½ inches, around the biceps or upper arm 15½ inches.

We do not believe that so great a development of muscle is generally desirable, or that it can be attained, in ordinary cases, without a sacrifice of brain power; but it shows what influence gymnastic exercises give us over the development of the physical system. For a model we should take Apollo in preference to Hercules; although the latter was by no means a useless member of the semi-celestial fraternity.

much at the outset. Those who are weak or in any way diseased must be particularly careful in this respect, or serious injuries may result. With the precaution we have indicated, incalculable good may be derived from the simplest private gymnasium.

Among the most important and useful exercises of the gymnasium are, 1. Balancing; 2. Leaping, in its various forms; 3. Climbing; 4. Hanging by the arm; 5. Wrestling; and 6. Throwing.

1. Balancing is usually performed on a pole or bar, as represented in Plate XVIII., or on a tight rope. It is admirably calculated not only to develop, strengthen, and give flexibility to the muscles of the body, and especially of the loins, but also to confer accuracy of eye and promote self-command and caution.

2. Leaping strengthens and gives elasticity to the feet, the legs, the thighs, the knees—to the whole frame, in fact; braces all the muscles; improves the faculty of measuring distances by the eye; imparts such a command over the body that there is but little danger from a fall; and makes one courageous and self-reliant.

Vaulting is the exercise of leaping on a horse, into the saddle, or over the saddle. The accompanying figures show how it is



HORSE MOUNTING.

SIDE VAULTING.

VAULTING OVER THE SADDLE.

done. The wooden horse used in the exercise is easily constructed. Well-wadded leathern pads should be buckled on any part of the horse on which the exercises are to be performed.

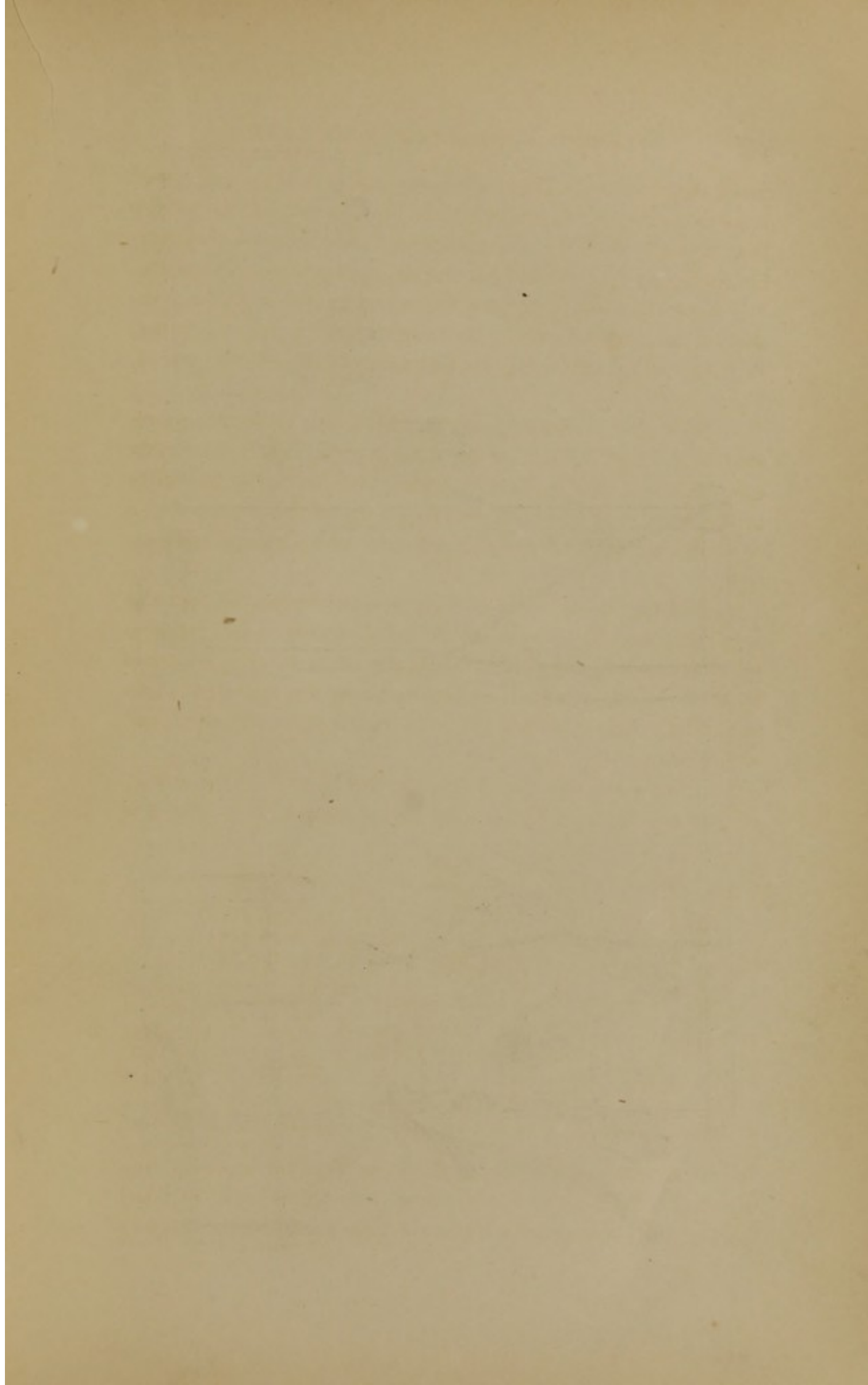
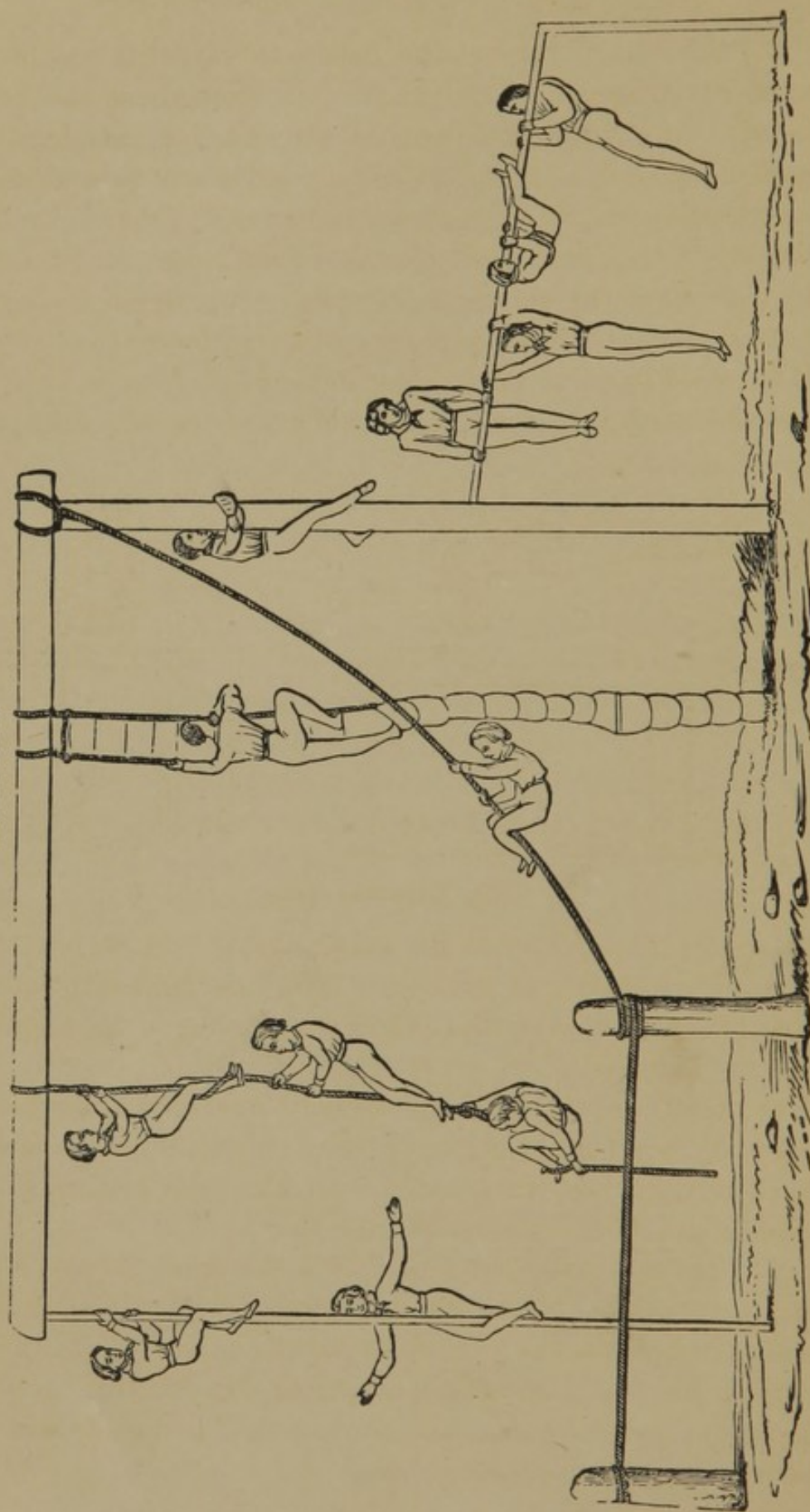


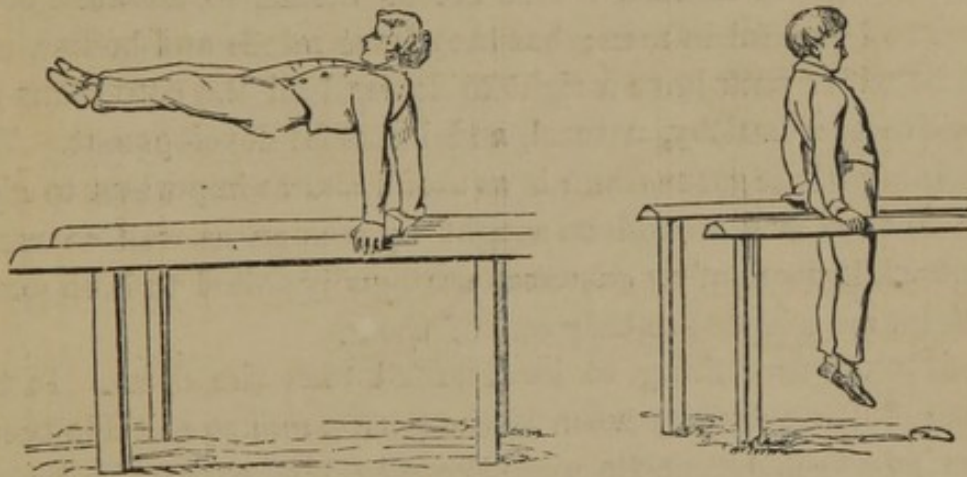
PLATE XIX.



A CLIMBING STAND.

3. "Climbing," the veteran Salzmänn says, "is one of the most advantageous of exercises." It strengthens the body, fortifies the courage, and increases the means of escaping from various dangers. It is performed on ladders of several kinds, masts, poles, and ropes, as shown in Plates XIX. and XX. The hands, arms, legs and thighs should be considerably strengthened by other exercises before climbing may properly be attempted.

4. Hanging by the arms is a preparatory exercise to climbing. It is varied in many ways. Modifications of it are seen in the exercises with the parallel bars, which are specially calculated



THE PARALLEL BARS.

to act upon the joints of the wrists and shoulders, and to increase the capacity of the chest. The bars can easily be constructed by any person who understands the use of the handsaw and the hammer.

5. Wrestling is a somewhat violent exercise, but may be engaged in without danger by persons whose physical powers have already been invigorated by other athletic games. It gives action to every muscle in the body.

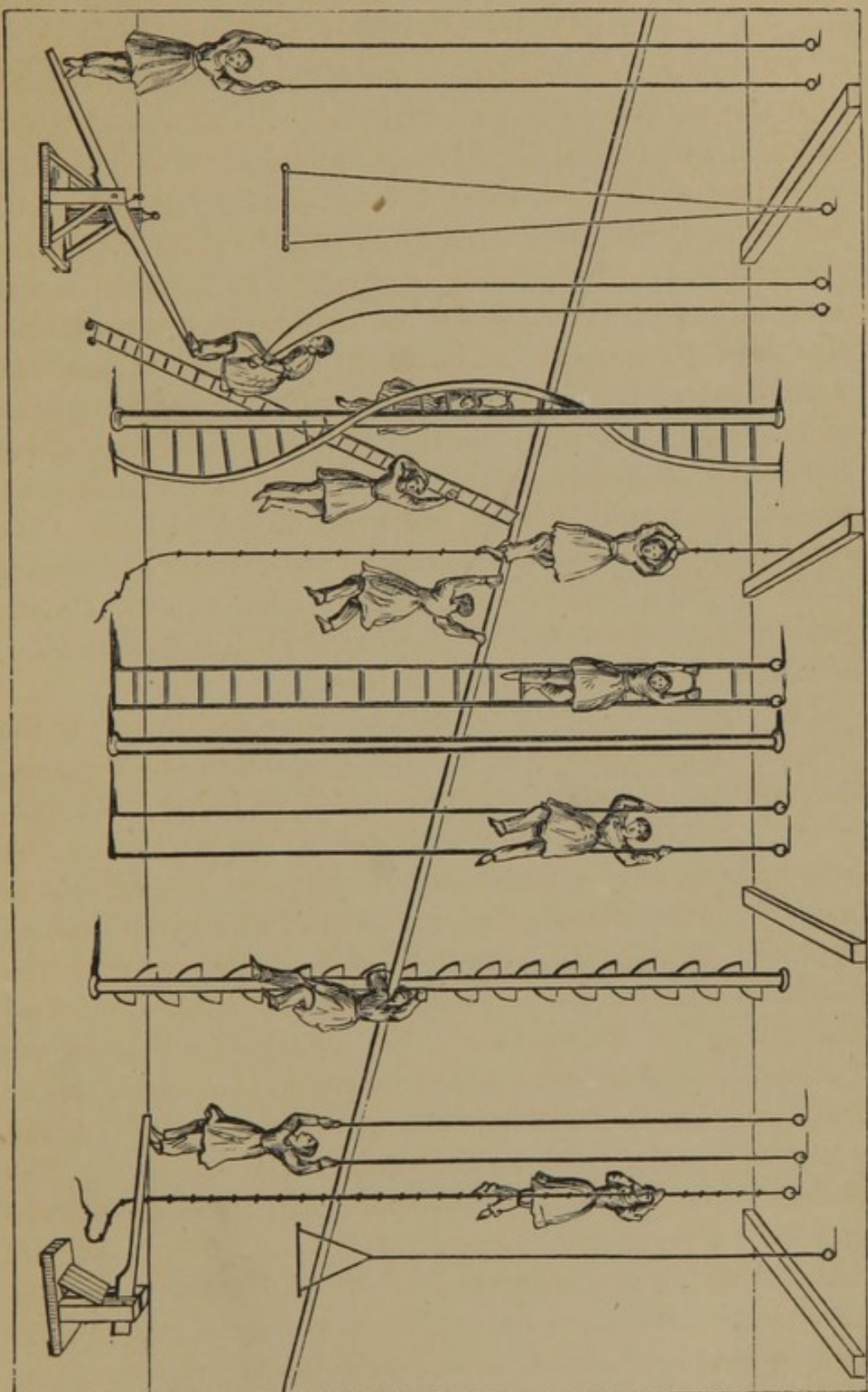
6. Throwing strengthens the hands, the arms, the shoulders, and the muscles of the chest. Combined with aiming at a mark it exercises the eye. The popular games of quoits and tenpins furnish good means of taking this kind of exercise. Gamblers and the hangers-on about public houses should not be permitted to monopolize them.

THE GYMNASIUM FOR GIRLS.

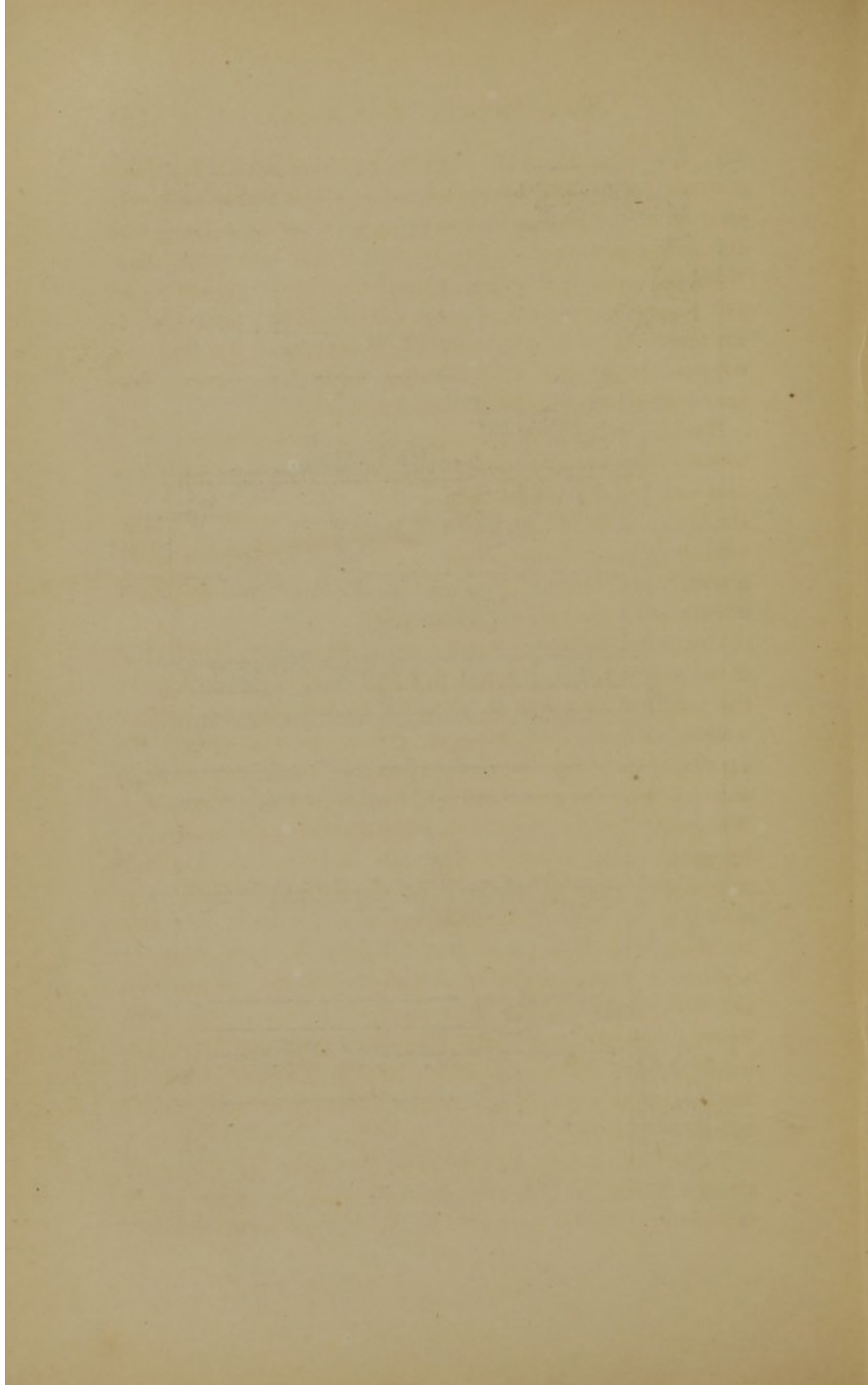
We do not believe, as we have had occasion to say before, that women should have precisely the same culture throughout as men; simply because they are not, and were never intended to be, precisely like men—because, in fact, they differ radically from our sex in some of their most important functions and characteristics. The remark applies to their physical as well as to their mental education. We desire to give them neither that towering expanse of forehead, nor that hardness and prominence of muscle, which are so fitting, so advantageous, and so beautiful in man; but they have minds and bodies, and in behalf of both have a right to demand all the conditions requisite to a healthy, natural, and beautiful development. The training of the gymnasium is as useful and as important to girls as to boys, and should be sought by women as well as men; but while some of its exercises are equally suited to both sexes, others are adapted to only one of them.

But the first thing to be attended to is the dress. In the long, flowing drapery worn in the parlor, and so suitable there, the principal gymnastic exercises would, of course, be impossible. The costume must be adapted to the occasion. The principal requisites in such a costume are, that it be as light as may be consistent with the protection of the person, and so fashioned as to allow perfect freedom of movement. The more beautiful and becoming it may be made the better, provided these points be not sacrificed. The prettiest costume for the gymnasium that we have seen is composed of a short dress or frock reaching to the knee, made with a yoke and belt, and pretty full; and trowsers of the common pantaloon form. The sleeves of the dress may be short for summer wear, and gathered into a band and buttoned at the wrist for winter. A sack or basque of a different color from the skirt has a fine effect as a part of this costume. Such a dress as this, or some other appropriate exercising costume, should form a part of every woman's wardrobe, and should be worn a portion of every

PLATE XX.



THE GIRLS' GYMNASIUM.



day. For a ramble in the country, Fashion deigning to permit, it would be just the thing; but surely a woman has a right to wear what she pleases in the privacy of her own home, and during that portion of the day in which "calls" are not in order. With the habits and modes of dress which now generally prevail among our women, a great number of the most important muscles of the body, especially those around the hips, can not possibly get their proper development. The consequences are of the most serious and painful character.

Having secured an appropriate dress, the young girl or woman may commence her gymnastic education with the easy and graceful exercises of the Indian scepter, alternating with skipping the rope, "the graces," and various other movements sometimes taught in schools under the name of calisthenics.



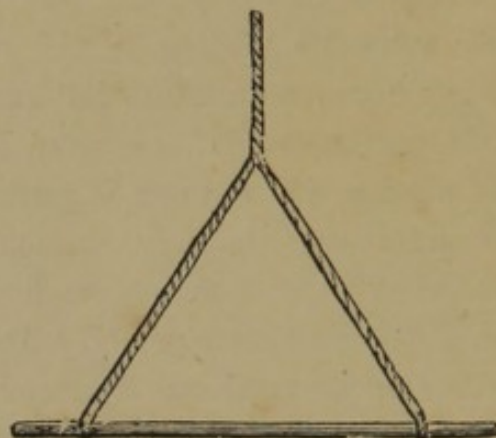
The Indian scepters, or clubs, are made of heavy, hard wood of the proper size and weight to adapt them to the strength of the pupil, or hollowed so as to be loaded with any desired weight, and are used in pairs. They promote greatly the development of the muscles around the chest, give strength and grace to the arms, and aid in the process of breathing. We greatly prefer them to the dumb-bells, so much extolled by some. They should not be too heavy, nor the exercises with them violent. Such a development of muscle as is shown in the arm of Mr. Montgomery, a drawing of which we give in another place, would hardly be appropriate in a woman. Take Praxiteles' or Canova's Venus for a model, and not Minerva of Lacedemonia, with a helmet and spear. Trall's "Family Gymnasium" furnishes a great number of examples of the movements which may be executed with the Indian club or scepter; and most of them are as well adapted to girls as to boys.

To call into action and develop the lower limbs and the muscles about the loins, the triangle may be brought into requisition. It is a short pole or bar of wood suspended by a

rope from the ceiling at the height of the head. (See Plate XX. and the accompanying cuts.)

The bar is to be grasped with the hands while various prescribed movements are executed with the feet, legs, and body.

"It is desirable," Riofrey remarks, "that a lady should be able to go up a wooden or even a corded ladder; that she should know how to make use of her hands, hold a rope, and mount a horse; that she should



pass without fear from one vessel to another, and maintain her equilibrium in a small boat, crossing a narrow river; that she should walk steadily on a plank placed over a ditch; and that she should swim."

We fully agree with the learned Frenchman, and therefore advise that, after the muscles have been considerably strengthened, and a degree of confidence acquired by the exercises already mentioned, the more difficult ones of balancing and climbing be engaged in and practiced till they become easy and pleasant, and the requisite skill be acquired.

An occasional recurrence to them afterward will suffice. See Plate XX. for illustrations of the various forms of climbing in which girls may properly engage. Their balancing exercises may be similar to those of the boys or men, and performed on a similar bar, as represented in Plate XVII. They are by no means difficult, though they will seem so at first to the uninitiated.

MISCELLANEOUS EXERCISES.

1. *For the Expansion of the Chest.*—The assertion of a distinguished physiologist, that “many people die for want of breath—when it is their own carelessness alone that prevents them from breathing,” is no less true than startling. Our vitality is in proportion to our respiration. If we only half breathe, we only half live. To expand the chest, therefore, and increase our breathing capacity, where it is deficient, is of the utmost importance. Whether, as Alphonse Le Roy and others have contended, the development of the chest be actually an absolute standard of the length of life or not, it is clear enough that by expanding it life may often be prolonged and health and beauty promoted.

As special exercises for expanding the chest, the following are excellent and if perseveringly made use of will prove infallible preventives of consumption.

(1.) Stand erect with the feet in the first position (see Plate XIX.), throw the shoulders back, and then breathe slowly, freely, and deeply, *filling the lungs to their utmost capacity at every inspiration.* Do this several times a day, in the open air if practicable, and if not, in a well-ventilated room, continuing the operation from one to five minutes at each time, or as long as you can without fatigue.

(2.) Stand in an erect position, as in the first case, set the hands fast on the hips, and in this half-bent position throw the arms forcibly back as far as possible, the trunk remaining immovable. The backward motion must take place at the same time as the *inhaling* of the breath. Repeat the movement a prescribed number of times, avoiding fatigue, as before.

(3.) With the body still in the same position, clasp the hands behind and then stretch

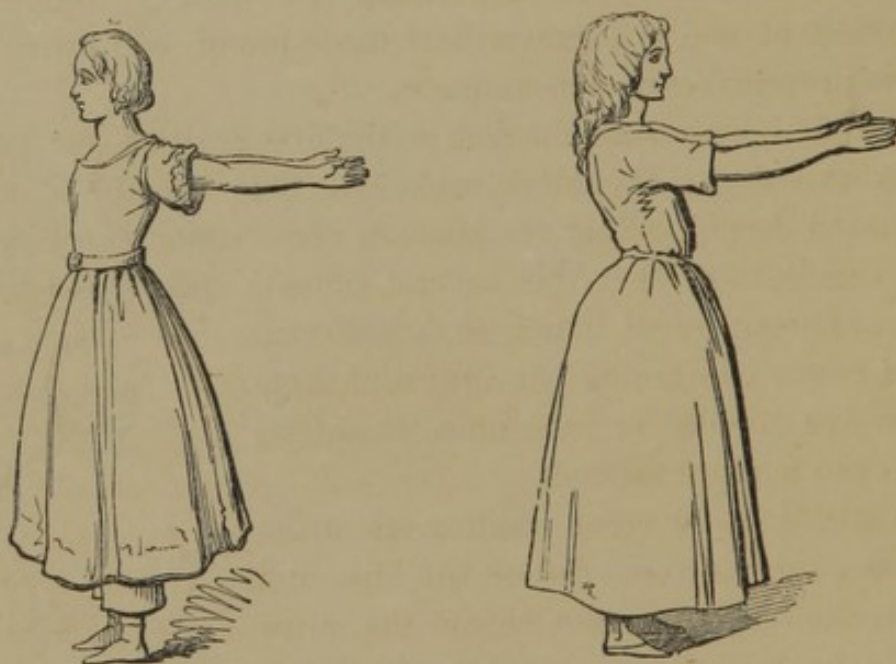


them downward as far as possible, making this movement at the same time with the *exhaling* of the breath. Repeat as before.

By the last two movements the shoulders are strengthened and thrown back as well as the chest expanded. The last also draws the shoulders down, thereby promoting a nobler carriage and remedying the wing-like standing out of the shoulder-blades so often seen.

(4.) Take a full, deep inspiration (standing erect as in the previous movements), retain the air in the lungs as long as possible, and then let the breath go out steadily and slowly, at the same time beating the chest, abdomen, and back with the hands, gently in front, but more smartly on the back and sides. Keep up the movement through from two to six inspirations.

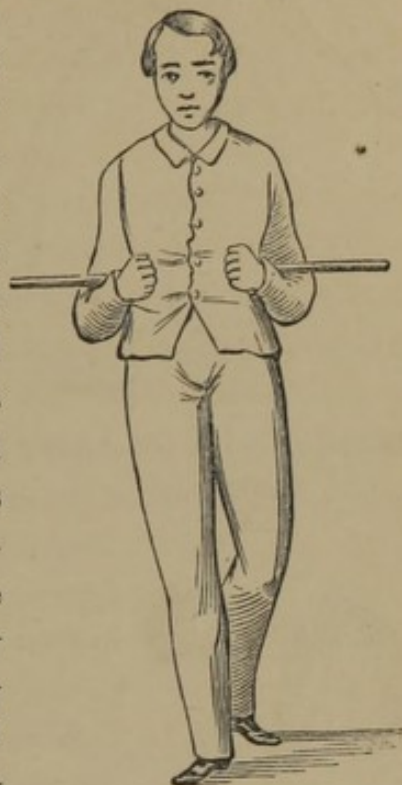
(5.) Extend the arms forward as nearly as possible at right



angles with the body, and then throw them backward a number of times with considerable force; afterward, from the same commencing position, bring the arms downward and backward, bent at the elbow, and strike the elbows together, or try to do so. These motions expand the chest in the line of the collar-bone, flatten the shoulder-blades, and thus tend to cure the deformity of too round shoulders, as well as enlarge

the breathing capacity. Women who have contracted the diameter of the chest by tight lacing will find this exercise particularly serviceable.

2. *For the Improvement of the Carriage.*—Take a short, rounded stick and put it straight across the back under the arms, which are thrown backward, and bent at right angles. In this manner walk up and down for ten or fifteen minutes, preserving as much as possible the upright position of the body. One principal point is the drawing of the shoulders back and down at the same time. A good carriage is thus promoted, and that position and bearing of the arms and shoulders which it is difficult always to preserve if the exercise be not performed with something to hold. The attention is to be directed exclusively to the upright bearing of the body while thus in motion. The aim of the movement, at the same time that it contributes to the strengthening of the muscles of the shoulder back, and foot, is to promote and confirm a habitually noble and healthy carriage. It is therefore designed as a remedy against a *one-sided, loose, and unsteady carriage of the back, and in general of the whole body*. This bad habit often shows itself in young people who are growing fast, and its effects are then most prejudicial (defective growth, faulty formation of the chest, etc.), extending their influence over the whole after-life.



3. *For Giving Strength to the Back and Loins.*—(1.) The arms being extended, bend the body from side to side (as shown in the left-hand figure on next page), very slowly at first, counting in a prolonged monotone to correspond with the bodily motion. Continue it for from two to five minutes.



(2.) Place the closed hands firmly at the small of the back (as shown in the right-hand figure) and then bend backward as far as possible. As the trunk is thrown backward, the head must be inclined moderately forward. This movement should always be performed slowly. Repeat from four to sixteen times,



counting with the backward motion only.

(3.) After raising the arms and throwing the body moderately backward, throw it forward (as shown in the figure), the knees being kept straight and the flexion being done on the hips and vertebral joints. From four to sixteen times.



4. *For the Promotion of Circulation.*—(1.) Standing erect and placing the hands on the hips (as shown in the following cut), hop on the points of the toes, first of one foot and

then of the other, from ten to a hundred times or more. The body should not advance, but remain upright in its place. The joints of the knee and the ankle must be quite free and elastic, for only by this means can be promoted that soft and wholesome shaking of the body which, after the setting in motion of the leg and foot muscles, is the aim of the movement. The degree of intensity of the movement can be regulated at will, by raising the foot to any desired height.

This movement promotes the circulation of the blood in the abdomen, carries off humors from the head and chest, cures cold feet, and is especially adapted to the bringing again into order hemorrhoidal fluxes and the monthly courses of females

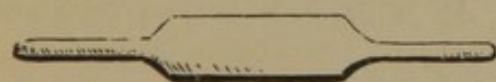
which may have got out of order by obstruction, due attention, of course, being paid to the general principles which should regulate all exercises, and of which the careful reader of this book will not remain ignorant.



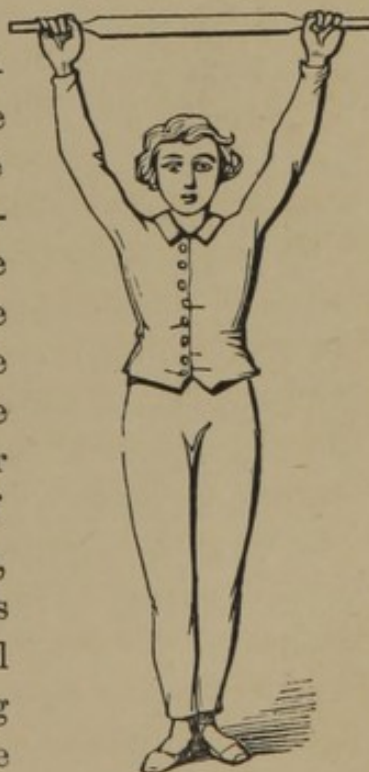
(2.) Standing upright and throwing the arms into a nearly horizontal position, rub the hands together backward and forward, from forty to a hundred times; or, to vary the exercise, strike the palms vigorously together from ten to fifty times. This exercise in connection with the previous one is useful as a remedy against affluence of the blood and nervous affections of the head. It can be also used against the same complaint of the inner organs of the chest. But in this case the energetic striking together of the hands, which rather strains the muscles of

the chest, should give place to a quiet rubbing together of the same, which being longer performed, the operation gains in amount what it loses in intensity.

5. *For the Correction of Round Shoulders, etc.*—Perform the following exercise



with the long back-board for a short time every day. Take the back-board by the handle with the left hand, placing the right hand on the top while the other end rests on the floor; then, at the word “attention” (or without the word), bring it in front of the body, holding it with both hands, their backs being in front. From this position raise it slowly to a horizontal position over the head, and then bring it down gradually across the back of the



shoulders, where it may be held for a minute or two, or the movement may be immediately reversed. This exercise may be profitably alternated with that of the Indian scepter.

For other special exercises we must refer the reader to works on medico-gymnastics, or to Dr. Trall's "Family Gymnasium," from which last we have borrowed several of the foregoing examples.

On the subject of vocal gymnastics—reading, speaking, singing, etc.—which should form a part of every system of physical education, the best work in the English language (or in any language so far as we know) is Professor C. P. Bronson's "Elocution, or Mental and Vocal Philosophy," which we commend to our readers in place of the brief and unsatisfactory remarks which we might have offered here. A popular little handbook, entitled "How to Talk," has some excellent hints on this subject.

SOME GENERAL RULES AND HINTS.

1. The best time for gymnastic exercises is early in the morning. Toward evening, however, is also considered a favorable time. If practiced late in the evening or near bedtime, they should be more moderate.

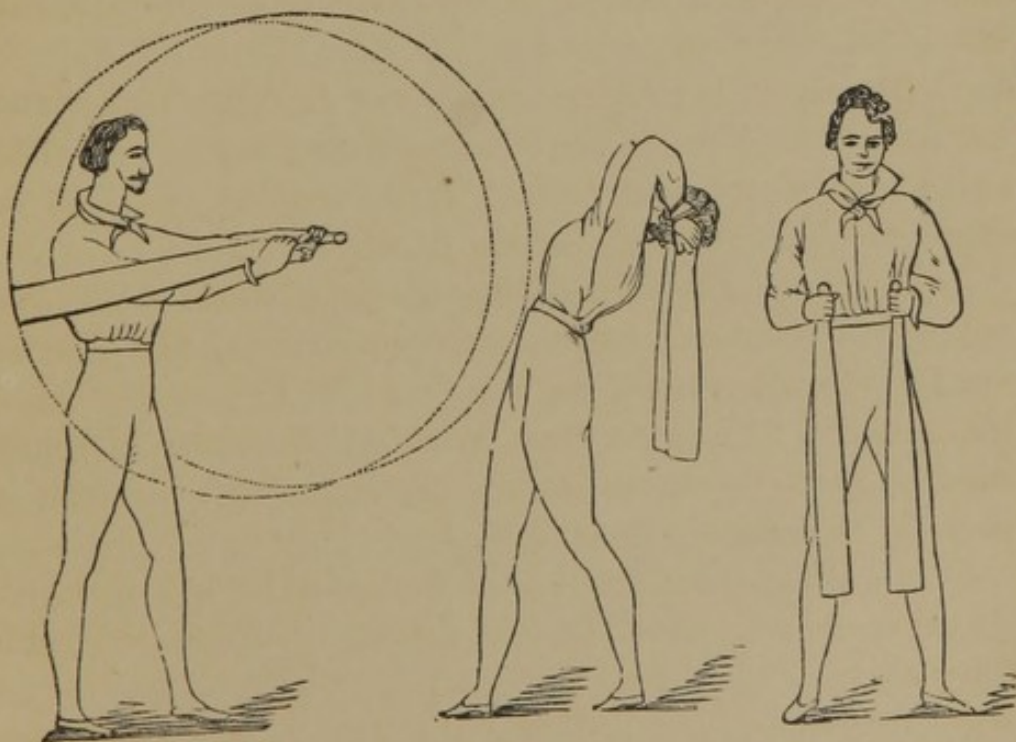
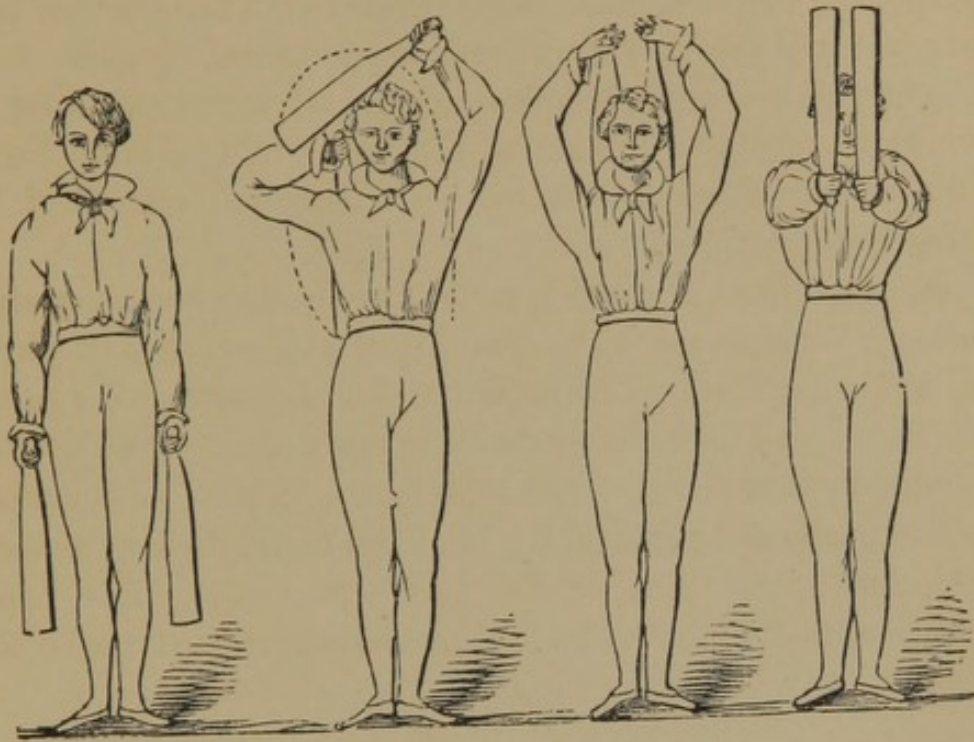
2. Gymnastic exercises should never be taken immediately before or immediately after a meal—Riofrey says, "not within two hours of the meal-time." It is doubtless true that the stomach should be empty, or nearly so.

3. The open air is the best place to take all kinds of exercise; but as, in a systematic course of physical training, the exercises must not be interrupted, as they would be, by bad weather, in the open air, an in-door gymnasium is to be preferred; but it must be perfectly ventilated, and kept at a low and, so far as possible, an equable temperature.

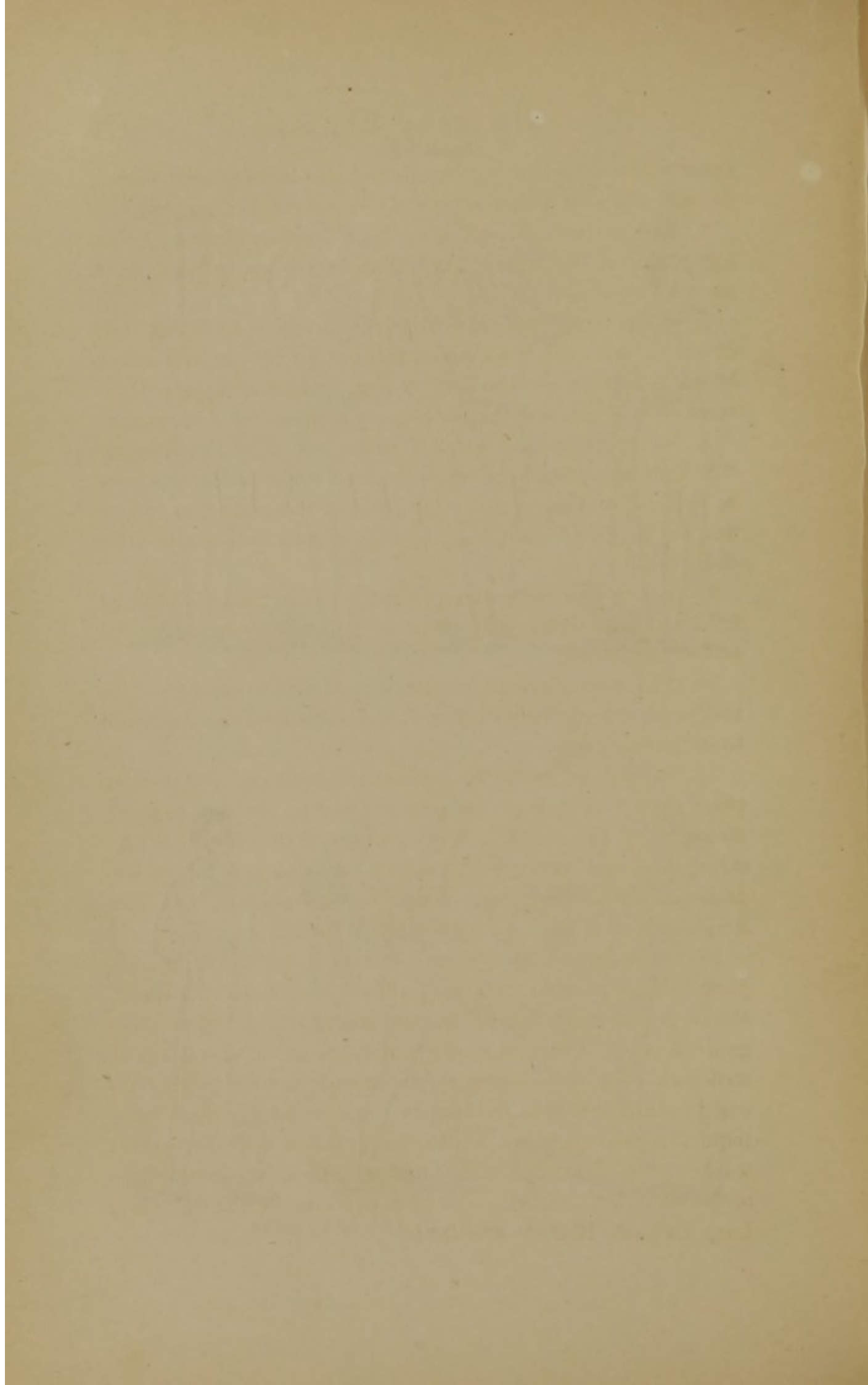
4. The dress should be light and easy, so as not to impede the movements of the body, and nothing should be carried in the pockets.

5. "Exercises," Dr. Trall remarks, "should always be commenced and finished gently, and all abrupt transitions, as a

PLATE XXI.



MOVEMENTS WITH THE INDIAN SCEPTER.



general rule, avoided." They should also be frequently varied, so as to call into action alternately various sets of muscles.

6. The exercises should never be so prolonged as to induce great fatigue; for injury rather than benefit might result from such a course.

7. When heated and perspiring from exercise, do not sit or lie down at once, but walk about for awhile, till the circulation becomes slower and the body cooler; and carefully avoid currents of cold air, and the too copious drinking of cold water.

8. Never go into the water to bathe or swim when fatigued. "A high temperature, perspiration, or feverishness of the body is, in itself, no objection to cold bathing, but rather an indication for it, provided the body be not fatigued or the respiration disturbed."

9. It is by moderate and prolonged rather than violent and fitful exertions that organs or parts of the body are developed and strengthened.

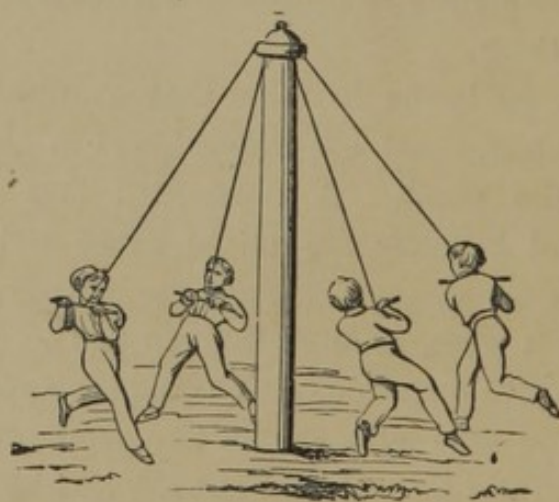
10. The weaker organs or parts should receive most attention and be most frequently subjected to exercises specially adapted to invigorate them.

11. It must be borne in mind that gymnastic exercises, to effect their object, must be proportioned to the age, sex, and strength of the pupil. A movement that might develop, strengthen, and beautify one, might cause serious injury and perhaps death to another. Begin moderately, and feel your way along, as it were, to more difficult feats.

12. Our general directions and examples apply, for the most part, only to persons who are (in the common acceptation of the term) naturally formed, and not affected by any serious organic disease. Where deviations, distortions, or alterations of structure exist, they might be increased instead of being remedied by many of the movements recommended. Such cases require *special* exercises under the guidance of a competent teacher or physician; or in the absence of these, the instructions to be found in the works of such writers as Moritz Schreber, Ling, Delpech, Riofrey, and Roth.

13. Avoid extremes. "The great art in education," it has been truly observed, is to combine in their proper proportions mental and bodily development; and not to oppose the one to the other. If a prodigy of learning be required, he will probably be weak and sickly; while if extreme bodily strength be sought, and we strive to make a young Hercules, he will be ignorant."

14. All exercises should be made as attractive as possible; should engage the mind as well as the body; and should be regular, systematic, and perseveringly applied.



XIII.

PRACTICAL HYGIENE.

Unerring Nature—still divinely bright—
 One clear, unchanged, and universal light—
 Life, force, and beauty must to all impart,
 At once the source, and end, and test of Art.—*Pope.*



HEALTH and beauty, as we have shown in previous chapters, are inseparable—the latter being but a sign or visible manifestation of the former. Our teachings throughout this work, therefore, since they all relate, either directly or indirectly, to the means of acquiring and preserving beauty, may be considered as more or less complete enunciations and illustrations of the laws of health—using the latter term in its broadest signification as the perfection of bodily organization and functional ac-

tion. On some points, however, we have touched lightly, and on others scarcely at all; and we purpose here to set the whole subject before the reader in a compact and methodical, but popular, form. Our statements and illustrations will necessarily be brief, but they will at least indicate the path to be pursued, if they do not furnish a complete chart of the whole route.

Health, even in the restricted sense in which the word is generally used, is now so rare a phenomenon that we seem to be getting accustomed to look upon illness as our normal state. To the common salutation, "How do you do?" we are wont to reply, "Very well," when, in nine cases out of ten, a more correct answer would be, "No sicker than usual."

But health is possible. Individual men and women may, even at this day, be found in almost every country, who have at least escaped actual sickness through the whole course of a long life. In fact, large communities have existed, if we may credit the earlier navigators, in entire exemption from disease. When the celebrated Captain Cook first visited the New Zealanders, he says he found them enjoying perfect and uninterrupted health. In all the visits he made to their towns, where old and young men and women crowded around the voyagers, they never observed a single person who appeared to have any bodily complaint; nor among the numbers that were seen naked was once perceived the slightest eruption of the skin, or the least mark which indicated that such eruptions had formerly existed.*

Health, then, since it occurs in individuals, must be possible for the race as a whole. Is it reasonable to believe that the means of attaining and preserving it are hidden beyond the possibility of discovery?

Health depends upon the existence of certain conditions, clearly indicated by our physical and mental constitutions, all of which may be included under the following general heads: 1. A sound physical organization; 2. A vigorous and well-balanced mind; 3. A constant and adequate supply, and the right use of all the elements essential to the sustenance of the body, including air, sunlight, electricity, food, and drink; 4. Physical exercise, rest, and sleep; 5. Cleanliness; 6. A proper temperature; 7. The satisfaction of the affections, or harmonious social relations.

* Kippis' Life of Captain Cook.

1. As the only secure basis of perfect functional efficiency we must have a sound and well-formed body, complete and symmetrical in all its parts and proportions. Without this, the most perfect combination of all the other conditions named will not avail. If, for instance, the chest be narrow and the lungs imperfectly developed, the most copious supply of pure air, since it can not be efficiently made use of for the purpose of vitalizing the blood, may be continually presented in vain. So with defects in the stomach, the limbs, or any other part of the physical system.

It has already been shown how a sound physical organization may be secured to children at birth by the observance of certain pre-natal conditions; how such an organization may be preserved in all its harmony, strength, and beauty through the great perils of infancy; and how original defects of constitution may, in a measure at least, be remedied, especially in childhood and youth. Under this head, therefore, we need merely refer the reader back to previous chapters, and particularly to V., VI., and XII.

2. That mental vigor and balance are essential to physical health can not be doubted by any one who is at all acquainted with the laws of life. Without mind, the body, at best, merely vegetates. Activity, guided by intelligence, is essential to bodily well-being. If the intelligence be wanting or deficient in balance, the activity must either fail or be irregular and abnormal. It is for this reason that idiotic and insane persons are generally sickly. But this point, like the preceding one, has been sufficiently elucidated in the preceding chapters.

3. The human body has been thrown into the circle of "the great dependence of things," from which no amount of mental power can rescue it. As physical beings, we are compelled to owe the continuance of our lives to the elements and objects, organic and inorganic, by which we are surrounded—to air, sunlight, electricity, food, drink, and so forth.

(1.) Air is the first and the last demand of our lives. "Active life. the vital union of body and spirit, and all the powers

and susceptibilities of our earthly being, are only maintained by the action of air in our systems—air which we inhale incessantly, day and night, from birth to death. There is an awful life-import in these never-ceasing, rythmic movements of inspiration and expiration—this tidal flux and reflux of the gaseous ocean through animal mechanisms.”*

Atmospheric air, in its natural state, consists of four substances—two *elements*, nitrogen and oxygen; and two *compounds*, carbonic acid gas and the vapor of water. Of the nitrogen—the neutral or diluting principle—dry air contains nearly seventy-seven per cent.; and of the oxygen—the active or life-supporting principle—twenty-three per cent. The percentage of moisture is small and very variable, and that of carbonic acid amounts, on an average, to no more than one two-thousandth. Such is the air which the human respiratory system demands, and which is essential to healthy vital action.

In breathing, the air is drawn in by the nostrils, and, passing through the bronchial tubes, is received into the air chambers (see description of the lungs in Chapter I.), where it is brought into contact with the venous blood, to which it yields a portion of its oxygen, and receives carbonic acid in return. It is by this process, and by this alone, that our blood can be purified and re-vitalized. It comes to the lungs in dark and turbid tides, meets the air, freighted with the life-giving element, casts off its poisonous load (to be taken up and carried out by the same willing messenger), and is thrown back in crimson streams to the outmost boundaries of the vital domain. It is this oxygenated or vitalized blood that imparts the hues of health to the human skin; and the fair one who desires to have rosy cheeks and ruby lips on any other terms than the copious breathing of pure air, must buy them at the shop of the chemist, and renew them every time she makes her toilet.

It is to the oxygen of the atmosphere, it will be perceived,

* Youmans' Hand-Book of Household Science.

that the effects we have noted are to be attributed. The same element which kindles our fires keeps alive the vital flame. Without it both are quickly extinguished. If the proportion of oxygen in the air we breathe be diminished, all our powers of body and mind are depressed to an extent corresponding with the deficiency. Now, every time we breathe, a certain portion of air is deprived of a large part of its oxygen, and rendered, by that loss alone, unsuitable for respiration. If the same air be again taken into the lungs, another portion of its oxygen is abstracted, and so on till it is no longer capable of sustaining life. But this abstraction of its oxygen, it must be remembered, is not the only effect which respiration has upon the air. The place of the life-supporting element taken away is supplied by a deadly poison—the carbonic acid received from the venous blood. Besides this, constant streams of effete animal matter exhale from every living body, and help to poison the air by which we are surrounded in close rooms. The breath of diseased persons is particularly noxious. *The odor of the air at the top of the ventilator of a crowded room is of so obnoxious a character that it is dangerous to be exposed to it for the shortest time.** If the room be provided with no means of ventilation, as is too often the case, this foul and deadly air must be breathed over and over again by those confined within. The mere thought of it is almost sufficient to make one sick!

Out of doors, fresh supplies of pure air are constantly offered to the lungs, and the vitiated products of respiration are received by the general currents of the atmosphere to be carried through the perpetual round of purification; but in our almost air-tight rooms the case is quite different. A single person will deprive from one to two hogsheads of air of its blood-purifying qualities, and saturate it with poisonous gases in a single hour. In the light of this fact, consider what must be the effects of the in-door life of our people, and especially of our women.

* Leblanc, &c quoted by Youmans.

Think of our crowded work-rooms; of family gatherings around the sitting-room stove; of evening parties in unventilated parlors, where the lights which make everything so brilliant rapidly hasten the deteriorating process which respiration has commenced; and of two or more persons sleeping all night in a close seven-by-nine bedroom. "Close bedrooms," Dr. Hall says, "make the graves of thousands." The occasional opening of doors gives us now and then a breath of fresh air in the rooms occupied during the day; but even this is denied us in our sleeping apartments.

Could we but *see* the mass of vitiated and poisoned air in the midst of which we pass so large a portion of our lives—should it for a moment become visible in the form of a lurid mist, for instance, we should flee from our stove-heated and unventilated rooms as from a city swept by a pestilence!

Is it a wonder that pale cheeks, sallow complexions, cutaneous eruptions, dyspepsia, scrofula, and consumption prevail? It can not be otherwise. To maintain good health, and live through the long winters, which prevail in the northern parts of our country, in unventilated or ill-ventilated rooms, is utterly impossible. Beauty fades; the cheek loses the roseate tinge which, as we have seen, fresh air alone can give, and body and brain alike sink into premature imbecility.

If you would acquire and preserve health and beauty, do not forget that pure air must be constantly supplied for the purpose of respiration, and that unventilated rooms are entirely unfit for human beings to live in, and absolutely fatal, in the end, not only to health and beauty, but to life itself. As it is now, we are safe nowhere except in the open air. At home, we sit around that "household demon," as Dickens calls it, the airtight stove, and breathe carbonic acid; at church we breathe carbonic acid while we listen to a sermon which has probably been written under the depressing influences of the same gas; in the lecture-room, the theater, the opera-house, and even in the schoolroom, in which our children spend five or six hours a day, the same atmosphere of disease and death prevails.

Need we say more? The easy remedy for this terrible state of things is—ventilation.*

Everything which vitiates the air should be, so far as possible, excluded from our rooms, and especially from our sleeping apartments. Even flowers should not be permitted in any room where there is not a free circulation of air. The leaves of plants give off oxygen, but flowers absorb it. A rose placed under a bell-glass very quickly destroys the vitality of the air, so that a candle will not burn in it.

Having secured a copious and constant supply of fresh air, the next requisite is that it be made use of to the fullest extent. Some of us (partly because we are so much subjected to the depressing influences of bad air) only half breathe. This is not enough. The lungs should be well expanded at every inspiration. On this point, see directions for expanding the chest in Chapter XII.

But it is not through the pulmonary organs alone that we are affected by the different states of the air with reference to purity. The skin is closely akin to the lungs. It also breathes, in its way, imbibing oxygen and throwing off carbonic acid. Hence come the great benefits of the air-bath, so much extolled by Dr. Franklin. A bath in carbonic acid, however, is not to be recommended.

(2.) Solar light, although generally left almost entirely out of the account by physiological and hygienic writers, has a great and striking effect upon the human physical system. Without it, in fact, nothing like perfect bodily development, health, or beauty can possibly exist.

* To give a description of the various modes of securing the thorough ventilation of our dwelling-houses and public buildings would occupy more space than we can give to the subject here; but we are happy in being able to refer our readers to a work in which the necessary information may be found in an available form, together with much other needed knowledge. We have reference to Youmans' "Hand-Book of Household Science," a most admirable work, the teachings of which should be as "familiar as household words" in every family.

It is well known that plants growing in the shade or in darkness are always slender, weak, and pale. Deprivation of light has a similar effect upon man, as shown by persons confined in dungeons, mines, or other dark habitations. The complexion grows sallow, the strength fails, aqueous humors break out on the skin, and dropsy often intervenes.

Women who avoid the sunlight, and darken their parlors and sitting-rooms through fear of spoiling their complexions, invite thereby the very evil which they wish to avoid. Here, as elsewhere, however, extremes are to be avoided. The direct rays of a noonday sun should be warded off by broad-brimmed hats and sun-shades; but to shun the solar ray altogether, and shut it out from our dwellings, is equaled in folly only by the exclusion of fresh air.

To promote the symmetrical development of the body and limbs, and the health of the skin, it is useful to expose the whole person frequently to the light in a well-lighted (day-lighted) room, or better still, where it can be made practicable, in the open air. The air-bath mentioned in another place should be made a light-bath as well. Light is particularly necessary to children and youth during the process of growth.

(3.) Electricity is undoubtedly an important agent in the development and sustenance of the human body; but our present knowledge of the modes of its action is too limited to permit any profitable discussion of the subject here. Fortunately, we can not so effectually exclude this subtle element from our dwellings and persons as we do air and light.

(4.) We now approach the subject of food—one of the most important in the whole range of hygienic inquiry, and one involving a greater number of mooted questions than any other. To discuss it properly in all its bearings would require a large volume. We shall not, of course, attempt even the outlines of such a discussion within the compass of a few pages. Our purpose is rather to put the reader in the way of settling the question of diet for himself than to essay the solution of it here. We shall, however, endeavor to give our brief remarks

such a bearing that they will not be wholly without practical value, apart from their use as guides in the true path of investigation and thought.

A superficial knowledge of the subject, a few loosely conducted experiments and observations, and some very hasty generalizations have of late been made the basis of a good deal of confident but specious and unreliable inculcation on the subject of diet. We have had too much dogmatism and too little thorough investigation and sound deduction. Much, however, has been learned within the last ten years, and the knowledge which we possess, or which lies within our reach, is far in advance of our practice. The confessed uncertainty in which some points are yet involved is not a sufficient excuse for the abominably bad feeding of which we are guilty at the present day, and especially in this country.

No other civilized people, probably, are accustomed to abuse their stomachs so badly as we, Americans of the United States. Our food is often badly chosen, still more frequently spoiled in cooking, and almost always eaten in utter disregard of dietetic rules. We eat far too much flesh-meat (and especially pork, its most objectionable form*), and too little bread, vegetables, and fruits. Our hot, soda-raised biscuits; hot griddle cakes, saturated with butter; and the hot, black, intolerable coffee, which form the staples of our breakfasts, are, in the way in which they are taken, among the most deleterious articles ever put upon a table. Pies are another American abomination, and have no small share of our ill health to answer for. The mince pie, as it is generally made, is the abomination of abominations. Some one describes it as "very white and indigestible at the top, very moist and indigestible at the bottom, and with untold horrors in the middle." Even our bread is unwholesome. It is made of the finest of fine flour, and either fermented till its natural sweetness and a large portion of its

* More than thirty millions of swine are slaughtered annually in the United States, nearly all of which are appropriated for food

nutritive elements are destroyed, or raised with those poisonous chemicals, soda and cream-of-tartar. In either case it is unfit to be eaten. The rich cakes which our good housekeepers deem so indispensable are still worse, and so on. Now add to our badly chosen dishes and our objectionable cookery the rapid eating, imperfect mastication, and the continually interrupted digestion which our intense and feverish life necessitates, and we have a complication of abuses which would, one must believe, have long since have utterly destroyed the vital stamina of any people not originally endowed with marvelous physical powers.

In the lower animals (except where domestication has greatly demoralized them), instinct seems to be a perfect guide in the choice of foods and drink. With them the demands of appetite and the sense of taste are always in harmony. The wild beast or bird makes no mistakes, and never poisons itself by eating or drinking anything inimical to its life or health. This instinctive perception of what is adapted to his system and fitted to supply its needs belongs also to man; and a natural appetite is, no doubt, an infallible guide, in our case as well as that of the lower animals. But our natural appetite has, for the most part, been so perverted that it is now impossible, in many cases, to distinguish the undepraved cravings of the system from the demands of acquired and vicious tastes. If we can but find our way back to Nature once more, no doubt all our original endowments will be restored to us; in the mean time, we must make our observing and reasoning faculties serve us instead.

A late writer,* who has given us some excellent hints toward a system of dietetics founded upon a firm basis of science, lays down the principle, which we believe can not be successfully called in question, that "*The body itself is the rule of its food*—that is, as is the chemical nature of the body at large, such must be the chemical nature of the entire mass of aliments

* Professor Levi Reuben, in a series of articles in the *American Phrenological Journal*, Vols. XXII. and XXIII.

taken; and as is the nature of each particular structure to which we would secure nutriment and efficiency, such must be the nature of the particular aliment employed to that end. Or, to express the same thought in other words: A person should eat such material as he *is*, or such material as he *would be*, so far as that is allowable in view of known truths of physiology."

Taking this grand principle as our guide, we might, if time and space were allowed us, approximate, at least, the true answers to such questions as these: "For what do we eat? Why do we eat what we do? Why should particular persons employ or avoid particular kinds of food? What are the special uses in the body of special kinds of food? To produce or maintain a required condition of bodily health and power, what aliments, in a particular case, will prove most effectual? Why do we not always subsist on some single article of food—say upon potatoes, or wheat-flour, or flesh? How is it that many of the lower animals do subsist on substantially one species of aliment?"

The first thing to be done is to ascertain the nature of the substances which compose the blood and tissues—the fluids and solids—of the human body, and the next to examine the various alimentary principles found in the ordinary species of food, with reference to the especial use of each in the economy of the living physical system. Having a clear conception of what his body is made of, and of what the bread, meat, vegetables, and fruits placed before him consist, one may eat and drink understandingly.

The course of investigation we have suggested (for which recent standard works on physiology and chemistry will furnish the required facilities) will make clear the reason why variety in food is essential to health; why diet should be modified by climate, season, occupation, temperament, age, sex, and so forth, and why the same dietary is not adapted to all persons alike, or to the same person at all times.

Some of the conclusions arrived at by the writer last quoted

may here be concisely stated, although the investigations which led to them can not be followed out.

(a) The law previously stated that "The body is the rule of its food" is modified by another equally imperative, namely: that "*Exercise is the rule of food*"—that is, "the food we eat should contain as nearly as possible the several elements in the same proportion as their expenditure occurs in the individual system of the consumer, owing to his particular mental and physical activities." In other words, if a man exercise his muscles largely, he should consume largely of muscle-forming aliment; and if he work his brain continually, he must satisfy the cravings of the system with brain-food.

(b) The plastic, cell-forming, or *nutritive* aliments are *albumen* and the substances usually grouped with it—*gluten*, *casein*, and the *substance of muscle-fiber*, *nerve-tube*, and *cell-membrane*; the calorific or *respiratory* foods are *sugar*, *starch*, and the *oils* or *fats*; the *acids* are *cooling*, *purifying*, and *blood-perfecting* in their action; *water* is indispensable, both as *vehicle* and *material* to digestion, absorption, assimilation, circulation, nutrition, secretion, and excretion, muscular and brain-action; the inorganic elements other than water, sometimes called nutritive minerals, have various uses.*

(c) Among the alimentary compounds particularly fitted to produce *muscle* are *wheat-meal*, *corn-meal*, *beans*, *cabbages*, *carrots*, and the *flesh of quadrupels*; while eggs, nuts, cream, oils, fish, and the flesh of poultry are specially adapted to nourish

* The bones, especially in the young and growing, must have *phosphate* and *carbonate of lime*; and the *phosphate of lime* must also enter freely into all nutritive materials and processes. The blood, brain, and muscle, as also the hair, must have sufficient *iron*. Digestive fluids, blood, all nutritive processes, and secreting or excreting glands, demand a due supply of *common salt*. All circulating fluids, together with muscles, demand *potash*, and all the former, with all the secretions, but in particular mucus and bile, require *soda*. Nutrient fluids, bones, and tissues call for the *phosphate of magnesia*, though in a less degree than for that of lime. Muscles, nerves, bile, and hair must receive a due supply of *sulphur*; and nerves, but more especially brain, necessitate, in proportion to their activity, a plentiful allowance of *phosphorus*—*Prof Levi Reuben*.

the brain. "Oatmeal and milk seem to belong to both classes of alimentæ; and rice, potatoes, fruits, and a large list of foods may be styled indifferent, as specially favoring neither development.

(d) "The diet of no two persons should be, in reality, exactly alike, since their constitutions, states of health, avocations, and forms and amounts of physical expenditure are necessarily different.

(e) "Insufficient variety in food is as great an evil as insufficiency in the quantity of food, and an evil of the same kind; because it necessarily withholds from the system a due supply of some one or more essential forms of aliment. A moderate variety is desirable at every meal; a greater, from day to day.

(f) "That diet is most perfect for each individual which furnishes to each the various forms of substance necessary to make up his fluids and solid tissues, and in the same proportion as they exist and are daily expended in his particular constitution and mode of life.

(g) "Muscle and nerve both necessitate albuminous food; the former, in connection with the finer or phosphorized fatty substances; the latter, with the grosser fats and the phosphate and carbonate of lime.

(h) "Excess in food is not to be defined by any particular quantity. It exists only when there is a surplus over healthful expenditure; and by this rule one adult system may require more than twice the amount of food demanded by another.

(i) "Both vegetable and animal foods have their uses; the former favor and support more especially the organic development and processes, such as nutrition and secretion; the latter, the animal or active functions, such as locomotion, will-power, and intellectual action.

(j) "No *imperfect* vegetable or animal production, as those that are *dwarfed*, or *sickly*, or *immature*, or *undergoing decay*, can furnish materials for complete human alimentation.

(k) "Some foods constitute necessary *compensating* adjuncts

to others, and should be used with them. Thus, rice, corn, or potatoes require the addition of wheat-meal bread, or flesh, or milk and eggs, to supply the albuminous and mineral elements which they possess in much less degree. So beans, pease, cabbages, cauliflower, asparagus, etc., lack the oleaginous element, and this should be added in our cookery."

(*L*) A larger proportion of fatty or heat-producing food is required in the winter than in the summer, and in a northern than in a southern climate.

The points at issue between the vegetarians and the advocates of a mixed diet can not be argued here. We can do little more than state our own opinion, which may pass for what it is worth. After a thorough trial of both systems, we have become convinced that a mixed diet (embracing, however, a much smaller proportion of flesh-meat than is usually taken in this country, and excluding pork altogether) is, on the whole, better than one composed exclusively of the products of the vegetable kingdom, for the great majority of adult persons living in a northern climate, and under the *régime* of existing social and industrial organizations. That health and long life can be enjoyed in the use of either, history and observation furnish conclusive evidence. Exceptional individuals, or persons placed in exceptional positions in civilized society, may find a vegetable diet best suited to their needs; but we think there is an admirable harmony between the mixed diet and existing social and industrial antagonisms. Life is, with most of us, a perpetual warfare, not with persons, perhaps, but with circumstances, and the soldier who carries beef and bread in his knapsack is generally more than a match for him who is provided with bread alone. In the coming ages of Harmony we may, perhaps, return to the diet of Eden.

But that we eat too much flesh-meat in this country (and more than any other civilized people) is beyond a doubt, and that we are too careless in reference to its quality is equally clear. The opponent of vegetarianism need not fear to admit this, and should, for the sake of the cause he advocates (leav-

ing out of sight all high considerations), be foremost in promoting a reform in this particular.

Among the best articles of food for general use we should enumerate bread, wheaten grits or cracked wheat, hominy, rice, beans, pease, milk, cream, butter, eggs, poultry, beef, mutton, fish (such as have scales), potatoes and the other common garden vegetables, and fruits.

The best bread is made of wheat-meal (commonly called Graham flour); but a mixture of wheat and rye meal, or of corn-meal with either, makes excellent bread. The meal should be freshly ground, as it soon deteriorates by keeping. Unleavened bread is the sweetest and most nutritious. If fermented or raised bread be required, hop yeast is the best ferment that can be used. The exclusive use of fine or bolted flour for bread is exceedingly injurious. Johnny-cake or corn-bread is an excellent article, if properly made and cooked, and not eaten hot. That favorite New England dish, pork-and-beans, minus the pork, is not to be despised. Supply the place of the swine's flesh (if you will take our advice) by a little sweet milk or cream, or a slice of beefsteak.

Meat should be chosen with great care. It should always be the flesh of a healthy animal, and must not be in the slightest degree tainted. It should be eaten sparingly, if at all, during hot weather. Baked meats are more nutritive and wholesome than boiled. Salted meats are less easy of digestion than fresh, unless they be merely corned.

Milk and butter, to be wholesome, must be pure and sweet. Butter that is in the slightest degree rancid is as hurtful to the stomach as it is repugnant to the palate. Heat renders butter empyreumatic and very objectionable, especially for weak stomachs. A slight degree of heat effects the change, and this accounts in part for the hurtfulness of hot bread or hot biscuits and butter. All the fats are liable to be changed by heat into various acrid and irritant fatty acids. It is this that renders frying so objectionable a form of cooking, and makes cakes mixed with a large proportion of butter or eggs (the

yolk being rich in oil) so injurious to the stomach, the high heat of baking rendering these oils empyreumatic. Dr. Pereira remarks: "Fixed oil or fat is more difficult of digestion, and more obnoxious to the stomach, than any other alimentary principle. Indeed, in some more or less obvious or concealed form, I believe it will be found the offending ingredient in nine tenths of the dishes which disturb weak stomachs. Many dyspeptics, who have most religiously avoided the use of oil or fat in its obvious or ordinary state (as fat meat, marrow, butter, and oil), unwittingly employ it in some more concealed form, as yolk of eggs, livers of animals, rich cheese, fried dishes, buttered toasts, suet puddings, etc." Dr. Chambers says: "Fatty food can be taken without pain by gastric invalids, very closely in proportion as it is fresh and without rancidity. New-made butter often agrees, when the empyreumatic fat in baked meat makes it utterly indigestible. If there is much emaciation, it is right to try several forms of oleaginous food in each case, to see if one can not be found capable of supplying nutriment to the failing adipose tissues."

Fresh eggs, slightly boiled, form a wholesome basis for a substantial breakfast. With good brown bread, sweet butter, and a cup of fragrant Mocha, they leave little to be desired.

Fruits, in their season, should have a far more prominent place on our "bills of fare" than is now generally awarded to them. Apples, pears, peaches, plums, grapes, figs, strawberries, raspberries, and melons are food fit for gods. They should be perfectly ripe and free from decay, and should form a part of our regular meals. They can not be improved by cooking, being "baked, roasted, and boiled in the sunlight."

Dishes compounded from many different articles are generally unwholesome, however unobjectionable these ingredients individually may be. They do not agree with each other. Until we know something more of the harmonies of diet, it is best to be content with the simplest accords. Very highly seasoned viands are for the most part bad; so are old smoked

salt meat and fish, old strong cheese, sausages, mince pies, and fat pork.

“Good cheer is friendly to health.” A generous diet promotes vitality and capability for action; but high living is not always good living. Let all your dishes be nutritious, but plain and wholesome.

Three meals a day are enough; and if the second be not promptly digested, the third should be omitted. The latter should always be light, and taken at least two hours before bedtime. Nothing should ever be taken between the regular meals. Regularity in the time of taking meals is particularly important, and we should allow no ordinary hindrance to interfere with it; but we must not eat when we have no appetite. It is better to wait till the next meal-time. Eating without an appetite is one of the most fatal of common errors. Food taken under such circumstances generally remains for a long time undigested, and may become rank poison in the stomach. We should also avoid eating when greatly fatigued, or when excited by any violent emotion. Tranquillity and cheerfulness promote digestion. “Chatted food is half digested,” the proverb says, and truly. A meal eaten slowly in the midst of pleasant conversation is readily assimilated, and at once invigorates body and brain, while another, composed of the same viands, but eaten rapidly and in silence, may prove but a clog upon the energies of both. Eat slowly, masticate thoroughly, and, if possible, rest awhile after each meal. In reference to quantity, we can only say, eat so much as the system demands and is capable of assimilating, and no more. “Drunkenness is deplorably destructive,” Dr. Kitchener says, “but her demure sister Gluttony destroys a hundred for her one.”

(5.) For a universal drink, we can safely recommend water; and we suppose there will be few to call our recommendation in question. We have heard of persons, however, who contend that man is not naturally a drinking animal; and once, by way of experiment, we ourself abstained entirely and without inconvenience from every kind of drink for several weeks in succes-

sion, eating copiously of juicy fruits, however, and refraining from the use of animal food at the same time. But we are not disposed to put an exception in the place of the general rule.

Water, in some form, is absolutely essential to the welfare of the physical system. If, however, we make use of none but wholesome articles of food, with a proper proportion of fruits and vegetables, and do not over-eat (the most common cause of thirst), we shall require comparatively little drink of any kind. The water made use of both for drinking and for cooking should be fresh and quite pure, many diseases arising wholly from the use of that which is impregnated with decaying animal or vegetable matter, or with unwholesome mineral substances.

We have felt half disposed to pass over tea and coffee without even a mention. To speak of them without committing ourself either for or against their use would (as we have settled convictions on the subject) do no credit to either our honesty or our moral courage. To condemn them *in toto*, contrary to our convictions, and in the face and eyes of our practice, would be still worse; while by giving our approval to their use without being able, for want of available space, to set clearly and fully before the reader our reasons for doing so, or to draw the necessary sharp lines of demarkation between use and abuse, is liable to subject us to misapprehension, and perhaps to throw discredit upon our work in the eyes of some whose countenance we should be sorry to lose. The last-mentioned course, however, has been decided upon as preferable to absolute silence. A little dogmatism (for which we have the example of those who take the opposite side of the question) may be unavoidable, and will, we trust, be charitably excused.

Tea and coffee are *stimuli*, and on this ground are generally condemned by physiological and hygienic reformers. We are disposed to call in question the justice of the sentence. Stimulation, instead of being inherently wrong, as their verdict assumes, is a law of our being. We are all subjected every day and every hour of our lives to the action of stimuli, which legitimately animate, but in excess might destroy our organism.

They present themselves in various forms, material and spiritual, natural and artificial; but so far as they comport themselves alike or with equal propriety in the system, all are equally admissible.

Now, looking at them, for the present, merely as stimulants, can any substantial difference be pointed out between the physical effects of a cup of coffee and those of a piece of good news received with one's breakfast? Has not the lively conversation of a brilliant woman the same exhilarating influence as the infusion she is wont to pour from her tea-pot? Five or six cups of the tea or the coffee, taken in rapid succession, might cause great ultimate depression and exhaustion of the vital energies; so intense joy, from an excess, so to speak, of good news, may throw one into a swoon, or even destroy life; and the wit of a beautiful woman, if it elevate overmuch, may leave one dispirited and downcast in the end. In all these cases, it is the *excess* to which the mischief is to be attributed.

But we are reminded of a second ground of objection to tea and coffee—that they are poisons. *We* do not so label them; but it matters little whether they be called by this or some other name. That, taken in moderate quantities, they act in any proper sense as poisons in the human system, has not to our knowledge been shown. We have the greatest respect for chemistry, but when it pushes its inquiries within the domain of physiology, without fully acknowledging the sovereignty of the *life* which reigns there, and which it can not analyze, we have a right to distrust its deductions. Poisons destroy the structure or subvert the functions of the body. We have yet to see the proof that tea and coffee, in their moderate use, do either. In excess they may act as poisons; and so, under certain circumstances, may a too full meal of Graham bread or roasted potatoes. To some weak stomachs they may be injurious in any quantity, as may a ripe apple or a glass of cold water. The eyes of some persons are so debilitated that they can not bear the light; but that, surely, is not a sufficient reason for shutting us all up in dark rooms. The same excep-

tional phenomenon may be recognized on a spiritual plane; for high truths, "the stimuli of the soul," often intoxicate and render insane the more weak-minded of their receivers.

We condemn as strongly as any one can the abuses of tea and coffee which so generally prevail. The strongest and healthiest man, to say nothing of delicate and nervous women, can not possibly drink eight or nine cups of strong tea or half that number of coffee per day, and continue the practice from month to month and from year to year, without the most disastrous consequences to both stomach and nerves. Let no one, therefore, who is guilty of any such excess, endeavor to shelter himself under our recommendation. Throughout this work we have constantly warned our readers against extremes and excesses, and counseled moderation.

In this, as in other matters of diet, allowance should be made for differences of age, sex, temperament, and so forth. Some persons may take more than others, and some, as we have said, should abstain wholly. As a general rule, a single, medium sized coffee-cup full of coffee with one's breakfast, and about the same quantity of not very strong black tea with his supper, are sufficient.*

Black tea should be used in preference to green, the latter being objectionable from the chemicals used in its preparation, to heighten its color. Tea should be *infused* (not boiled) in a tight vessel, boiling water being poured upon it.

The beverage drunk at most American tables under the name of coffee, is a vile, black, muddy compound, as disagreeable to the unperverted taste as it is harmful to the stomach; but the properly extracted flavors and aromas of the genuine Arabian

* We have not alluded in the text to the fact that both tea and coffee serve another purpose—in some cases, an important one—in the system besides stimulation. The investigations of Lehmann and Böcker prove that they protract decomposition and greatly diminish the waste of the system; so that, if the diet be sufficient, the body is more likely to gain weight if they are taken than when not; and that when the diet be insufficient, they limit the loss of weight thereby entailed.

or East Indian berry, tempered into mild deliciousness by the right proportions of boiled milk, sweet cream, and refined sugar, compose a draught which the gods of Olympus, with their cups overflowing with nectar and ambrosia, might covet.*

The drugged preparations generally sold at the present day under the name of wine can not be too strongly condemned or too carefully avoided; but the pure juice of the grape, as a beverage of occasions, is worthy of the place it has held for ages on the festive board. Those who hold, with the total abstinents, that alcohol can not be received into the system in the smallest quantity without injury, and who therefore reject wine altogether, may make use of the unfermented juice in the form of a syrup, which is slightly stimulating and very pleasant to the taste; and it is our firm belief that in no other way could the noble cause of temperance be so greatly promoted, and the

* As good coffee is one of the rarest of luxuries on American tables, we shall deserve, if we do not receive, the thanks of some of our readers for the following hints:

1. To have good coffee, the first essential is to procure the genuine berry (Mocha or Java are always to be preferred, and the first is best of all) in a perfect and undamaged state. It should be round, small grained, free from dust, and of a light color. Never buy *ground* coffee, unless you are willing to pay a high price for roasted chiccory, peas, and corn.

2. It must be properly roasted. On this point most housewives fail; and the best coffee badly roasted can hardly be distinguished from the poorest. In roasting, the heat should be strong and the operation as brief as possible. The proper degree of heat gives the berry a glossy appearance, and a peculiar flavor and aroma, which fail to appear with too little heat, and are totally destroyed by too much. Avoid *burning*, as a single charred grain will spoil the whole.

3. It should be ground fine, and just before using.

4. It should be *infused*, and *not* boiled. Use the French coffee-pot (*cafetière*); or if this can not readily be procured, or is too expensive, Stockwell's patent coffee-strainer, which can be used in any common coffee-pot, is an excellent substitute. Pour boiling water upon the coffee and let it stand a few minutes to steep, and you will have a strong infusion, with all the proper flavor and aroma of coffee. Dilute this in the cup with rich boiled milk (adding cream, if you have it), and sweeten to the taste. Use at least two parts of milk—real *cow's* milk—to one of coffee, making the latter very strong. Allow Bridget to *boil* it, and you have quite a different article, which let those drink who like it. The flavor and aroma which give the properly prepared coffee its magic charm are gone.

detestable poisoned strong drinks, with which our people are besotting themselves, driven from our midst, as by covering the hill-sides of our country with vineyards.*

We do not, let it be understood, insist upon tea, coffee, or wine as essential to physical well-being. One may probably live as long without them as with them—if that be the point mainly aimed at—and perhaps longer. We merely express the opinion that the highest planes of existence can not be reached, and the greatest sum and the richest experiences of life possible for us enjoyed, without some stimulation, material or spiritual, beyond what our common food and the ordinary routine of every-day sensations and emotions afford; and that these beverages furnish, in a desirable form, a portion of the needed exhilaration. Faith, enthusiasm, fanaticism, love, and other passions of the soul, serve with some to raise their lives, and sustain them for a long time above their original level. These stimuli are more powerful than wine, and those who are subject to them are often intoxicated. They have no need of other excitants, unless it be to neutralize the effects of these. But we leave the whole subject in the hands of the reader. “Let every man be fully persuaded in his own mind,” and if he drink tea, or coffee, or wine, let him not do it on pretexts.†

(6.) In connection with what is received into the system in the form of food and drink, the excretions, or what passes off by the natural outlets of the body, should be considered. These are the worn-out materials of the system, and those parts of the food which, although perhaps of the greatest use, are not assimilable. Retained in the system, they poison its fluids and

* Those who desire to see what may be said on both sides of the alcoholic question should consult Youmans' "Alcohol and the Constitution of Man," and Trall's "Alcoholic Controversy," on the side of abstinence, and Wilkinson's "Human Body and its Connection with Man," on the side of temperance. The last-named work treats the subject on the high grounds of vital philosophy.

† We beg the reader not to hold any person or class of persons with whom we may be supposed to be in any way associated, or whose views are, in the main, the same as ours, in any way accountable for the sentiments we have here or elsewhere expressed. We claim the entire responsibility.

ultimately destroy its tissues. The complete and regular performance of the excretory functions is therefore of the utmost importance. A stoppage of the bowels or of the pores of the skin can not exist for a single day without positive injury to the health. A too great relaxation, on the other hand, is equally to be avoided.

A properly regulated diet will generally insure regularity and efficiency in the action of the bowels. If costiveness or diarrhea occur, the cause should at once be ascertained, if possible, and removed. This will ordinarily suffice. The diet is often in fault, in which case it should at once be changed. Among the foods of a constipating tendency are bread and cakes from fine wheaten flour, rice, beans, peas, meats, eggs, and tea. Bread from wheaten meal or unbolted flour, rye or corn; fruits, raw and cooked; raw sugar and molasses; and generally substances abounding in ligneous matter, are laxative in their tendency.

Avoid purgative medicines, as they have a tendency to increase, in the end, the very evil they are intended to remedy. If the means we have suggested do not prove sufficient, a few injections of pure water, even in the most obstinate cases, effect the desired result.

4. The necessity of bodily exercise has been sufficiently insisted upon in a previous chapter. The amount required varies with age, sex, and temperament; but no person can enjoy vigorous health, or acquire or retain any high degree of personal beauty, without more or less active bodily exertion. The women of our country are suffering incalculably for want of the proper exercise of their muscles. Exercise *in the open air* should be an every-day duty, and an every-day pleasure, with every man, woman, and child.

If exercise is essential to human well-being, repose is not less so. The one is the complement of the other. Without exercise, repose would have no meaning and no use; and without repose, exercise would soon wear out and destroy the body.

* The most complete and refreshing repose, is found in sleep—

Tired Nature's sweet restorer.

“The vital energy expended in many ways, during the activity of the day, is recruited during the repose of the night. Rest without sleep affords a less complete opportunity for the restorative process, but to a certain extent is efficacious for the same end. During mere rest, the whole of the voluntary muscular actions at least can be suspended, and with the help of quiet and darkness, new impressions from the outward world can be excluded. The activity of the mind not being so easily within control, the brain may continue to fulfill the demands of thought, imagination, or memory. In order that the brain and nervous system may also obtain rest, the state of sleep is provided.”

Hardly anything is more destructive to health and beauty than insufficient sleep. Children require more sleep than adults; and some individuals more than others. From seven to eight hours is, perhaps, a good average for adults. The harder we labor, either with mind or body, the more sleep we need. To answer the purpose for which it was bestowed, sleep must be quiet and sound. Among the causes which prevent or disturb sleep are, indigestion (often caused by late or heavy suppers); too great bodily fatigue; mental excitement; strong tea or coffee in excess; disordered passions; unsatisfied desires; bad air; too much or too little clothing—in short, all unnatural conditions.*

* Dr. Binn, in his curious essay on the “Anatomy of Sleep,” thus directs how to fall asleep:

“The great point to be gained in order to secure sleep is to escape from thought—especially from that clinging, tenacious, imperious thought which, in most cases of wakefulness, has possession of the mind. I always effect this by the following simple process: I turn my eyeballs as far to the right or left, or upward or downward, as I can without pain, and then commence rolling them slowly, with that divergence from a direct line of vision, around in their sockets, and continue doing this until—I fall asleep; which occurs generally within three minutes, and always within five at most. The immediate effect of this procedure differs from that of any other which I ever heard, to procure sleep. It not merely diverts thought into a new channel, but actually suspends it.

Feather beds should be avoided, as unwholesome at all times, and especially so in summer. Healthy persons, who wish to continue healthy, must not sleep with the sick; nor children with old people. The sick and the aged may be thus benefited, but the healthy and the young are sacrificed; and it is a sacrifice which no one should be selfish enough to demand.

Well may we all join Sancho Panza in invoking blessings on him who invented sleep, and sing with Keats the following sweet lullaby:

What is more gentle than a wind in summer?
 What is more soothing than the pretty hummer
 That stays one moment in an open flower,
 And buzzes cheerily from bower to bower?
 What is more tranquil than a musk-rose blowing
 In a green island, far from all men's knowing?
 More healthful than the leafiness of dales?
 More secret than a nest of nightingales?
 More serene than Cordelia's countenance?
 More full of visions than a high romance?
 What but thee, sleep? Soft closer of our eyes!
 Low murmur of tender lullabies!
 Light hoverer around our happy pillows!
 Wreather of poppy buds and weeping willows!
 Silent entangler of a beauty's tresses!
 Most happy listener! when the morning blesses
 Thee for enlivening all the cheerful eyes
 That glance so brightly at the new sunrise.

5. It was the good St. Ambrose, we think, who said that "Cleanliness is next to godliness; and we commend the aphorism to our modern saints, who are too much disposed to ignore the body and its needs altogether. Cleanliness promotes godliness by promoting health, beauty, and happiness. "Dirt upon the skin," Wilkinson says, "is not merely dirt, but dirty feeling; and the latter is no sooner set up than it travels soulward;" while cleanliness "places a cordon of pure life around our bodies, as a troop of angels around the bed, and before the path of the faithful."

The millions of pores which everywhere pierce the skin, exercise important functions, respiratory and excretory, and their stoppage, among other evils, causes accumulations of im-

pure humors, which finally break out in the form of pimples or sores, to the great disfigurement of the body. To keep them open, frequent ablutions are required. This necessity, no doubt, results in a great measure from our artificial and erroneous modes of life and dress; but we state the fact as it exists and manifests itself under the existing order of things.

If you would be healthy you must keep yourself scrupulously clean. As a general rule, the whole body should be washed all over every day in summer, and at least once a week in winter. Tepid water—say from 80° to 92°—or that which feels slightly cool, but not cold to the body, is best for general use. The cold bath is a powerful stimulus, and, like other stimuli, must be used in moderation and with good judgment. The skin as well as the stomach may be stimulated too much. As a remedial agent, in some forms of disease, the cold bath is invaluable. The warm bath may be used occasionally with great benefit, but, like the cold bath, is liable to abuse. It must not be indulged in too frequently. The moderate use of tepid and warm baths tends to increase the plumpness of the body, the smoothness, softness, and freshness of the skin, and the suppleness and elasticity of the muscles.

The towels used at the bath should be only moderately coarse. The friction required should mostly be given with the hands. The violent rubbings and scrapings with very coarse towels, flesh-brushes, etc., which some have recommended, may sometimes, in cases of torpid skin and general sluggishness of the vital functions, be highly useful as a remedial agency, but they should never be applied to any tolerably healthy skin.

6. In speaking of the effects of climate (in Chapter XI.), the relation of temperature to the human body was pointed out and illustrated. We need only add here that sudden transitions as well as extremes of temperature should, so far as possible, be avoided. Clothing should be proportioned to temperature; but in our changeable climate it is seldom safe to go very thinly clad. Our rooms are generally kept too warm in winter, and we wear too much clothing in-doors, by which means our sys-

tems are relaxed and weakened, and the necessary occasional exposure to the open air rendered far more deleterious than it would be if we kept our in-door temperature lower. From 60° to 62° Fahrenheit, is, we believe, as agreeable and as wholesome a temperature as can be designated.

7. The influence of mental states upon bodily health can not be adequately discussed here. We have already devoted a chapter (VII.) to an elucidation of the effects of intellectual culture on the configuration of the body. The statements which seem to be called for here, are but corollaries of the facts therein set forth.

Mental activity has already been shown to be almost as essential to health as bodily exercise; but to act is not enough. We must also enjoy. "Sorrow," Melancthon says, "strikes the heart, and makes it flutter and pine away with great pain." And if one merely feels "stupid," or is out of "humor," or has the "blues," he is already half sick, and likely soon to be wholly so. The cheerful man digests his food properly; his blood circulates freely; and his system is duly nourished; but depress his mind with sorrow or care, and all his functions are obstructed and he grows lean and pale.

As a people, we need more cheerful amusements, more relaxation from work, more time to enjoy the objects which we pursue with such terrible earnestness.

8. Finally, the affections must also find their satisfaction in our lives. Unsatisfied longing for love, for the joys of maternity, or for the companionship of kindred and friends, depress the vital energies, wither the roses and lilies of the cheek, and dim the light of the eye. Unhappy marriages, and family discords in general, bring with them physical derangement as well as mental suffering. The whole man must be in harmony with itself and with all surrounding circumstances, or perfect health can not be enjoyed.

The whole tenor and spirit of our remarks, in this chapter and throughout this work, inculcate temperance in the use of all good things, and abstinence from all hurtful indulgencies—

in other words, the dominance of the intellect and moral feelings over our lower or animal nature; we will not therefore particularize here the various abuses and vicious indulgencies which are destroying the health and the lives of so many, and among them some of our otherwise promising young men. They are all condemned in the preceding rules and hints in terms, which, although they may not name them, will be understood by all who are willing to be instructed.



XIV.

WOMANHOOD.

The destiny of woman is to be a wife and mother, but she does not, like Eve, awake full grown. She has to pass through the various phases of growth before she is able to fulfill the duties of her ordination.—*Bur and Riofrey.*



WOMANHOOD, crowned with peculiar honors, is also environed by peculiar perils. With the education and habits which generally prevail at the present day, the crisis of puberty, common to both sexes, is fraught with far greater danger to the girl than to the boy; and the culminating point of joy and of

exaltation, in maternity, is reached by the woman through trials of which the man knows nothing. If by a few words of counsel, drawn from the teachings of physiological science, we shall be able to lessen, in any degree, these trials and dangers, we shall not have written this chapter in vain.

At the age of from twelve to fifteen, according to climate and temperament, the young girl who has reached that period under tolerably healthful conditions, experiences that wonder-

ful change which transforms her, in the course of a few months, from a child into a woman. Among the physical modifications which this crisis ushers in are the rapid development of the reproductive organs; a considerable widening of the pelvis, which makes the hips appear broader and larger; a marked expansion of the base of the brain; a gradual filling up of the interstices of the muscles with cellular tissue, resulting in more delicate and rounded contours; and increased fineness of texture and smoothness of the skin. The bosom expands into luxuriant fullness, the features acquire new and more expressive lines, the cheeks become more fresh and rosy, and the lips glow in tempting ripeness. Nature has accomplished her work. Beauty has reached its climax. The girl is a woman, and may become a wife and a mother.

Normally, these changes are accomplished, the monthly flow established, and the new phase of life fully inaugurated with very little pain or inconvenience, and no real danger. In the abnormal state to which our unnatural and pernicious systems of education and our unphysiological habits, with the consequent depreciation of vital stamina, have brought a majority of girls, particularly in cities, the case is widely different; and thousands on thousands either lose their lives at once (the happier fate), or enter upon what should be the supremely happy and honorable career of womanhood with constitutions irretrievably ruined, and utterly incapable of the distinctive function of the sex.

In the debilitated and diseased state of the system to which we have alluded, puberty exhibits itself under several abnormal aspects. It is frequently precipitated; sometimes it is retarded beyond the natural period; and very often, when taking place at the proper age, it is accompanied by the most serious and dangerous derangements and diseased conditions. Over-heated rooms, feather beds, improper clothing, rich and too stimulating food and drink, want of exercise in the open air, improper books, pictures, and conversation, and the pernicious example of depraved persons, tend to bring on premature sexual matu-

rity, establish the menses before the proper age (sometimes, we are told, as early as the eighth or ninth year), and lay the foundation for disease and premature death.

At this point we beg the fond mother to pause a moment and reflect on her position, her duties, and her responsibilities. It is your fault mainly if these false and unhealthful conditions be permitted to exist, and your daughters be subjected to this premature and abnormal development. We beg you, then, as you value their health and beauty (and what mother does not desire to see her daughters beautiful?), their moral welfare, and their present and future happiness, see to it that the conditions we have named be all reversed, and that in their education and management everything that is calculated to promote precocity, either mental or physical; impair the strength of the constitution; or interfere in any way with the natural, orderly, and harmonious development of every organ and faculty of body and mind, be carefully avoided. Above all, beware of that direct incitement to sexual feeling, so common in many families, which consists in allusions to love, courtship, and marriage, in the company of boys and girls, and with the express purpose of directing their attention to these subjects. No harm is meant by this sort of talk, we are aware; but harm, and great harm is done, nevertheless. Never talk to a young girl of lovers, or tease her with reference to any person of the other sex, and by no means allow her to be kissed or fondled by any boy or young man, except a father or a brother. But if you have not already corrupted her, or allowed her to be corrupted, you will have no occasion to forbid such liberties. Her own instinctive modesty and sense of propriety will be a sufficient safeguard. If, however, you are accustomed to urge her, against these instinctive feelings, to kiss this or that boy or young man whom you represent as a lover or suitor, you have already taken the first step toward her ruin. *Allow her, we beg you, to remain a child till Nature, in her own good time, shall make her a woman.*

In peculiar diseased, debilitated, or sluggish states of the

system, the phenomena of puberty, instead of being precipitated, fail to appear at the proper period. This retarded development is often characterized by great derangement of the general economy, extraordinary tastes, and diseased appetites. Girls thus affected sometimes eat with avidity chalk, charcoal, plaster, clay, slate pencils, and other innutritious substances, and are pale, sickly-looking, dyspeptic, and nervous.

The thing to be done in cases like this is to restore the general health, by first removing the causes through which it has been lost, and then bringing to bear upon the system such hygienic agencies as a well-chosen diet, exercise in the open air, judicious bathing, lively company, and pleasing amusements. Thus Nature may be assisted, and the function finally established. Avoid drugs in all such cases. None but an ignorant or dishonest physician would prescribe them; and yet the health of thousands, already sufficiently deteriorated, is utterly ruined by their use. The fault is frequently in the ignorant mother, who either doses her daughter with some advertised nostrum, or insists upon receiving medicines for her from her physician.

Where there is simply a degree of tardiness in the appearance of the menstrual flow, without any other symptoms of disease or debility, no alarm need be felt. The case may be left mainly to Nature. No harm will result from a little delay. The desired development may be legitimately promoted, however, by the tonic and stimulating action of cold water dashed upon the bosom at the morning bath; by wet bandages, worn low down on the abdomen, and by cool sitz-baths.

Every mother should inform herself thoroughly on the subject of which we have been speaking, that she may be qualified to prepare her daughters for the important changes which await them at the verge of girlhood. She should understand the *rationale* of the menstrual function, know the conditions on which its normal development depends, and be deeply impressed with its important bearings upon health and beauty. With this conviction and this knowledge she will endeavor to

surround her daughters with all the conditions of health, remove carefully every cause of disease or debility, and prepare their minds, by such instructions as may be necessary, for the new and interesting phase of life upon which they are about to enter. The crisis will thus be mainly disarmed of its dangers and its terrors, and, safely passed, will usher the young girl into a healthy and beautiful womanhood.

Regularity in the performance of the menstrual function, once rightly established, depends upon health, regular habits, and regulated passions. Irregularity indicates disease or debility, and leads to the most disastrous results, affecting health, beauty, and life itself.

The menstrual function being regularly established, it would seem to be in accordance with the intentions of Nature that, other conditions being favorable, marriage should at once take place, and the grand work for which the materials and forces are now prepared be consummated. If puberty has not been precipitated, but has been established and become regular at the normal period, under circumstances of perfect physical development and sound health, we see no physiological objection to this course; but taking the physical conditions as we find them at the present day, it seems to us far better, in a majority of cases, that marriage be deferred for several years, or till more solidity and vigor of constitution than generally exists at puberty be attained.

Of marriage it is not our purpose to speak at length; but we can not forbear a word or two of counsel to the young maiden or wife in reference to its physiological bearings; for looking upon it from the point of view here suggested alone, it is fraught with the most momentous consequences.

The young woman who has honored these pages with a perusal need not be told, after reading so far as this, that an education, to be worthy of the name, or anything better than a misfortune to the receiver, must embrace other branches than French, Italian, music, and drawing—that physiology and its applications must not be ignored. Having arrived at woman-

hood, a thorough knowledge of your own physical and mental constitution becomes imperative. Whatever relates to the requirements of your destiny as wife and mother—a destiny which no true woman, we believe, can desire to avoid—is at this juncture of paramount importance to you. Without this knowledge you launch your bark upon an unknown sea, and sail forth without chart or compass. The most perfect physical organization and the best health are thus liable to be shipwrecked during the first matrimonial voyage. With how many thousands, alas! is this the sad actual which takes the place of the maiden's ideal wifehood. For proof, look about you and observe the contrast between the blooming brides and the pale and sunken-cheeked wives of even the best and most loving of husbands, who have tenderly tried to shield them from all the harms which their own ignorance has permitted them to see. A little easily acquired information on the part of the wife, and a course of action dictated by it, would, in a majority of cases, entirely prevent the deplorable consequences we have noted. Permit us to urge you again to seek this knowledge at once; for, without it, whatever may be your other qualifications, physical or mental, you are utterly unfitted to marry.*

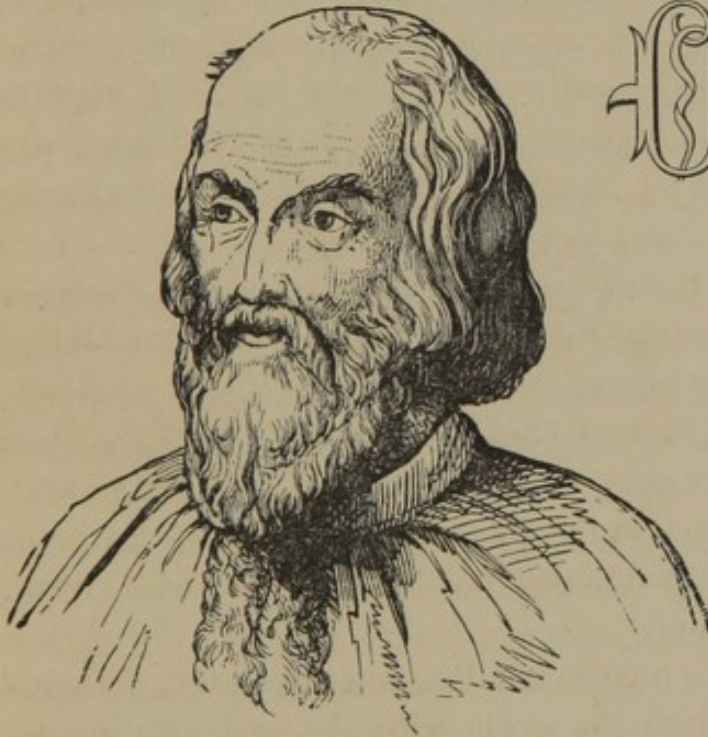
Marriage, when love and physiology unite in sanctioning it, gives the finishing touch to the beauty of both man and woman; nor does maternity, exercised under proper conditions, impair in the least the attractions of the latter—in fact, it adds to them. *If, then, you would retain your health and beauty, become the mother of healthy children, and remain a perpetually overflowing fountain of joy to your husband, study and obey the laws of your being.*

* In connection with standard works on general physiology, Dr. Edward H. Dixon's "Women and her Diseases," Alexander Walker's "Intermarriage," and O. S. Fowler's "Love and Parentage" and "Matrimony," and especially the last named (in spite of a blunt and unpolished style, which is apt to repel), may be read with profit.

XV.

THE SECRET OF LONGEVITY.

Nothing is more advantageous to man than long life. * * * * That which gives one the truest pleasure is to perceive that age and experience may render a man wiser than the schools can make him. We do not know the value of ten years of healthy life at an age in which man can enjoy all his faculties and profit by all his experience.—*Louis Cornaro.*



ONE FOURTH, at least, of all the children who are born, die before they have completed their seventh year, and one half before reaching the age of seventeen. Only six persons in a hundred reach the age of sixty-five, and hardly more than one in ten thousand lives one hundred years.

What an appalling picture of life—or of death, rather—on this globe do these startling facts present! Is it possible that this terrible premature mortality is natural and inevitable—a part of the permanent Providential order of things? Is man, as a physical being, essentially a failure? Among the lower animals nothing of this kind occurs; and anatomy and physiology have failed to discover anything in the structure or

functions of the human system that necessarily leads to these sad results. On the contrary, they show clearly enough that every child born with a sound constitution possesses the basis of a long life. The one in ten thousand—the man who lives a hundred years—to say nothing of the still longer lives of which history and observation have taken note—is *only* a man, and has no organs, faculties, or powers which are not the birth-right of the race. Now, as all men are subject to the same fixed natural laws, it follows that under the same set of conditions throughout, the same length of life would have been possible for each individual of the ten thousand, and is fairly within the capabilities of the race.

How comes it, then, that this birthright is not also the possession of the race? What are the causes which have thus shortened life and filled it with pain? How shall we regain our lost inheritance—length of days? It is upon these important questions that we now purpose to throw such light as we have been able to bring to the proper focus.

The means by which we shorten life and swell the melancholy records of premature mortality are almost innumerable, consisting of whatever lessens the sum of vital power, weakens or mars the organism, hastens vital consumption, or hinders the natural restorative processes—in a word, we abbreviate existence by the same means, in the main, that we make use of to destroy health, bodily symmetry, and beauty; and these have already been pointed out.

Multitudes of children (through the transgressions of their parents) are brought into the world with the seeds of disease and dissolution already implanted in their bodies, or with organisms so weak or imperfect that they are unable to carry on the processes of life, and they die almost as soon as they have begun to live. Other multitudes, more fortunate in the outset, and born with tolerably sound constitutions, perish during the first few months, from the combined effects of improper food, over-feeding, impure air, rocking and jouncing, laudanum, purgative, castor-oil, and tight bandages. Thousands on thou-

sands, with their systems weakened, their functions deranged, and their vitality lowered by the abuses just enumerated, and whatever else the ignorance or stupidity of their parents has been able to inflict upon them, lose their lives at the period of the first dentition, which, although a natural process, and fraught with no danger to the well-managed and perfectly healthy child, constitutes a most perilous crisis for those who are weak and surrounded by unhealthful conditions. The second dentition, made dangerous by similar means, carries off a great number more. Then come the perils of puberty, and, with woman, those of maternity follow, leaving but a shattered remnant of the great phalanx of life still on their feet. Improper food; intemperance in eating and drinking; dissipation and excesses of various kinds; family cares; the excitements and anxieties of business; and unphysiological habits and false conditions generally, carry off the remainder, one by one, long before they have reached the natural term of life.

The perils which thus environ us at every turn, and at almost every step, are mainly the creations of our own ignorance or folly, and might therefore be avoided, and the highway which leads to old age rendered pleasant and safe, by pursuing that course of conduct which knowledge and wisdom would dictate. What this course of conduct seems to us to be will appear from what follows.

The conditions on which longevity depends (to give our remarks a less negative turn) are mainly these:

1. A sound physical constitution. We have shown how this may be insured to all infants at birth. The children of long-lived parents, other things being equal, are most likely to be long-lived, because they generally inherit those qualities of constitution which are favorable to that result.

2. A judicious physical education, symmetrically developing, solidifying, and hardening the bodily organs.

3. Simplicity, wholesomeness, and regularity of diet, and the efficient action of all the nutritive or restorative functions.

4. Sufficient pleasurable exercise in the open air to promote

a healthy circulation and keep the muscles in tone, and adequate rest and sleep.

5. Immunity from harassing cares and anxieties, excesses of every kind, and all unhealthful conditions.

6. Constant moderate activity of body and mind. No idler ever reached a great age.

7. Happiness. "Enjoyment," Dr. Southwood Smith says, "is not only the end of life, but it is the only condition of life compatible with a protracted term of existence. The happier the human being is, the longer he lives; the more he suffers, the sooner he dies. To add to enjoyment is to lengthen life; to inflict pain is to shorten existence."

But all this, in substance, has already been set before the reader in previous chapters, and the simple statement of these conditions is all that is necessary to show their extended application. A new statement of the principal question raised in a preceding paragraph may, however, bring out new facts and illustrations.

"But I can not, in my own person," the reader may say, "go back to the beginning, and insure myself a perfect constitution and a judicious physical education. I must forego the full realization of these conditions. Taking myself as I am, then, with the measure of soundness and the sum of vital power with which I find myself possessed, what are the practical means by which I may prolong my days in health and comfort to the greatest possible extent?"

Consider, in the first place, the sum of your vital power and the strength of your organism as making up your stock of life—the capital on which the business of existence is to be carried on—life itself, which is action, making constant drafts upon it; so that, if there be no process of restoration—no income—it must soon be exhausted.

But here you must understand, in the second place, that Nature takes care to guard against this bankruptcy by providing means by which the original stock may be kept good, and under favorable conditions, even increased.

The simple facts thus briefly stated and illustrated are of vital importance, and seem to suggest something like the following practical rules:

1. Every available means must be made use of to strengthen the constitution and give a sufficient degree of solidity and hardness to the organs. Exercise, within proper limits (which will be indicated in another rule), bathing and friction, a moderately cool temperature, and a free use of gelatinous nourishment, impregnated with iron, are some of the more important agencies to be made use of for this purpose. A degree of solidity and hardness amounting to rigidity must, however, be carefully avoided, as it will shorten life by rendering the organs sooner unfit for action. We should carry the hardening process so far as to make strong, but not stiff.

2. The sum or fund of vital power must, if practicable, be increased. The means of doing this should be sought mainly in the expansion of the chest (see Chapter XII.) and the inhaling of copious drafts of pure air, whereby the blood is more highly vitalized, the digestive functions rendered more efficient, and circulation and nutrition more active.

But here, too, there may be excess. Overmuch vital power leads to a higher degree of action than is consistent with long life, and also increases the liability to inflammatory diseases. Hufeland says: "Sound health may shorten the duration of life by intensifying it, and a certain kind and degree of weakness may be the means of prolonging it."* The idea he wishes to express is no doubt a correct one; but the excessive vitality to which he probably refers is not sound health, although it may temporarily assume the appearance of it. A very ruddy face and a full habit are by no means signs of longevity, as the most cursory examination of the subject will convince the candid reader. A degree of paleness and lankness, although denoting deficient vital power, are more favorable indications. A moderate plumpness, and a diffused, but not a high color in the face, are the marks of enduring vigor.

* Art of Prolonging Life.

3. Vital consumption must be so lessened or moderated that it may not be attended with a too speedy wasting of the powers and the organs. If you would live long, you must not live fast. The energy of life is in inverse ratio with its duration.* It is for each individual to judge for himself how slowly or how rapidly, within practicable limits, it may be desirable to live; but the question now before us is in reference to the duration of life, and not to its absolute sum. Of two persons, then, each possessing the same stock of vital power and capability of physical endurance, one may consume twice as much in a day as the other, and, other things being equal, live only half as long.

To retard vital consumption, moderation must govern all our thoughts, feelings, and actions. We must avoid—

(1.) Excessive stimulation of all kinds, intensity of feeling, the excitements of the passions, and whatever unduly increases organic or functional activity.

(2.) All straining of the mental powers by too intense or too greatly prolonged study or thinking.

(3.) Too violent or long-continued muscular exertion.

(4.) Irritants of all kinds, whether affecting body or mind.

(5.) Immoderate excretions.

Retarding vital consumption must, however, have its limits. Without a degree of activity, the organs lose their power, and become unfit to act at all. Some of the lower animals have the power of remaining dormant—the activities of life ceasing without life itself becoming extinct—and their existence may be prolonged in that way indefinitely; but man is differently constituted, and the idea of Dr. Franklin and others, of suspending the processes of life entirely for a time, and afterward restoring animation, will probably never be found practicable with the human being.

4. The restoration of the vital power consumed by the activities of body and mind must be complete and easily effected. Nutritive food, a good digestion, repose, and sleep are essential

* Hufeland.

to this end. The last-named must be especially insisted upon. Without it, necessary restoration of vital power can not be effected. With insufficient sleep, the vigor of the body is very soon impaired, and the term of life greatly shortened.

There is another means of restoring vitality and prolonging life, which we mention merely to express our abhorrence of the atrocious selfishness which would make use of it. Ever since the time when Abishag the Shunammite was brought to King David to "cherish him" and lie in his bosom, "so that he might get heat," it has been well known that living with the young and healthy, and especially sleeping with them, has a restorative effect upon the old and the feeble. Reinhart calls living with the young the restoration of the old,* and Bartholin says the same, that it is a preventive to the chilliness of old age, and by the breath restores much of the expired physical powers.† Rudolph of Hapsburg is said, according to Serar's account, when very old and decrepit, to have been accustomed to kiss, in the presence of their relations, the daughters and wives of princely, ducal, and noble personages, and to have derived strength and renovation from their breath. The Emperor Frederick Barbarossa, near the end of his life, was advised, by a Jewish physician, to have young and healthy boys laid across his stomach, instead of using fomentations.‡

The story of Lucius Claudius Hermippus, who reached a great age by being continually breathed upon by young girls—detestable old man!—has often been quoted. Hufeland records the following inscription discovered in Rome :

"To Æsculapius and Health
this is erected by
L. Clodius Hermippus,
who, by the breath of young girls,
lived 115 years and 5 days,
at which physicians were no little
surprised.
Successive generations, lead such a life!"

* Bibelkrankheiten des Alten Testaments.

† De Morbis Biblilis.

‡ Ennemoser. History of Magic.

What became of the young girls whose virgin lives were thus absorbed—made use of as so much tonic medicine—by this shameless and selfish old philosopher, we are not told. The Bible is equally silent with reference to the condition of Abishag when she had done keeping King David warm.

Old men, on the same principle, prolong their days by marrying young wives,* and invalid mothers by daily contact with their children. That those who thus impart vitality where they receive nothing in return must experience a loss equal to the gain on the other side, is sufficiently plain.†

The grand secret, after all (a sound constitution and an adequate fund of vital power being assumed as a basis), is MODERATION in everything, and a happy medium as to climate, temperature, employment, social condition, diet, and so forth. Almost the entire substance of Cornaro's celebrated "Discourses,"‡ and of Hufeland's "Art of Prolonging Life," may be reduced to this single aphorism—Without moderation, the strictest obedience to all other rules will be vain. "Few would believe," M. Reveillé-Parise says, "how far a little health, well managed, may be made to go;" and Cicero declares, "To use what we have, and to act in every thing according to our strength, is the rule of the sage."§

* De Longueville, who lived to the age of 110, had ten wives, the last of whom he married when he was ninety-nine. We saw it recently stated in a newspaper that a man in Massachusetts had lived forty-one days without eating anything, during which period he had been nourished altogether by cold water, and "by the influence absorbed by him while daily holding the hand of his wife."

† Dr. E. P. Foote says: "I once knew a woman who had become prostrate with incurable consumption. Her infant occupied the same bed with her almost constantly, day and night. The mother lingered for months on the verge of the grave, her demise being hourly expected. Still she lingered on, daily disproving the predictions of her medical attendant. The child meanwhile pined, without any apparent disease. Its once fat little cheeks fell away with singular rapidity, till every bone in its face was visible. Finally it had imparted to the mother its last spark of vitality, and, simultaneously, both died."

‡ Discorsi della Vita sobria.

§ De Senectute.

In connection with the means of prolonging it, the question, What is the natural duration of human life? may very properly receive a passing notice.

Leaving out of the account the antediluvians, whose bones we will not now disturb, and coming down to comparatively modern times, we find at least ten instances of persons living to one hundred and fifty years and upward.* Petrarch Czarten, a Hungarian peasant, lived, as the record is, from 1587 to 1772, or *one hundred and eighty-five years*; Louisa Truxo, a South American negress, one hundred and seventy-five years; Henry Jenkins, an English laborer, one hundred and sixty-nine years; Thomas Parr, an Englishman, one hundred and fifty-two years. Instances of persons reaching the age of one hundred years and upward are comparatively numerous, and come within the observation of almost every one. The tables of mortality for England and Wales, for a period of eighteen years, commencing in 1813 and ending in 1830, as quoted by Pinney, show that seven hundred and seven persons lived to the age of one hundred years; eighteen to one hundred and ten; three to one hundred and twenty; and one to one hundred and twenty-four.

Now it is by no means certain, or even probable, that the longest lived individuals on our list lived in strict accordance with the laws of nature, or reached the furthest possible limit of human life. Thomas Parr, who lived one hundred and fifty-two years, died of a fit of indigestion, brought on by having been feasted at court. Dissection showed that all the viscera were perfectly healthy and the cartilages not ossified. He might have lived many years longer, had he not died thus of an accident. May we not reasonably infer from these facts that it is possible, under the most favorable conditions, for men to live nearly or quite two centuries? This was the opinion

* Captain Riley thinks he has met with Arabs on the Great Desert who were *three hundred years* old, and that "a great many of them live two hundred years and upward." We can not quote these, however, among our well-authenticated instances of longevity.

of the celebrated physiologist Haller, who says that "man should be placed among the animals that live the longest."*

But there is another means of reaching, approximately at least, the point at which we aim. As long ago as the time of Aristotle it was known that the length of the growing period is an index of the possible length of life—the latter being some number of times the former. Buffon, the great naturalist, develops and illustrates this idea in his works; but there has existed an element of uncertainty in this method, growing out of the difficulty of ascertaining the exact limits of the period of growth. M. Flourens, a late French writer, has removed this difficulty by finding a sign of this limit—the union of the bones with their *epiphyses*.† This having taken place, the animal grows no more. According to this rule, man reaches the limit of growth in about twenty years; the camel in eight years; the horse in five years; the ox in four years; the dog in two years, and the rabbit in one year. Now, if the camel lives about forty years, the horse twenty-five years, the ox twenty years, the dog ten years, and the rabbit five years, or, in each case, *five times the period of growth*, man should live one hundred years, or five times his period of growth. This is the result at which Flourens arrives. The lives which exceed this term he sets down as extraordinary or exceptional, and adds: "Just as the duration of growth multiplied a certain number of times—say five times—gives the ordinary duration of life, so does this ordinary duration, multiplied a certain number of times—say twice—give the extreme duration."‡ It is possible, then, as we have already inferred from historical facts, for man to live ten times the period of growth, or *two hundred years*. Ought not this, then, to be received as the normal duration of life, and possible, under supposable con-

* *Elementa Physiologiæ.*

† Epiphysis (plural epiphyses), Gr. *ἐπιφύσις*, accretion; the growing of one bone to another by simple contiguity.

‡ *Human Longevity and the Amount of Life on the Globe.* By P. Flourens. Translated from the French. London. 1855.

ditions, for all men? So it seems to us. Whether all the essential conditions are now *attainable* or not is another question. A late writer, to whose contributions to our scientific literature we have before had occasion to refer, remarks that "we must distinguish between the *possible* and the practicable length of life," and that "the distinction is very wide." He continues:

"In fine, although the problem is yet in a degree open, and the results may require to be somewhat varied, we feel warranted in drawing from the facts presented [in the series of articles from which we quote] the following conclusions:

"1. Men and women *have* lived to an age of near two hundred and fifty years, and within the last few centuries a few individuals to from a hundred and forty to a hundred and eighty-five years.

"2. Since these were *but* men and women, they possessed no capabilities but those which all of us possess; and providing our parentage, habits, and external and internal conditions in all respects were as good as theirs, all men and women now could attain to ages of from a hundred and forty to a hundred and eighty-five years.

"3. Just as soon as the race at large shall have discovered and reduced to unmistakable rules the principles of health and endurance on which those few stumbled, as it were, by chance, the majority of human kind may live to at least a hundred and forty or a hundred and fifty years.

"4. When for a few generations the practice of hygienic living has been quite universally adopted, so that the *constitution* may recover from its present broken and enfeebled condition, deaths under eighty should become as unusual as deaths over a hundred now are; and the whole race, with rare exceptions, could then attain to ages ranging from a hundred to a hundred and fifty years, and may even beyond that, to near or quite two hundred years. We have, as human beings, the germs of the capacity to do this; we only need to look after and develop them.

"5. While a life thus prolonged is our birthright, and would become our possession if our condition and modes of living were brought to a perfection of system and practice, it is evident that until some great change is made in the CAUSES now at work, we shall continue to reap the present CONSEQUENCES. And so, with a right to exist in health, comfort, nay, positive happiness, to the age of one hundred and fifty years, the coming century will likely, as the past has done, find children and adults dying rapidly from the first year, and indeed the first hour of being, until the number of centenarians, even if somewhat increased, shall still be extremely small."*

Notwithstanding the lamentable premature mortality of the present day, statistics show that the length of life has been steadily increasing since the sixteenth century, when, according to Dr. Buchanan, its average was only *eighteen years*. It is now *forty-three years*.

In Geneva, Switzerland, of whose population, births, and deaths an accurate account has been kept for three centuries, the mean duration of life—

From 1500 to 1600	was 21 years 2 months
" 1600 to 1700	" 25 " 9 "
" 1700 to 1800	" 32 " 9 "
In 1830	" 40 " 5 "
In 1850	" 47 " 0 "

The mean duration of life among the ancient Romans, not including the servile classes, according to Ulpianus (as quoted by Dr. Southwood Smith), was only thirty years. Among the same class in Great Britain at the present time it is fifty years. For the whole population of Great Britain the average is forty-five; for France forty-two, and for the United States about forty-three.

These facts illustrate in a very striking manner the influence of civilization and an increase of knowledge and the comforts of life in promoting physical welfare. The poor and laboring classes in most countries (popular belief to the contrary not-

* Prof. Levi Reuben, in *Life Illustrated*.

withstanding) are shorter lived *by more than one-fourth* than the wealthy. A comparison made for France by M. Villemermé, and based on actual statistics, shows that the wealthy live on an average *twelve years* longer than the poor. The proportion would be different here, however, as even those whom we call poor possess most of the conditions essential to health and long life as largely as the rich, and are free from some of the unfavorable conditions to which the latter are subjected.

“Philosophers and men of quiet reasoning, naturalists, statesmen, and other men whose studies and avocations were especially calculated to develop and maintain the supremacy of the moral and intellectual powers, have been proverbially long-lived. In this connection we may name, among the ancients, Homer, Hippocrates, Pythagoras, Plutarch, Xenophon, Plato, Thales, Carneades, Sophocles, Zeno, Galen, Democritus; and among the moderns, Locke, Newton, Galileo, Boyle, Leibnitz, Buffon, Olbers, Blumenbach, Hahnemann, Swedenborg, Sir Edward Coke, and Fontenelle. All of the persons thus named were distinguished by active and laborious habits, and some of them were intense, if not intemperate workers.”

The married live longer than the single; large men live longer than small ones; more women than men become old, but men only attain the highest point of longevity. Savages do not live so long as civilized people; but in this country the most remarkable instances of longevity have been found among the negro slaves of the Southern States.

One of the most remarkable and instructive instances of longevity on record is that of Louis Cornaro, author of “Discourses on a Sober and Temperate Life,”* who was born in Venice, of an illustrious family, in the year 1467 (according to the “*Biographie Universelle*”), and died in 1566.

Born with a very feeble constitution, and plunging early into the fashionable excesses of his times, he lost his health, and when only thirty-five years old was told by his doctors that he could not live more than two years.

* Published by Fowler and Wells, New York, price 3 cents.

This serious warning had the effect of inducing him to abandon his pernicious habits and commence a simple and temperate life. His abstemiousness became almost excessive. Twelve ounces of solid food and fourteen ounces of wine each day were for more than half a century all his nourishment; and this diet agreed so well with him that during the whole of that half century he was never ill. He took this quantity, in the beginning, at two meals; but afterward, as he became older, he made four meals of it. He ate, he says, "bread, mutton, partridges, and so forth. All such articles of food are suited to old men, who, if they be wise, will be contented with them, and not seek for others."

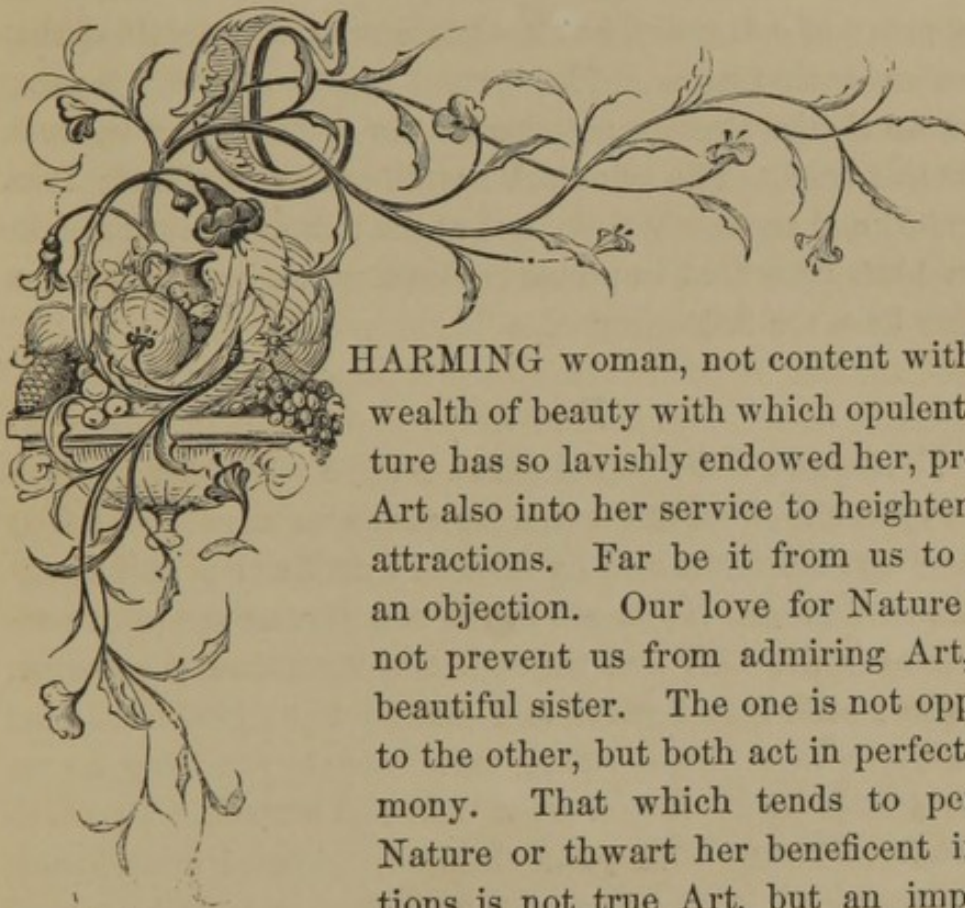
But for the particulars of Cornaro's way of living we must refer the reader to his book. We call attention to him here simply as an example of the extent to which one's health and longevity are in his own hands. What a noble victory was that which he gained over himself and over the disorders and weaknesses which assailed him! No wonder he is proud of living, and never ceases speaking of what he calls his *beautiful life*, and of the victory he has gained. "What I am going to say," he exclaims, "will appear impossible or hard to believe; nothing, however, is more true. It is a fact known to many persons, and worthy of the admiration of posterity—I have attained my ninety-fifth year, and find myself as healthy, merry, and happy as if I were but twenty-five."



XVI.

THE ARTS OF BEAUTY.

'Tis beauty truly blent, whose red and white
Nature's own sweet and cunning hand laid on.—*Shakspeare.*



HARMING woman, not content with the wealth of beauty with which opulent Nature has so lavishly endowed her, presses Art also into her service to heighten her attractions. Far be it from us to raise an objection. Our love for Nature does not prevent us from admiring Art, her beautiful sister. The one is not opposed to the other, but both act in perfect harmony. That which tends to pervert Nature or thwart her beneficent intentions is not true Art, but an impostor working under her name.

Some of the means already brought forward for the promotion of a symmetrical and beautiful physical development, and the corresponding functional harmony, may be called artificial; but they all have their foundation in natural laws, and co-operate harmoniously with Nature's more direct agencies. So far as dress, personal ornaments, cosmetics, and so forth, can be

properly placed in the same category, they have our approval, and no further.

The Arts of Beauty, so far as we purpose to treat of them here, may be properly considered under three heads: 1. The Use of Cosmetics; 2. Dress; 3. The wearing of Ornaments.

I.—THE USE OF COSMETICS.

A cosmetic (from the Greek *κοσμητικός*) is properly a *beautifier*—anything that is capable of improving personal beauty. It is in this broad sense that we use the term. Of course, then, we approve of cosmetics, but not necessarily of everything that passes under that name. The careful reader of the foregoing pages no doubt already anticipates the drift of our remarks under this head. The principal beautifiers have already been described and recommended; but, at the risk of repeating some of the hints presented in previous chapters, we beg permission to offer here the following

Recipes.

1. *To Acquire a Beautiful Form.*—Take abundant exercise in the open air—free, attractive, joyous exercise, such as young girls—when not restrained by false and artificial proprieties—are wont to take. If you are in the country, or can get there, ramble over the hills and through the woodlands; botanize; geologize; seek rare flowers and plants; hunt bird-nests, and chase butterflies. Be a romp, even though you may be no longer a little girl. If you are a wife and a mother, so much the better. Romp with your children. Attend also to your bodily positions in standing, sitting, lying, and walking, and employ such general or special gymnastics as your case may require. Live, while in-doors, in well-ventilated rooms; take sufficient wholesome and nourishing food, at regular hours; keep the mind active and cheerful—in short, obey all the laws of health.

Take a lesson from the English girl, as described in the following extract:

"The English girl spends more than one half of her waking hours in physical amusements; that is, in amusements which tend to develop, and invigorate, and ripen the bodily powers. She rides, walks, drives, rows upon the water, runs, dances, plays, swings, jumps the rope, throws the ball, hurls the quoit, draws the bow, keeps up the shuttlecock, and all this without having it forever impressed upon her mind that she is thereby wasting her time. She does this every day, until it becomes a habit, which she will follow up through life. Her frame, as a necessary consequence, is larger, her muscular system better developed, her nervous system in subordination to the physical; her strength more enduring, and the whole tone of her mind healthier. She may not know as much at the age of seventeen as does the American girl; as a general thing she does not, but the growth of her intellect has been stimulated by no hot-house culture, and though maturity comes later, it will last proportionably longer."*

2. *To Promote Plumpness.*—A lack of the proper degree of *embonpoint*, for which no other physical quality can compensate, is a very common defect among American women. The cause of this want of plumpness is generally either actual ill health, or an abnormal development of the mental temperament. If the vital system be naturally well developed, the desired fullness will come with health. To increase the vital temperament, moderate (within the limits of health) the activ-

* Among the items particularized in the published accounts of the bridal outfit of the Princess Royal of England, on the occasion of her marriage with the Crown Prince of Prussia, is the following:

"Twelve dozen pairs of boots of useful and solid make; some of them intended for rough walking, being provided with treble soles, and small but projecting nails."

"Only think," an American newspaper says, "of some of our 'paper-soled,' delicate-footed damsels, sporting, by way of novelty, hob-nailed, triple-soled shoes! Does any one doubt, however, that such an innovation would do more to preserve the roses in fair cheeks than any style of hygiene which 'the faculty' could recommend? We denounce often the fashions of England as monarchical—we think the Princess Royal might set us good republicans an example in the matter of *understanding*."

ity of both mind and body; choose your diet with reference to the formation and deposit of cellular tissue; and live, so far as possible, an easy, serene, and cheerful life. Tepid and warm baths (keeping in mind the cautions we have already dropped with reference to bathing) will contribute to the same end. We do not recommend spending half one's time in the bath, as some women of historical renown are said to have done, but when taken for the purpose here indicated, they may be somewhat prolonged with profit.

3. *To Improve the Features.*—Cultivate the mind, refine the tastes, cherish all the virtues, and every gentle and loving mood, avoid gross food and strong drink, and harbor no disturbing passion. Be lovable, and you will be beautiful.

4. *To Acquire a Beautiful Complexion.*—The beauty of the complexion, depending upon the efficient performance of the vital functions of nutrition, circulation, and excretion, is generally in proportion to the integrity and vigor of the vital system. The complexion, then, is improved by increasing vitality, and injured by depressing it. To promote vitality (and through it a clear complexion), expand the chest by deep, full breathing, either in the open air or in well-ventilated rooms, and by other appropriate movements (for which see Chapter XII.); keep the pores of the skin open by bathing and gentle friction; avoid hot bread or biscuits and butter, all very greasy or high-seasoned food, rich pies and cakes, hot or heating drinks, the excessive use of tea and coffee, bad air (and, if possible, stove-heated rooms), excessive heat and cold (and especially sudden transitions from the one to the other), dissipation, and late hours.

If you are troubled with pimples or other eruptions on the face and neck, avoid washing these parts with cold water, as it will have a tendency to cause a still greater flow, not only of the blood, but of the impure humors also, to them. Use tepid or slightly warm water instead.

A bath composed of tepid water and wheat bran is said to be remarkably efficacious in cleansing, purifying, and beautify-

ing the skin. Milk, or milk and water, are also recommended. There is certainly no harm in trying either of these, or the much-lauded pimpernel water, made by infusing the plant in pure rain water, as auxiliaries to the grand hygienic agencies we have enumerated.*

Beware, above all, of the cosmetic lotions advertised in the papers and sold by the apothecaries. They are, almost without exception, worse than worthless, and in the end destroy, instead of improving, the complexion, whatever their makers and venders may say to the contrary.

5. *To Obtain Rosy Cheeks.*—Cultivate a flower-garden. Rise early, and try to discover where the roses and carnations get their brilliant complexions. It is a secret worth knowing. You will find the cosmetic you seek in the same place.

6. *To Beautify the Hair.*—Keep the head clean, the pores of the skin open, and the whole circulatory system in a healthy condition, and you will have no need of bear's grease (*alias* hog's lard) or Macassar Oil. Where there is a tendency in the hair to fall off on account of the weakness or sluggishness of the circulation, or an unhealthy state of the skin, cold water and friction with a tolerably stiff brush are probably the best remedial agents.

7. *To Beautify the Bosom.*—The fullness, whiteness, smoothness, and elasticity on which the beauty of the bosom mainly depends, are due to the perfection of the vital or nutritive sys-

* We may add to the foregoing auxiliary beautifiers the celebrated *lait virginal*, which is said to have been known to the beauties of the court of Charles II. It is a simple tincture of benzoin precipitated in water. It emits a most agreeable perfume, has a slightly stimulating effect upon the skin, and gives at least a temporary brilliancy to the complexion; but those who put this or anything else in the place of pure air, light, exercise, wholesome food, and good habits, will soon see how powerless it is for any grand cosmetic effect. It may be made according to the following

Recipe.

Take a small piece of gum benzoin, and boil it in alcohol till it becomes a rich tincture, which bottle up for use. Ten or fifteen drops of this in a tumbler full of water makes the famous *virgin milk*.

tem, and are promoted in the same way as the general plumpness of form of which we have spoken in another place. Cold water and gentle friction will stimulate the development of the breasts. The cotton padding so generally used to give "the appearance of something where there is nothing," is utterly destructive to the health and beauty of these organs. They should be covered as lightly as may be consistent with their protection, and left to grow in unrestrained luxuriance, like the lilies of the field. All compression, and especially the pressure of such hard substances as steel or whalebone, and above all, whatever tends to push them out of their proper place—the place in which symmetry and use alike require them—is sure to result in more or less deformity, and may give rise to more terrible evils still, in the form of abscesses or cancers. To young girls just budding into womanhood these cautions are of the utmost importance.

8. *To Improve the Arms and Hands.*—The recipes already given for the promotion of beauty of form, complexion, and so forth, will apply here. An additional hint may be found in the following extract:

"It has been suggested that the Greek or Ionian, whose arms were of so perfect a form, owed that beauty in some measure to the custom of leaving them nude, or covered only by loose drapery, as in that case no pressure constricted the roundness of the fleshy parts, and prevented their development; no ligature, binding the upper part of the arm, altered the color of the skin; and the arm, being always uncovered, received at the toilet the same attention as other parts. * * * * It is certainly not improbable that we may attribute the absence of this beauty, in some measure, to the custom of wearing long sleeves; but want of exercise is the great cause."*

9. *To Retain Beauty and Youthfulness.*—The rules we have given for acquiring beauty supply also the needful instructions for retaining it. It comes and goes with health. The bad

* Walker.

habits and false conditions which destroy the latter render the former impossible. Youthfulness of form and features depends upon youthfulness of feeling.

Spring still makes spring in the mind
When sixty years are told—
Love wakes anew the throbbing heart,
And we are never old.

If, then, we would retain youthful looks, we must do nothing that will make us *feel old*.

Beauty is generally spoken of as a fleeting show, a fragile flower, an evanescent gleam of celestial radiance; and too often these terms are well applied, especially in this country. This, however, we are convinced, is not according to the intentions of Nature. Some women have retained their beauty and youthful appearance till a very advanced period of life. Of Diana of Poitiers, who died at the age of sixty-seven, Brantôme says: "I saw her six months before her death, still so beautiful that I know not a heart so rocky as not to be moved at the sight of her." "I believe," he adds, "if this lady had lived a hundred years, she would never have grown old, either in the face, so finely was it formed, or in the person, so good was her constitution, and so excellent her habit of body."* Ninon de l'Enclos and other famous beauties are also represented as being exceedingly fascinating at forty or even fifty years of age. Examples of the same well-preserved loveliness are not entirely wanting at the present day. A late writer, speaking of English society, says: "One meets ladies past fifty, glowing, radiant, and blooming, with a freshness of complexion and fullness of outline refreshing to contemplate."† Another, speaking of the Italian women who have passed what he calls the "first bloom of youth," remarks: "Instead of presenting a shriveled and withered appearance, they seem to grow in beauty as they grow in years, and although age of course makes its progress, yet its ravages are well-nigh imperceptible. In no country in

* *Dames Galantes* (Œuvres tom. IV.).

† Mrs Harriet Beecher Stowe.

the world are so many *middle-aged beautiful women* as in Italy, and this also we attribute to the fullness of their imagination and spiritual nature, which permits them to bear the sacred pangs of motherhood without impairing the vigor and buoyancy of their *physique* or their intellect." Is all this impossible for American women? We do not believe it. The women spoken of in the foregoing extracts *keep their beauty because they keep their health*. Here is the grand secret, after all; and it is mainly because they lose their health that American women lose their beauty. We have shown how health is lost, and indicated the means by which it may be regained and preserved. It is not necessary to repeat here the instructions scattered through the preceding chapters.

The writer whose remark in reference to the English women is quoted in the preceding paragraph continues: "How comes it that our married ladies dwindle, fade, and grow thin—that their noses incline to sharpness, and their elbows to angularity, just at the time of life when their island sisters round out into a comfortable and becoming amplitude and fullness? If it is the fog and the sea-coal, why, then, I am afraid we shall never come up with them. But perhaps there may be other causes why a country which starts some of the most beautiful girls in the world produces so few beautiful women. Have not our close-heated stove-rooms somewhat to do with it? Have not the immense amount of hot biscuits, hot corn-cakes, and other compounds got up with the acrid poison of saleratus, something to do with it? Above all, has not our climate, with its alternate extremes of heat and cold, a tendency to induce habits of in-door indolence? Climate certainly has a great deal to do with it—ours is evidently more trying and more exhausting; and because it is so, we should not pile upon its back errors of dress and diet which are avoided by our neighbors."

Another writer, after detailing the various abuses which are undermining the constitutions and ruining the beauty of American women, says:

"All day long in winter the stove-heat burns into the brain

and withers the cheeks, and palsies the muscles, and enfeebles the step; and though summer comes with its outer air, and its fruits and flowers, the loads it is asked to remove are too much for it, and the years circle round—the weary, aimless, soul-consuming years! and the bad diet, and the uncleanly habits, and the foul air, and the hot stove have done their miserable work. Beauty is gone, health is vanished, hope has set, and the young mother, who should be just beginning to shed beauty and goodness and light around her, has shrunk mournfully into the forlorn and wrinkled and unlovely old woman.”*

Need we add anything more? These warning words are from the lips of your own sisters. Ponder them well, we beg you.

II. - DRESS.

Women are sometimes charged with devoting too much attention to matters of dress. There is, perhaps, some foundation for the accusation, for these things should not, certainly, be made the principal business of their lives; but we would by no means counsel them to treat dress as a trifling or unimportant matter. The grand cause of regret is, not that they devote themselves so zealously to it, but that their studies and labors in that direction are not guided by a better knowledge and more artistic tastes. With all the time, attention, and labor bestowed upon the subject, comparatively few women, especially in this country, dress well, either in an esthetic or a hygienic point of view; and what is intended to heighten their charms, too often obscures, and, in the end, destroys them. A woman who has herself the reputation of dressing well, and who has had abundant opportunities of observing the toilets of different nations, says: “The great majority of my sex understand the art of dress no further than that ‘fine feathers make fine birds;’ hence, they dress more or less in bad taste.”

The fact is, dress is not studied as an art, and in the light

* Mrs. Paulina Wright Davis.

of the fundamental principles of taste, as it should be, but is subjected to the arbitrary and senseless rules of fashion.

Fashion is an arch tyrant whom we would gladly overthrow, but she is securely enthroned beyond the reach of our blows. A direct attack would be useless. Our only hope is in gradually undermining her power by the diffusion of knowledge and the cultivation of the popular tastes. To contribute to such an extent as our very limited space will permit, to these ends we offer the following hints:

1. *The Uses of Dress.*—Dress has primarily two functions—to clothe and to ornament; but use and beauty, in this as in other cases, so far from requiring any sacrifice for combination, are found, each in the highest degree, where both are most fully obtained—the fittest or most comfortable dress being that which is most graceful or becoming. Fitness is the primary demand, and *the dress that appears uncomfortable is untasteful.**

2. *Subordination of Clothes.*—“Dress is always to be considered as secondary to the person.” This is a fundamental maxim in the art of costume, but is often lost sight of, and dress made *obtrusive* at the expense of the individuality of the wearer. A man’s vest or cravat must not seem too important a part of him; and a woman should not be wholly lost in her crinoline. If you are not better and more beautiful than your clothes, you are, indeed, a man or a woman of straw.†

Mrs. E. Oakes Smith very happily says: “The greatest compliment that can be paid to a woman is to forget her dress, or rather not to see it—as proving it to be so characteristic that we are not incommoded by observation, and are thus left to unalloyed companionship. We see, as it were, face to face, and not through whalebone and starch. The rose in her hair is a part of her womanhood, and the robe, in hue and shape is so a part of her mold that we do not see it, but her. All is harmony, and she is the genius to which everything else has become subordinate.”

* *The Crayon.*

† *How to Behave.*

3. *Fitness of Dress.*—It follows from the principles already stated, that any costume, to fulfill properly either of its important functions, must possess *fitness* in forms, materials, and colors to the person of the wearer, and to the conditions of time, place, and occasion on which it is worn. The fact that fashion compels us constantly to violate this principle does not invalidate it. In treating of dress as an art, we must ignore fashion altogether. In our practice we must do what we can. It is but justice, however, to fashion and its promoters, to admit that they are not responsible for all the incongruities with which we meet. They are often mainly due to bad taste and affectation.

(1.) The first application of the law of fitness gives us the distinction of *sex* in dress, and shows the absurdity of dressing men and women alike. The physiological reasons why every form of dress which is becoming on one sex may with propriety be rejected by the other, will suggest themselves to any one at all familiar with the human figure.

“Some,” Mrs. Smith says, “have contended that there should be no difference in the dress of the sexes. I think that a moment’s reflection will convince us that this is a mistaken taste. As a general rule, we are shorter than the other sex, and I am sure we do not wish to seem only a poorer sort of men.”*

(2.) There should be fitness to the *individual*, as well as to the sex. We instinctively know that the young and the old should not dress alike. Neither should the tall and the short, the pale and the rosy, the grave and the gay, the tranquil and the vivacious. Each variety of form, color, and character has its appropriate style.

“Woman,” the erratic, but beautiful and witty Lola Montes, says, “may take a lesson on dress from the garments which Nature puts on at the various seasons of the year. In the spring of youth, when all is lovely and gay, the light and trans-

* Hints on Dress and Beauty.

parent robes of brilliant colors may appropriately adorn the limbs of beauty. Especially if the maid possess the airy form of Hebe, a light, flowing drapery is best suited to display her charms. This simple garb leaves to Beauty all her empire. No heavy ornaments should load the figure or distract the attention in its admiration of the lovely outlines. The young woman of graver mien should select her apparel with reference to her different style of beauty. Her robes should always be long and more ample than those of her gayer sister; and they should also be thicker in substance and of a more sober color."

"In form," another writer says, "simplicity and long, unbroken lines give dignity, while complicated and short lines express vivacity. Curves, particularly if long and sweeping, give grace, while straight lines and angles indicate power and strength. In color, unity of tint gives repose—if somber, gravity, but if light and clear, then a joyous serenity—variety of tint gives vivacity, and if contrasted, brilliancy."

Tall women should not wear dresses with longitudinal stripes, as they will make them appear taller than they really are. Flounces and stripes running around the dress have an opposite effect, and should be avoided by short persons. Light colors are more suitable to small persons than to large ones, as they increase the apparent size. The colors worn should be determined by the complexion, and should harmonize with it and with each other. The following suggestions from Youmans' "Household Science" will be useful to our fair readers:

"Any colored objects, as bonnet trimmings or draperies, in the vicinity of the countenance, change its color; but clearly to trace that change we must know what the cast of complexion is. This varies infinitely, but we recognize two general sorts, light and dark, or *blonde* and *brunette*. In the blondes or fair-complexioned the color of the hair is a mixture of red, yellow, and brown, resulting in a pale orange brown. The skin is lighter, containing little orange, but with variable tinges of light red. The blue eye of the blonde is complementary to the orange of the hair. In brunettes the hair is black, and the skin

dark, or of an orange tint. The red of the brunette is deeper or less rosy than that of the blonde. Now the same colors affect these two styles of complexion very differently. A green setting in bonnet or dress throws its complement of red upon the face. If the complexion be pale and deficient in ruddy freshness, or admits of having its rose-tint a little heightened, the green will improve it, though it should be delicate in order to preserve harmony of tone. But green changes the orange hue of the brunette into a disagreeable brick-red. If any green at all be used, in such case it should be dark. For the orange complexion of brunette the best color is yellow. Its complementary, violet, neutralizes the yellow of the orange and leaves the red, thus increasing the freshness of the complexion. If the skin be more yellow than orange, the complementary violet falling upon it changes it to a dull pallid white. Blue imparts its complementary orange, which improves the yellow hair of the blondes, and enriches white complexions and light flesh tints. Blue is therefore the standard color for a blonde, as yellow is for a brunette. But blue injures the brunette by deepening the orange, which was before too deep. Violet yellows the skin, and is inadmissible except where its tone is so deep as to whiten the complexion by contrast. Rose-red, by throwing green upon the complexion, impairs its freshness. Red is objectionable, unless it be sufficiently dark to whiten the face by contrast of tone. Orange makes light complexions blue, yellow ones green, and whitens the brunette. White, if without luster, has a pleasant effect with light complexions; but dark or bad complexions are made worse by its strong contrast. Fluted laces are not liable to this objection, for they reflect the light in such a way as to produce the same effect as gray. Black adjacent to the countenance makes it lighter."

(3.) Dress should accord with the wearer's pecuniary means, her social position, and the society in which she moves.

(4.) One's costume should be suited to the time, place, and other circumstances under which it is to be worn. You would not, of course, wear your summer clothes in winter, or your

winter clothes in summer. For a similar reason you should have one dress for the parlor and another for the kitchen, one for in-doors and another for the street or a ramble in the country. "Long flowing and even trailing skirts are beautiful and appropriate in the drawing-room, but in the muddy streets, dragging in the filth and embarrassing every movement of the wearer; or in the country, among the bushes and briars, they lose all their beauty and grace, because no longer fitting."

(5.) No dress that hinders the movements of the body or prevents its symmetrical development can be either fitting or in any high sense beautiful, whatever Fashion, which has no respect for physiology, may say to the contrary.

4. *Variety in Costume*.—An application of the principles just laid down would give a pleasing variety in style and color in place of the uniformity which now so generally prevails. No two persons should dress precisely alike, unless two can be found between whom no point of difference, either in physical or mental character, can be discovered. What is wanted is to get rid of the absurd tyranny of Fashion, so that what is becoming to each person, whether man or woman, may be worn without social outlawry or discredit. Of the advent of such a state of things as this we have strong hopes. There is now certainly a tendency in the right direction among the more thoughtful and independent of both sexes.

5. *A Hint to Married Women*.—A newspaper writer, whose name we do not get hold of, has the following hint, which we hope no fair reader of ours will feel constrained to take to herself.

"It is no uncommon thing for women to become slatternly after marriage. They say they have other things to attend to, and dress is habitually neglected—except, perhaps, on great occasions, when there is a display of finery and bad taste abroad, to be followed by greater negligence at home. Great respect is shown to what is called 'company,' but apart from this there is a sort of *cui bono* abandonment, and the compliment which is paid to strangers is withheld from those who have the best

right to claim, and are most likely to appreciate it. This is a fatal, but too common error. When a woman, with reference to the question of personal adornment, begins to say to herself, 'It is only my husband,' she must prepare herself for consequences which, perhaps, she may rue to the latest day of her life."

6. *The Hair and Beard*.—The hair and beard, in one of their aspects, belong to dress. In reference to the style of wearing them, consult the general principles of taste. A man to whom Nature has given a handsome beard, deforms himself sadly by shaving. On this point, we believe fashion and good taste at present agree.

In dressing the hair there is room for the display of a good deal of taste and judgment; but every lady will be able, after a few experiments, to decide what mode renders her face most attractive.

"Ringlets hanging about the forehead suit almost every one. On the other hand, the fashion of putting the hair smoothly, and drawing it back on either side, is becoming to few; it has a look of vanity instead of simplicity: the face must do everything for it, which is asking too much, especially as hair, in its pure state, is the ornament intended for it by Nature. Hair is to the human aspect what foliage is to the landscape."

III.—THE WEARING OF ORNAMENTS.

That beauty

Needs not the foreign aid of ornament,
But is when unadorned adorned the most,

is a trite observation; but with a little qualification it is worthy of general acceptance. Aside from the dress itself, ornaments should be very sparingly used—at any rate, the danger lies in overloading oneself, and not in using too few. A young girl, and especially one of a light and airy style of beauty, should never wear gems. A simple flower in her hair or on her bosom is all that good taste will permit.

When jewels or other ornaments are worn, they should be

placed where you desire the eye of the spectator to rest, leaving the parts to which you do not want attention called as plain and negative as possible.

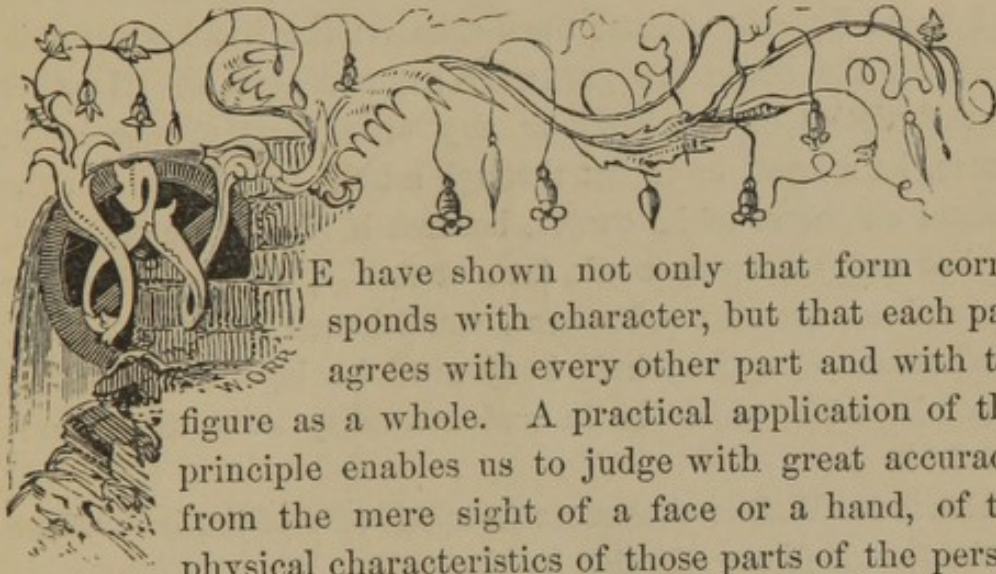
There is no surer sign of vulgarity than a profusion of heavy jewelry carried about upon the person.



XVII.

EXTERNAL INDICATIONS OF FIGURE.

The eye of the physiologist penetrates all disguises.—*J. H. Daniels.*



We have shown not only that form corresponds with character, but that each part agrees with every other part and with the figure as a whole. A practical application of this principle enables us to judge with great accuracy, from the mere sight of a face or a hand, of the physical characteristics of those parts of the person concealed by the dress. An oblong face, for instance, we know indicates the motive or active temperament (see plates X. and XI.), and is associated with dark, strong, and abundant hair; a somewhat long and tapering neck; rather broad and definitely marked shoulders; only a moderate fullness of bosom (in woman); a finely shaped waist, and rather long and slender limbs; while a round face is a sure index of the vital temperament (see plates XII. and XIII.), and is found in connection with soft and light hair; blue eyes; a clear complexion; a rather short neck; finely rounded shoulders; a full chest (and, in woman, a luxuriant development of bosom); large, but tapering limbs; and comparatively small feet and hands, the whole figure being portly in man, and soft and voluptuous in woman. The oval or pyriform face (see plates XIV. and XV.),

symbolizing the dominance of the mental powers, goes with the high forehead, the straight nose, the intensely expressive eye, wavy or curling hair, rather a small frame, deficient in fullness, moderately rounded limbs, and a figure, as a whole, characterized by intellectuality and grace.

The correspondence between the arm or the hand and the figure as a whole are equally perfect. "Long-handed persons," O. S. Fowler says, "have long fingers, toes, arms, legs, bodies, heads, and phrenological organs; while short and broad shouldered persons are short and broad-handed, broad-fingered, and broad-limbed. When the bones on the hand are prominent, all the bones are generally so, and thus of all other characteristics of the hand or any other part of the body. Hence, let a hand be thrust through a hole, and I will tell the general character of its owner, because if it be large or small, hard or soft, strong or weak, firm or flabby, coarse-grained or fine-grained, even or prominent, small-boned or large-boned, or whatever else, the whole body must be built on the same principle, with which brain and mentality must also correspond."*

Alexander Walker thus remarks upon some of the indications of the female figure afforded by the walk:

"In considering the proportions of the limbs to the body—if, even in a young woman, the walk, though otherwise good, be heavy, or the fall on each foot alternately be sudden, and rather upon the heel, the limbs, though well formed, will be found to be slender, compared with the body.

"This conformation accompanies any great proportional development of the vital system; and it is frequently observable in the women of the Saxon population of England, as in the counties of Norfolk, Suffolk, etc.

"In women of this conformation, moreover, the slightest indisposition or debility is indicated by a slight vibration of the shoulders and upper part of the chest at every step in walking.

* Self-Instructor.

“In considering the line or direction of the limbs—if, viewed behind, the feet, at every step, are thrown out backward, and somewhat laterally, the knees are certainly much inclined inward.

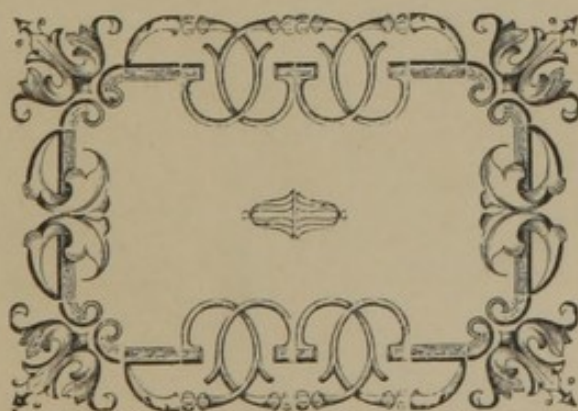
“If, viewed in front, the dress, at every step, is as it were gathered toward the front, and then tossed more or less to the opposite side, the knees are certainly too much inclined.

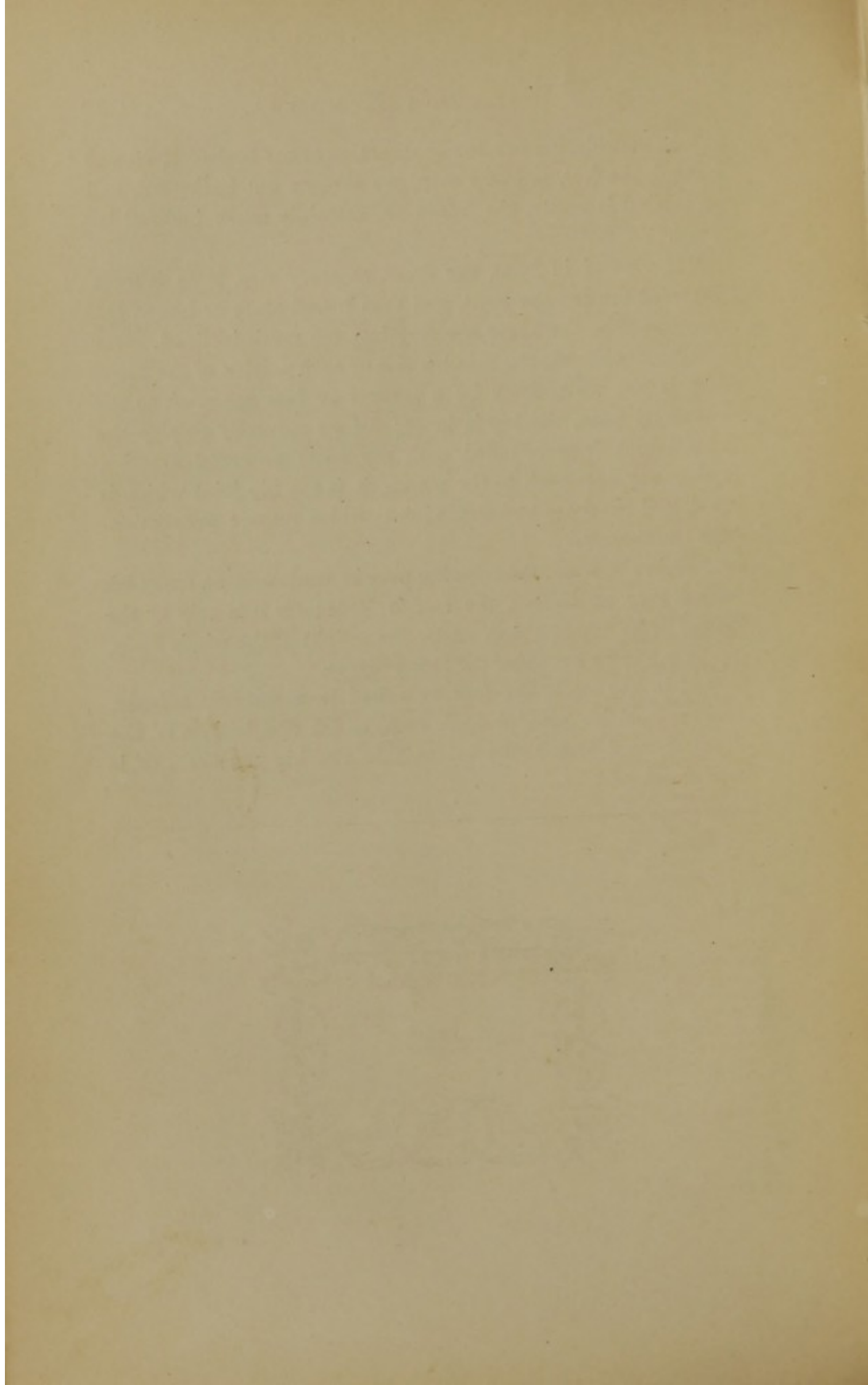
“In considering the relative size of each portion of the limbs—if, in the walk, there be a greater or less approach to the marching pace, the hip is large; for we naturally employ the joint which is surrounded with the most powerful muscles, and in any approach to the march, it is the hip-joint which is used, and the knee and ankle-joints which remain proportionally unemployed.

“If, in the walk, the tripping pace be used, as in an approach to walking on tiptoes, the calf is large; for it is only by the power of its muscles that, under the weight of the whole body, the foot can be extended for this purpose.

“If, in the walk, the foot be raised in a slovenly manner, and the heel be seen, at each step, to lift the bottom of the dress upward and backward, neither the hip nor the calf is well developed.”

* Beauty.





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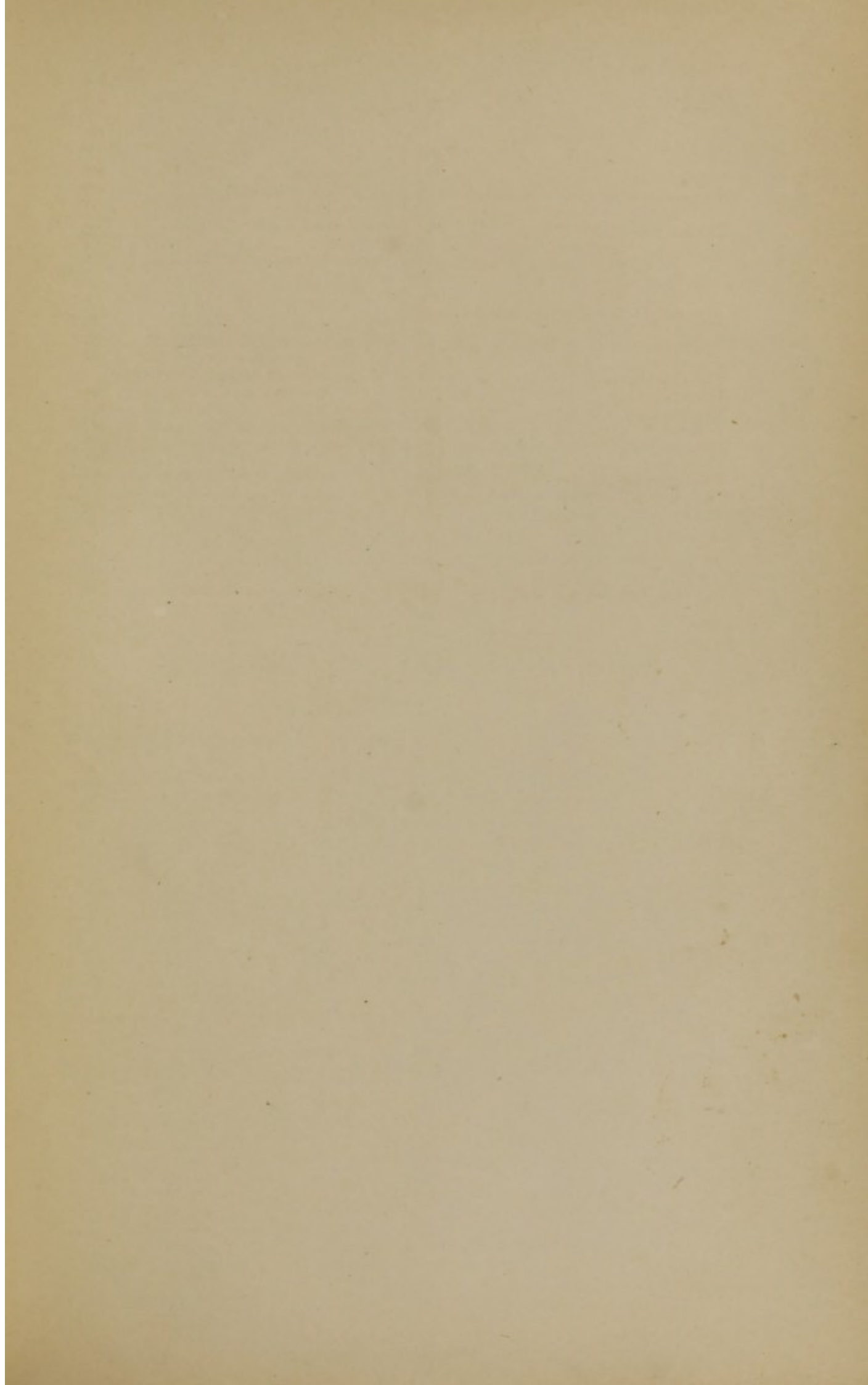
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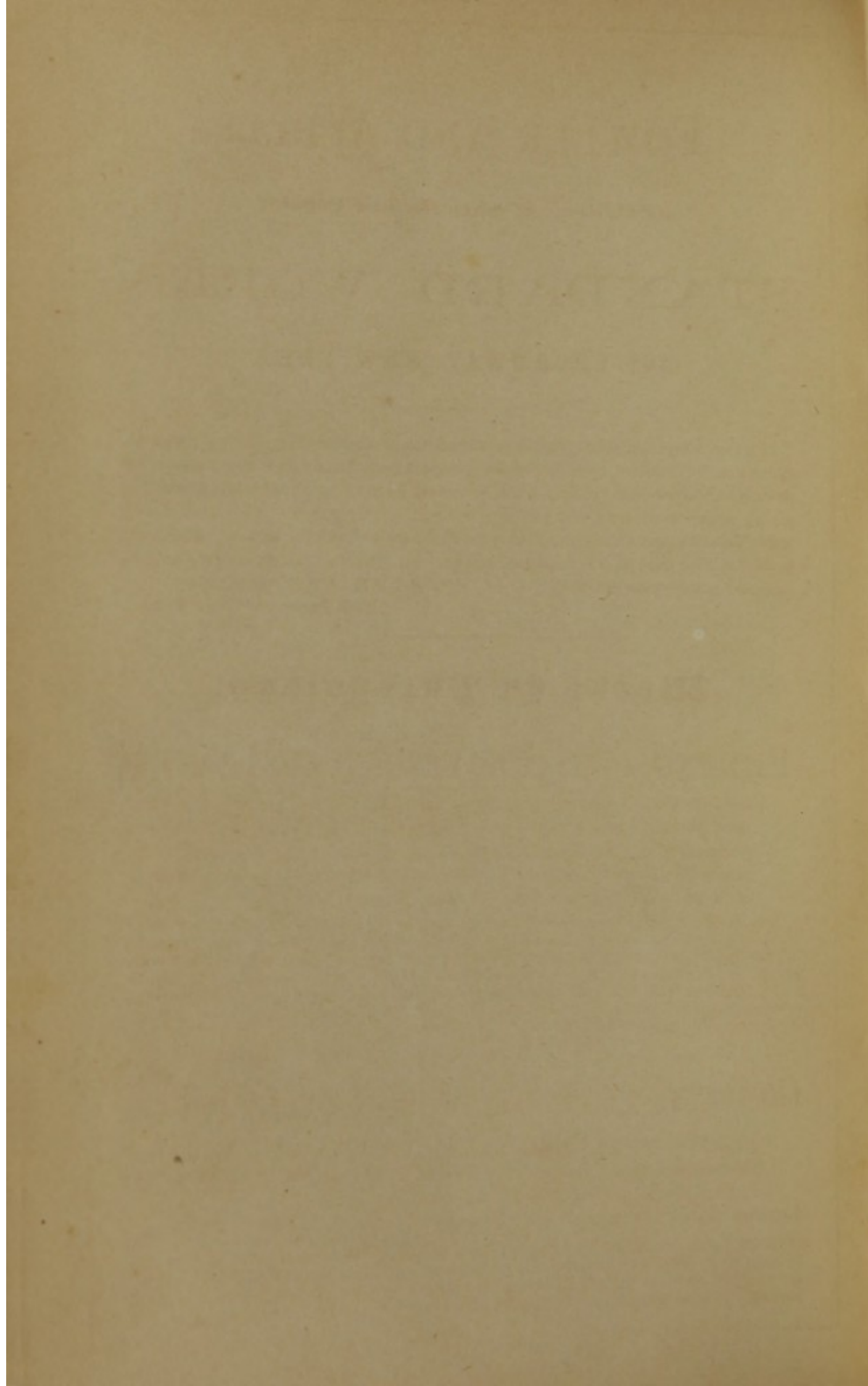
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